

18. Language disorders

CAS LX 540 Acquisition of Syntax

Spring 2012, March 29

SLI

Specific Language Impairment (“SLI”) refers to a condition in which linguistic disorders are evident despite normal nonlinguistic development (and absent any problems like perceptual-motor deficits, hearing loss, etc.).

This could cover a number of distinct problems, but there does seem to be an identifiable population that has trouble with inflectional morphology. There is also evidence suggesting a genetic basis, rather than an environmental basis.

Modularity

The very existence of SLI supports the by-now-common view that language is a distinct cognitive capacity—it is possible for language to be impaired while other cognitive processes are not.

On the other side, though we won't talk much about it here, is Williams Syndrome—where linguistic ability exceeds cognitive ability.

Approaches to SLI

Broadly speaking, we can consider four approaches to SLI, though the evidence we'll examine here points to the first one.

- Grammatical deficit affecting expression of tense
- Grammatical deficit affecting agreement
- Performance deficit
- Perception deficit

EOI

Several researchers collaborating with Mabel Rice and Ken Wexler have proposed and argued for a view of SLI as stemming from an “extended optional infinitive” stage.

That is, the cause of “optional infinitives” in typically-developing children affects children with SLI for longer.

This also can be seen as support for the idea that the optional infinitive stage is on a maturational schedule.

Finiteness vs. verb placement: German

German TD (2;1–2;7) (Rice et al. 1997)

	+Finite	–Finite
V2	604	11
V-final	22	37

German SLI (4;0–4;8)

	+Finite	–Finite
V2	239	2
V-final	9	72

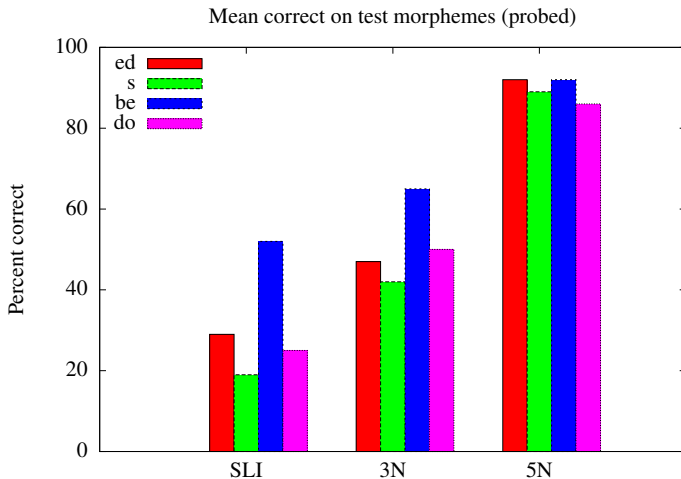
Looking for a clinical marker

During preschool years, children show considerable variation in their progress toward the adult grammar—so it is not clear how to tell which children have SLI and which don't. We should try to locate a marker prior to 5 years old, when they enter school.

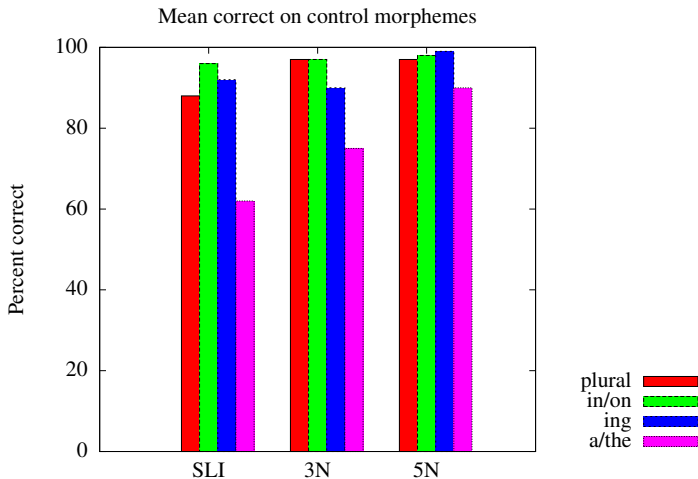
Rice & Wexler (1996) looked for evidence that the properties of the optional infinitive stage could serve this purpose. Their plan: compare tense marking to other non-tense-related morphology: plural *-s*, prepositions (*in* and *on*) and progressing *-ing*. They tested:

- 37 with SLI (around 5 years old)
- 45 age matched TD (around 5;0: “5N”)
- 40 language matched TD (Around 3;0: “3N”)

Test morphemes



Control morphemes



Rice/Wexler Test of Early Grammatical Impairment



Grammaticality judgments

Rice et al. (1999) set out to test the four possibilities outlined earlier: Grammatical (EOI vs. problems with subject/verb agreement), production, and input processing.

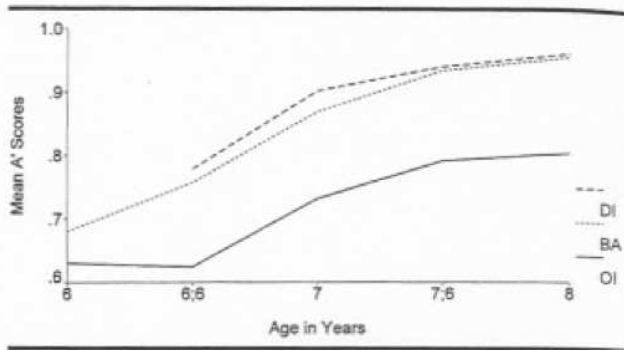
They do this using grammaticality judgments, and testing agreement-related errors against tense-related errors. Attributing SLI to general deficit with inflection predicts problems across the board; same for input processing deficits. If SLI is about performance only, then grammaticality judgments should be adult-like across the board. The EOI hypothesis predicts a differentiation between tense-deficient items and “bad agreement” items.

Results

		AG	OI	+AGR	-AGR	+ing	-ing
SLI	Yes	68	32	81	19	87	13
	No	18	82	11	89	12	88
3N	Yes	85	15	90	10	95	5
	No	8	82	8	92	6	94
5N	Yes	95	5	100	0	100	0
	No	4	96	4	96	3	97

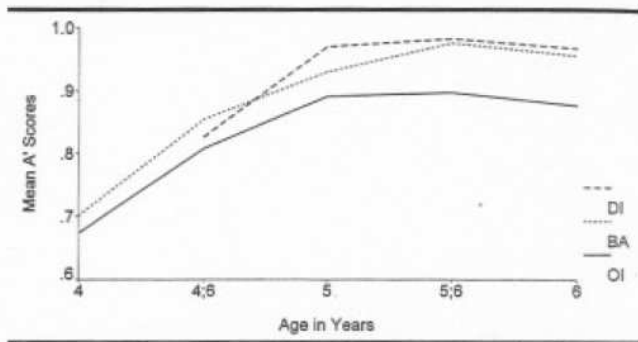
Rice et al. (1999): SLI

Figure 2. A' for grammar types OI, BA, and DI for the SLI group.



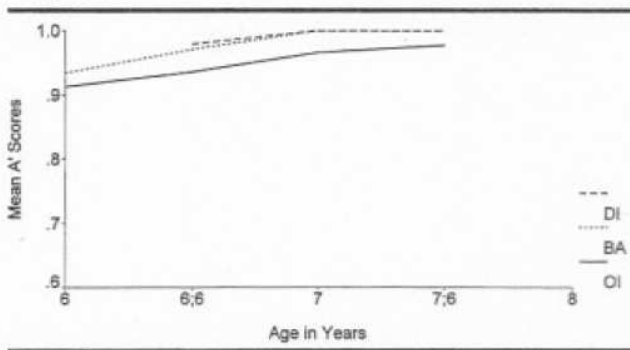
Rice et al. (1999): 3N

Figure 3. A' for grammar types OI, BA, and DI for the language control group.



Rice et al. (1999): 5N

Figure 4. A' for grammar types OI, BA, and DI for the age control group.



Pragmatics vs. syntax

Schaeffer et al. (2002) looks at a couple of other phenomena associated with the “optional infinitive” stage: subject case marking, and subject drop. We expect subject case marking to go along with root infinitives, more or less for SLI children as for TD children. Schaeffer et al. test this.

Specific language impairment: Considered to be a disorder that affects language but not other cognitive functions. In fact, it mainly affects grammar—other components of language (lexicon, pragmatic system) remain mostly unimpaired.

Subject omission

Recall the story we had for subject omission: (TD) children in the root infinitive stage will leave out subjects. They leave out a *lot* of subjects when the verb is non-finite. (And adults can do this too—so as long as root infinitives are allowed, so are null subjects.) But there are also null subjects in finite clauses as well. Not zero. Sano & Hyams (1994) report:

	age	-s	-ed	total
Eve	1;6–2;3	10%	23%	16%
Adam	2;3–3;0	26%	57%	34%
Nina	2;2–2;4	?	19%	?

Finite subject omission

The idea is that when children leave out subjects of finite clauses, they are basically doing something like “diary drop,” except that they are doing it even where it is not supported by the context.

If SLI is impairment in grammar and not in pragmatics, then we expect to find that children with SLI older than 3 will have this pragmatic rule, and so . . .

Prediction

SLI children will show the syntactic signs of the OI stage (non-finite verbs, non-nominative subjects, null subjects with infinitives), but they will not drop subjects in finite (pragmatically inappropriate) contexts.

Results

17 English speaking children with SLI (3;11–8;7, MLU 2.1–9.4).
 Data from Tallal, Curtiss, and Kaplan (1988). Children were followed
 for 4 years. Year 1 is when the children are about one year old. Year 4,
 about seven years old.

	year 1	year 2	year 3	year 4	LM	AGE
bare stem	33%	23%	15%	4%	39%	0%
non-nom	15%	3%	3%	1%	15–17%	0%
overt subj	86%	91%	94%	96%	~60%	100%
nonadult null	9%	5%	3%	2%	~40%	0%
nonadult fin null	2%	6%	5%	3%	16–34%	0%

Article omission and overuse

Schaeffer et. al (2002/3, BUCLD) look at the omission of articles and the overuse of *the*. Before we had considered that the overuse of *the* stems from a pragmatic problem (egocentrism of a sort). Whereas article omission seems to be more of a syntactic thing. So again we'd expect a dissociation. (Children tested were around 4;0, age matches are older than 2;0).

	SLI	LSM	AGE	2-yos
article drop	13%	8%	1%	
overuse of <i>the</i>	0%	0%	0%	16%

- Rice, Mabel L., Karen Ruff Noll & Hannelore Grimm. 1997. An extended optional infinitive stage in German-speaking children with specific language impairment. *Language Acquisition* 6(4): 255–295.
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- Sano, Tetsuya & Nina Hyams. 1994. Agreement, finiteness and the development of null arguments. In M. González (ed.) *Proceedings of NELS 24*, 543–558. Amherst, MA: GLSA.

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