

On the Development of *much* as a Negative Polarity Item: A Corpus-based Account

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Licensing environment

- Negative Polarity Item (NPI): words or idioms which only appear in environments such as negative sentences, questions or in the protasis of an *if* conditional

(1) I don't have any money.

(2) Do you have any money?

(3) If you have any money, lend me some.

(4) *I have any money.

Licensing environment

- Different NPIS have different licensing requirements
 1. Negation
 - We haven't talked much about the weather.
 - ?We have talked much about the weather.
 2. Question
 - **Have** you all been able to do much as a family these days? (Switchboard)
 - ?We were able to do much.

Licensing environment

- Different NPIs have different licensing requirements
3. The determiner *few*
 - **Few** of them spent much on their outfits.
 4. VP adverb *seldom*
 - He **seldom** gets much sleep before a performance.
 5. Curt was **too** involved in his own problems **to** pay much attention. (Brown)

Non-NPI *much*

- I take much content that I may hope to see your father and you within 2 months.
(CEEC, 1641)
- " Ha! ha! --ugh - I like that much - never saw that before - must remember that – good many young men of your profession here, I suppose, Mr. Bradshaw? "
(COHA, 1835)

Non-NPI *much*

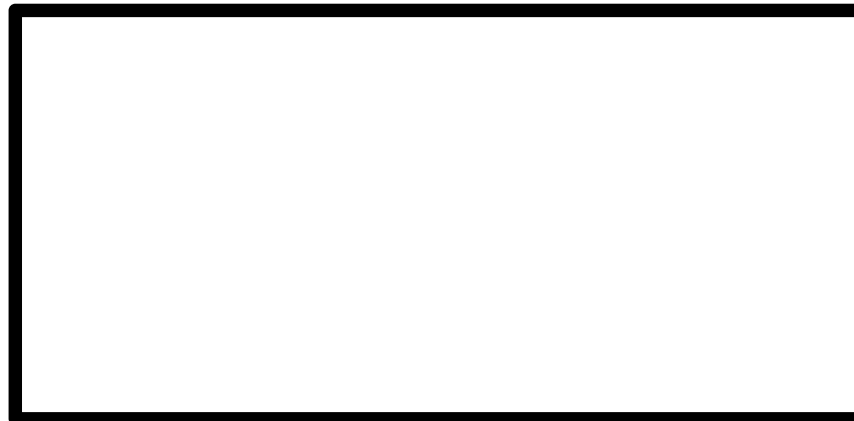
- Much work on polarity has neglected this diversity, blinded, as it were, by the desire for universal principles of grammar. (Israel 1996)
- We have learned much about interstellar drives since a hundred years ago. (Brown)
- This dish much resembles the oysters Rockefeller made famous by Antoine's in New Orleans, though the Palace chef announced it as a variant of Manning's roast oysters. (Brown)

Horn (1989)

- A, I and often E values lexicalize, O almost never does.
- O → E drift : expressions associated with O corner of the square move towards E

A all

E no
(all ~)



I some

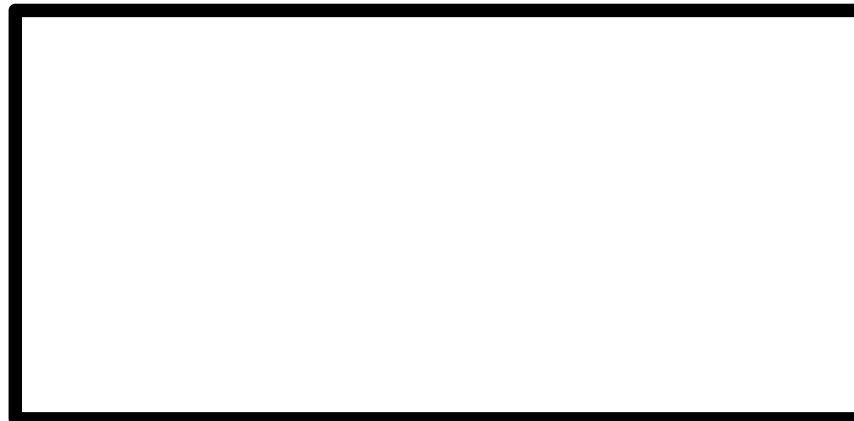
O not all
(some ~)

Horn (1989)

- A, I and often E values lexicalize, O almost never does.
- O → E drift : expressions associated with O corner of the square move towards E

A always

E never=not ever
(always ~)



I sometimes

O not always
(~ always)

- “Intermediate” scalars
- $O \rightarrow E$ drift : expressions associated with O corner of the square move towards E

A much



I

“a significant majority... not”

E little



O NEG much

Hypothesis 1

- Paucity *little* will drop in frequency over time as its meaning comes to be increasingly expressed by NEG *much*.

(a) lot(s) (of)

1. Negation

- We haven't talked much about the weather.
- ?We have talked much about the weather.
- We have talked a lot about the weather.

- I don't watch much TV.
- *I watch much TV.
- I watch a lot of TV.

2. Question

- **Have** you all been able to do much as a family these days? (Switchboard)
- ?We were able to do much.
- We were able to do a lot as a family.

OED entry for *lot*

9. *colloq.* A considerable number, quantity, or amount; a good deal, a great deal. Used in sing. (***a lot***) and plur.; also as quasi-adv. Often *absol.*, without explicit mention of the persons or things intended. Also with adj., as ***a good lot, a great lot, (this, that) little lot.***

1812 *Spirit Pub. Jrnls.* XVI. 191 Lots of our Senators have of late been subject to the awful visitation.

1816 *Grand Master* II. 47 Gallons of Arrack, lots of beer.

Hypothesis 2

- As the NPI tendency of *much* strengthens, *much* is replaced in non-NPI context primarily by (a) *lot(s)*.

Hypotheses

1. Paucity *little* will drop in frequency over time as its meaning comes to be increasingly expressed by NEG *much*.
2. As the NPI tendency of *much* strengthens, *much* is replaced in non-NPI context primarily by (a) *lot(s)*.

Corpora

- Corpus of Early English Correspondences Sampler (CEEC)
 - Size: 0.45 million words
 - Period covered: **1418-1680**
- Corpus of Historical American English (COHA)
 - Size: 400 million words
 - Period covered: **1810-2009**
- Late Modern English Prose
 - Size: 99,000 words
 - Period covered: **1861-1919**

- Brown Corpus
 - Size: 1 million words
 - Present Day English of 1960s
- Frown Corpus
 - Size: 1 million words
 - Present Day English of 1990s
- **Switchboard Corpus**
 - **Size: 3 million words**
 - **Spoken Present Day English of 1990s**
- **Santa Barbara Corpus of Spoken American English**
 - **Size: 0.25 million words**
 - **Spoken Present Day English of 1990s**

***much*: not included**

1. much with modifiers
 - The cost had gone up so much.
 - They want too much money.
 - They were pretty much in good taste.
 - They drink that much fuel.

2. much followed by an adjective, determiner
+ noun or PP
 - You are probably much ahead of me.
 - This film certainly is a much needed catharsis.
 - I did very much the same thing until my boys got into high school.
 - Painting "a secco" is much in evidence.

3. much used as an intensifier (before comparatives)
 - When I was much younger, it was less important.
4. how much
 - Mr. Keys has only an incidental interest in how much Americans eat.
5. Formulaic expressions
 - Thank you very much.
 - Interpretation in psychoanalysis is often considered to be as much an art as a science.
 - And thanks to a lot of new inventions , housework doesn't take as much time as it used to.

***much*: included**

1. *much* used as an adjective
 - I haven't been watching much TV lately.
2. *much* used pronominally
 - There is not much between us and the North Pole.
3. *much* used to indicate frequency
 - We just don't wear coats much.
4. *much* used to indicate intensity
 - She doesn't enjoy it much.
 - I don't much care for them.

very: non-polarity sensitive intensifier

1. much modified by very
 - Lewis is very clever.
 - Lewis is sorta clever.
 - *Lewis is all that clever.

 - Lewis isn't very clever.
 - *Lewis isn't sorta clever.
 - Lewis isn't all that clever.

very: non-polarity sensitive intensifier

1. much modified by very

- ?I have much money.
- ?I have very much money.

- There is much that needs to be done.
- There is very much that needs to be done.

- ?He had loved them much.
- He had loved them very much.

little

1. Included: quantity(paucity) sense

- There can be little doubt that there was a conspiracy in Washington.

2. Not included

- He turned to his typewriter with little more confidence.
- Mama always felt that the collection symbolized Mrs. Coolidge's wish for a little girl.

(a) lot(s) (of)

1. Included:

- A friend of mine goes golfing a lot.
- I am doing lots of traveling.

2. Not included:

- A lot of people do that.
- I got mugged in the parking lot.
- It is the lot of mortals.

Findings

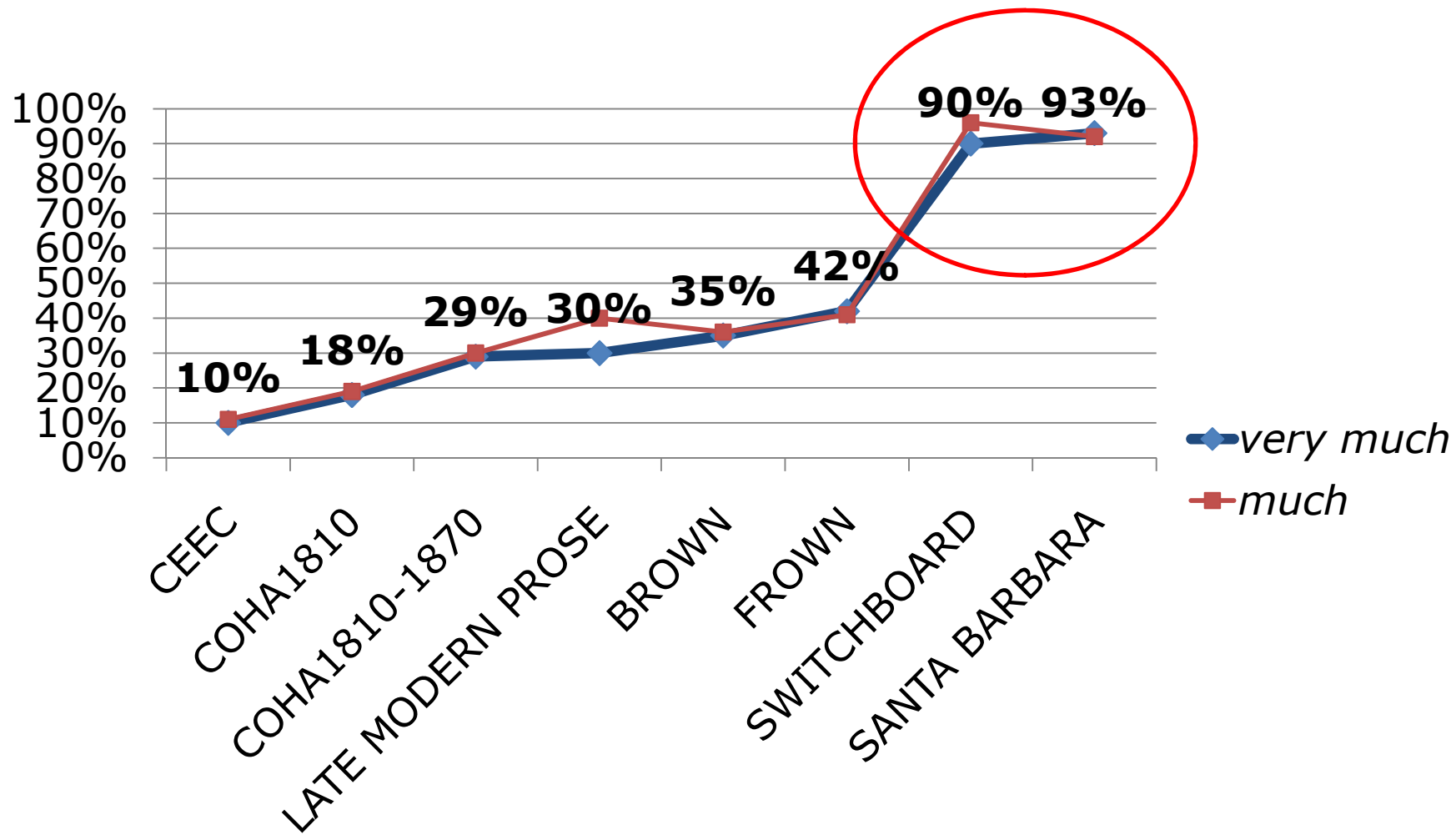
- NPI use of *much* increases with time.

Ratio of NPI *much* over all instances of *much*

NPI tendency:
$$\frac{\text{NPI } much}{\text{NPI } much + \text{non-NPI } much}$$

Corpus	<i>much</i>	(<i>very</i>) <i>much</i>
CEEC	11%	10%
COHA 1810	19%	18%
COHA 1810-1870	30%	29%
LATE MODERN PROSE	40%	30%
BROWN	36%	35%
FROWN	41%	42%
SWITCHBOARD (SPOKEN)	96%	90%
SANTA BARBARA (SPOKEN)	92%	93%

NPI tendency: $\frac{\text{NPI much}}{\text{NPI much} + \text{non} - \text{NPI much}}$



Hypothesis 1

- Paucity *little* will drop in frequency over time as its meaning comes to be increasingly expressed by NEG *much*.

Occurrences of *little*: $\frac{\text{paucity } little}{\text{paucity } little + \text{NEG } much}$

CEEC: $\frac{65}{96} = 68\%$	68%
COHA1810: $\frac{125}{164} = 76\%$	76%
COHA1810 – 1870: $\frac{9721}{17305} = 56\%$	56%
Late Modern English Prose: $\frac{12}{33} = 36\%$	36%
Brown: $\frac{159}{256} = 62\%$	62%
Frown: $\frac{149}{258} = 58\%$	58%
Switchboard: $\frac{5}{210} = 2\%$	2%
Santa Barbara: $\frac{0}{26} = 0\%$	0%

Findings

- Hypothesis 1 is not supported.
- There is variation by register: spoken language shows stronger tendency towards synthetic negation.

Quirk et al. (1985)

The combination of *not(-n't)* and the "any" word is more colloquial and idiomatic than the "no" variant.

1. *no vs. not ... any*

- We haven't had any lunch. (more colloquial)
- We've had no lunch. (less colloquial)

2. *no one vs. not ... anyone*

- I wasn't speaking to anyone. (more colloquial)
- I was speaking to no one. (less colloquial)

3. Switchboard

- Well they didn't have much choice. (more colloquial)
- I see that even he was met with little success, even though I guess quite a bit of money and other, uh, planning efforts went into that. (less colloquial)

Hypothesis 2

- As the NPI tendency of *much* strengthens, it is replaced in non-NPI contexts primarily by (a) *lot(s)*.

Occurrences of *much*: $\frac{\text{non - NPI much}}{\text{non - NPI much} + (\text{a})\text{lot(s)}(\text{of}) + \text{a great deal} + \text{a good deal}}$

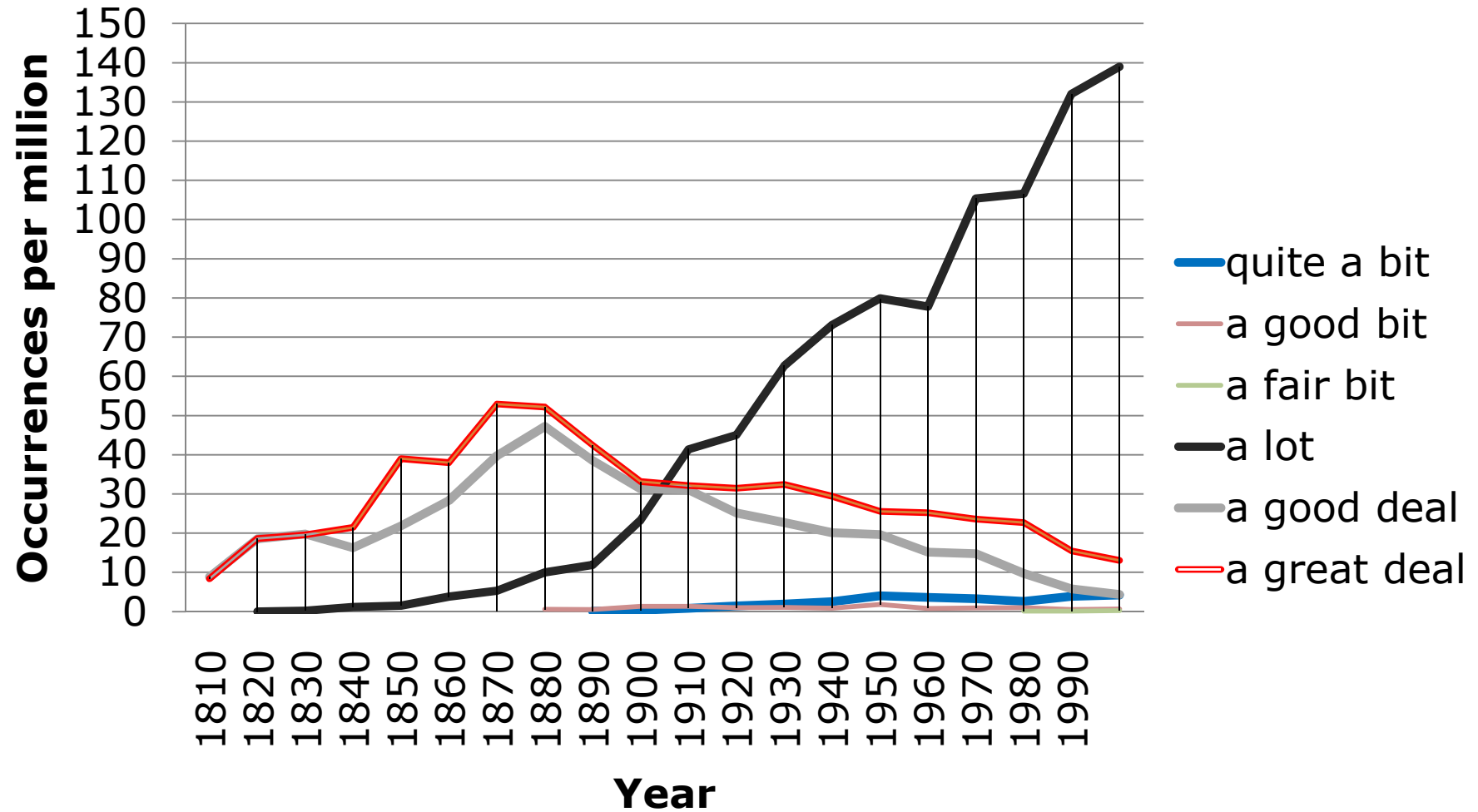
	<i>much</i>	<i>very much</i>
CEEC: $\frac{232}{305} = 97.4\%$	97%	98%
COHA 1810: $\frac{179}{198} = 90.4\%$	90%	91%
COHA 1810 - 1870: $\frac{18345}{23842} = 76.9\%$	77%	77%
Late Modern English Prose: $\frac{33}{56} = 58.9\%$	59%	69%
Brown: $\frac{170}{291} = 58.4\%$	58%	60%
Frown: $\frac{146}{267} = 54.7\%$	55%	56%
Santa Barbara: $\frac{2}{118} = 1.7\%$	2%	2%
Switchboard: $\frac{7}{995} = 0.7\%$	1%	2%

non – NPI much

Occurrences of *much*: $\frac{\text{non – NPI much}}{\text{non – NPI much} + (\text{a})\text{lot}(\text{s})(\text{of}) + \text{a great deal} + \text{a good deal}}$

		much	very much
CEEC:	$\frac{297}{297 + 0 + 6 + 2} = \frac{232}{305} = 97.4\%$	97%	98%
COHA 1810:	$\frac{179}{179 + 0 + 10 + 9} = \frac{179}{198} = 90.4\%$	90%	91%
COHA 1810 – 1870:	$\frac{18345.173}{18345.173 - \frac{211}{33} + 3032.4 + 2251.39} = \frac{18345.173}{23842.985} = 76.9\%$	77%	77%
Late Modern English Prose:	$\frac{170}{33 + 7 + 9 + 7} = \frac{170}{56} = 58.9\%$	59%	69%
Brown:	$\frac{170}{170 + 70 + 33 + 18} = \frac{170}{291} = 58.4\%$	58%	60%
Frown:	$\frac{146}{146 + 93 + 24 + 4} = \frac{146}{267} = 54.7\%$	55%	56%
Santa Barbara:	$\frac{2}{2 + 113 + 3 + 0} = \frac{2}{118} = 1.7\%$	2%	2%
Switchboard:	$\frac{7}{7 + 963 + 14 + 1} = \frac{7}{995} = 0.7\%$	1%	2%

Specialization



Findings

- Hypothesis 2 is observed.
- (a) *lot(s)* tends to replace *much* in positive contexts.

Summary

- NPI behavior of *much* strengthens with time.
- Hypothesis 1 is not supported.
 - There is variation by register: spoken language shows stronger tendency towards synthetic negation.
- Hypothesis 2 is observed.
 - (*a*) *lot(s)* tends to replace *much* in positive contexts.

NPI behavior by type

1. Nominal

- I haven't been watching much TV lately.
- Much of the tonal analysis can be done without any study of intonation.

2. Pronominal

- There is not much between us and the North Pole.

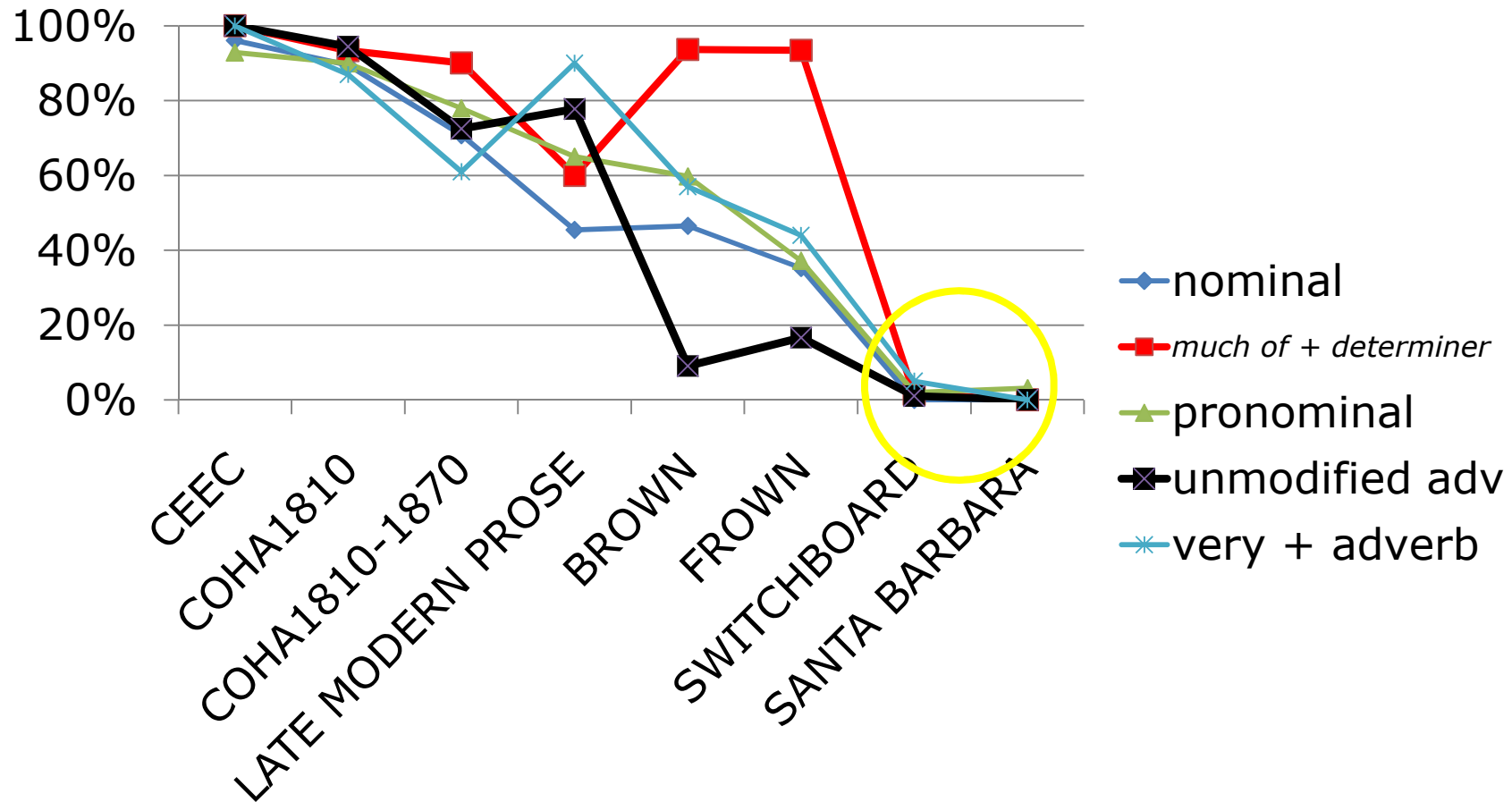
3. *much* used as an adverb unmodified

- She doesn't enjoy it much.
- I don't much care for them.
- We just don't wear coats much.

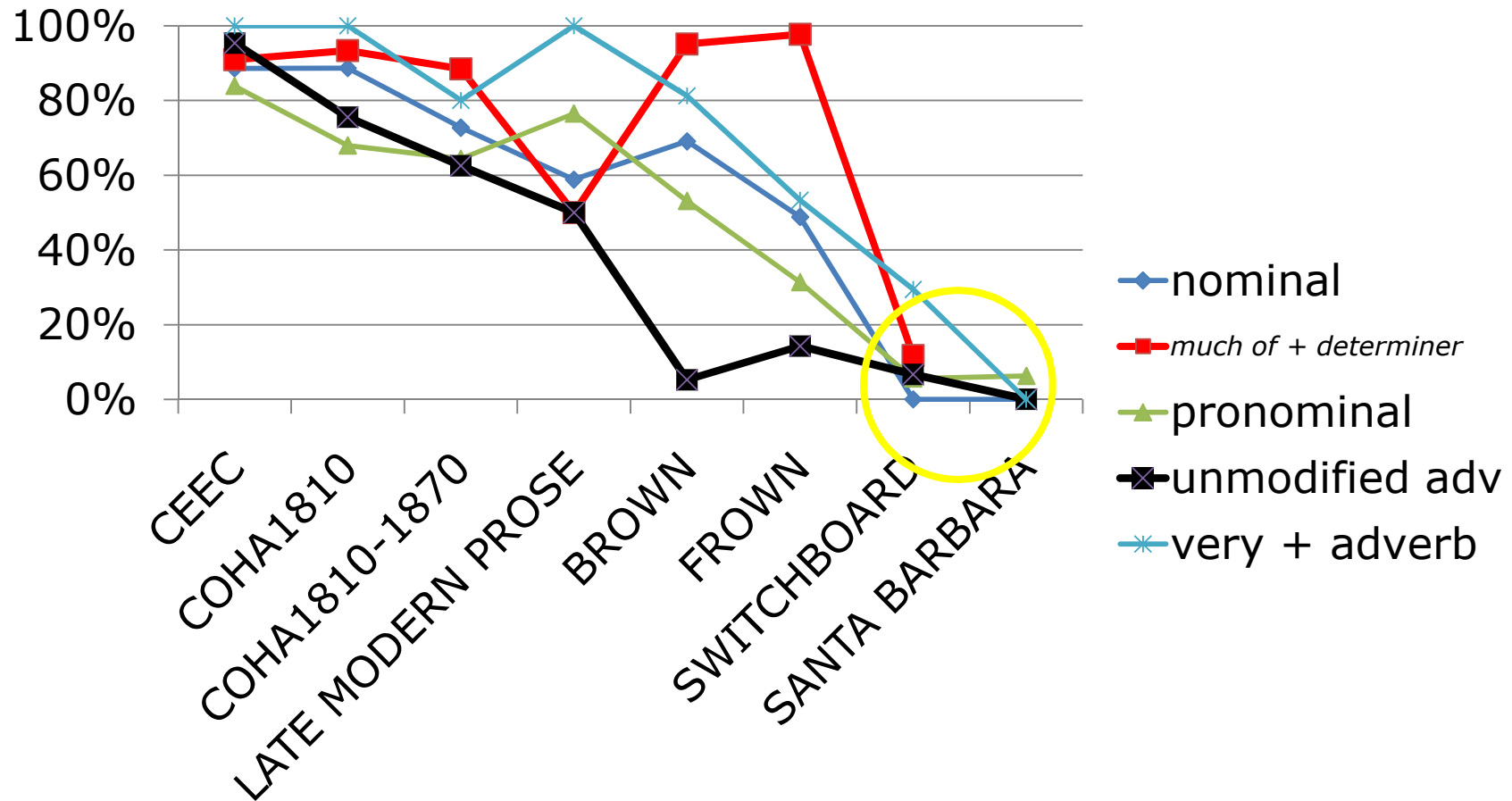
4. *much* modified by *very*

- He doesn't like me very much.
- I'd like to know that very much.

Occurrences of *much*: non – NPI much
non – NPI much + (a)lot(s)(of) + a great deal + a good deal



non – NPI tendency: $\frac{\text{non – NPI } much}{\text{NPI } much + \text{non – NPI } much}$



Future study

- *many vs. lot*
- *far vs. a long way*
- *long vs. a long time*

Von Bergen and von Bergen (1993)

- Between the pairs of elaborate and simple forms the simple form is said to be the NPI.
 1. *much* (vs. *a lot*)
 - He didn't like her much.
 - He liked her a lot.
 2. *much N* (vs. *a lot of N*)
 - There isn't much food left.
 - There is a lot/lots of food left.

3. *long* (vs. *a long time*)

- It won't take her long.
- It took her a long time.

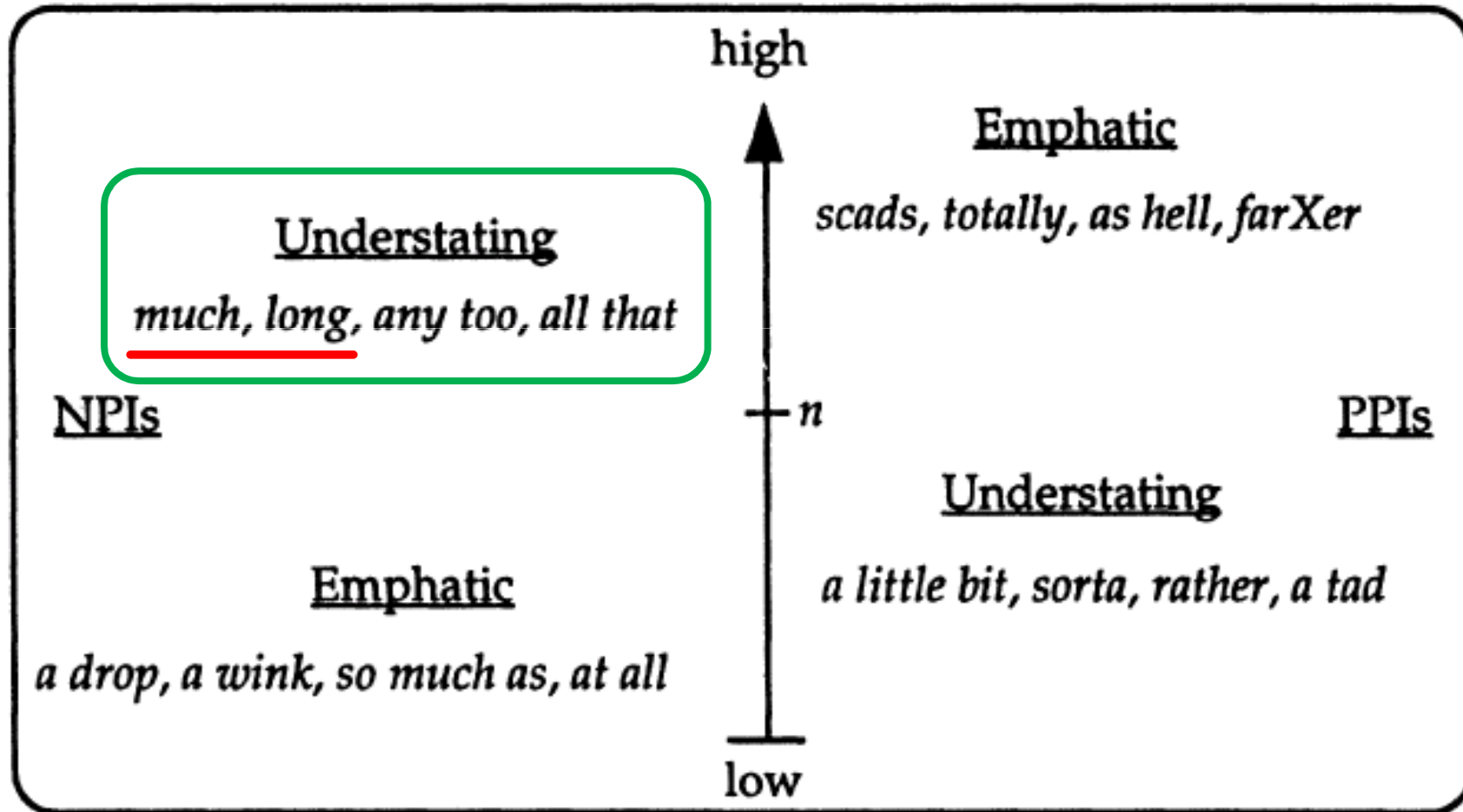
4. *many* N (vs. *a lot of* N)

- There were not many chairs.
- There were a lot of chairs.

5. *far* (vs. *a long way*)

- He lives not far from here.
- He lives a long way (pretty far) from here.

Israel (1996)



References

- Hopper, Paul & E. Traugott. (2003)
Grammaticalization. Cambridge University Press:
Cambridge
- Horn, Laurence. (1989) *A natural history of negation*. University of Chicago Press: Chicago and London
- Israel, Michael. (1996) 'Polarity sensitivity as lexical semantics'. *Linguistics and Philosophy*. 19(6): 619-666.
- Quirk, Randolph et al. (1985) *A comprehensive grammar of the English language*. Longman: New York.

Examples from Corpora

1. *much*

- He doesn't care much about the dollar-sign or the footnote. (Brown)
- There isn't much time. (Brown)
- Now they aren't worth much right now. (Switchboard)

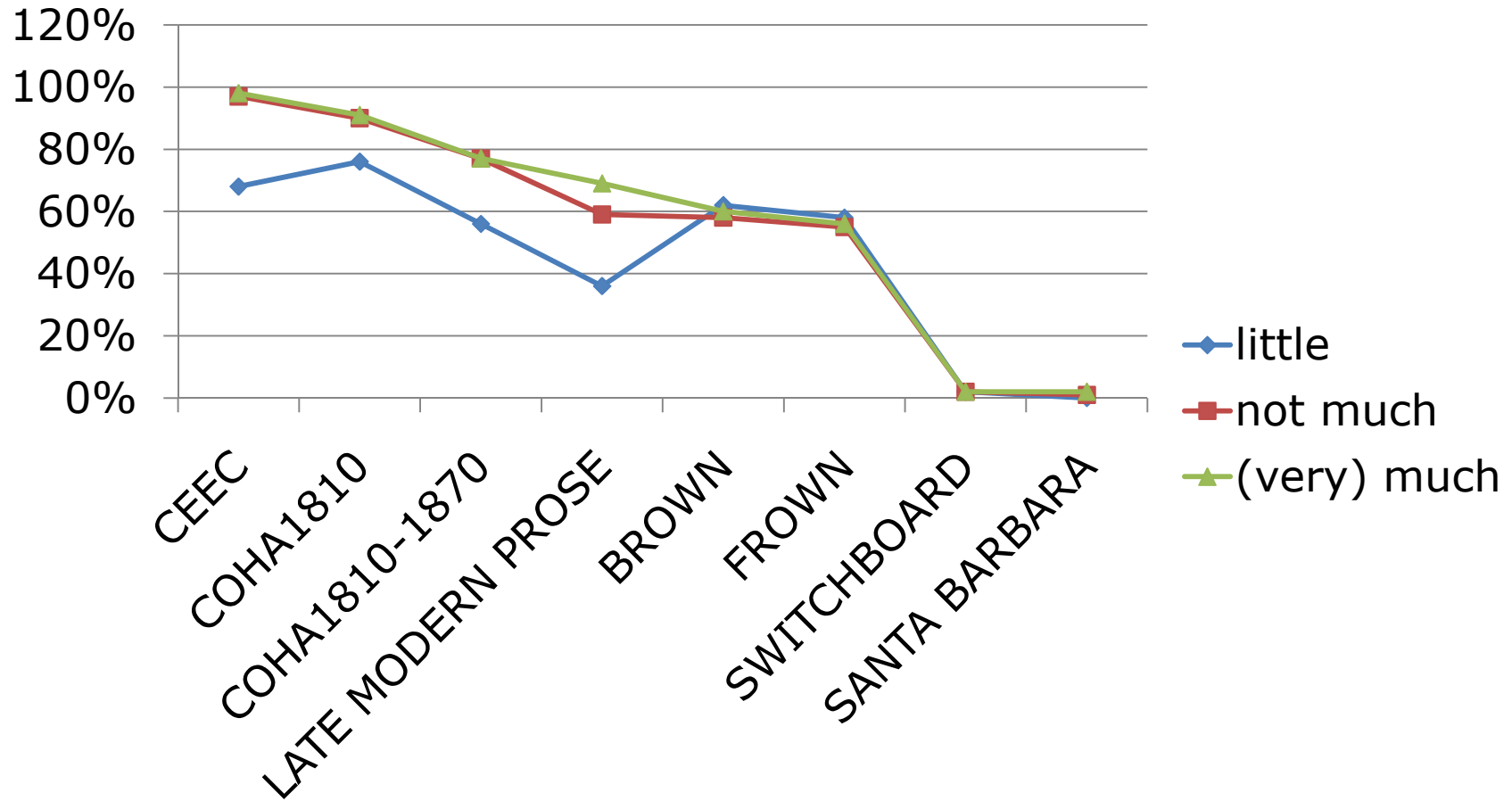
2. (a) *lot(s) (of)*

- When your 6-inch torrent of water is released, it may cause a lot of comment as it passes through or by neighboring properties. (Brown)
- I walk around the house a lot. (Brown)

3. *little*

- There can be little doubt that there was a conspiracy in Washington, overt or implied. (Brown)
- The altercation in the coffee house had done little to dampen his spirits. (Brown)

much and little



Semantic equivalence

- Assumption
NEG *much* = *little*
much = *lot*
- Lavandera (1978)
 - Non-phonological variance

Paucity *little*

NEG *much* per million

Corpus	Per Mil
CEEC 1418-1680	69
COHA 1810	33
COHA 1810-1870	82
LATE MODERN ENGLISH PROSE	212
BROWN	93
FROWN	101
SWITCHBOARD	55
SANTA BARBARA	96

Paucity *little* per million

Corpus	Per Mil
CEEC 1418-1680	144
COHA 1810	106
COHA 1810-1870	108
LATE MODERN ENGLISH PROSE	121
BROWN	159
FROWN	149
SWITCHBOARD	2
SANTA BARBARA	0

$$\text{CEEC: } \frac{\textit{not much}}{\textit{paucity little} + \textit{NEG much}} = \frac{31}{65 + 31} = \frac{31}{96} = 32\%$$

$$\text{COHA1810: } \frac{\textit{not much}}{\textit{paucity little} + \textit{NEG much}} = \frac{39}{125 + 39} = \frac{39}{164} = 24\%$$

$$\text{COHA1810} - 1870: \frac{\textit{not much}}{\textit{paucity little} + \textit{NEG much}} = \frac{7584}{9721 + 7584} = \frac{7584}{17305} = 44\%$$

$$\text{Late Modern English Prose: } \frac{\textit{not much}}{\textit{paucity little} + \textit{NEG much}} = \frac{21}{12 + 21} = \frac{21}{33} = 64\%$$

$$\text{Brown: } \frac{\textit{not much}}{\textit{paucity little} + \textit{NEG much}} = \frac{97}{159 + 97} = \frac{97}{256} = 38\%$$

$$\text{Frown: } \frac{\textit{not much}}{\textit{paucity little} + \textit{NEG much}} = \frac{109}{149 + 109} = \frac{109}{258} = 42\%$$

$$\text{Switchboard: } \frac{\textit{not much}}{\textit{paucity little} + \textit{NEG much}} = \frac{205}{5 + 205} = \frac{205}{210} = 98\%$$

$$\text{Santa Barbara: } \frac{\textit{not much}}{\textit{paucity little} + \textit{NEG much}} = \frac{26}{0 + 26} = 100\%$$