ASD in 3D: Autism Spectrum Disorders across the Lifespan
11/27/2012

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Webinar, 11/28/2012

Kanner, L. Autistic Disturbances of Affective Contact. Nervous Child, (2) 217-250, 1943

The NERVOUS CHILD
Quarterly Journal of Psychotherapy, Psychotherapy, Mental Hygiene, and Guidance of the Child

AUTISTIC DISTURBANCES OF AFFECTIVE CONTACT
By Leo Kanner

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Kanner, 1943

“Since 1938, there have come to our attention a number of children* whose condition differs so markedly and uniquely from anything that has been reported so far, that each case merits – and I hope will eventually receive – a detailed consideration of its fascinating peculiarities.”

*N = 11 (M 8; F 3); Age: 2 to 8 yr.

Kanner, L. Autistic Disturbances of Affective Contact. Nervous Child, (2) 217-250, 1943

Impaired Socialization
“In his own little world”

Age: 22 months. Nonverbal. CARS=44.
Idiosyncratic Language

- Echolalia
- Delayed Echolalia
- Pronoun Reversal
- Odd inflection

Repetitious Behaviors

- Rigid Routines
- Difficulty with transitions
- Repetitious play (lining up objects)
- Stereotypies (flapping, spinning)
Unusual sensory responses

- “Petrified of vacuum cleaner”
- Drawn to, or afraid of, spinning objects
- Mouthing behavior
- Ingesting inedible materials
- Food selectivity

Abnormal responses to sensory stimuli

Kanner, 1938 → 1943

“Between the ages of 5 and 6 years, they gradually abandon echolalia and learn spontaneously to use personal pronouns.

“Language becomes more communicative, at first in the sense of a question-and-answer exercise, and then in the sense of greater spontaneity of sentence formation....

Kanner, L. Autistic Disturbances of Affective Contact. Nervous Child, (2) 217-250, 1943
Kanner, 1938 → 1943

“Food is accepted without difficulty. Noises and motions are tolerated more than previously. The panic tantrums subside. The repetitiousness assumes the form of obsessive preoccupations…

Kanner, L. Autistic Disturbances of Affective Contact. Nervous Child, (2) 217-250, 1943

“Draw a picture of your family, with everybody in the picture doing something.”

“My parents and my brother”

“Cedar Point Park, with the ocean and Canada in the background.”

http://www.cedarpoint.com/
Kanner, 1938 → 1943

“Reading skill is acquired quickly, but the children read monotonously, and a story or a moving picture is experienced in unrelated portions rather than in its coherent totality...”

* “Central coherence”
Kanner, L. Autistic Disturbances of Affective Contact. Nervous Child, (2) 217-250, 1943

Central Coherence

What’s happening in this picture?

Q: What’s happening in this picture?
A: The boy is hoarding animals.
Central Coherence

Q: What’s happening in this picture?
A: The kitten is on the boy’s back and is about to eat him.


Kanner, 1938 → 1943

“Between the ages of 6 and 8, the children begin to play in a group, still never with the other members of the group, but at least on the periphery alongside the group.

Kanner, L. Autistic Disturbances of Affective Contact. Nervous Child, (2) 217-250, 1943

www.drcoplan.com

Kanner, 1938 → 1943

All of this makes the family feel that, in spite of recognized ‘difference’ from other children, there is progress and improvement.

Leo Kanner, 1943

Kanner, L. Autistic Disturbances of Affective Contact. Nervous Child, (2) 217-250, 1943

www.drcoplan.com
### Quantifying severity of ASD - 1

<table>
<thead>
<tr>
<th>Clinical Domain</th>
<th>Decreasing Atypicality / Increasing Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Interaction</td>
<td>Severe / Youngest</td>
</tr>
<tr>
<td></td>
<td>No eye contact</td>
</tr>
<tr>
<td></td>
<td>No physical affection</td>
</tr>
<tr>
<td></td>
<td>Cannot be engaged in imitative tasks</td>
</tr>
<tr>
<td></td>
<td>Modified eye contact</td>
</tr>
</tbody>
</table>

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### Theory of Mind

**Muff**

Muff is a little yellow kitten.  
She drinks milk.  
She sleeps on a chair.  
She does not like to get wet.

What is this story about?  
How would Muff feel, if you gave her a bath?

- Clean
Theory of Mind

Camping

Six boys put up a tent by the side of the river. They brought things to eat with them. When the sun went down, they went into the tent to sleep. In the night, a cow came and began to eat grass around the tent. The boys were afraid. They thought it was a bear.

Is this a sad story, a scary story, or a funny story?

- A scary story, because the boys were scared. (PDD-NOS)
- It was a most unusual story, because you don’t often find cows in the woods. (Asperger Syndrome)

Quantifying severity of ASD - 2

<table>
<thead>
<tr>
<th>Clinical Domain</th>
<th>Decreasing Atypicality / Increasing Age</th>
<th>Severe / Youngest</th>
<th>Moderate / Older</th>
<th>Mild / Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Language Pragmatics + Prosody</td>
<td>Silenced; no response to voice; may “act deaf”</td>
<td>Echolalia, Delayed echolalia</td>
<td>Verbal perseveration</td>
<td>Echolalia, Delayed echolalia</td>
</tr>
<tr>
<td></td>
<td>No use of gestures as a means of for absence of spoken language</td>
<td>Odor hallucination</td>
<td>Odor hallucination</td>
<td>Odor hallucination</td>
</tr>
<tr>
<td></td>
<td>May use stock phrases in an attempt to communicate</td>
<td>Makes use of visual communication modalities (symbol cards, sign language)</td>
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</tr>
<tr>
<td></td>
<td>May use “hand-over-hand” to guide caregiver to desired objects</td>
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<td></td>
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</tr>
</tbody>
</table>

Quantifying severity of ASD - 3

<table>
<thead>
<tr>
<th>Clinical Domain</th>
<th>Decreasing Atypicality / Increasing Age</th>
<th>Severe / Youngest</th>
<th>Moderate / Older</th>
<th>Mild / Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Repetitious Behaviors</td>
<td>Extreme distress if routines are changed or when required to transition from one task to another if fascination with odd objects (tags, wheels, fans, etc.)</td>
<td>Same, but with diminishing level of distress; able to accept verbal preparation for changes in routine</td>
<td>Complex repetitive play (lining up objects, memorizes numbers, letters, etc)</td>
<td>May demonstrate conscious awareness of preference for routines; easier to self-modulate</td>
</tr>
<tr>
<td></td>
<td>Motor stereotypies</td>
<td>May demonstrate conscious awareness of preference for routines; easier to self-modulate</td>
<td>Motor stereotypies</td>
<td>Motor stereotypies</td>
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<tr>
<td></td>
<td>Motor</td>
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<td></td>
<td>Stereotypical movements (flapping, spinning, toe-walking, finger twiddling)</td>
<td>Motor stereotypies</td>
<td>Motor stereotypies</td>
<td>Motor stereotypies</td>
</tr>
</tbody>
</table>

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Quantifying severity of ASD - 4

<table>
<thead>
<tr>
<th>Clinical Domain</th>
<th>Severe / Youngest</th>
<th>Moderate / Older</th>
<th>Mild / Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Sensorimotor</td>
<td></td>
<td></td>
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<tr>
<td>• Intense aversion or attraction to specific classes of stimuli</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• Clumsiness</td>
<td></td>
<td></td>
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<tr>
<td>4. Auditory: Hyperacusis; covers ears, acts deaf</td>
<td>Same, but diminishing intensity</td>
<td>Same, but diminishing intensity</td>
<td></td>
</tr>
<tr>
<td>4. Visual: Self-stimulation (lights/patterns); looks at objects from odd angles</td>
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<tr>
<td>4. Tactile: Rubbing, licking, mouthing, deep pressure; aversion to light touch</td>
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<tr>
<td>4. Olfactory: Sniffing</td>
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<td></td>
</tr>
<tr>
<td>4. Extreme food selectivity</td>
<td></td>
<td></td>
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<tr>
<td>4. Pain threshold</td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

“The Spectrum”: ASD in One Dimension

Atypical features range from severe to mild
Atypical features improve over time

Kanner's contributions

• Clinical Description
  – Social, Language, Repetitious behavior, & Sensory aversions / attractions
• Attribution: An “inborn error of affective contact”
• Described the Natural History of improvement over time

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Over time, the ice melts

But the ice melts faster for some children than others. Why is that?

Influence of IQ on Prognosis

- “In terms of scholastic progress, social competence, and work opportunities, the child’s IQ level is as influential as the presence of autism.”**
- 1973-2005: > 10 studies; >1000 subjects

Measuring intelligence in ASD

- How to operationalize the measurement of intelligence in ASD?
  - Omit ASD-specific areas of dysfunction or inflator scores:
    - Language
    - Social judgment
    - Savant skills
  - What’s left?
    - Non-verbal Problem-Solving
    - Adaptive skills (somewhat)
    - Play skills (somewhat)

Non-Verbal Problem-Solving

1" Cubes

- Takes one: 6 m
- Transfers: 7 m
- Bangs two: 9 m
- Takes three: 10-12 m
- Copies
  - Builds: 14 m
  - 18 m
  - 24-27 m

- Builds: 30-36 m
- 3 1/2 yr
- 4 yr
- 5 yr
- 6 yr

Crayon

- Mouths: < 9 m
- Makes marks 10-12 m
- Scribbles p demo: 14 m
- Scribbles spont: 16 m
- Alternates from stroke to scribble: 22 m
- Draws: 24-27 m

- Draws: 30-36 m
- 3 1/2 yr
- 4 yr
- 5 yr
- 6 yr
Adaptive Skills

- **Self-feeding**
  - Finger-feeding
  - Cup
  - Spoon (tool use)

- **Self-dressing**
  - Unbuttoning, buttoning
  - Zippers, Snaps
  - Tie shoes

- **Toilet-training**

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Play

- Midline hand play (3 mo)
- Banging & Mouthing (7 - 9 mo)
- Casting (12 mo) (object permanence)
- Tools (crayon, e.g.) ~ 14 mo
- Cause & Effect (14 to 16 mo & up)
- Imitative Play (24 mo)
- Imaginative Play (36 mo)
- Rule-based Play (48 mo)
Any degree of atypicality can be accompanied by any level of intelligence.
ASD in 2 Dimensions: Autism

Severe → Moderate atypicality = Autism

ASD in 2 Dimensions: HFA and LFA

IQ: ≥ 70

ASD in 2 Dimensions: Asperger Syndrome

IQ: ≥ 70

Hyperverbal

Odd topics

Asperger Syndrome

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ASD in 3D – A lifespan perspective
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ASD in 2 Dimensions: PDD-Not Otherwise Specified

ASDs

Borderland Diagnoses

ATYPICALITY

NLD = Nonverbal Learning Disability
SPLD = Semantic-Pragmatic Language Disorder
BAP = Broad Autistic Phenotype ("NQA" – “Not quite autism”)

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Borderland Diagnoses
The warmer the water, the faster the ice melts.
Adult outcome

- “Losing the diagnosis” does not mean “cured”
- Persistence of
  - Cognitive patterns
  - Behavioral patterns
  - Emotional patterns
- Symptoms ⇒ Quirks ⇒ Traits
- Non-ASD neuropsychiatric disorders
"Broad Autistic Phenotype"

- Social Impairment
- Communication Impairment
- Restricted, repetitive behaviors & interests
- Anxiety Disorders
- Obsessive-Compulsive Disorder
- Depression, Bipolar Disorder
- Alcoholism

Non-ASD Psych Di/O

- Anxiety Disorders
- Obsessive-Compulsive Disorder
- Depression, Bipolar Disorder
- Alcoholism

Adult outcomes for children who “lose the diagnosis”

NLD: Non-Verbal LD, SPLD: Semantic-Pragmatic Lang. Disorder

Interactive Autism Network On-Line Survey

http://www.iancommunity.org/cs/ian_research_reports/adults_on_the_autism_spectrum_september_2009

Anxiety, ASD

Generalized Anxiety Di/O

A.Q.; MRN 07-043B

Anxiety, ASD
Anxiety, Tourette Syndrome, ASD

- Generalized Anxiety D/O Poor Eye Contact (not ASD)
- ASD with normal HV IQ Tourette Syndrome Anxiety

Bipolar D/O, OCD, Anxiety, ASD

- Bipolar Disorder
- OCD Anxiety

- Asperger Syndrome Anxiety
- Speech Delay “Processing Disorder”

Atypicality
- Social: Theory of Mind
- Language: Pragmatics, Prosody
- Cognitive: Central Coherence
- Sensory/Motor: Aversions / Attractions, Clumsiness

Cognitive Rigidity
- Difficulty changing mental sets
- Routines
- Transitions
- Repetitious behaviors
- Perfectionism

Anxiety
- Generalized Anx. D/O
- OCD / TS
- Phobias
- Selective Mutism
- Depression

DD Model
Mental Health Model
Progression of Interventions
Follows the Natural History

It's not a matter right or wrong.
It's a matter of what and when.

Summary
Summary

- Natural History of ASD is for improvement over time, regardless of intervention
- Any degree of atypicality can be accompanied by any level of IQ
- Long-term outcome is driven by the joint impact of IQ and degree of atypicality
  – *The warmer the water, the faster the ice melts*


Summary

- Shift from Developmental Disability model to Mental Health model
- “Losing the diagnosis” does not = “cure”
- Need for adult services
Summary

- Need for controlled research:
  - What works, what doesn’t?
  - How much improvement is due to Natural History?
- Beware of quackery, capitalizing on natural history.
  - “Half of what we’ve taught you in medical school is either incorrect or obsolete – but we don’t know which half.” – Sir William Osler