A Corpus-Based Analysis of the L1-Acquisition of Amplifiers in American English

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Habilitation (in progress)
Acquisition, Variation, and Diachronic Development of Intensification in English

Intensification is related to the semantic category of *degree* (degree adverbs) and ranges between very low intensity (downtoning) and very high (amplifiers) (Quirk et al. 1985: 589–590).

- Amplifiers (Tagliamonte 2008)
  - Maximizers (e.g. *completely*)
  - Boosters (e.g. *very much*)
- Downtoners
  - Approximators (e.g. *almost*)
  - Compromisers (e.g. *more or less*)
  - Diminishers (e.g. *partly*)
  - Minimizers (e.g. *hardly*)

Amplification

- . . . used to maximize or boost meaning (Quirk et al. 1985)

  (1) Lexical
  very, *real(ly)*, *extremely*, *totally*, etc.

  (2) Morphological
  {uber#}, *{super#}*,*{hyper#}*,*{mega#}*,

- Syntactic function of adjective

  (3) Attributive
  The very/so hungry caterpillar is always hungry.

  (4) Predicative
  The hungry caterpillar is always very/so hungry.

Amplification

- Extensive history of research on intensifiers (e.g. Borst 1902; Bolinger 1972)
- Intensification is considered a major area of grammatical change in English (cf. Brinton and Arnovick 2006: 441)
- Growing amount of variationist and historical research (e.g. Ito and Tagliamonte 2003; Tagliamonte and Roberts 2005; Macaulay 2006; Tagliamonte 2006)
- Very little research on the acquisition of intensification(!); an exception is Gülzow (2006)

(5) The queen *herself* welcomed the soldiers

Q_1:

How do children acquire amplification?

$\rightarrow$ How does the use of amplifiers pattern among children?

Corpus data: HSLLD

The Home–School Study of Language and Literacy Development (part of *The Child Language Data Exchange System*)

- began in 1987 (a collaborative, longitudinal research endeavor)
- participants are racially diverse, English-speaking children from low-income families growing up in the Boston area.
- transcripts collected in the home of children during 5 visits
- visits took place at ages 3 (hv1), 4 (hv2), 5 (hv3), 2nd grade (hv4) and 4th grade (hv5)
- during visits children performed different tasks: book reading, toy play, child narratives, elicited report, and experimental tasks.

Corpus data: HSLLD

The Home–School Study of Language and Literacy Development (part of *The Child Language Data Exchange System*)

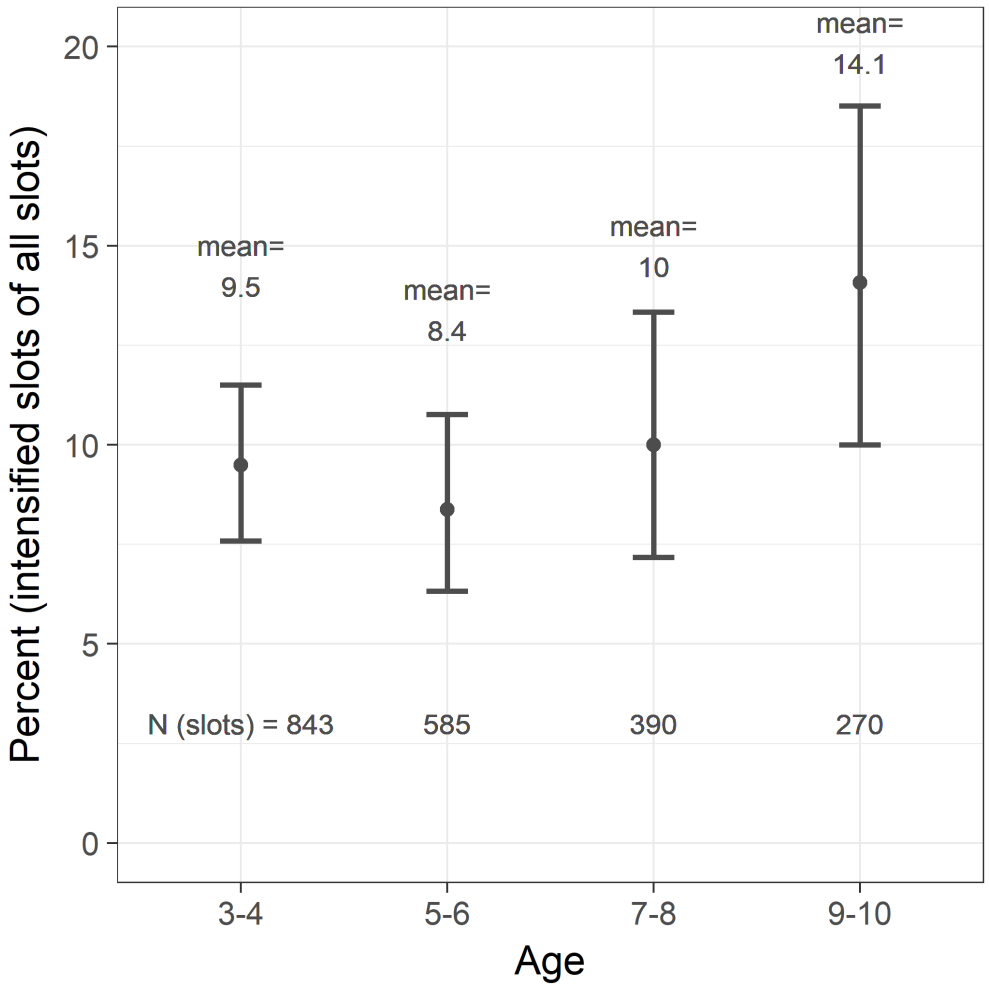
- POS-tagged all utterances in the HSLLD
- POS-tagging via the Apache OpenNLP library in `R` using a Maximum Entropy model (machine learning based toolkit for NLP of text written in Java)
- search for all adjectives and subsequently identified all adjectives preceded by an intensifying adverb

Data Processing

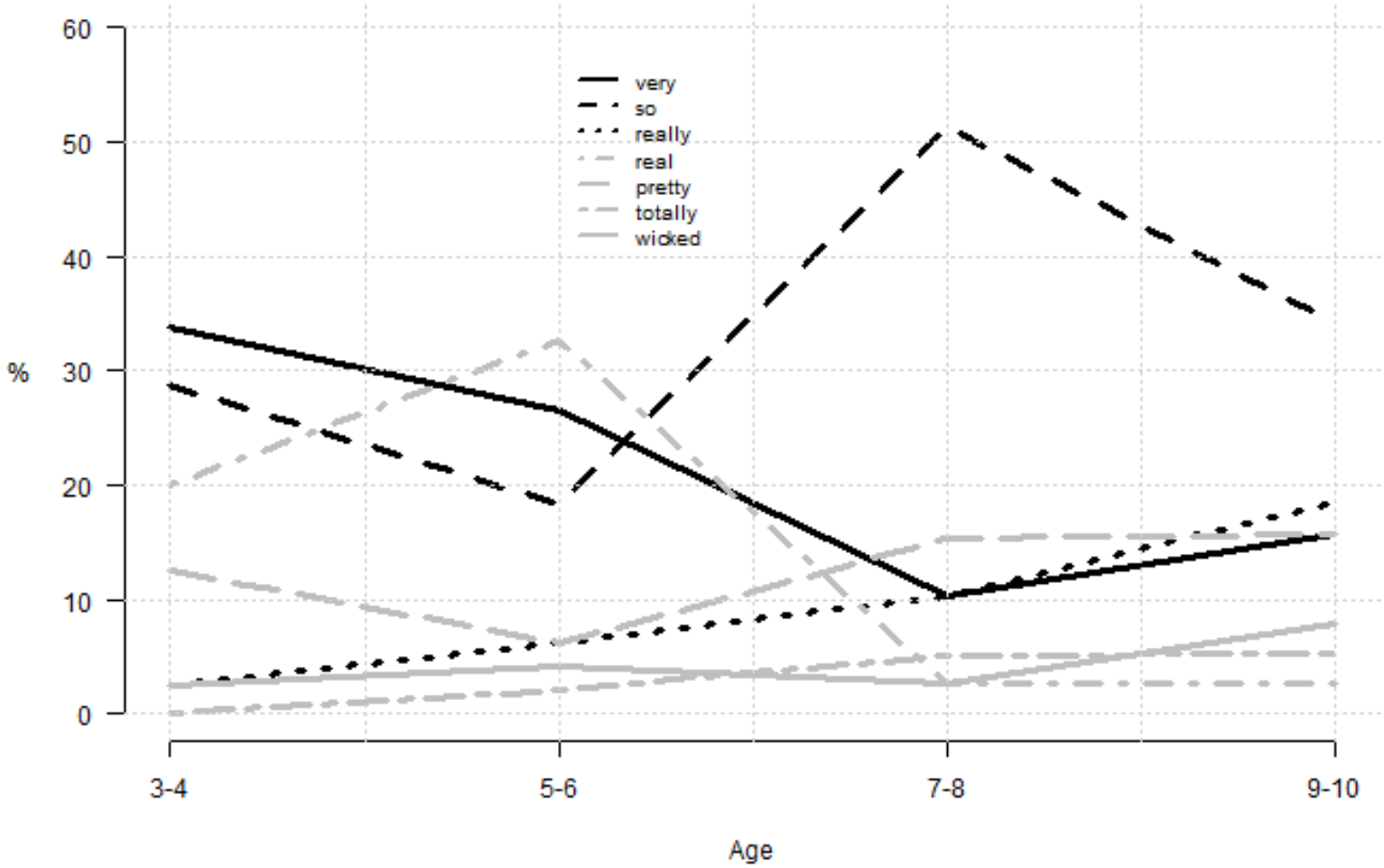
- Removal of adjectives that did not occur before a full stop or before a noun (to determine syn. function; predicative vs attributive)
- Removal of adjectives that were not intensified by at least two different amplifier types
- Removal of adjectives that were intensified in less than five percent of cases
- Removal of negated adjectives
- Removal of comparative and superlative forms

Data Summary: HSLLD (Children only)

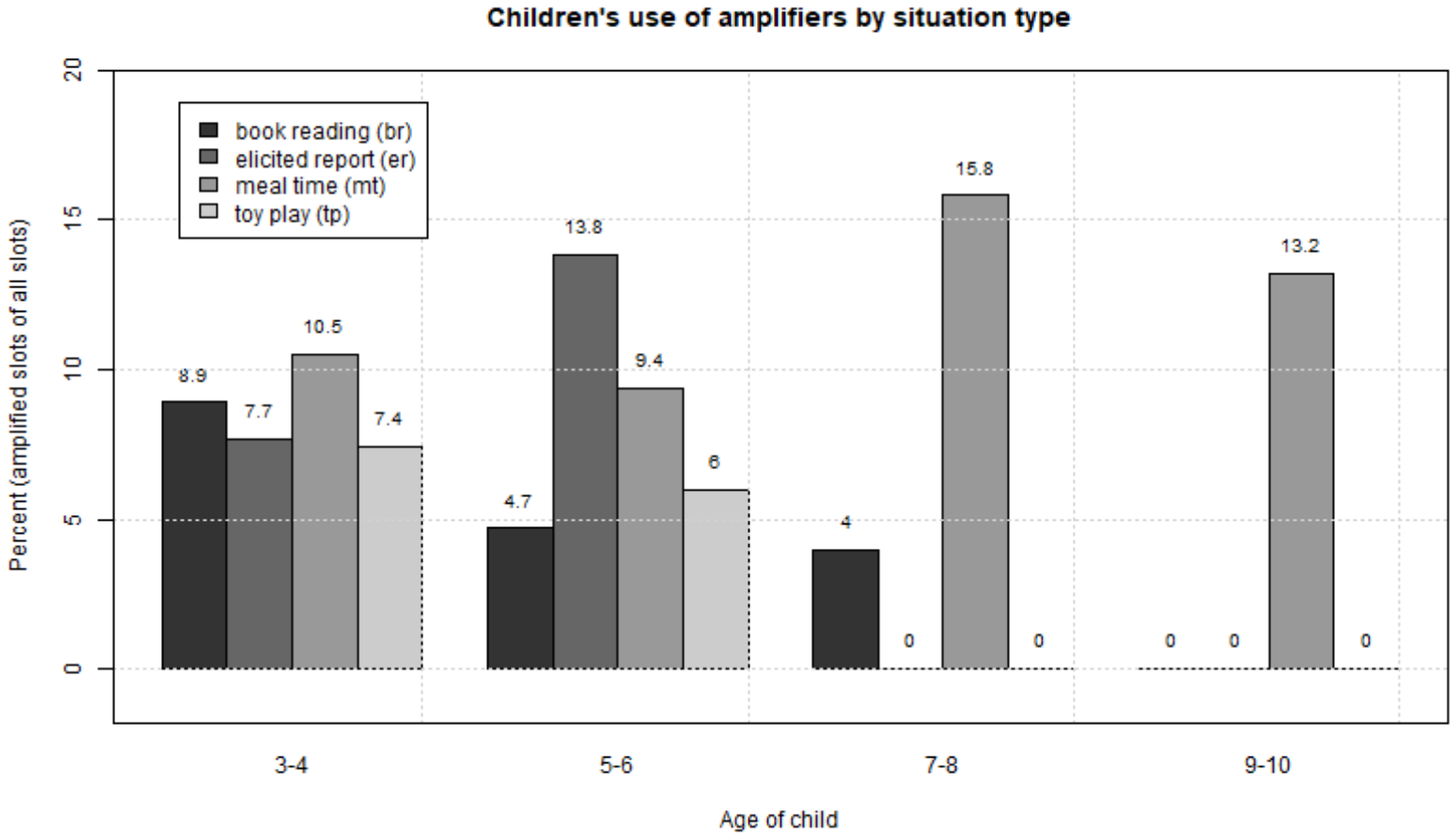
Amplifier	**N**	**%**	**Int.** (%)
∅	1,882	90.13	
so	65	3.11	31.55
very	50	2.39	24.27
real	34	1.63	16.50
pretty	25	1.20	12.14
really	16	0.77	7.77
wicked	8	0.38	3.88
totally	5	0.24	2.43
awful	1	0.05	0.49
fucking	1	0.05	0.49
well	1	0.05	0.49
Total	2,088	9.87	100



Percent of amplified slots against Age (HSLLD; pred.)



Amplifier Types against Age (HSLLD; pred.)



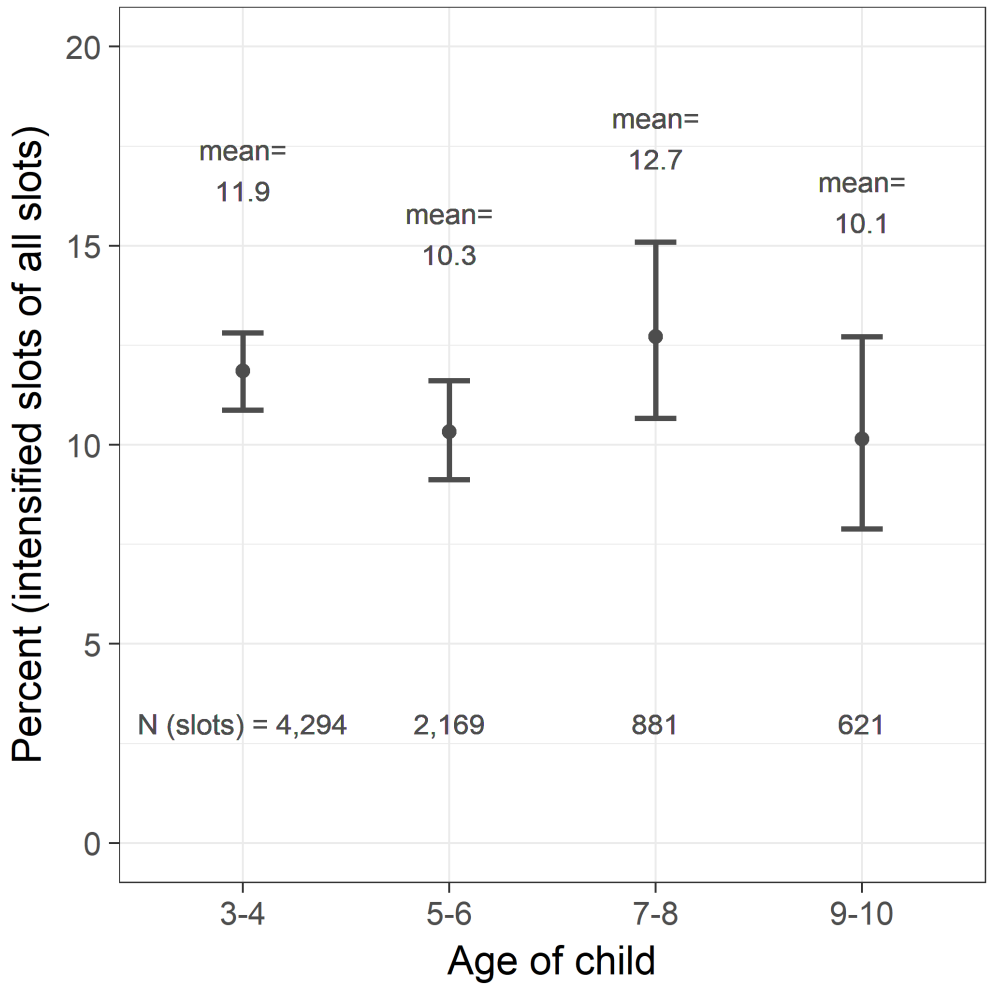
Percentages of Amplification against Age and Situation Type (HSLLD; pred.)

Interim synopsis

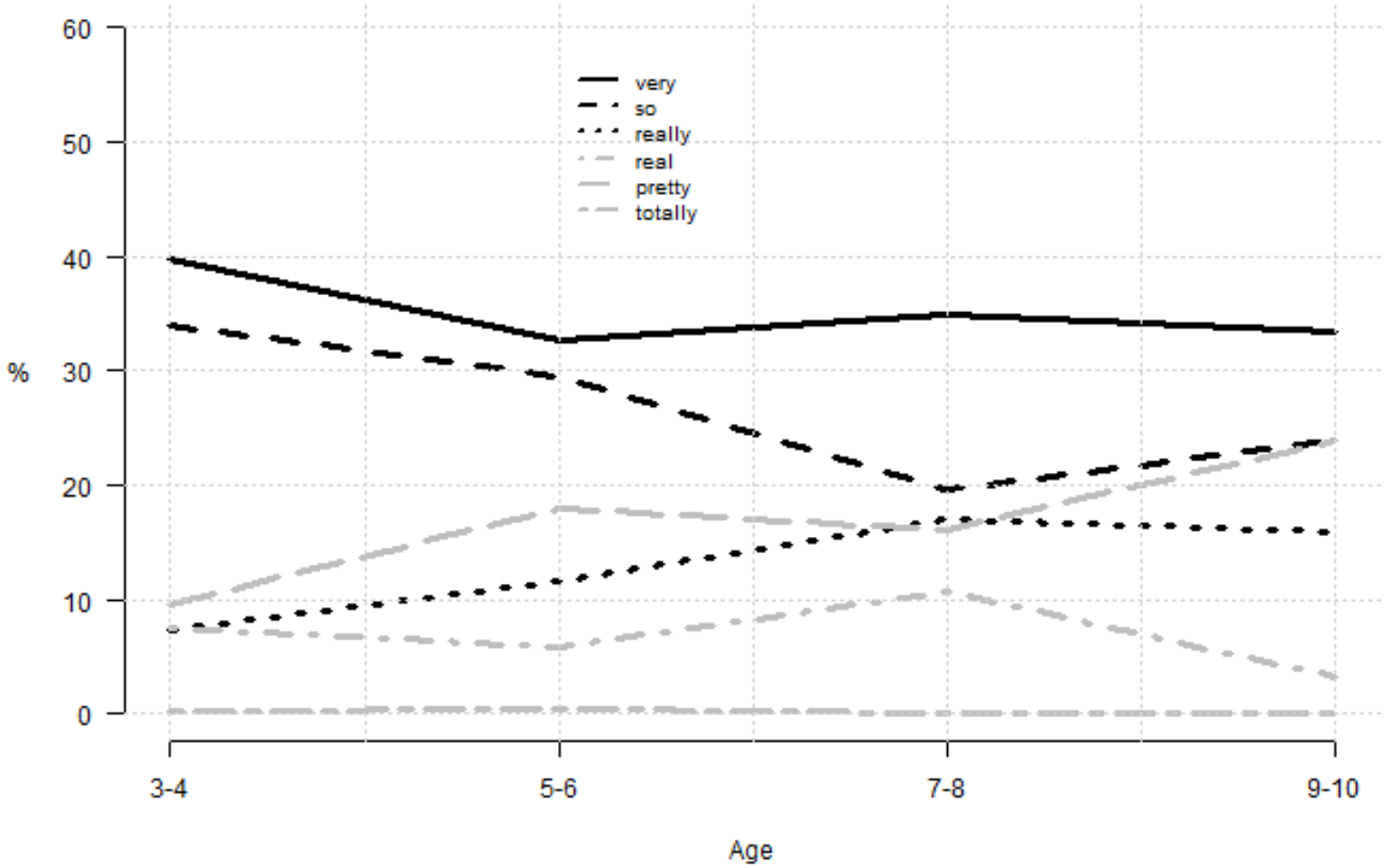
- Overall frequency
  Stability among younger speakers, increase in amplification among children aged 9 and 10
- Type frequency
  Chaotic use among younger children, patterning emerges after an age of 5 (*so* outperforms rival variants)
- Extra-ling. constraints
  - Similarity among children aged 3 and 4, situational differentiation emerges at age 5
  - Differentiation in use: freq. increase in meal time conversations but substantial decrease in book reading situations.

Q_2:

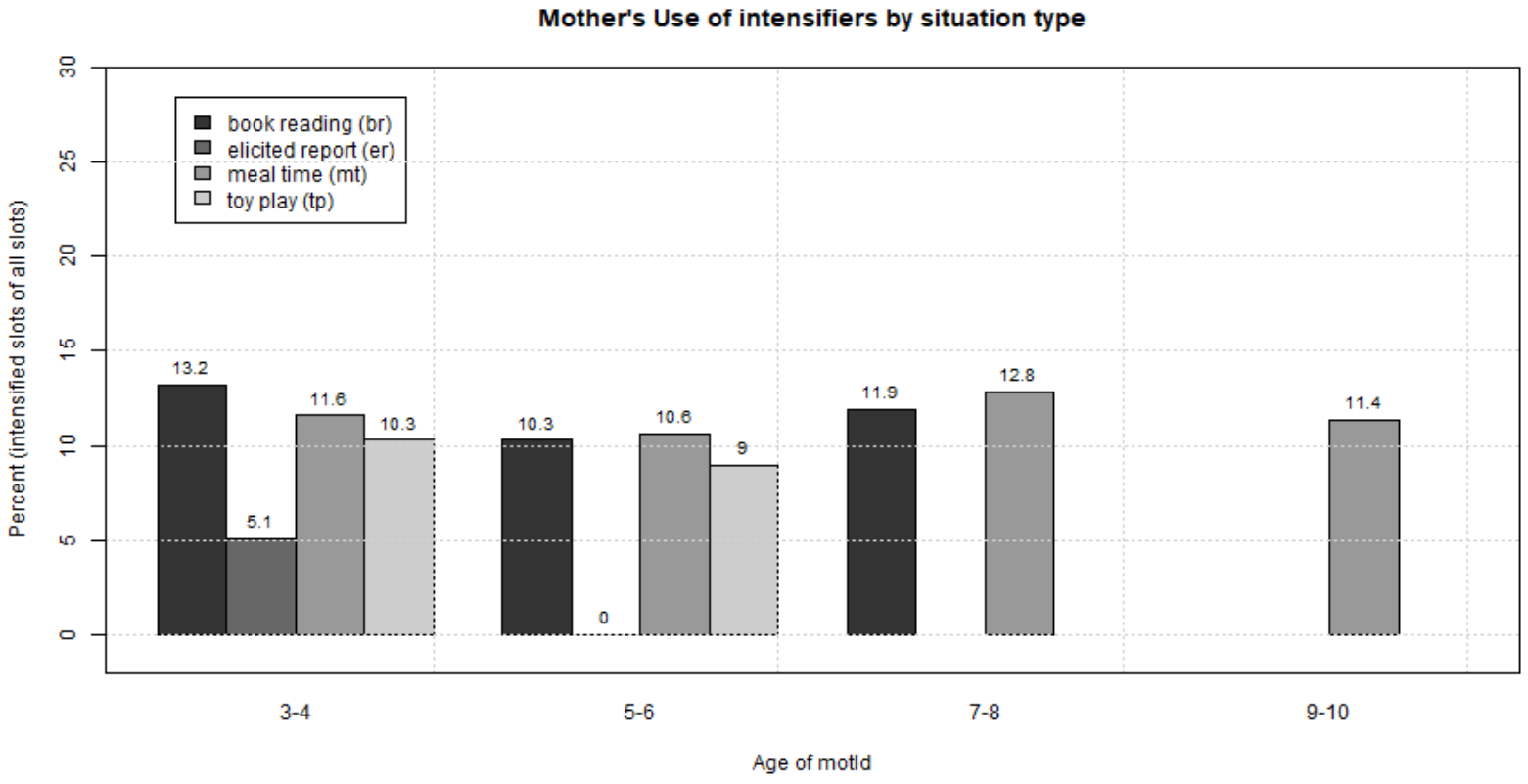
How does the input of the mother pattern?



Percent of amplified slots in CDS by Mothers against Age of Child (HSLLD; pred.)



Mothers' Amplifier Types against Age of Child (HSLLD; pred.)



Percentages of Amplification in CDS by Mothers against Age of Child and Situation Type (HSLLD; pred.)

Interim synopsis

- Overall frequency
  Relative stability; neither linear in- or decrease
- Type frequency
  Conservative use (*very* is dominant) and relative stability of amplifier system (only *really* increases somewhat)
- Extra-ling. constraints
  Similarity of usage patterns - little stratification along the lines of situation type (register)

Q_3:

What causes the obs. stratification if not the CDS input?

$\rightarrow$ How does the use of women in non-CDS pattern?

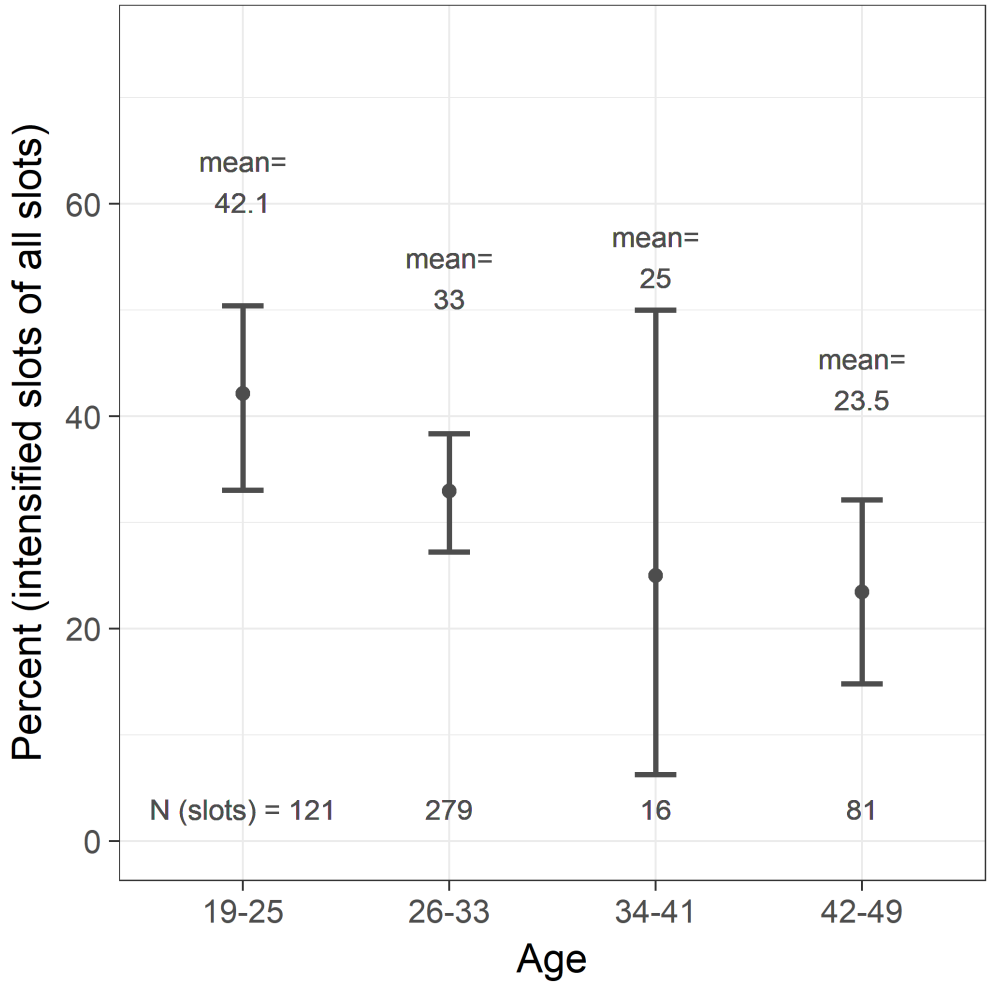
Corpus data: SBC

Santa Barbara Corpus of Spoken American English (part of the American component of the *International Corpus of English* compiled between 2000 and 2005)

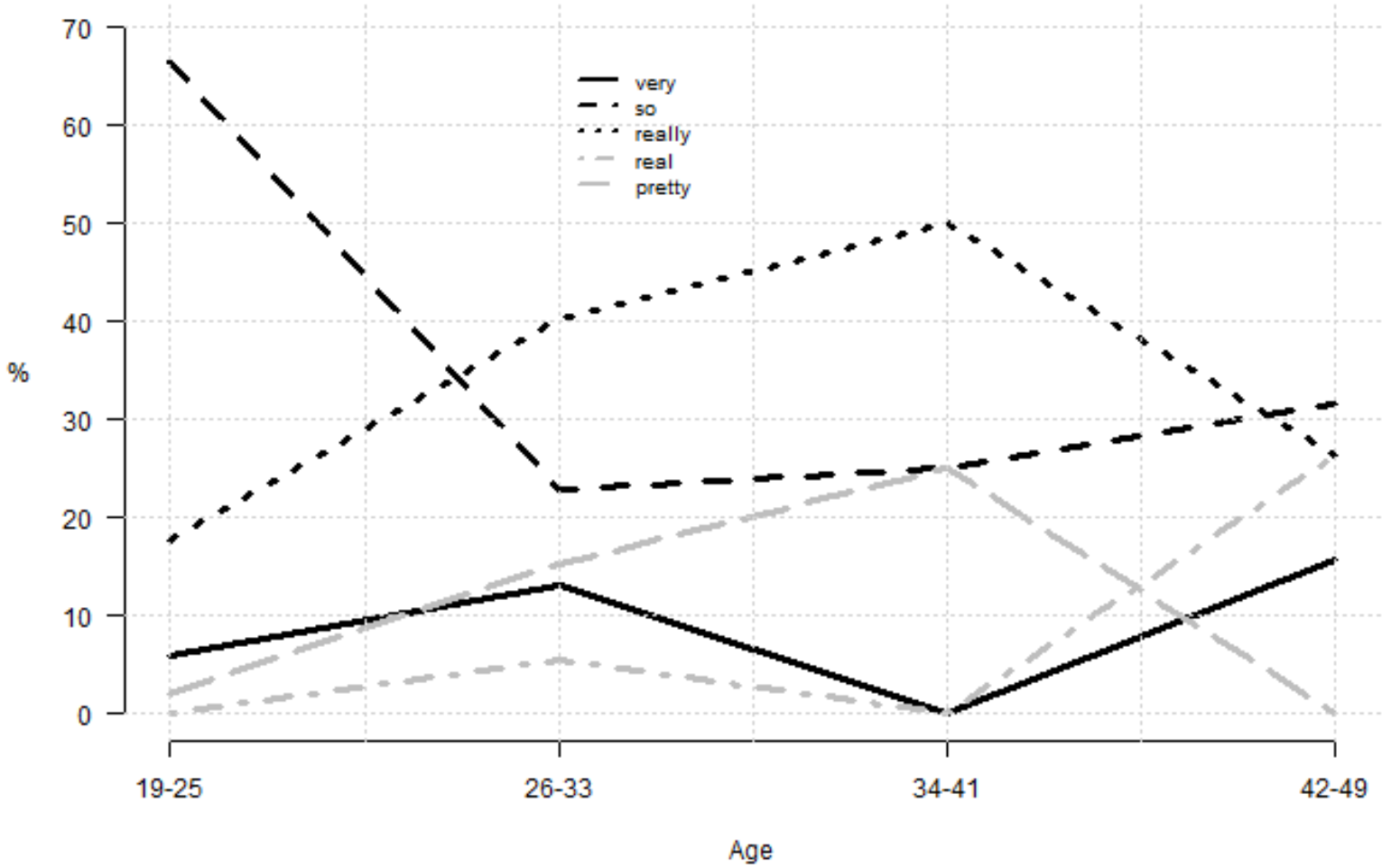
- POS-tagged all utterances in the SBC
- POS-tagging via the Apache OpenNLP library in `R` using a Maximum Entropy model
- search for all adjectives and subsequently identified all adjectives preceded by an intensifying adverb
- only speech of women between 19 and 50 years of age

Data Processing

- Removal of adjectives that did not occur before a full stop or before a noun (to determine syn. function; predicative vs attributive)
- Removal of adjectives that were not intensified by at least two different amplifier types
- Removal of adjectives that were intensified in less than five percent of cases
- Removal of negated adjectives
- Removal of comparative and superlative forms



Percent of amplified slots by Women against Age (SBC; pred.)



Women's Amplifier Types against Age (SBC; pred.)

Interim synopsis

- Overall frequency
  Substantially higher compared to both children and CDS
- Type frequency
  Youngest group similar patterning to children
  (*so* > *really* > *very*)
- Extra-ling. constraints
  SBC represents private dialogue data: cannot test for effects of situation type (register)

Q_4:

How do the amplified adjectives pattern pattern?

Amplifier	Adjective	3-4	5-6	7-8	9-10
other	big	1	1	0	0
other	cool	0	1	1	1
other	funny	0	0	0	2
other	good	0	1	1	0
pretty	big	1	1	0	0
pretty	cool	0	0	0	3
pretty	funny	0	0	1	0
pretty	good	7	1	1	3
real	big	2	0	0	0
real	cool	0	0	0	0
real	funny	1	0	0	0
real	good	2	5	1	0
really	big	0	0	0	0
really	cool	0	0	0	1
really	funny	0	0	1	1
really	good	0	2	1	3
so	big	0	4	1	0
so	cool	0	0	0	4
so	funny	3	0	1	1
so	good	6	0	1	3
very	big	1	0	0	0
very	cool	0	0	0	0
very	funny	4	0	1	1
very	good	7	3	2	2
Total		35	19	13	25

decreasing trend (linear model, $p<.05$)
increasing trend (linear model, $p<.05$)

Covarying Collexeme Analyses

Collocations: Covarying Collexeme Analyses

Adjective	Intensifier	OddsRatio	Sig	Bonf. Corr. Sig
pretty	good	3.23	p<.05*	ns
so	fat	11.52	p<.05*	ns
so	good	0.43	p<.05*	ns
so	happy	5.73	p<.05*	ns
so	much	11.52	p<.05*	ns
very	nice	6.61	p<.05*	ns

Collocations by Age: Covarying Collexeme Analyses

Age	Adjective	Intensifier	OddsRatio	Sig	Bonf. Corr. Sig
3-4	pretty	good	8.26	p<.001***	ns
3-4	so	mad	Inf	p<.05*	ns
7-8	so	good	0.12	p<.05*	ns
7-8	so	happy	Inf	p<.05*	ns
9-10	real	bad	Inf	p<.05*	ns

p-values obtained by Fisher's Exact tests

Covarying Collexeme Analyses

Collocations: Covarying Collexeme Analyses (CDS)

Adjective	Intensifier	OddsRatio	Sig	Bonf. Corr. Sig
pretty	dirty	0.055	p<.001	p<.05
pretty	neat	64.01	p<.001	p<.05
real	quick	91.08	p<.001	p<.05
real	slow	39.96	p<.001	p<.05
really	dirty	0.00	p<.001	p<.05
so	dirty	78.61	p<.001	p<.05
so	good	0.07	p<.001	p<.05
so	much	5.95	p<.001	p<.05
so	neat	0.14	p<.001	p<.05
so	nice	0.153	p<.001	p<.05
very	dirty	0.03	p<.001	p<.05
very	good	6.79	p<.001	p<.05
very	neat	0.00	p<.001	p<.05
very	nice	3.23	p<.001	p<.05

p-values obtained by Fisher's Exact tests

Summary, Discussion & Problems

Summary

Main points (with pinches of salt)

- frequency of children's use of amplifiers mirrors the frequency of CDS but not that of women of child bearing age (frequencies of youngest cohort in SBC much higher)
- patterning of children's use of amplifier types mirrors the use of women of child bearing age (youngest cohort in SBC) but not CDS
- CDS very conservative(!) in terms of amplifier usage
- drastic register differences (extra-ling. constraints) are observable from age 5 onward
- little register stratification in the speech of children aged 3-4 (similar to CDS patterning)

Discussion: observing acquisition

- Interestingly, results indicate that the children model their use based on non-CDS input rather than CDS (true for type patterning but not with respect to frequency).
- The frequency of amplification differs across situation types which shows that extra-linguistic factors contribute to the acquisition process and that extra-ling. constraints are acquired very early on.
- Thus, extra-linguistic constraints seem to be acquired alongside linguistic forms rather than separate from linguistic forms as previously suggested (Labov 1964; Nardy et al. 2013: 258-260).

Discussion: (usage-based) CxG and L1–acquisition

Children are thought to start out with concrete pieces of language and gradually develop more schematic constructions. . . . Constructivists see these early constructions as the building blocks for later development. . . (Lieven 2006: 84–85)

Stage 1	**Stage 2**	**Stage 3**
Holophrases	Pivot schemas	Schematic constructions
↓	↓	↓
It's daddy! It's mommy! It's Elmo!	It's X_{NN}	$[Y_{Dem./Existential/Dummy} + X_{NN}]$
very busy very wet very hungry	very $X_{Adjective}$	$[Y_{Intensifier} + X_{Adjective}]_{Int.Construction}$

Discussion: social grounding of acquisition

- Children "acquire language in a socially grounded fashion. On the constructional view, the item-based schemas that children acquire are . . . tied to specific situations and situation types" (Hilpert 2014: 159)
- The patterning of amplifiers produced by children aged 5 and older therefore moderately substantiates predictions of usage-based approaches of language acquisition (cf. Tomasello 2003)

Problems

Problems

- HSLLD data set too small to warrant reliable conclusions
- situation types not across all age groups (data compilation not optimal; D'Arcy is compiling a more controlled version)
- no manual cross–evaluation of automated classification
- SBC compiled later (2000-2005) than HSLLD (1987-1991)
- SBC and HSLLD not fully comparable (California vs Boston)

Thank you so, really, very much!

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