Introduction to Autism

PSYCH 448A – Stone & Murray
Winter 2016

- Brief history
- Current conceptualizations
- Clinical features

Origins of the term “Autism”

- 1910 - Paul Eugen Bleuler, a Swiss psychiatrist, coined the German word “autismus” to describe a symptom of schizophrenia
- Derived from the Greek word autós (αὐτός, meaning “self”)
- Used to describe the self-absorption seen in schizophrenia, the “autistic withdrawal of the patient to his fantasies, against which any influence from outside becomes an intolerable disturbance”

30 years later – Leo Kanner

- 1943 - Leo Kanner, an Austrian-born psychiatrist at Johns Hopkins, published a case series of 11 children in “Autistic disturbances of affective contact”
- 1944 - published “Early infantile autism”
- Kanner’s use of “autism” referred to living in one’s own world, not retreating into fantasy
  - Described an absence of fantasy
  - Described a failure to develop relationships, not withdrawal from them
- Confusion between autism and childhood schizophrenia lasted for decades

“Kanner’s” Autism

- Kanner described characteristics of:
  - “extreme autistic aloteness”
  - “innate inability to form the usual, biologically provided affective contact with people”
  - “obsessive desire for the maintenance of sameness”
  - “limitation in the variety of spontaneous activity”
  - “excellent rote memory, coupled with the inability to use language in any other way”

Kanner’s other conceptualizations

- Potential causal role of parents
  - Parents were highly intelligent, obsessive, lacking in warmth
  - “The question arises whether or to what extent this...has contributed to the condition of the children.”
  - “The children’s aloneness from the beginning of life makes it difficult to attribute the whole picture exclusively to...early parental relations”
- Cognitive potential of children
  - “The outstanding vocabulary...excellent memory for events..., phenomenal rote memory for poems and names, and the precise recollection of complex patterns and sequences, bespeak good intelligence”

Across the pond...

Leo Kanner
Baltimore

Hans Asperger
Vienna
Another version: Hans Asperger

- 1944 – Hans Asperger, an Austrian pediatrician, published a case series of 4 children titled “Autistic psychopathy” (i.e., personality disorder)
- Described a lack of empathy, little ability to form friendships, one-sided conversations, intense absorption in a special interest, and clumsy movements (“little professors”)
- His publication was in German, and largely unknown until Lorna Wing, a London psychiatrist, re-discovered his work in 1981 and introduced “Asperger Syndrome” as part of the autism spectrum.

Asperger’s conceptualizations

- Emphasized genetic causality
  - Noted similar behavioral traits between parents and children
  - Described autism as an “inherited disposition”
- Emphasized the “social value” of autism
  - Observed that many of his patients had successful careers in adulthood using their special talents
  - “Able autistic individuals can rise to eminent positions and perform with such outstanding success that one may even conclude that only such people are capable of certain achievements”
  - “We are convinced...that autistic people have their place in the organism of the social community”

Key differences in conceptualizations

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<th>Kanner</th>
<th>Asperger</th>
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<td>Causal role of parents</td>
<td>Parental characteristics such as emotional coldness may cause autism</td>
<td>Similar traits in parents and children suggest genetic etiology</td>
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<td>Children’s cognitive potential</td>
<td>Good intelligence</td>
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<td>Rare disorder</td>
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Historical myths about autism

- Autism is a rare disorder
- Autism is an emotional disorder
- Autism is caused by poor parenting
- Children with autism are incapable of forming social relationships
- Inside a child with autism is a normal child (or genius) waiting to emerge

Autism in the 1950s & 1960s

- Considered a form of childhood schizophrenia
- Bruno Bettelheim popularizes the concept of “refrigerator mother;” blamed cold, rejecting parents for causing autism; advocated “parentectomy” as treatment (1967: The Empty Fortress)
- Psychoanalysis is the prevailing treatment; other treatments for intractable symptoms include electric shock therapy and LSD
- Bernard Rimland promotes the concept of autism as a biological, brain-based disorder (1964: Infantile Autism: The Syndrome and its Implications for a Neural Theory of Behavior)

Autism in the 1970s – coming into its own

- 1971: Journal of Autism and Childhood Schizophrenia is founded
- 1979 – Name changed to Journal of Autism and Developmental Disorders
- Behavior modification (now “ABA”) used as treatment (Lovaas, Koegel, 1977)
- Twin studies support genetic cause of autism (Folstein & Rutter, 1977)
Autism in the 1980s – increased recognition

- 1980 - Kanner’s term “Infantile Autism” is included as a diagnostic category in DSM-III
- Increased awareness that children with autism grow up

Published in 1983

Autism in the 1980s

1. Increased recognition
3. The movie Rain Man describes an “autistic savant” (1988)

Autism in the 1980s & 1990s - Advocacy efforts

- “People-first” language encouraged (1988)
  - Putting the person before the disability
  - “Autistic children” → “Children with autism”
- Autism included as a special education category in the Individuals with Disabilities Education Act (IDEA, 1991)
- “Neurodiversity” movement begins (1993)
  - Atypical neurological wiring is a normal human difference, not a pathology or disorder
- Parent advocacy groups founded
  - National Alliance for Autism Research (NAAR, 1994)
  - Cure Autism Now (CAN, 1995)

Current conceptualization of autism

- Autism/ASD is common
- Complex neurodevelopmental disorder
- Present from early in development
- Variability in presentation
  - Level of intellectual functioning
  - Language development
  - Symptom severity and expression

The evolving autism diagnosis

Diagnostic and Statistical Manual of Mental Disorders
American Psychiatric Association

- DSM-I (1952) Autistic-like symptoms classified as Schizophrenia, childhood type
- DSM-II (1968)
- DSM-III (1980) Infantile Autism
- DSM-IV (1994) Pervasive Developmental Disorders

DSM-IV Pervasive Developmental Disorders: The expanded autism spectrum

- Autistic Disorder
- Asperger’s Disorder
- Childhood Disintegrative Disorder
- Rett’s Disorder
- Pervasive Developmental Disorder, NOS

Trying to differentiate between these subcategories was compared to “cleaving meatloaf at the joints”
**Current Diagnostic Criteria (DSM-5)**

ASD diagnosis is based on a pattern of impairments in 2 broad domains of behavior:

- Impaired social interaction & social communication
- Restricted & repetitive behaviors or interests

Characterized by extreme heterogeneity in symptom expression (i.e., “the autisms”)

**Associated Conditions**

- Intellectual disability (~38%)
- Sleep difficulties (~50%)
- Seizure disorders (~25%)
- Gastrointestinal symptoms (~34%)
- Genetic/metabolic disorders (~10%)
- Mental health symptoms (e.g., anxiety, depression) (~20%)
- Attention deficits, language delays/disorders, motor coordination difficulties

**Autism Etiology**

- No single identified cause
  - More likely different etiologies for the different “autisms”
- Strong genetic component
  - Twin studies
  - Sibling recurrence risk is ~ 20%
  - “Broader autism phenotype” in families
- Multifactorial: combination of genetic vulnerability and environmental influences

**The pathway from genes to behavior**

Which genes/gene combinations? How do they exert their effect on the brain? Which functions or parts of the brain are affected?

- Disruptions in “social brain” circuitry?
- Imbalance between excitatory and inhibitory neurons?
- Disruptions in functional connectivity (long-range vs. local)?

**The pathway from genes to behavior**

What are some possible “environmental influences”?

**Autism Prevalence**

[Graph showing the prevalence of autism from 1960 to 2012, with a peak at 1-4 per 10,000 individuals in DSM-IV published.]
Current Prevalence Numbers
CDC, March 2014*
*Based on 2010 record reviews of 8-year olds across 11 surveillance sites

Prevalence is 1 in 68 children (1 in 42 boys)

- 28% increase since 2008
- 64% increase since 2006
- 123% increase since 2002

Why the increases in prevalence?

- Increased recognition/awareness (diagnostic substitution)
- More inclusive diagnostic criteria
- Younger age of diagnosis
- Environmental contributions?

Diagnostic Substitution
Autism diagnoses in 2011-2013 vs. 2014

Autism Treatment

- No known cure; goal is symptom improvement
- Early intervention is key
- Focus is on educational and behavioral approaches
- Psychotropic medications often used for comorbid features
- Use of complementary & alternative treatments is the norm (e.g., elimination diets, dietary supplements, biological)

Autism Treatment Goals

- Improve skills in core deficit areas
- Optimize functional outcomes
  - independence → self-determination
  - acceptance → self-esteem
  - productivity → accomplishment
- Requires a multisystem approach
- Treatment needs can be lifelong

It takes a community...

Educational
- Teach academic, daily living, and pre-vocational skills
- Remediate core deficit areas

Behavioral/Mental Health
- Improve participation and learning in home, school, and community settings

Medical/Allied Health
- Treat associated medical conditions & manage severe behaviors
- Speech-language tx, Occupational tx

Social/Vocat’l Services
- Transition from school to independent living, post-secondary education, & employment
Clinical Features

- Behaviorally-based diagnosis
- There are no medical tests or biological markers that indicate the presence of autism
- Diagnostic criteria are specified in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*
  American Psychiatric Association, 2013

Components of Diagnostic Evaluation for ASD

- **Child assessment**
  - Behavioral observation during structured and unstructured activities
  - Cognitive and language skills
- **Caregiver interview**
  - Developmental, medical, family history
  - Behavioral features: quality, effort, context
  - Adaptive skills/Self-care
- **Information from other professionals serving the child**

“Gold-Standard” ASD Diagnostic Assessments

- Autism Diagnostic Observation Schedule (ADOS 2)
  - Semi-structured interaction
- Autism Diagnostic Interview – Revised (ADI-R)
  - Structured clinical interview

DSM-5 Criteria for ASD

**A. Impairments in social communication and social interaction (must show all 3)**
1. Deficits in social-emotional reciprocity
2. Deficits in nonverbal communication
3. Deficits in developing and maintaining relationships

**B. Restricted, repetitive patterns of behavior, interests, or activities**
1. Stereotyped or repetitive speech, movements, or use of objects
2. Inflexible adherence to routines
3. Highly restricted, fixated interests
4. Unusual sensory interests or reactivity

**1. Deficits in social-emotional reciprocity**
- Social approach, back-and-forth conversation
- Sharing of interests, emotions, or affect
- Initiating or responding to social interactions
A. Impairments in social communication and social interaction

2. Deficits in nonverbal communication
   - Integration of verbal and nonverbal communication
   - Use of eye contact and body language
   - Understanding and use of gestures and facial expressions

3. Deficits in developing and maintaining relationships
   - Adjusting behavior to different social contexts
   - Sharing imaginative play
   - Showing interest in peers
   - Making friends

Social-communicative behavior is not all-or-nothing

- Social behaviors are not completely absent in autism
- Children with autism do show social behaviors (e.g., eye contact, imitation, attachment)

**BUT...**

- These behaviors occur less consistently across people and settings
- Parents may have to work harder to elicit them
- Subtle qualitative differences may exist (e.g., timing, integration, coordination of behaviors within interactions)

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

1. Stereotyped or repetitive speech, movements, or use of objects
   - Lining up toys, flipping objects
   - Simple motor stereotypies
   - Echolalia
   - Idiosyncratic phrases

2. Inflexible adherence to routines
   - Ritualized patterns of verbal or nonverbal behavior
   - Extreme distress at small changes
   - Need to take the same route or eat the same food
   - Difficulty with transitions
   - Rigid thinking

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   3. Deficits in developing and maintaining relationships

B. Restricted, repetitive patterns of behavior, interests, or activities (must show at least 2)
   1. Stereotyped or repetitive speech, movements, or use of objects
   2. Inflexible adherence to routines
   3. Highly restricted, fixated interests
   4. Unusual sensory interests or reactivity
B. Restricted, repetitive patterns of behavior, interests, or activities

3. Highly restricted, fixated interests (abnormal in intensity or focus)
   - Strong attachment to, or preoccupation with, unusual objects
   - Excessively circumscribed or perseverative interests

4. Unusual sensory interests or reactivity (hyper- or hypo-reactivity)
   - Indifference to pain/temperature
   - Adverse response to specific sounds or textures
   - Excessive smelling of touching of objects
   - Visual fascination with lights or movement

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**Individual ASD Symptoms Overlap With Other Disorders**

**Behaviors Features of ASD:**
Qualitative or Quantitative Differences?

Do the characteristics of ASD represent natural variation (i.e., the extreme end of the normal distribution)?

**How do ASD characteristics impact learning?**

**How can we promote learning?**
How can we promote learning?

- Difficulty understanding language
- Difficulty expressing needs
- Capitalize on visual strengths
- Use visual cues & supports to supplement language
- Teach a way to communicate

Restricted activities

- Upset when routines change
- Focused interests
- Rigid use of materials/Less functional play
- Difficulty with transitions
- Teach flexibility
- Provide predictability AND prepare child for changes
- Teach functional play

THINK ABOUT: How might the characteristics of autism impact family life and everyday routines?

- Social interaction
- Social Communication
- Restricted activities

Mealtime
Bathtime
Bedtime
Playing with siblings
Getting dressed
Going shopping

THINK ABOUT: Why is this the universal symbol of autism?

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