Linguistic Characteristics of Autism

LING419_30SEP08
Overview

• Kanner’s 11 seminal cases
• Diagnostic criteria and general characteristics of Autism
• Communicative competence deficits in Autism
• Structural language deficits in Autism
• Overlap between Autism and SLI
# Kanner’s 11 Cases

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The table above represents various variables for Kanner’s 11 Cases. Each row corresponds to a specific case, and the columns indicate the presence or absence of certain variables.

- **Variable 1**: Indicates the presence or absence of variable 1.
- **Variable 2**: Indicates the presence or absence of variable 2.
- **Variable 3**: Indicates the presence or absence of variable 3.
- **Variable 4**: Indicates the presence or absence of variable 4.
- **Variable 5**: Indicates the presence or absence of variable 5.
Diagnostic Criteria for Autism

• Core Deficits Model:
  – Communication
  – Social Interaction
  – Repetitive and stereotyped behaviours

• Prevalence: “Classic” autism = 0.1%; on the rise
Language Delay as Core Deficit

• Delay in speech-language most common reason for initial referral
• Delay becomes more pronounced at 5;0 than 2;0
• Lord et al. (2004): Longitudinal large-scale study
  – At 5;0, all children with autism had language delays; more pronounced than children with developmental delays
Nonverbal Autistic Children

- 50% nonverbal commonly assumed in past
- Changes in diagnostic criteria since 1970s
- 1970s
- Non-verbal proportion varies with age
  - 2;0 - 64%-68% nonverbal
  - 9;0 - 14%-20% nonverbal
IQ and Autism

• Kjelgaard & Tager-Flusberg (2001): 89 children with autism; mean IQ = 68, range = 25-141

• Relationship between language outcomes and IQ
Overlap between Autism and Closely-Related Disorders

- Pragmatic Language Impairment (PLI)
  - Deficits in communicative competence; no repetitive/stereotyped behaviours; structural language spared; normal range IQ

- Asperger’s Disorder
  - Repetitive/stereotyped behaviours; deficits in social interaction; deficits in communicative competence; no delays in structural language

- Spectrum Disorders:
Genetic Basis for Autism

• 1940s-1960s - environmental causes
• Since 1980s: Autism is an inherited neuro-developmental disorder
• Chromosomes 7q31 and 13q21 likely sites for susceptible genes
• Reoccurrence risk in families: 6%-8%
• MZ twins = 70%; DZ twins = 3%; mild symptoms in family members
• Vaccine cause of autism?
  – Word loss profile
Deficits in Communicative Competence

• 1980s = language deficits primarily pragmatic
  – Understanding figurative language
  – Repairs
  – Direct vs. indirect requests
• Range of speech acts, understanding the hearer’s perspective, narrative structure
Autism and Theory of Mind

• Claim: Children with autism have deficits in ToM

• Examples to support claim:
  – Self-centered in conversation topics
  – Disinterested in initiating communication
  – No interest in interlocutor
  – Limited range of speech acts
  – Not making appropriate repairs
  – Not understanding indirect requests
  – Figurative language?
Autism and Theory of Mind

• ToM is related to structural language abilities

• Steele et al. (2003): N=57; 10 ToM tasks; expressive and receptive vocabulary
  – Vocab and ToM correlated

• Tager-Flusberg & Sullivan (1994): receptive vocab and sentence comprehension correlated with ToM
Kjelgaard & Tager-Flusberg (2001)

• Participants: N=89 (80 boys; 9 girls); 4;0-14;0; mean IQ = 68, 25-141

• Methods:
  – Goldman Fristoe (phonology)
  – PPVT (receptive vocabulary)
  – EVT (expressive vocabulary)
  – CELF (comprehensive, omnibus test)
  – Nonword repetition (phonological working memory)

• Results: (graphs)

• Conclusion
Kjelgaard & Tager-Flusberg (2001)

FIG. 3.1. Profile of language test performance for children with autism.
FIG. 3.2. Profiles of language test scores for normal and impaired children with autism.
Overlap between Autism and SLI

• Churchill (1972): “There was no qualitative distinction between ‘developmental aphasia’ and autism, they differed only in degree”

• Wing (1976): “If children…could be arranged in an orderly series, starting from the most autistic child at one end and extending to the child who most clearly had nothing but a developmental receptive speech disorder at the other, to say where the dividing line should be drawn would need the judgment of Solomon”
Overlap in Structural Language

• Condouris et al. (2001): Children with autism aged 10, mean IQ = 77. Non-word repetition in impaired range and error patterns like SLI

• Roberts et al. (2000): Children with autism impaired range performance for 3rd sing [-s] and past [-ed]. Errors of omission mainly

• Paul et al. (1988): Children with autism, children with SLI and TD CA
  – Comprehension of passive sentences
  – Autism = SLI, both < TD CA
Overlap in Other Symptoms

- Lord et al. (2004): Some children with non-specific SLI display some clinical autism symptoms (graph)
- Howlin et al. (2000): Adults who had SLI as children displayed clinically significant symptoms in stereotyped behaviours, social functions, social relationships, jobs and independence
Lord et al. (2004)

FIG. 2.4. Proportion of verbal and nonverbal subjects meeting DSM-IV/ICD-10 criteria for autism in one or all domains.

18 months = nonverbal mental age; preschool children
Overlap in Neuropathology & Genetics

• Reversed asymmetries in size of language areas and right hemisphere analogs in both SLI and autism
  – Boys with autism, right analog 27% larger than Broca’s; TD = 17% larger Broca’s than analog on right

• Family history profiles of children with autism include SLI
  – Fombonne (1997)

• Is the continuum theory correct?