Upcoming changes to autism spectrum disorder: evaluating DSM-5
What is ASD?

ASD ‘disease entity’
Aims of the talk

• What changes will be made to the definition of ASD with the publication of DSM-5?
• Are these changes justified?
• What will be the impact of these changes?
Changes to ASD

1. Triad to dyad
The end of the triad

Reciprocal Social Interaction

Communication

Repetitive interests, activities and behaviours

Autism (1980-2013)

Social communication

Repetitive behaviour and sensory interests

Autism (2013-?)
708 children and young people (mean age = 9.5 years)
• All verbal and in mainstream education (mean VIQ=93)
• ASD (n=488) and broader autism phenotype (n=220)
• Autistic symptoms measured using the 3Di
<table>
<thead>
<tr>
<th>3Di subscale</th>
<th>Factor</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 non-verbal interaction</td>
<td>SC</td>
<td>.79</td>
</tr>
<tr>
<td>S2 peer relationships</td>
<td>SC</td>
<td>.75</td>
</tr>
<tr>
<td>S3 sharing</td>
<td>SC</td>
<td>.74</td>
</tr>
<tr>
<td>S4 socio-emotional reciprocity</td>
<td>SC</td>
<td>.66</td>
</tr>
<tr>
<td>C1 non-verbal communication</td>
<td>SC</td>
<td>.72</td>
</tr>
<tr>
<td>C2 conversational abilities</td>
<td>SC</td>
<td>.59</td>
</tr>
<tr>
<td>R1 unusual preoccupations</td>
<td>RRB</td>
<td>.57</td>
</tr>
<tr>
<td>R2 routines and rituals</td>
<td>RRB</td>
<td>.72</td>
</tr>
<tr>
<td>R3 stereotyped and repetitive motor behaviour</td>
<td>RRB</td>
<td>.60</td>
</tr>
<tr>
<td>R4 preoccupation with parts of objects</td>
<td>RRB</td>
<td>.68</td>
</tr>
<tr>
<td>SA sensory abnormalities</td>
<td>RRB</td>
<td>.56</td>
</tr>
</tbody>
</table>
Changes to ASD in DSM-5

1. Triad to dyad

2. Inclusion of sensory abnormalities as a core diagnostic feature
Sensory abnormalities as a core feature of ASD

DSM-5 propose the following as a core feature of ASD:

‘Hyper-or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment; (such as apparent indifference to pain/heat/cold, adverse response to specific sounds or textures, excessive smelling or touching of objects, fascination with lights or spinning objects).’

It is proposed as a type of repetitive behaviour
Sensory abnormalities as a core feature of ASD

- Sensory abnormalities are widespread in ASD
- They are pervasive across age, modality and ability range
- SA’s have some specificity, in that they are more common in ASD than age and IQ matched controls

But are they a form of repetitive behaviour?
<table>
<thead>
<tr>
<th>3Di subscale</th>
<th>Factor</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 non-verbal interaction</td>
<td>SC</td>
<td>.79</td>
</tr>
<tr>
<td>S2 peer relationships</td>
<td>SC</td>
<td>.75</td>
</tr>
<tr>
<td>S3 sharing</td>
<td>SC</td>
<td>.74</td>
</tr>
<tr>
<td>S4 socio-emotional reciprocity</td>
<td>SC</td>
<td>.66</td>
</tr>
<tr>
<td>C1 non-verbal communication</td>
<td>SC</td>
<td>.72</td>
</tr>
<tr>
<td>C2 conversational abilities</td>
<td>SC</td>
<td>.59</td>
</tr>
<tr>
<td>R1 unusual preoccupations</td>
<td>RRB</td>
<td>.57</td>
</tr>
<tr>
<td>R2 routines and rituals</td>
<td>RRB</td>
<td>.72</td>
</tr>
<tr>
<td>R3 stereotyped and repetitive motor behaviour</td>
<td>RRB</td>
<td>.60</td>
</tr>
<tr>
<td>R4 preoccupation with parts of objects</td>
<td>RRB</td>
<td>.68</td>
</tr>
<tr>
<td>SA sensory abnormalities</td>
<td>RRB</td>
<td>.56</td>
</tr>
</tbody>
</table>
HFA - beyond the triad
Effect sizes (Cohen’s D) compared to clinical controls for associated features of autism

Autistic Disorder

- Sleep
- Eating
- Gross Motor
- Dyspraxia
- Fine Motor
- Sensitivities to sound

Autism N=194
Controls N = 330
A broader conceptualisation of ASD

Motor difficulties

Communication

Repetitive interests, activities and behaviours

Feeding difficulties

Sleep problems

Sensory issues

Underlying impairment
The autism ‘disease entity’
Changes to ASD in DSM-5

1. Triad to dyad
2. Inclusion of sensory abnormalities as a core diagnostic feature
3. Lumping of ASD
The lumping of ASD in DSM-5

- Autism
- Asperger’s disorder
- PDD-NOS

Autism Spectrum Disorder
Autism versus Asperger’s syndrome

Leo Kanner
(1894-1981)

Hans Asperger
(1906-1980)
When you match autism and Asperger’s groups on IQ they do not differ in terms of:

- core symptom severity and type
- cognition
- associated difficulties
- personal strengths
- associated mental health difficulties
Validity – the ‘trueness’ of a concept
Utility – the usefulness of a concept

Regardless of whether it is real, how useful is the distinction between autism and Asperger’s syndrome?
High-Functioning Autism and Asperger’s Disorder: Utility and Meaning for Families

Luisa Ruiz Calzada · Nancy Pistrang · William P. L. Mandy

• Interviewed 22 participants from 10 families
• Young people were aged 9 to 16 years
• Subjected data to framework analysis
• Asked about advantages and disadvantages of receiving ASD diagnosis
• Also asked about perceptions of HFA v AsD distinction
Against merging AsD and AD

“I think it’s probably easier for [my son] when he’s older to say he’s got Asperger's rather than autism because of what people are going to think about it at work and things like that.”

“To lump the two into the same category just seems unfair to [my son]. In that respect I wish there were more categories because [he’s] got mild Asperger's as opposed to full-blown Asperger's”
James has autism: what might he be like?

1. Intellectually impaired (18%)
2. Anxious (11%)
3. Difficult to manage (57%)
4. Clever (12%)
5. Kind (1%)
6. Scary (1%)
James has Asperger’s: what might he be like?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4%</td>
<td>1. Intellectually impaired</td>
</tr>
<tr>
<td>18%</td>
<td>2. Anxious</td>
</tr>
<tr>
<td>40%</td>
<td>3. Difficult to manage</td>
</tr>
<tr>
<td>38%</td>
<td>4. Clever</td>
</tr>
<tr>
<td>0%</td>
<td>5. Kind</td>
</tr>
<tr>
<td>0%</td>
<td>6. Scary</td>
</tr>
</tbody>
</table>
Changes to ASD in DSM-5

1. Triad to dyad
2. Inclusion of sensory abnormalities as a core diagnostic feature
3. Lumping of ASD
4. Raising the threshold for diagnosis?
Is DSM-5 raising the bar?

In DSM-IV-TR

- Autism required that at least half the 12 criteria were met
- PDD-NOS could be diagnosed with as few as 3 criteria, and did not necessarily include RSB
DSM-5 Criteria

A. Social Communication
   – Socio-emotional reciprocity
   – Non-verbal communication
   – Relationships

B. Repetitive and stereotyped behaviour
   – Stereotyped repetitive behaviour and speech
   – Routines and rituals
   – Fixated interests
   – Sensory abnormalities
In DSM-5

• 5 of the 7 criteria must be met for any diagnosis on the autism spectrum

There are 2027 ways to be diagnosed with autism in DSM-IV-TR and only 11 in DSM-5...
Will ASD become rarer under DSM-5?

McPartland et al. (2012)
Concerns arising from studies of DSM-5 ASD criteria

Will DSM-5 exclude...
...people who currently meet criteria for Asperger’s?
...people who currently meet criteria for PDD-NOS?
...higher functioning individuals?

‘...did not collect the information necessary to evaluate the specific criteria proposed for the DSM-5’ (Swedo et al, 2012)
A Social communication and interaction

A1 Socio-emotional reciprocity
- Social approach (3 items)
- Age-appropriate social behaviour (8 items)

A2 Non-verbal communication
- Sharing (16 items)
- Eye contact (2 items)
- Facial expression and social smile (15 items)
- Body language and gesture (13 items)
- Adjusting to social context (14 items)

A3 Relationships
- Shared play and imagination (8 items)
- Friendship and social interest (8 items)
B Restricted and repetitive behaviour

B1 Repetitive speech and actions
- Stereotyped speech (11 items)
- Stereotyped behaviour (8 items)

B2 Verbal and non-verbal routines and rituals
- Verbal routines and rituals (3 items)
- Non-verbal routines and rituals (5 items)

B3 Focused interests
- Fixated on objects (3 items)
- Focused interests (4 items)

B4 Sensory abnormalities
- Hypo-sensitivity (3 items)
- Hyper-sensitivity (7 items)
What is agreement between 3Di’s DSM-IV and DSM-5 algorithm?

<table>
<thead>
<tr>
<th></th>
<th>DSM-IV PDD-</th>
<th>DSM-IV PDD+</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (column %)</td>
<td>N (column %)</td>
<td>N (column %)</td>
</tr>
<tr>
<td>DSM-5 ASD-</td>
<td>156 (68%)</td>
<td>50 (10%)</td>
</tr>
<tr>
<td>DSM-5 ASD+</td>
<td>75 (32%)</td>
<td>446 (90%)</td>
</tr>
</tbody>
</table>

If we take DSM-IV as the criterion, DSM-5 has a sensitivity of .90 and specificity of .68.
Agreement between the two measures is moderate to good (86%, Kappa = .59)
# Agreement by diagnosis

<table>
<thead>
<tr>
<th></th>
<th>BAP</th>
<th>AD</th>
<th>AsD</th>
<th>PDD-NOS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (column %)</td>
<td>N (column %)</td>
<td>N (column %)</td>
<td>N (column %)</td>
</tr>
<tr>
<td>DSM-5 ASD-</td>
<td>156 (68%)</td>
<td>17 (4%)</td>
<td>5 (3%)</td>
<td>38 (23%)</td>
</tr>
<tr>
<td>DSM-5 ASD+</td>
<td>75 (32%)</td>
<td>179 (96%)</td>
<td>138 (97%)</td>
<td>129 (77%)</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>-</td>
<td>.96</td>
<td>.97</td>
<td>.77</td>
</tr>
<tr>
<td>Specificity</td>
<td>-</td>
<td>.68</td>
<td>.68</td>
<td>.68</td>
</tr>
</tbody>
</table>
Conclusions

Our findings:

• provide support for the DSM-5 ASD dyad
• do not suggest DSM-5 criteria will exclude people with Asperger’s and higher IQ
• Do not support the idea that DSM-5 has a sensitivity problem...
• ...but does raise the possibility of further rises in rates of diagnosis (see also Huerta et al., 2012).
w.mandy@ucl.ac.uk