

International Conference on Historical Linguistics

**Much ado about *a lot*: A
corpus study of *much* as a
negative polarity item**

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Contents

- Negative Polarity Items (NPIs)
- Literature Review
- Corpora
- Findings

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. It is surprising that...
 - These folks spend so much time judging others during the week it is **surprising** they have much time left for anything else.
 4. VP adverb *seldom*
 - He **seldom** gets much sleep before a performance.
 5. Too ... to
 - Curt was **too** involved in his own problems **to** pay much attention. (Brown)

Licensing environment

- NPIs are licensed in a downward entailing (DE) environments (Ladusaw 1980, Zwarts 1993)

A function is DE iff for any x, y

$$x \leq y \Rightarrow f(x) \geq f(y)$$

where \leq denotes a subset relation

and \Rightarrow refers to an entailment

ex) $x = \text{red rose}$ $y = \text{rose}$

$f(x) = \text{I didn't buy } x.$

Holds for negation, the scope of *few, only, (long) before,* a universal quantifier *every,* in *it is surprising (amazing), too ... to* constructions and a conditional

Licensing environment

- Nonveridicality licenses polarity items (Giannakidou 2002)

(Non)veridicality for propositional operators

A propositional operator F is veridical iff F_p entails p :
 $F_p \rightarrow p$; otherwise F is nonveridical.

Holds for question:

Yesterday, Paul saw a snake. \rightarrow Paul saw a snake.

Did Paul see a snake? $\neg \rightarrow$ Paul saw a snake.

Non-NPI *much*

- I take much content that I may hope to see your father and you within 2 months.
(CEECS, 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)

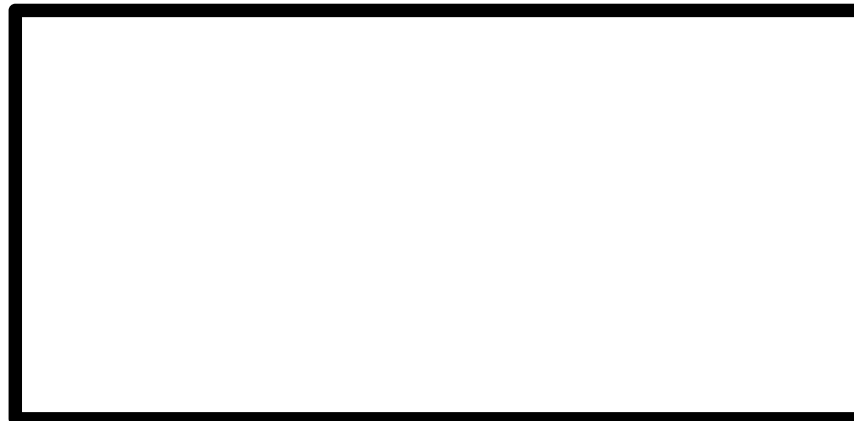
Horn (1989)

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

A all

E no

(all \neg)



I some

O not all

(some \neg)

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

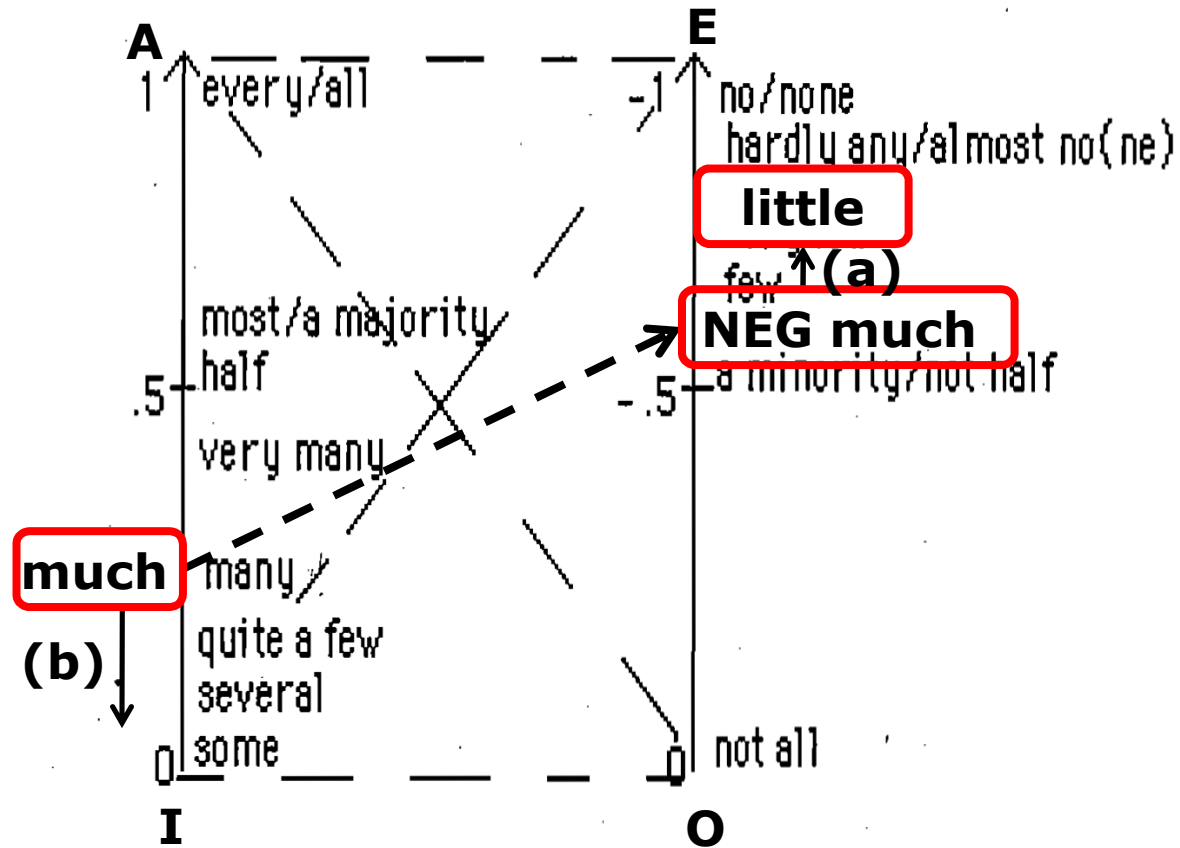
E never=not ever
(always \neg)



I sometimes

O not always
(\neg always)

much



Original diagram from Horn (2007)

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



(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.

Corpora

- Corpus of Early English Correspondences Sampler (CEECS)
 - 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
- **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*: included**

unmodified *much* in following contexts

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.

much: not included

all that do not show polarity sensitivity

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.

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.

Hypothesis 1

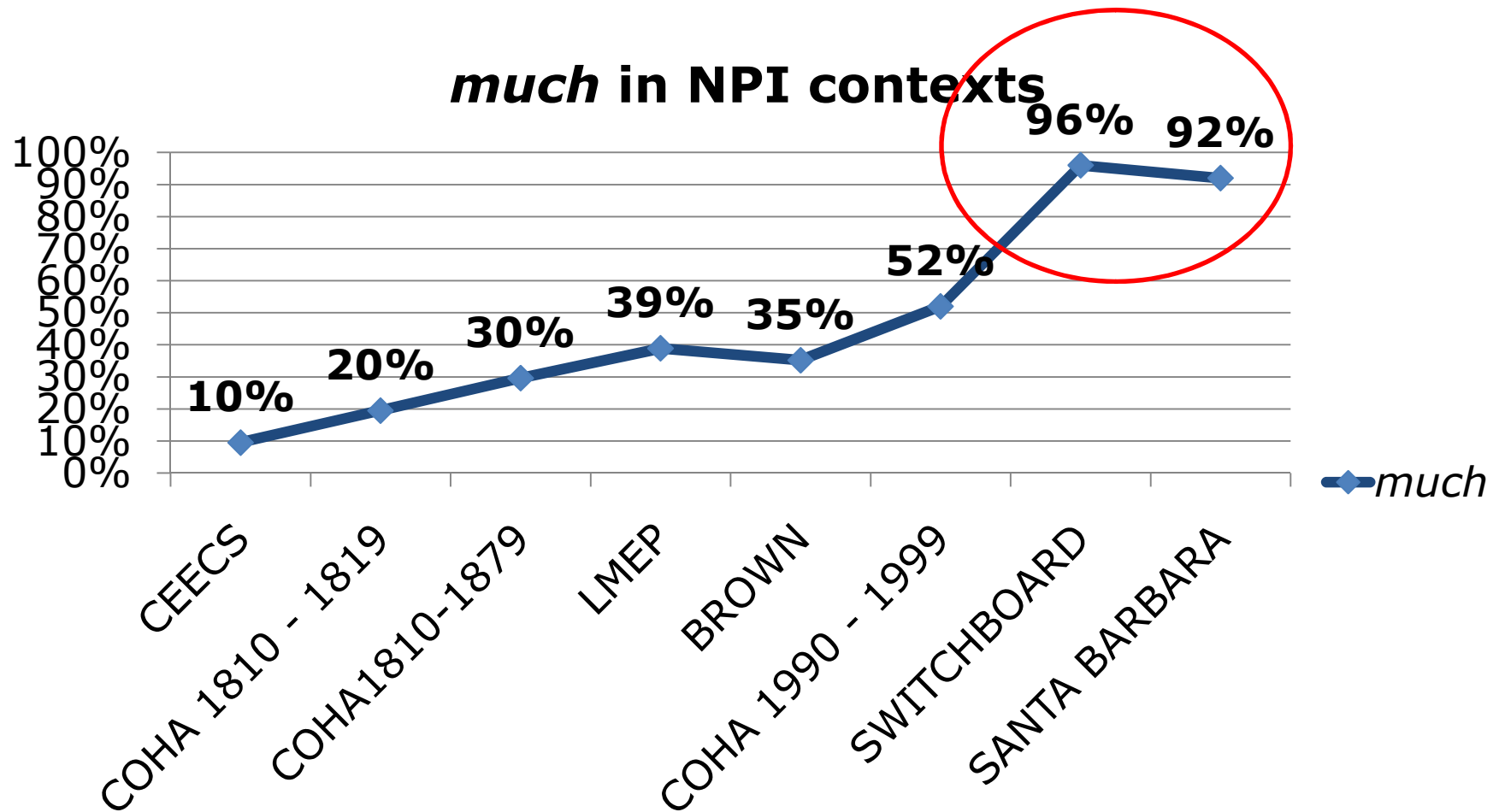
- NPI tendency of *much* increases with time.

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

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

Corpus	Time Period	<i>much</i> in NPI contexts	<i>much</i> in non-NPI contexts	Percentage of NPI <i>much</i>
CEECs	1418-1680	31	296	9.5%
COHA 1810-1819	1810-1819	43	177	19.5%
COHA 1810-1879	1810-1879	7687	18243	29.6%
LMEP	1871-1919	21	33	38.9%
BROWN	1961	92	169	35.2%
COHA 1990-1999	'90s	3484	3094	52%
SWITCHBOARD (SPOKEN)	Early 1990s	180	7	96.3%
SANTA BARBARA (SPOKEN)	Early 1990s	23	2	92%

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



Findings

- NPI use of *much* increases with time.

Hypothesis 2

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

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

	<i>little</i>	NEG <i>much</i>	
CEECS	77	31	71%
COHA 1810-1819	122	39	76%
COHA 1810-1879	9721	7379	57%
LMEP	12	20	38%
BROWN	159	88	64%
COHA 1990-1999	2645	3198	45%
SWITCHBOARD	5	164	3%
SANTA BARBARA	0	24	0%

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)

Findings

- Hypothesis 2 is not supported.
- There is variation by register: spoken language shows stronger tendency towards *not*-negation.

Hypothesis 3

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

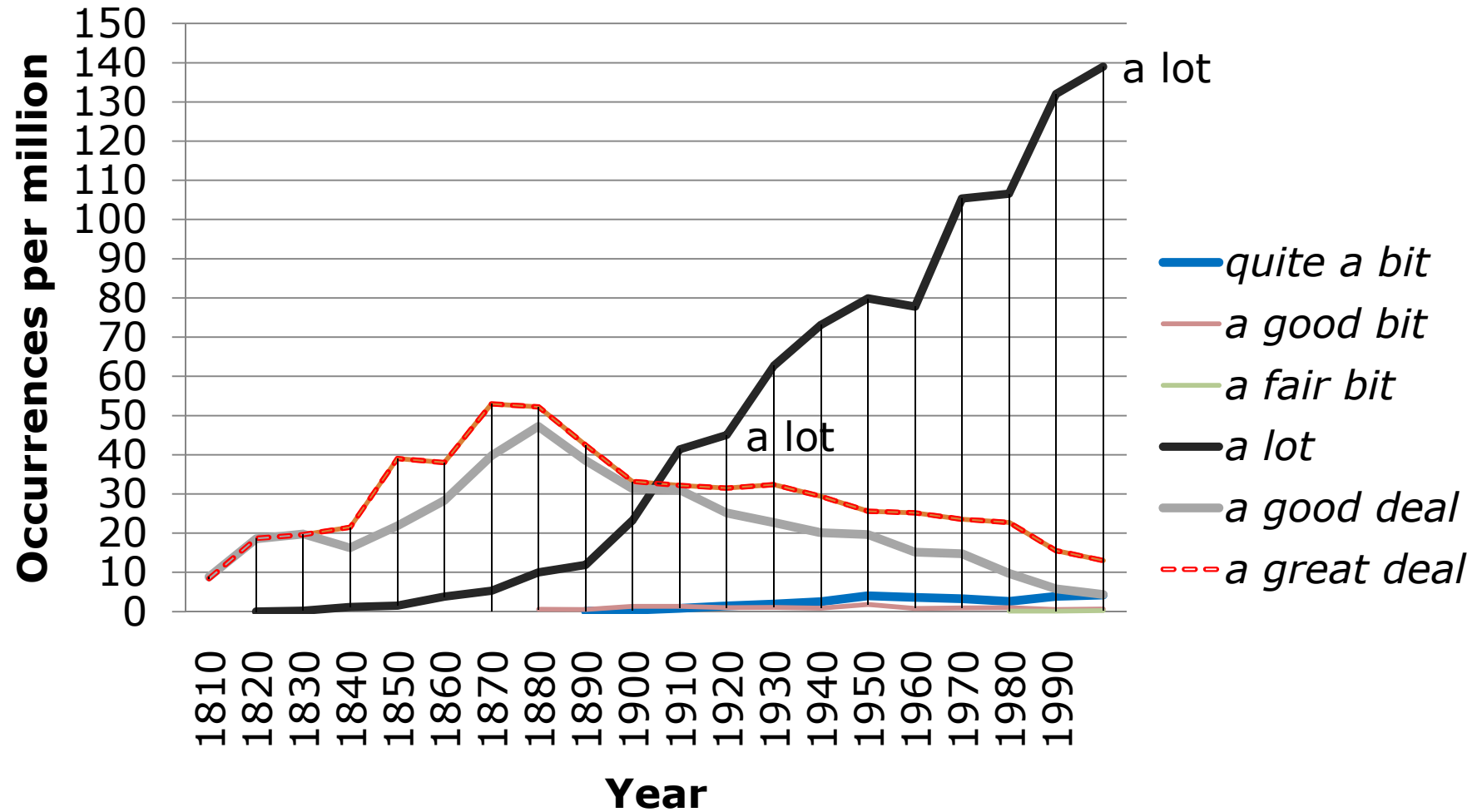
$$\frac{\frac{\text{much in NPI contexts}}{\text{all expressions in NPI contexts}}}{\frac{\text{much in non-NPI contexts}}{\text{all expressions in non-NPI contexts}}} = \frac{\frac{\text{much in NPI contexts}}{\text{much in NPI contexts} + \text{other expressions in NPI contexts}}}{\frac{\text{much in non-NPI contexts}}{\text{much in non-NPI contexts} + \text{other expressions in non-NPI contexts}}}$$

CORPUS	Ratio
CEECS	1.027
COHA 1810-1819	1.065
COHA 1810-1879	1.283
LMEP	1.758
BROWN	1.644
COHA 1990-1999	2.128
SWITCHBOARD	87.55
SANTA BARBARA	51.75

$$\frac{\frac{\text{much in NPI contexts}}{\text{all expressions in NPI contexts}}}{\frac{\text{much in non-NPI contexts}}{\text{all expressions in non-NPI contexts}}} = \frac{\frac{\text{much in NPI contexts}}{\text{much in NPI contexts} + \text{other expressions in NPI contexts}}}{\frac{\text{much in non-NPI contexts}}{\text{much in non-NPI contexts} + \text{other expressions in non-NPI contexts}}}$$

CORPUS	Ratio	Tokens in NPI contexts				Tokens of <i>much</i> in non-NPI contexts			
		<i>much</i>	other expressions			<i>much</i>	other expressions		
			<i>lot</i>	<i>a great deal</i>	<i>a good deal</i>		<i>lot</i>	<i>a great deal</i>	<i>a good deal</i>
CEECS	1.027	31	0	0	0	296	0	6	2
COHA 1810-1819	1.065	43	0	1	0	177	0	9	7
COHA 1810-1879	1.283	7687	0	25	2	18243	207	760	741
LMEP	1.758	21	0	0	0	33	7	10	8
BROWN	1.644	92	3	1	0	169	68	35	18
COHA 1990-1999	2.128	3484	315	14	5	3094	3524	450	148
SWITCHBOARD	87.55	180	103	6	0	7	960	14	3
SANTA BARBARA	51.75	23	6	1	0	2	113	2	18

Specialization



Findings

- Hypothesis 3 is observed.
- (a) *lot(s)* tends to replace *much* in positive contexts.

Hypothesis 4

- There would be a difference in NPI tendency of *much* by the grammatical function it plays in a sentence.

NPI behavior by type

1. Adjectival

- 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

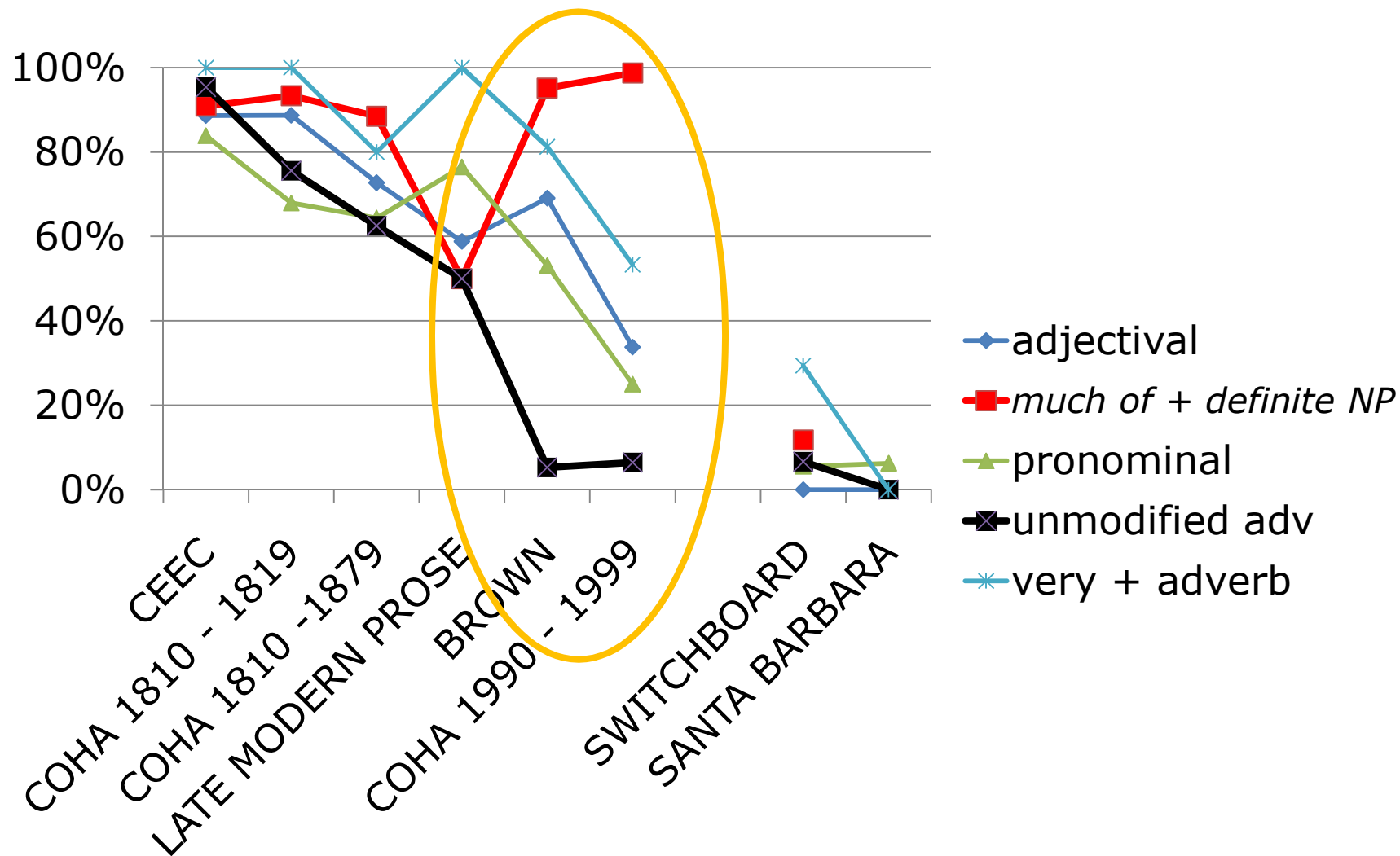
- She doesn't enjoy it much.
- I don't much care for them.
- We just don't wear coats much.

4. *much* modified by *very*

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

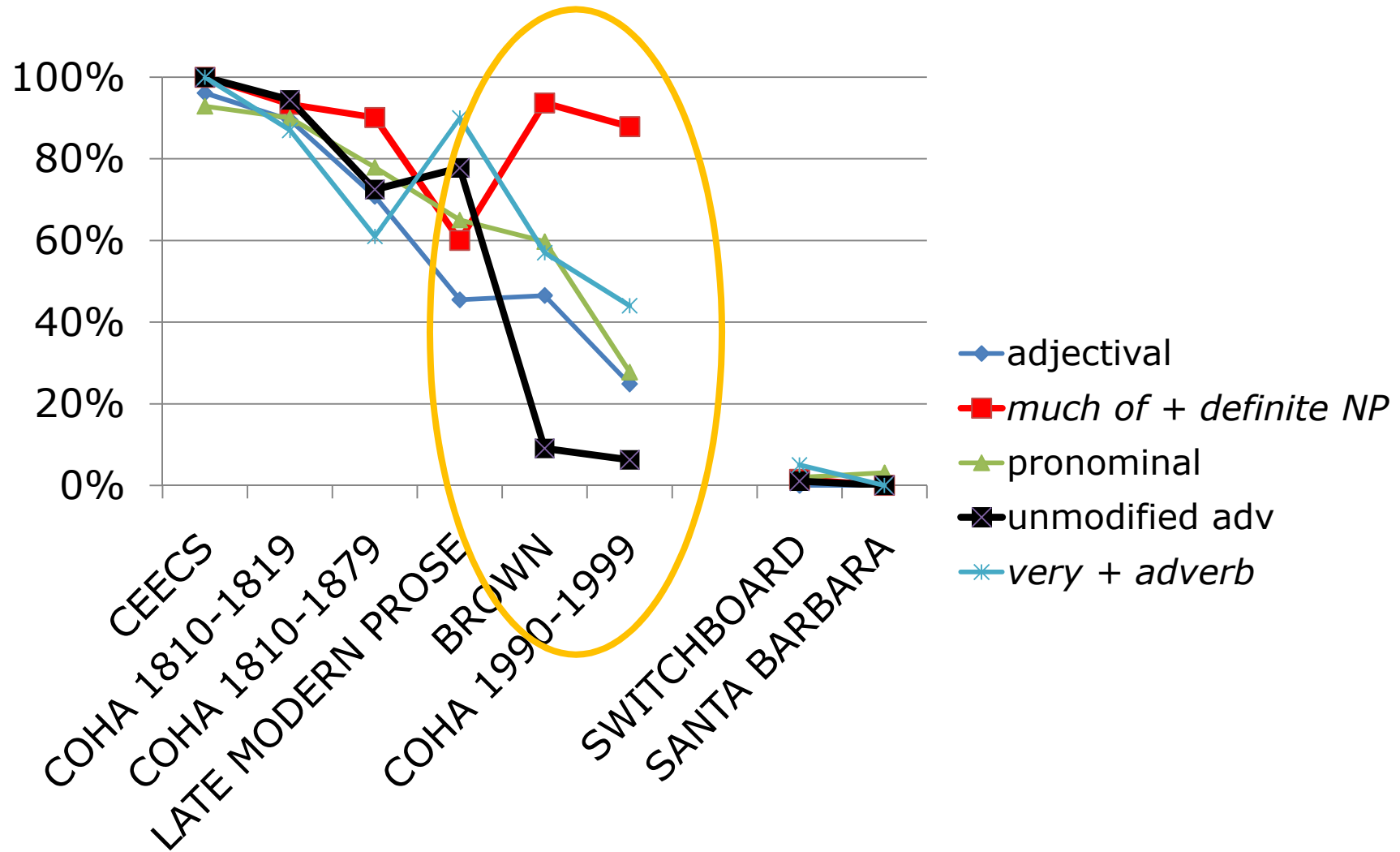
non – NPI much

non – NPI much + NPI much



non – NPI much

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



Findings

- Hypothesis 4 is observed.
- In present day written English,
 - Adverbial uses of *much* shows the strongest NPI tendency compared to other functions it plays in a sentence.
 - When *much of* is followed by a definite NP, it almost exclusively appears in a positive context and behaves like a PPI (Positive Polarity Item).

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Questions?

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References

- Giannakidou, Anastasia. 2002. *Licensing and sensitivity in polarity items: from downward entailment to nonveridicality*. In Maria Andronis, Anne Pycha and Keiko Yoshimura (eds), CLS 38: Papers from the 38th Annual Meeting of the Chicago Linguistic Society, Parasession on Polarity and Negation.
- 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

References

- Horn, Laurence. 2007. Lexical Pragmatics and the Geometry of Opposition: the Mystery of *nall and *nand revisited. To appear in Jean-Yves Béziau (ed.) Proc. *First World Congress on the Square of Opposition*. Available at: http://www.ling.yale.edu/faculty/doc/horn07_SQUOP.pdf
- Israel, Michael. (1996) 'Polarity sensitivity as lexical semantics'. *Linguistics and Philosophy*. 19(6): 619-666.
- Ladusaw, William. (1980). *Polarity Sensitivity as Inherent Scope Relations*. Garland, NY.

References

Ladusaw, William. (1997). Negation and Polarity Items. *The Handbook of Contemporary Semantic Theory*. Lappin, S. (ed.). Blackwell Publishing. Blackwell Reference Online.

Quirk, Randolph et al. (1985) *A comprehensive grammar of the English language*. Longman: New York.

Israel (1996)

