Theoretical perspectives on SLI
Extended Optional Infinitive Profile in English SLI

- Tense morpheme acquisition shows deviant pattern; non-tense morphemes do not
- Tense morpheme errors are omission rather than substitution
- Both expressive and receptive problems with tense
- Tense is a clinical marker of SLI in English
(Extended) Optional Infinitive Profile

- Children with SLI have a very **protracted** Optional Infinitive period
- (OI = TD children’s profile)
- OI and EOI profile attested in German, Dutch, Swedish and French
  - non-null subject languages
- In formal syntactic theory, non-null subject languages require some computational complexity for finiteness marking (tns & agr) in sentences
- Narrow morphosyntax vs. interface morphosyntax
Disruption-within-Delay Overview

• Domain-specific deficits in representation
• Domain-specific deficits are
  – Disruptions - beyond delay-based expectations
  – Disruptions reflected in clinical markers
• Contrast with domain-general approaches to clinical markers:
• Evidence for this perspective:
  – Longitudinal research on SLI
  – Cross-neurodevelopmental disorder research
  – Behavioural genetic research
Train Metaphor
Evidence from Longitudinal Research

- Growth of vocab $\neq$ growth of finiteness (graph)
- Growth pf finiteness $\neq$ growth of plural [-s] (graph)
- Environmental variables little effect on growth of finiteness
- Finiteness growth plateaus for SLI at lower level than unaffected children (82%)
Vocab and Tense Growth Curves

**FIG. 2.34.** PPVT raw scores.

Tense vs. Plural: SLI vs. 5N & 3N


FIG. 2.9. Regular -s plurals.
Cross-Neurodevelopmental Disorder Research

- Finiteness marking deficits in verbal children with autism, and with DS
- Finiteness marking unaffected in children with WS
- Significance of selectivity of finiteness marking:
Behavioural Genetic Research

• Is finiteness marking heritable?
• Dale et al. (1998)
  – MZ and DZ TD toddlers
  – MacArthur CDI
  – Genetic contributions to both lexical and grammatical development
  – Genetic contribution larger to grammatical development
Behavioural Genetic Research

- Bishop, Adams & Norbury (2005)
- 173 MZ and DZ twin pairs, one had SLI
- Tasks: non-word repetition and tense inflection elicitation
- Results:
  - Both non-word rep and tense abilities heritable
  - But, not much overlap/relationship between them
“…Our findings are also in agreement with predictions made by Rice and colleagues, in confirming that deficits in the use of verb inflections have distinctive genetic origins and cannot be explained away as secondary consequences of limitations of phonological short term memory…”
Hadley & Holt (2006)

• 22 “late-talkers” children studied over time form 2;0-3;0

• Procedures:
  – Use of tense morphemes in spontaneous speech
  – Vocabulary size
  – Family history of SLI

• Family history predicted onset and growth of tense morphemes; vocabulary size did not
Disruption-within-Delay

• Maturational/internal control does not mean there is UG or a gene for “tense”
• Neural-substrates highly implicated in grammar learning might be more tightly controlled by genetics than those highly implicated in vocabulary/semantic learning
• More tight genetic control + these neural substrates disrupted in genetic disorders like SLI = grammar being more highly affected