

# An ellipsis approach to polarity particles across languages

Workshop on the syntax of 'yes' and 'no', Newcastle

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- 2 Overview of K&R 2009
- 3 Experimental data
- 4 Interpretation puzzles
- 5 Embedded negative neutralization
- 6 Cross-linguistic predictions

## Puzzle 1: non-sentential uses of polarity particles

Pope 1972; Laka 1990; Holmberg 2001, 2003; Farkas and Bruce 2010; Kramer and Rawlins 2009

- (1) A: Is Alfonso going to the party?  
B: (Yes/yeah,) he is going.  
B': Yes/yeah.

The non-sentential puzzle

How can the apparently ad-sentential use in B, and the apparently pro-sentential use in B', be unified?

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# Puzzle 1: the interpretation of non-sentential particles

The classical view:

- $\llbracket ?p \rrbracket = \{\llbracket p \rrbracket, \llbracket \neg p \rrbracket\}$
- **【yes】** picks out the positive alternative, **【no】** the negative alternative.

Pattern 1: negative neutralization (Kramer and Rawlins, 2009)

- (2) A: Is Alfonso not going to the party after all?  
B: Yes/yeah.  
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Pattern 1: negative neutralization (Kramer and Rawlins, 2009)

- (2) A: Is Alfonso not going to the party after all?  
B: Yes/yeah. = he is not going.  
B': No. = he is not going.

This is a very puzzling pattern! Functionally ‘broken’.

## Puzzle 2: the interpretation of non-sentential particles

Pattern 2: reverse particles in negative contexts (Farkas, 2007; Farkas and Bruce, 2010; Kramer and Rawlins, 2010)

(3) French

A: Oscar ne vient pas à la soirée?

B: Si. (= he did come)

B: Non. (= he did not come)

(Pattern 2' – use same particles reversed in negative context, e.g. Amharic, Japanese.)

A pattern 2 system is much more useful...so why would pattern 1 ever exist?

# Agenda

- ① Outline our approach.
- ② Experimental data about negative neutralization.
- ③ Comparison of different theories of negative neutralization.
- ④ Cross-linguistic predictions of approach to negative neutralization.

# Kramer & Rawlins 2009

Theory centered around  $\Sigma$  system (Laka, 1990).

- All particles semantically mark attached sentence as a response to a polar question (Farkas and Bruce, 2010).
- Laka's high and low  $\Sigma$  heads.
- "yes" and "no" are adjuncts to a high  $\Sigma P$ . (Following Huddleston and Pullum 2002.)
  - Not strongly committed to this – somewhere between  $\Sigma$  and upper bound of CP domain. ("frankly, yes.")
- "no" carries polarity feature [NEG].
- When present, this feature enters into a concord relationship with other negative features present in the  $\Sigma$  system.
  - Concord chain must have exactly one interpretable feature.
  - K&R 2010: formalized as feature sharing (Cf. Zeijlstra 2004, 2008; Haegeman and Lohndal 2009).
- 'yes' carries no polarity feature, and so is response-marking only.

# Concord in the $\Sigma$ system

Concord intuition:

- (4) A: Did Alfonso go to the party?  
B: No, he didn't.

Two negative words, one  $\neg$ .



# Negative neutralization on K&R 2009

Assumption: solitary polarity particles involve an elided TP (Laka 1990; Holmberg 2001, 2003), ellipsis licensed by  $\Sigma$ .

- Overt high  $\Sigma$ : “so” / “not” (data next slide). Cf. Merchant 2003, 2006 on ‘negative stripping’. See also Spanish pseudostripping in Depiante 2000.
- Merchant’s semantic identity condition on ellipsis (e-givenness).
- Assumption: locate interpretable [NEG] as low as possible in the concord chain.

Negative neutralization follows!

- (6) Did  $_{[TP]} \text{Alfonso not}[i\text{NEG}]$  go to the party?
- (7) Yes $_{[]} \text{ } [TP \text{ Alfonso not}[i\text{NEG}] \text{ go to the party}]$ .
- (8) No $_{[u\text{NEG}]} \text{ } [TP \text{ Alfonso not}[i\text{NEG}] \text{ go to the party}]$ .

(Trees later in talk.)

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- (8) No[u<sub>NEG</sub>]  $[_T_P \text{Alfonso} \text{ not}[i_{\text{NEG}}] \text{ go to the party}]$ .

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## K&R 2009: More $\Sigma$ -licensed TP ellipsis

“so” and “not” as high  $\Sigma$  heads: (However, see Sailor 2012 for a different take.)

- (9) A: Did Alfonso go to the party?  
B: Maybe so. / Maybe not.  
B' I expect so. / I expect not. ('credence ellipsis')  
B'' If so, it must've been fun. / If not, ...

What happens in negative contexts?

## Embedded negative neutralization

In negative contexts, we get negative neutralization:

- (10) A: Did Alfonso not go to the party?  
B: Maybe *so*. / Maybe *not*. (both = he did not go to the party.)  
B' I expect *so*. / I expect *not*. (both = I expect he didn't go to the party.)  
B'' If *so*, it must've been boring. / If *not*, it must've been boring. (both = if he didn't go, ...)

## Particles vs. $\Sigma$ heads

In English, particles can co-occur with  $\Sigma$

- (11) A: Did Alfonso not go to the party?  
B: Yes, maybe so.  
B': Yes, maybe not.  
B'': No, maybe not.  
B''' # No, maybe so.

(All the good examples mean the same thing: he didn't go to the party.)

Conclusion: “yes” / “no” are not  $\Sigma$  heads.

- Unclear why they don't co-occur unless intervening adverb.

## Particles vs. $\Sigma$ heads

In many languages (e.g. French, Spanish), particles are  $\Sigma$  heads (in the sense of licensing this kind of ellipsis). (K&R 2010, Sailor 2012b)

- (12) A: Est-il venu à la soirée?  
has-he come to the party  
'Did he come to the party?'
- B: Je crois que oui. / Je crois que non.  
I believe that yes. / I believe that no.  
'I think so. / I think not.'
- (13) A: N'est-il pas venu à la soirée?  
NEG'has-he NEG come to the party  
'Did he not come to the party?'
- B: Je crois que si. / Je crois que non.  
I think that si / I think that not.  
'I think he did / I think he didn't'

## Particles vs. $\Sigma$ heads

- (14) A: Est-il venu à la soirée?  
B: Peut-être que oui. / Peut-être que non.  
maybe that yes / maybe that no  
'maybe so. / maybe not.'
- (15) A: N'est-il pas venu à la soirée?  
B: Peut-être que si. / Peut-être que non.  
maybe that si / maybe that no  
'Maybe he did. / Maybe he didn't.'

Similar pattern for reduced conditionals, but gap for 'si si'.

# Spanish psuedo-stripping

Ex. from Depiante 2000.

- (16) Ana leyó El Quijote pero María no  
Ana read El Quijote but Maria not  
'Ana read El Quijote but not Maria.'
- (17) Ana no leyó El Quijote pero María sí  
Ana not read El Quijote but Maria yes  
'Ana didn't read El Quijote but Maria did.'

Spanish uses particles ('sí', 'no') as markers of ellipsis here.  
"María" moved out of ellipsis site.

# Summary

Negative neutralization appears to be a widespread phenomena that, on our account, follows from independently motivated principles ( $\Sigma$  system, negative concord, ellipsis).

However...controversy about data, reports of difficulty with intuitions. What to do?

Run an experiment to establish data.

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Negative neutralization appears to be a widespread phenomena that, on our account, follows from independently motivated principles ( $\Sigma$  system, negative concord, ellipsis).

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# Experimental data

Method: present subjects with (i) a scenario, (ii) a question asked in that scenario, and (iii) a response. (At same time.)

- How appropriate is response in scenario? (1-7 Likert scale)
- Do you think [asker] was telling the truth? (Yes, no, unsure)

Factors:

- Question: negative or positive.
- Answer: “yes.”, “no.”
- Scenario makes content proposition: true or false.

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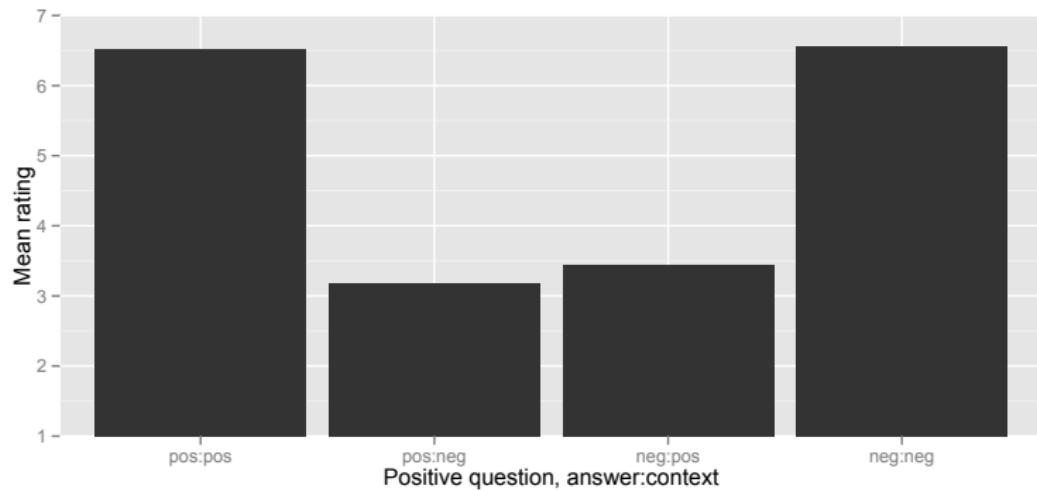
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## Method details

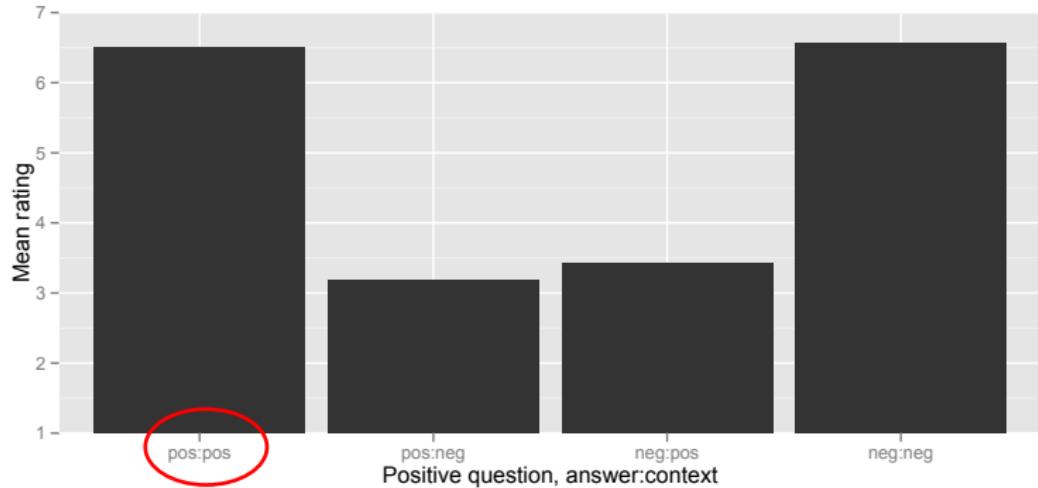
39 subjects, recruited and run using Amazon's Mechanical Turk (Paolacci et al., 2010; Sprouse, 2010), Gibson and Federenko (in press).

- Subjects all have US IP address, identify as native speakers of English. Paid 0.30USD.
- 1 item per condition, 8 fillers, 2 extras. (Size is potential issue with study! Easier to run short studies on MTurk, but we would like to do a longer version.) Avg time: 9.75 minutes.
- Presented experiment as a single page, scroll through, can see a single item at a time.
- Analysis: linear mixed effects model using z-transformed scores. p-values computed using MCMC sampling (Baayan 2008 a.o.).
- Analysis is quite preliminary – still thinking about how to incorporate truth value judgment data. (For now, will interpret this data subjectively.)

## Basic cases: positive polar questions

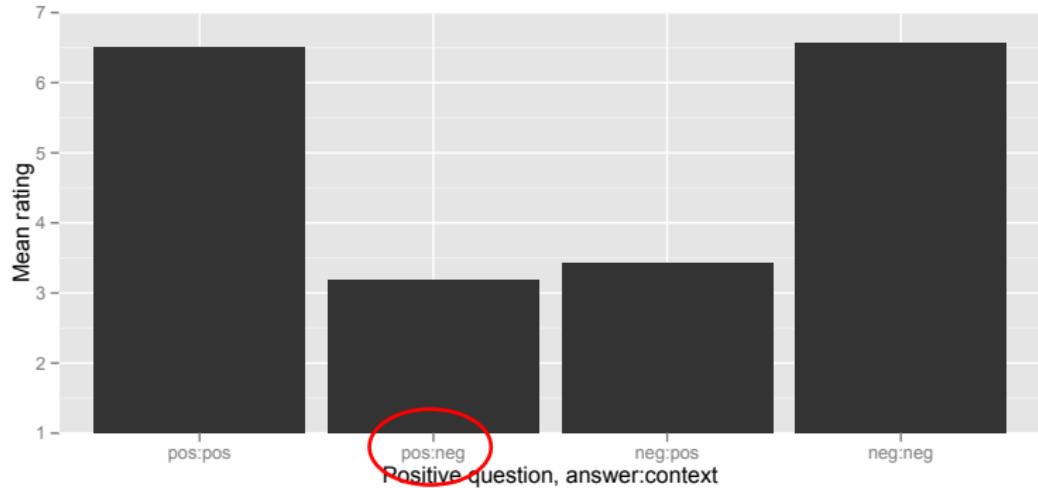


## Basic cases: positive polar questions



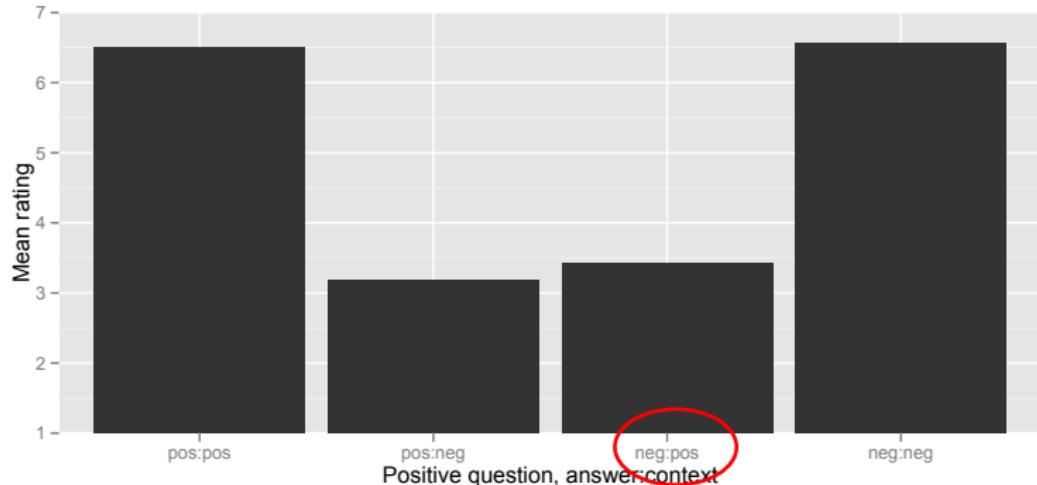
- (18) Item: context/positive, q-positive, present/yes
- SCENARIO: There was a party yesterday. Bill knows that John went to the party, and Sue doesn't.
  - QUESTION: Did John go to the party?
  - RESPONSE: yes.

## Basic cases: positive polar questions



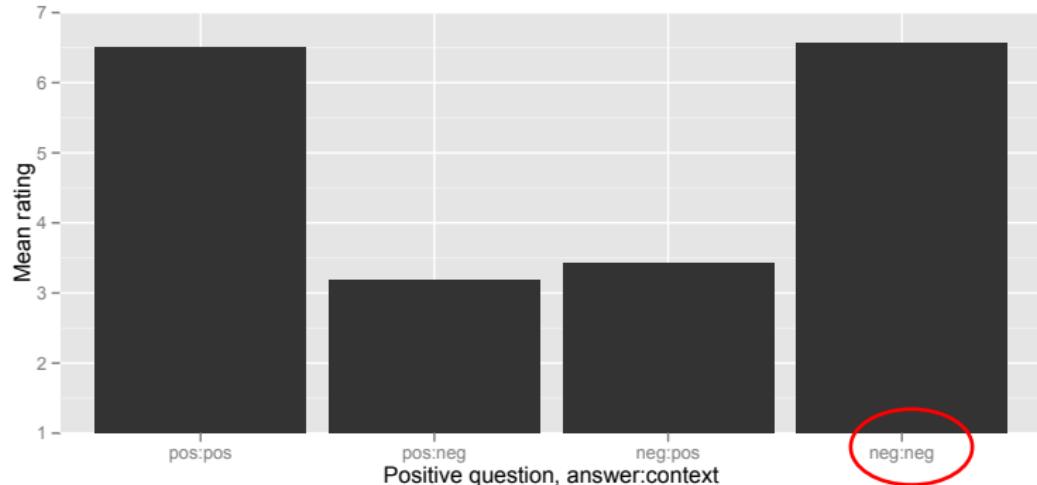
- (18) Item: context/negative, q-positive, present/yes
- SCENARIO: Bill knows that John did not buy a new car, but Sue doesn't know this.
  - QUESTION: Did John buy a new car?
  - RESPONSE: yes.

## Basic cases: positive polar questions



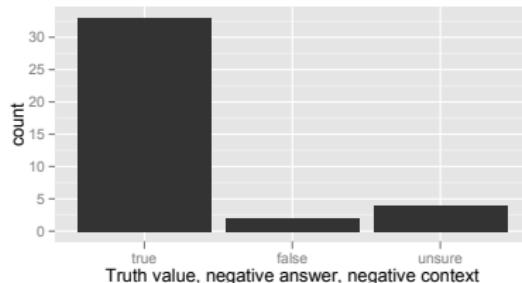
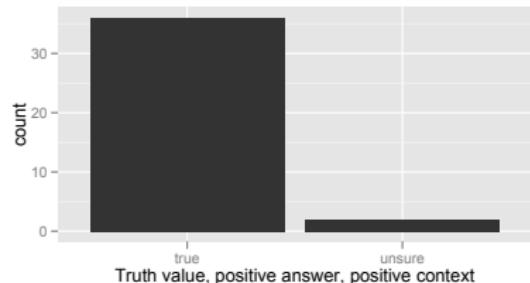
- (18) Item: context/positive, q-positive, present/no
- SCENARIO: John was supposed to send an email to a customer. Bill helped John write it and finally send it. Sue wasn't involved at all and doesn't know this.
  - QUESTION: Did John send the email?
  - RESPONSE: no.

## Basic cases: positive polar questions



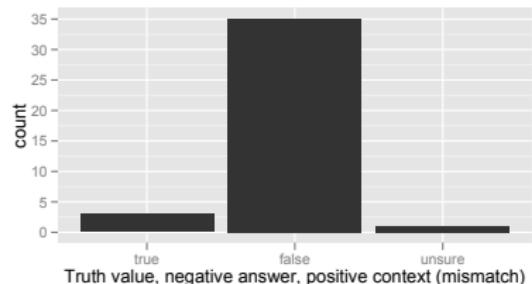
- (18) Item: context/negative, q-positive, present/no
- SCENARIO: It was John's turn to clean the office kitchen, and he didn't. Sue notices that it still looks messy.
  - QUESTION: Did John clean the kitchen?
  - RESPONSE: no.

## Basic cases: positive polar Qs, truthful answer

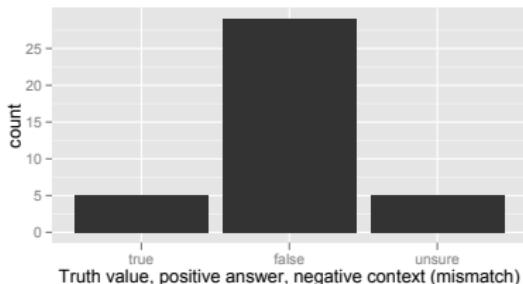


Subjects had clear intuitions about truth in these cases, as expected.

## Basic cases: positive polar Qs, untruthful answer



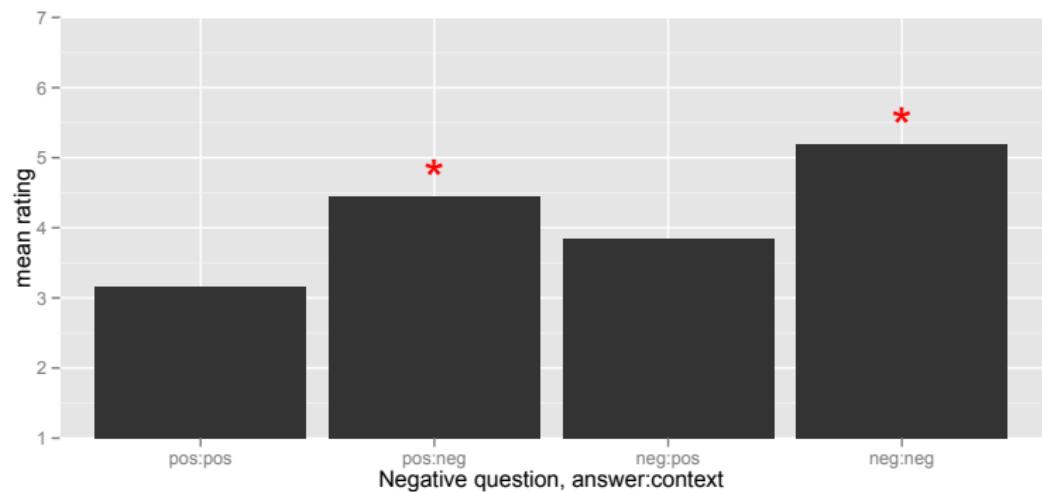
Truth value, negative answer, positive context (mismatch)



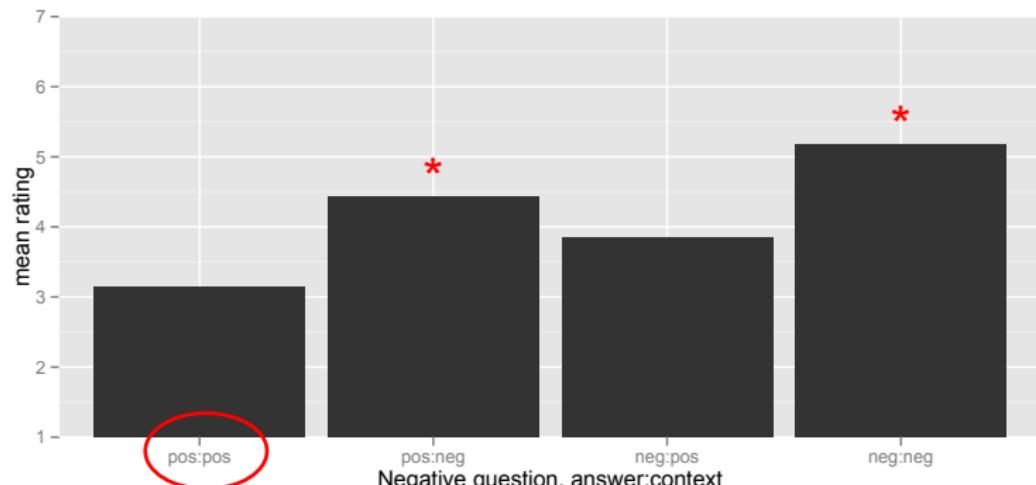
Truth value, positive answer, negative context (mismatch)

Similarly clear intuitions about falsity, as expected. On to negative neutralization...

## Negative neutralization: negative polar Qs



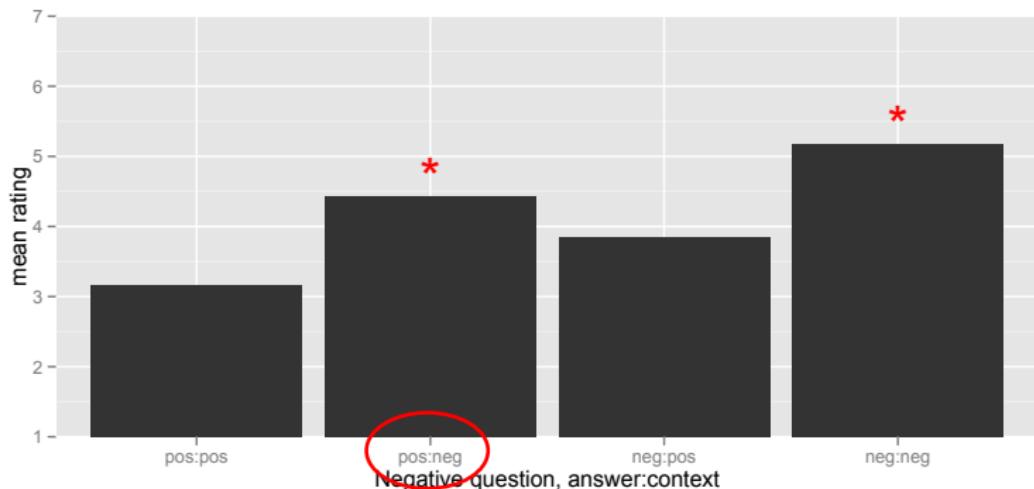
## Negative neutralization: negative polar Qs



(19) Item: context/positive, q-inner-negative, present/yes

- SCENARIO: John just went to pick up some food for the office, including coffee. He did buy some. Sue looks for it but doesn't look in the right place, and can't find it.
- QUESTION: Did John not get coffee after all?
- RESPONSE: yes.

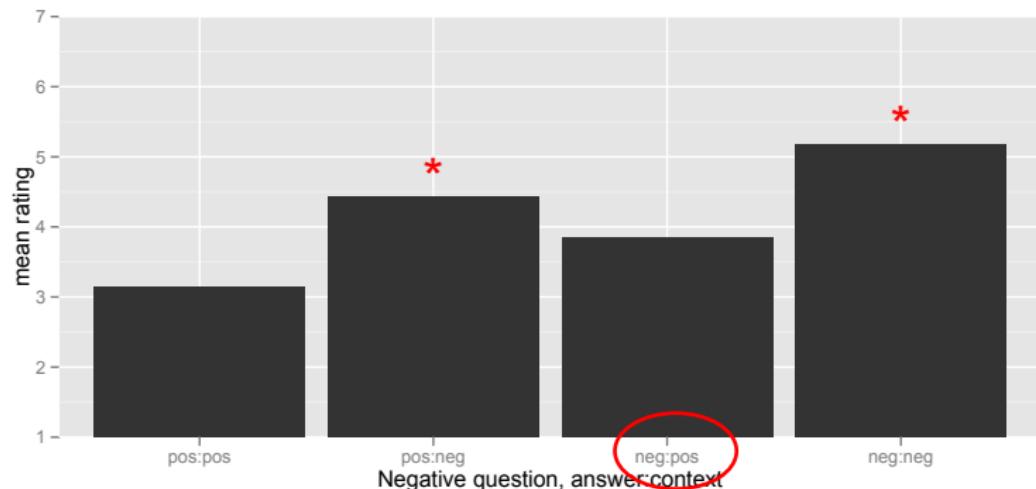
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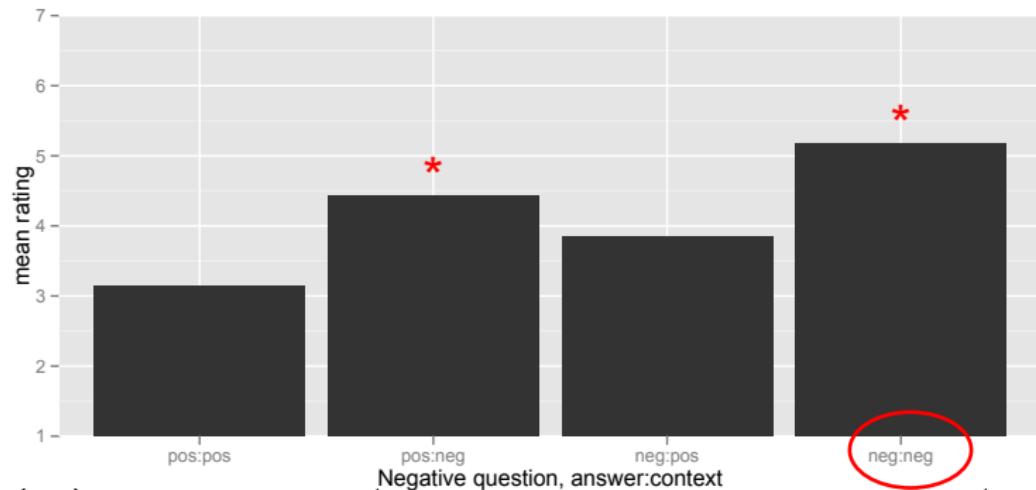
- SCENARIO: John just took an exam, and got a D. Bill knows John's grade on the exam, and Sue doesn't, but she has just seen him looking upset in the hallway.
- QUESTION: Did John not do well on the exam?
- RESPONSE: no.

## Negative neutralization: negative polar Qs



- (19) Item: context/positive, q-inner-negative, present/no
- SCENARIO: John ran in a marathon yesterday, and finished. Bill was watching the race. Sue doesn't know the outcome, and had low expectations for John.
  - QUESTION: Did John not finish the marathon?
  - RESPONSE: no.

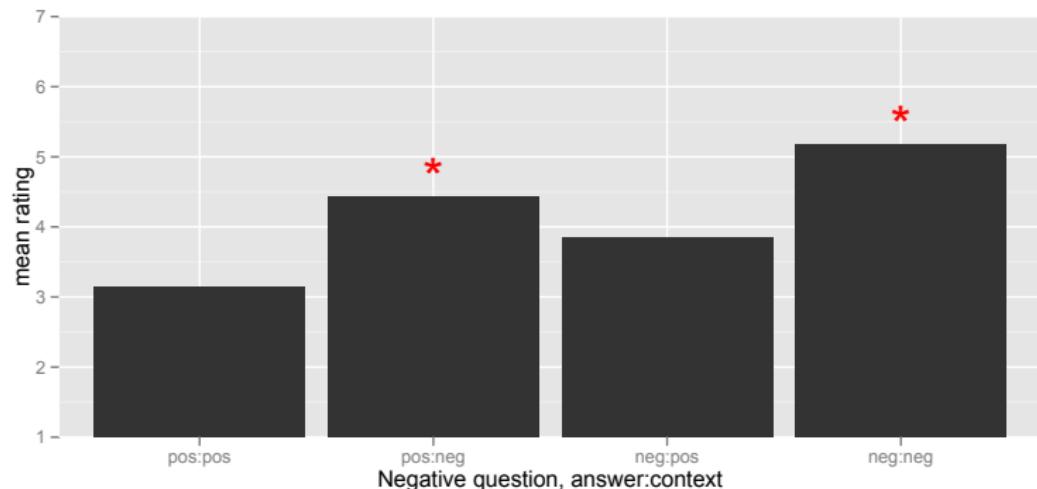
## Negative neutralization: negative polar Qs



(19) Item: context/negative, q-inner-negative, present/yes

- SCENARIO: John was planning on taking a vacation soon. Bill is John's boss and knows the details – he didn't go on vacation. Sue just noticed John's car in the parking lot.
- QUESTION: Did John not take his vacation?
- RESPONSE: yes.

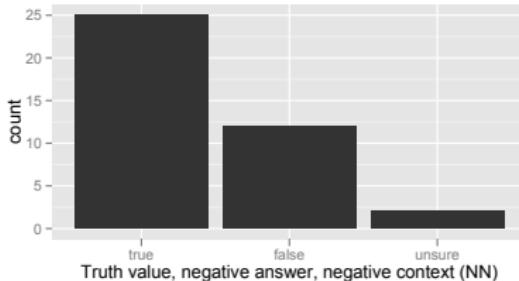
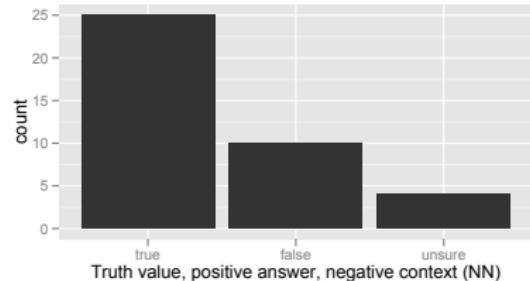
## Negative neutralization: negative polar Qs



What is significant in this graph?

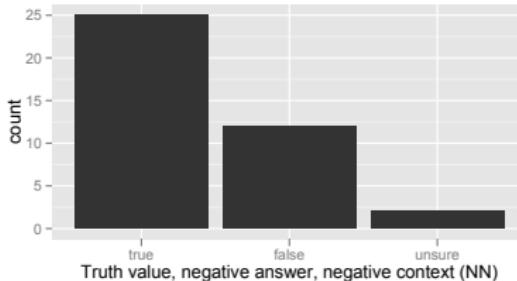
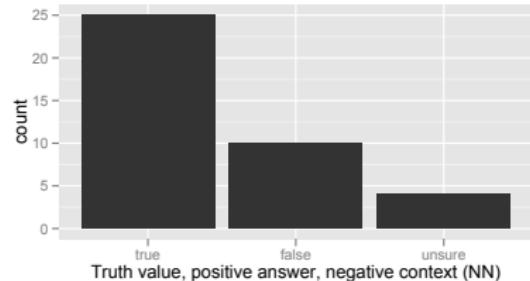
- pos:pos vs. pos:neg, and neg:pos vs. neg:neg
- *not* pos:neg vs. neg:neg (NN cases) or pos:pos vs. neg:pos (gap cases)
- Also not middle two (explanation below).
- Note also: NN gap cases not significantly different in rating from untruthful cases above. NN case are significantly better

# Negative questions: negative neutralization



- NN reading predominates (substantially).
- May be a minority reading for each case. Stronger for 'no'.
  - (Need some quantitative assessment of this before drawing strong conclusions...)

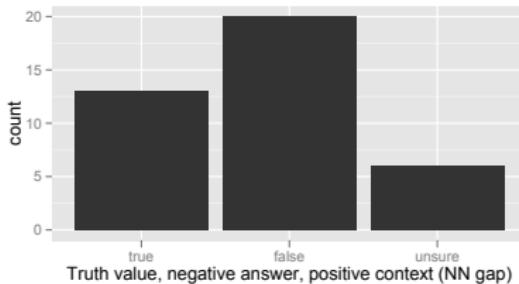
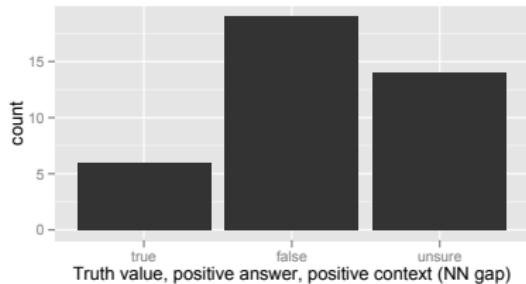
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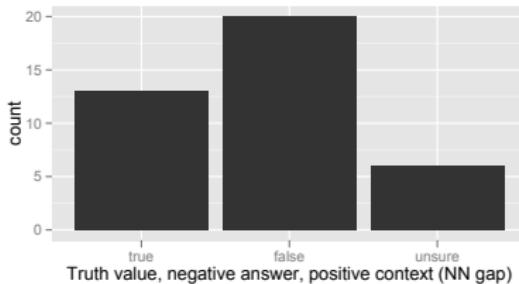
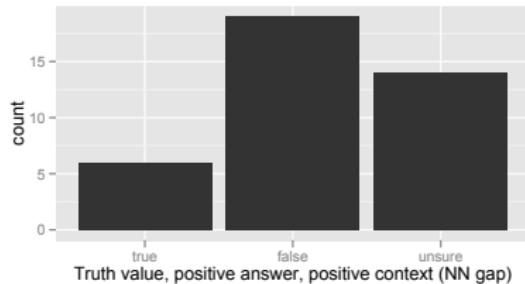
The negative neutralization gap: context is opposite of (negative) polarity of question.



- Higher proportion of 'unsure' answers for 'yes.' version – corresponds with lower felicity?
- Overall, more uncertainty, difficulty than NN cases.
- There may be a possible minority reading in each case (cf. Holmberg 2012). Needs further investigation.
- Majority interpretation consistent with NN reading being false here.

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## Negative neutralization: experimental evidence

- Across the board felicity/appropriateness drop for answers to negative polar Qs. But still far better than truly infelicitous/inappropriate answers...
- Readings characterized by Kramer and Rawlins 2009 predominate. (Contra Holmberg 2012)
- Inverse readings, significantly worse.
- Some evidence that “no.” is the ambiguous one in these examples.
  - Written format: does not control for intonation – emphatic ‘no’?
- Minority of speakers may take ‘yes’ to be ambiguous – but, huge proportion of ‘unsure’ responses for relevant NN gap item.
- Need an analysis that models relationship between reading, felicity, to disentangle results further...

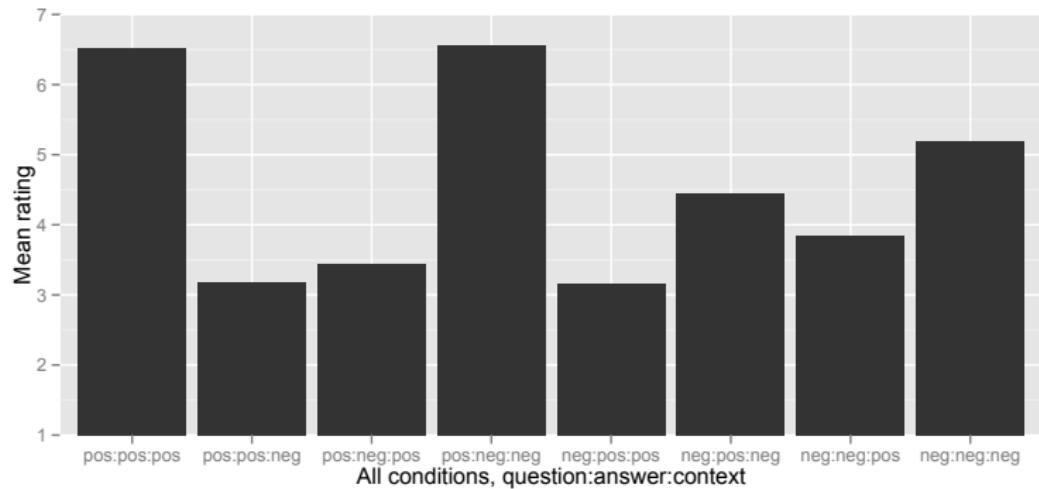
# Negative neutralization summary

Negative neutralization is real.

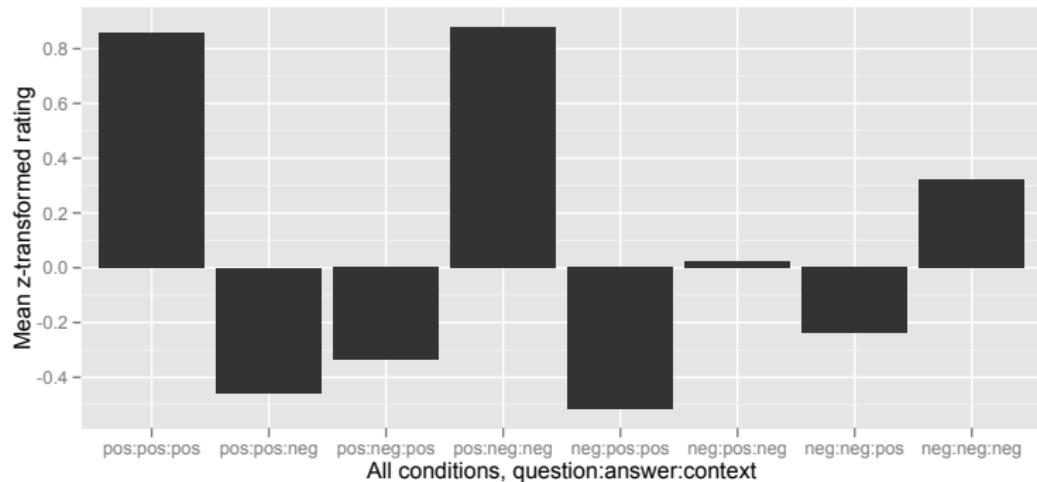
An analysis of responses to negative questions must address it one way or the other.

- Remaining mystery: why the drop in felicity of responses to negative questions?
- Promissary note: May be explained once falsity / infelicity deconfounded in the statistical model...

# Summary chart



## Summary chart, z-transformed scores



Warning: position of 0 in z-transformed scores is not meaningful.

## Interpretation puzzles

With the data more settled, next question: how do existing accounts handle negative neutralization?

## Subcase: “no”

Puzzle: why does “no.” align with an answer that is negative? I.e. ignore the polarity of the antecedent question?

## Background: the featural account.

Pope 1972; Bruce and Farkas 2007; Farkas 2009, to appear; Farkas and Bruce 2010; Brasoveanu et al. 2012; Farkas and Roelofsen 2012

Four core features:

- [SAME] vs. [REVERSE]: how the polarity of a response relates to the polarity of its antecedent.
- [+] vs. [-]: the polarity of a response.

Evidence for featural decomposition: languages like Hungarian, Romanian: encode [REVERSE] as a distinct morpheme that combines with [+], [-] particles. (Farkas, 2009, to appear)

## Background: the featural account.

These are not lexical features as implemented – particles are compatible with realizing certain features.

- E.g. “yes”: can realize [SAME] or [+] or both.
- Equivalent to, “yes” is underspecified for [SAME,+], [SAME,-], or [REVERSE,+]. (Lexicalist interpretation.)
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## “no.” neutralization on the featural account

Farkas and Bruce 2010: “no” can realize [REVERSE] or [-] or both.

- Positive Q, negative answer: [REVERSE, -]
- Negative Q, negative answer: [SAME, -]
- What about [REVERSE, +]? Will return to this when discussing “yes”.

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## “no.” neutralization for K&R

“No” carries an uninterpretable negative feature.

- Must agree with an interpretable negative feature. (Cf. negative concord; Zeijlstra 2004, 2008; Haegeman and Lohndal 2009 a.o.)
- Can either override or align with polarity of antecedent.
- Negative Q: align. Positive Q: override.
- Aligning case – interpretable feature need not be in ellipsis site.

[uNEG] amounts to forcing Farkas and Bruce's 2010 feature [-] – but syntactic implementation.

- Syntactic implementation is the key to negative neutralization.

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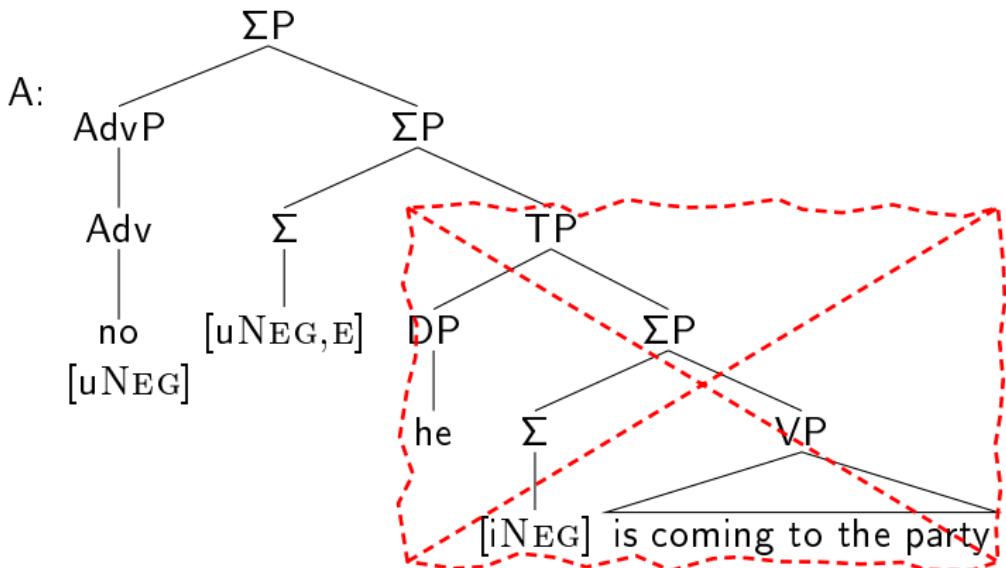
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## “no.” neutralization for K&R

(19) Negative question, negative answer (neutralization)

Q: Is Alfonso not going to the party?

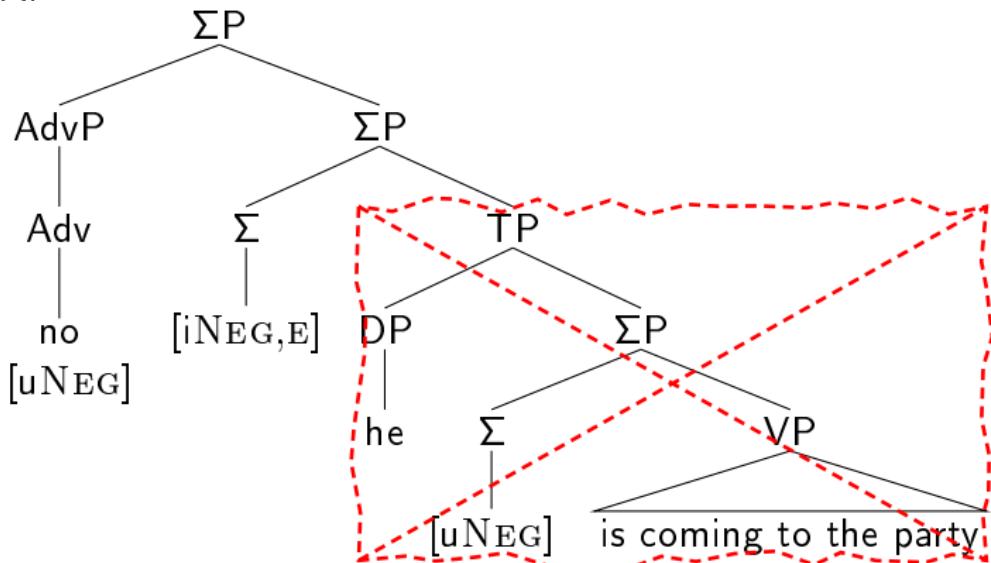


## “no.” neutralization for K&R

(20) Positive question, negative answer

Q: Is Alfonso going to the party?

A:



## Reversing “no”

Observation: in non-elliptical cases, “no” can occur with a stressed auxiliary in a positive sentence.

- (21) A: Did Alfonso not go to the party after all?  
B: No, he DID go to the party.

K&R 2010 proposal: rather than being [REVERSE, +], this is a different case.

- The “no” that shows up with a corrective focus in general.

## Corrective “no”

- (22) A: Alfonso is buying Henry's drink, I thought.  
B: No, HENRY is buying Henry's drink.

(see van Leusen 1994, 2004; Maier and van der Sandt 2003; Asher and Lascarides 2003, Horn 1989 a.o. on metalinguistic negation.)

- Diagnostic for corrective focus here: obviates condition C / repeated name violation.

Corrective “no” can show up with polar Qs as well:

- (23) A: Is Alfonso buying Henry's drink?  
B: No, HENRY is buying Henry's drink.

Generalization: corrective “no” appears when the speaker disagrees (in a very general sense) with the focused constituent.

- Prejacent is otherwise de-accented / given (in the sense of Schwarzschild 1999).

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## Corrective focus on low $\Sigma$

Can a  $\Sigma$  head be corrected? What happens?

- (24) a. Alfonso is buying Henry's drink.
  - b. No, Alfonso is NOT buying Henry's drink.
- (25) a. Alfonso is not buying Henry's drink.
  - b. No, Alfonso IS buying Henry's drink.

$\Sigma$ /verum focus shows up on positive auxiliary, in absence of overt  $\Sigma$ .

### Prediction

$\Sigma$ /verum focus in response to negative question results in focusing the auxiliary.

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### Prediction

$\Sigma$ /verum focus in response to negative question results in focusing the auxiliary.

## Corrective focus on low $\Sigma$

### Prediction (repeated)

$\Sigma$ /verum focus in response to negative question results in focusing the auxiliary.

- (26) A: Did Alfonso not go to the party?  
B: No, he DID go to the party.  
B: No, he went to the party.

“No” cannot encode [REV]  $\Rightarrow$  explanation for why there must be focus in this response pattern.

## Subcase: “yes.”

Puzzle: why does “yes.” / “yeah.” adopt the polarity of the antecedent question?

## “yes.” on the featural account

Farkas and Bruce 2010: “yes” can realize [SAME] or [+] or both.

- Positive question + “yes.”: [SAME,+]
- Negative question + “yes.”: [SAME,-]
- What about [REVERSE,+] following a negative Q? Recall similar question about “no.” following a positive Q.
- Basic idea: markedness scales lead to [REVERSE,+] responses being the most marked case, and so behave differently.

## “yes.” on the featural account

- (27) Farkas and Roelofsen 2012 (87) Generalization:  
In English, polarity particles in [REVERSE,+] responses must have an explicit prejacent with contrastive stress on the auxiliary verb.

[REVERSE, +] – special status in markedness scale, “high realization needs”.

- Typological generalization: [reverse,+] tends to have more complex ways of being realized.
- Romanian / Hungarian: multi-morphemic particle. (First approximation description..)

## Subcase: “yes.” on the Holmberg account

Holmberg's 2012 claim: only good for constituent negation.

- I.e. our neutralization cases with ‘yes’ involve interpreting the antecedent question as if negation is constituent negation.
- Holmberg argues that “yes” has an affirmative feature, rather than no polarity feature.
- Hence incompatible with actual negative feature in the  $\Sigma$  system, which constituent negation lacks.
- Return to this shortly.

## “yes.” in K&R 2009

Claim: “yes” lacks polarity features. (Still a marker of a response in Farkas’ sense.)

- In elliptical responses, forces behavior like Farkas and Bruce’s 2010 [SAME]. Exactly what is needed.
  - Positive Q – identity condition forces positive TP.
  - Negative Q – identity condition forces negative TP.

Problem for us:

- (28) A: Did Alfonso go to the party?  
B: # Yes, he didn’t.

This problem is why many authors have preferred to specify “yes” for positive polarity (Holmberg, 2007; Farkas and Bruce, 2010; Holmberg, 2012).

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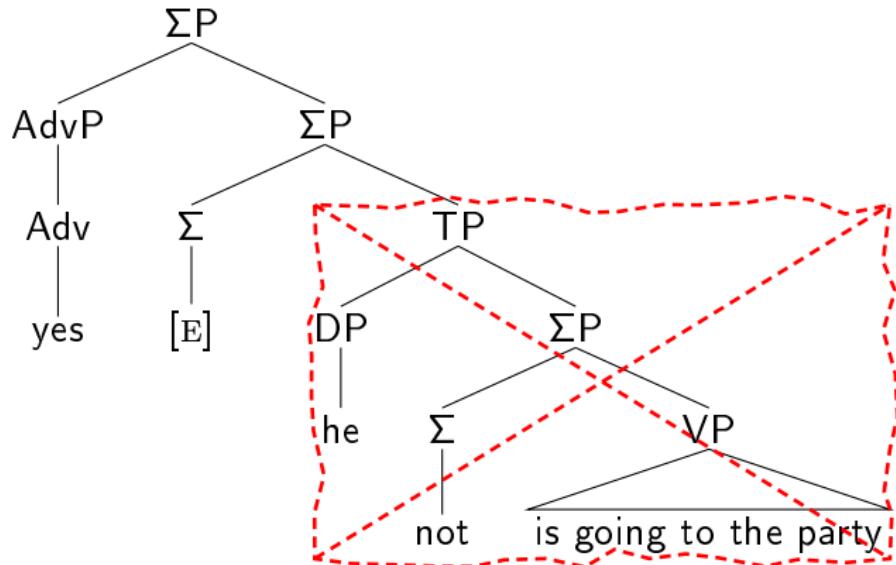
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## “Yes.” neutralization for K&R

(29) Negative question, positive answer (neutralization)

Q: Is Alfonso not going to the party?

A:



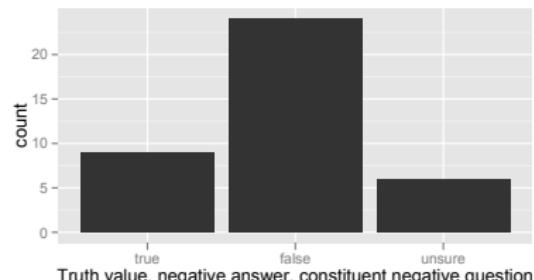
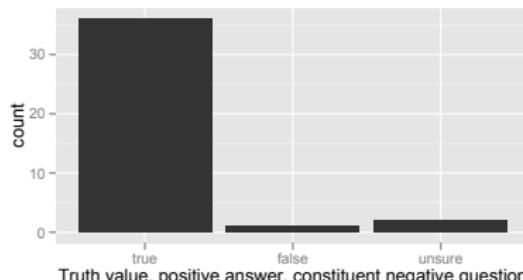
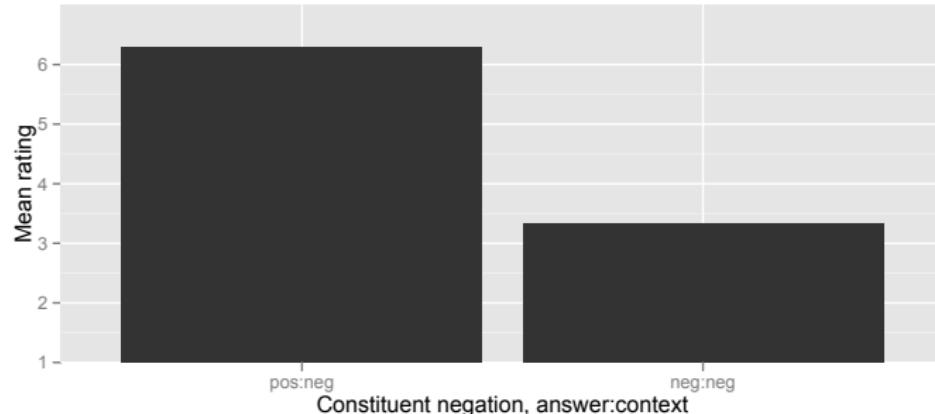
## Against the constituent negation account of “yes.”

- We agree with the data about what happens in constituent negation exx. (Experimental evidence below.)
- We disagree with the extension of this to negative neutralization.
- Preliminary point: Huddleston and Pullum 2002 (p. 848), Brasoveanu et al. 2012 found a similar neutralization pattern in responses to assertions in an experiment.
  - All of their negations (it seems) were contracted, i.e. *prima facie* not constituent negation. (Huddleston and Pullum, 2002)
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# Experimental evidence: constituent negation in polar questions



## Experimental evidence: constituent negation vs. negative neutralization

- Data confirms Holmberg's claim.
- "yes" felicity not significantly different from "yes" response to positive question.
- "no" infelicity not significantly different from false answer cases.
- Interpretations very clear.
- Unfortunately didn't test positive context versions in this experiment.
- However – patterns quite different from any of the NN or NN gap data.

## Explaining the constituent negation pattern

- Assumption: constituent negation distinct from the lower negation we have been considering (standard?).
- Infelicity of “no” results from difficulty licensing both “no” (with interpretable negative feature) and constituent negation.
- Felicity of “yes”: TP with constituent negation acts like ‘positive’ TP for our account.

- (30) A: Does John sometimes not lock his door?  
B: # No, he does(n't) sometimes not lock his door.  
B': Yes, he does sometimes not lock his door.

## Subcase: reverse particles in French

Many languages have reverse particles that can be used in negative contexts (E.g. German ‘doch’, French ‘si’.; see Farkas 2007 et seq)  
Focus here on French.

- Puzzle: Why does French “si” block the use of “oui”?

- (31) A: Oscar ne vient pas à la soirée?  
B: Si. (= he did come)  
B': Non. (= he didn't come)  
B'': # Oui.

- “si” similarly out in positive context.
- (Some languages: only one particle can be used in negative context. E.g. Hebrew.)
- No immediate explanation on ellipsis account. Cannot do without [REV], [SAME] for data like this.

# Embedded polarity ellipsis

“Not” and “so” in  $\Sigma$  license ellipsis.

- (32) Is Alfonso going to the party?
- If so, I can get a ride from him.
  - If not, I'll need to get a ride from someone else.
- (33) Is Alfonso not going to the party after all?
- If so, I'll need to get a ride from someone else.
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- (33) Is Alfonso not going to the party after all?
  - a. If so, I'll need to get a ride from someone else.
  - b. If not, I'll need to get a ride from someone else.

## Declarative antecedents

- (34) Joanna said that Alfonso isn't going to the party.
- a. **If so**, I'll need to get a ride from someone else.
  - b. **If not**, I'll need to get a ride from someone else.

Antecedent here is embedded declarative clause.

- (However, in this discourse, may be congruent with QUD...)

# Summary

We have:

- ① Argued that while the ellipsis account and the featural account have overlap, neither can be dispensed with.
  - [SAME] has similar function to identity condition for ellipsis.
- ② Given an account of English in particular where Farkas & Bruce's underspecification of particle features is not necessary.
  - In their terms, "yes" lacks polarity features, "no" is simply [-]
  - (Well, maybe we haven't quite yet succeeded for "yes".)
- ③ Argued that Farkas and Bruce's 2010 [+]/[-] can / should receive a syntactic implementation in the  $\Sigma$  system.
- ④ Argued that negative neutralization can't be dealt with by appealing to constituent negation.

# Predictions across languages

Ellipsis approach we have developed here makes a set of predictions about cross-linguistic variation in answering polar questions.

- Distribution of negative neutralization – tied to presence of ellipsis.
- See also ?, Jones 1999, ? (JoP 42 volume) a.o.

Plan for remainder of talk:

- Identify key predictions in detail.
- Begin to investigate whether they are true.

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# Predictions across languages

Our analysis of negative neutralization – interaction of  $\Sigma$ -licensed TP ellipsis, and absolute polarity.

- Independently ‘useful’ very general phenomena conspire to lead to a slightly useless answer particle case.

Two dimensions of variation:

- Some languages do not have negative neutralization. What do these systems look like?
- Some languages do not have polarity particles.
- (Set aside reverse particle languages for the moment.)

Will examine each case in turn.

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Our analysis of negative neutralization – interaction of  $\Sigma$ -licensed TP ellipsis, and absolute polarity.

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Will examine each case in turn.

Two languages without negative neutralization.

# Amharic polarity particles

- (35) (Meaning in positive context)

<i>awo</i>	'yes'
<i>ay</i>	'no'

Positive question:

- (36) Girma parti-w hed-o näbbär?

Girma party-DEF go-3MS.S AUX.3MS?

'Did Girma go to the party?'

- (37) Awo.

'yes.' (he went to the party / # he did not go to the party)

- (38) Ay.

'no.' (he did not go to the party / # he went to the party)

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awo            'yes'

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- (38) Ay.

'no.' (he did not go to the party / # he went to the party)

# Amharic polarity particles in negative contexts

Positive question:

- (39) Girma parti-w al-hedä-mm?

Girma party-DEF NEG-go-3MS-NEG?

'Did Girma not go to the party?'

- (40) Awo.

'no.' (he did not go to the party / # he went to the party)

- (41) Ay.

'He did go to the party (1 consultant / Leslau 1962) / infelicitous (2 consultants))

"Ay." does not have negative reading in negative contexts! **No negative neutralization.**

# Japanese polarity particles

- (42) (Meaning in positive context)

<i>hai</i>	'yes'
<i>iie</i>	'no'

- (43) Aisukureemu-wa suki de-su        ka?

ice.cream-TOP like COP-PRES Q?

'Do you like ice cream?'

- (44) Hai.

'Yes.' (=I do like ice cream.)

- (45) lie.

'No.' (=I do not like ice cream.)

# Japanese polarity particles

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*hai*              'yes'  
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- (46) Aisukureemu-wa suki -de-wa nai  
ice.cream-TOP like-COP-TOP NEG COP-PRES  
de-su ka?  
Q?

'Do you not like ice cream?'

- (47) Hai.  
=I do not like ice cream.

- (48) lie.  
=I do like ice cream.

Similar to amharic case, but improved felicity for 'lie' vs. Amharic 'Ay'.

- (Also, similar to 'yes'/'no' in the case of constituent negation.)

# How to explain Amharic / Japanese?

## Prediction

A language without negative neutralization will not have  $\Sigma$ -licensed TP ellipsis.

## How to test?

- Look for analogues of Eng. 'so'/'not' in relevant contexts: credence ellipsis, conditionals, probability adverbs.

As far as we can tell, Amharic / Japanese lack this kind of ellipsis.

- In both languages: negation is an unstrandalble verbal affix / clitic, so many possible cases are out right off the bat.

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## Amharic & Japanese credence ellipsis?

Closest case in both languages: parallel to credence ellipsis.

Amharic:

- (49) Girma parti-w hed-o näbbär?  
Girma party-DEF go-3MS.S AUX.3MS?  
'Did Girm go to the party?'

- (50) yi-mäsl-än-al  
3MS-seem-1S-AUX.3MS  
'I think so', lit. 'It seems to me'

- No actual ellipsis in this construction?

# Amharic & Japanese credence ellipsis?

Closest case in both languages: parallel to credence ellipsis.

Japanese:

- (51) Mary-wa omise-ni itta no?

Mary-TOP store-to went Q

'Did Mary go to the store?'

- (52) (Watasi-wa) soo omou.

(I-TOP) so think

'I think so.'

- Hoji (1990: ch.1, 1997): "soo" is a (deonstrative) manner adverb – lit 'I think this way.'
- Not a  $\Sigma$  head.

# Interpreting Amharic / Japanese particles

Straightforward analysis – no positive/negative features.

- 'Awo'/'Hai': I agree with the polarity of the question – [SAME]
- 'Ay'/'lie': I disagree with the polarity of the question – [REV]
- 'Ay' possibly [+ , REV] only.

Why are these particles interpreted this way?

- No TP ellipsis, hence no covert syntactic structure to solitary responses at all.
- If no TP ellipsis, and syntactic implementation of [+]/[-], then no way to have absolute polarity particles in such a language.
- Still need a [SAME] that is distinct from the same-forcing properties of ellipsis!

(Some evidence that Japanese particles interact further with question bias, see Holmberg 2012.)

Please let us know if you are aware of (counter)examples!

Note that  $\Sigma$ -licensed TP ellipsis is a necessary but not sufficient condition for neutralization...Cf. French, Hebrew.

## Another language with neutralization: Russian

(53)	<i>da</i>	'yes'
	<i>net</i>	'no'

- (54) A čto, Pasha ne pošel v knižnyi magazin  
CONJ what, Pasha NEG went.3SG in book store  
'So, did Pasha not go to the book store?'
- (55) Da. (he didnt go, # he did go)
- (56) Net. (he didnt go, # he did go)

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# $\Sigma$ -licensed TP ellipsis in Russian

Russian has  $\Sigma$ -licensed TP ellipsis!

- As in French, the particles are  $\Sigma$  heads.
- Credence ellipsis, reduced conditionals, “why not” questions, responding adverbs.

(57) Masha poshla v magazin?

Masha went.3SG.F to store

‘Did Masha go to the store?’

(58) Dumaju, chto da/net.

think.1SG, that yes/no

‘I think so. / I dont think so.’

Neutralization correlates with  $\Sigma$ -licensed TP ellipsis.

Languages without particles in answers.

# Languages without particles

Alternative to particles: use repetition of verb from question (e.g. VP ellipsis instead of TP ellipsis).

- Quite a bit of variation; particle systems can co-exist with verbal systems. (E.g. Welsh; Jones 1999)

Two well known case studies – Irish, Finnish.

# Irish polar responses

McCloskey 1991 (272–273)

- (59) Ar chuir tú isteach air?  
INTERR.COMP put.PAST you in on.it  
'Did you apply for it?'
- (60) Chuir.  
put.PAST  
'I did. / yes'
- (61) Níor chuir.  
NEG put.PAST  
'I did not. / No.'

## Irish polar responses

Neutralization? Does not occur. (Cf. Mac Congáil 2004:216)

- (62) Nach nith-eann siad úlla  
NEG eat-3PL they apples  
'Do they not eat apples?'
- (63) ith-eann  
eat-3PL  
'They eat.'
- (64) ní ith-eann  
NEG eat-3PL  
'They do not eat.'

Verb on its own cannot be interpreted as a negative response!

## Irish polar responses

Our prediction: Irish lacks  $\Sigma$ -licensed TP ellipsis.

McCloskey 1991:

- Extensive arguments that this is VP ellipsis.

Actually, same point can be made about English (McCloskey, p.c.):

- (65) A: Do they not eat apples?  
B: They do. (= they do eat apples)  
B': They don't. (= they do not eat apples.)

### Generalization

VP ellipsis in an answer does not include the low  $\Sigma P$  (sentential negation) as part of the ellipsis site.

⇒ No identity condition covering negation, no neutralization.

(TBD: does Irish have other  $\Sigma$ -licensed TP ellipsis?)

# Polar responses in Finnish

Holmberg 2001 (141)

- (66) On-ko Liisa kotona?  
is-Q Lisa at.home  
'Is Lisa at home?'

- (67) On  
is  
'yes.' (= she is at home.)

- (68) Ei (ole)  
NEG.AUX.3SG is  
'No.' (= she is not at home.)

- Positive form: repeated V.
- Negative form: negative aux, optional repeated V.

# Negative questions in Finnish

What happens in negative questions?

- (69) ei-kö hään tule?  
NEG.AUX-Q he come  
'Is he not coming?'

- (70) Tulee.  
comes  
'He is coming. / # He is not coming'

- (71) Ei (tule)  
NEG.AUX (come)  
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Holmberg (2001, 2003, 2007, 2009): this is clausal, not VP ellipsis.

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## Finish negative questions cont'd

If clausal ellipsis (following Holmberg), why no neutralization?  
Holmberg 2001 et seq: auxiliary (possibly as part of a larger phrasal constituent) merges inside ellipsis site, but moves out.

- Positive answer can't have negation inside ellipsis site, because it would have moved out!

Holmberg's analysis predicts no negative neutralization.

- TBD: is there  $\Sigma$ -licensed TP ellipsis elsewhere in Finnish?

## Summary: Irish and Finnish

Languages with verbal response systems:

- Lack negative neutralization.
- Involve ellipsis that does not include negation.
- Our proposal: these two facts are connected.

## The speculative question

Can a language without polarity particles ever have negative neutralization?

- Necessary conditions:
  - Clausal ellipsis for polar responses (or ellipsis including Neg/ $\Sigma$  head).
  - Negation does not move out of ellipsis site.
- Possible (?): language negates V using high  $\Sigma$ , low  $\Sigma$  remains in ellipsis.
- (V would move around low  $\Sigma$ ?)

## Summary typology

Particles	Neutralization	Prediction
✓	✓	$\Sigma$ -licensed TP ellipsis (English, Russian) or particle(s) infelicitous in negative context (French, Hebrew?)
✓	✗	No $\Sigma$ -licensed TP ellipsis (Amharic, Japanese)
✗	✓	$\Sigma$ -licensed TP ellipsis (to be found?)
✗	✗	No $\Sigma$ -licensed TP ellipsis (Irish) or Negation must vacate ellipsis site (Finnish)

# Conclusions

Ellipsis account of negative neutralization!

- Must co-exist with [SAME]/[REV] feature system, despite overlap.
- Explains embedded contexts, neutralization in non-interrogatives, etc.
- Testable, true (so far) cross-linguistic predictions.

Starting question: why would a pattern 1 (neutralization) system exist?

- Answer on the ellipsis account: collision of independently necessary, very general mechanisms.

Three challenges:

- Understand the difference in felicity between response particles in positive and negative contexts.
- Fine-grained experimental data on response particles across languages.
- [SAME] vs. GIVEN?

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- Irish: Jim McCloskey
- Hebrew: Aynat Rubinstein, Aviad Eliam
- Finnish: Antti Kauppinen, Teemu Toppinen
- French: Geraldine Legendre
- German: Elena Herburger, Armin Mester
- English: 39 anonymous mechanical turk users (and many others!)

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