On Embedded Polar Replies*

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1 Preview

Despite the recent influx of insightful theoretical work on polar answers, we are still very much in the early stages of their description.

- We're at a point where we can use some of the most common components of their analysis to guide ongoing empirical investigation.
- The project I am talking about today, also in its earliest stages, takes this approach to the description of polar replies in embedded contexts.

The common analytical component guiding this (mostly) descriptive study is the intuition that polar answers lead double lives: they are small utterances that evoke big structures. (A polar iceberg effect?)

Specifically, minimal polar answers are now generally thought of as clausal, just as other fragment answers are.[1] Under such accounts:

- Polar Response Particles (PRPs; e.g. *yes/no*) either move out of a TP that undergoes ellipsis (Postma and van der Wurff 2007, Sailor 2012) or are generated just above an elided TP (Laka 1990, Kramer and Rawlins 2009, Holmberg 2011)
  - And prior to such ellipsis accounts, PRPs were often taken to be clausal anaphors.
- Verbal answers have received similar treatment (Santos 2009, McCloskey 2011, a.o.)

If such analyses are correct, we expect polar answers to distribute more or less like clauses.

- This is trivially attested in bare answers: assumed to be root/matrix clauses.
- But what about answers in embedded contexts? By and large, this empirical domain has not been looked at in detail.

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[1] There are of course alternatives – e.g. the "sub-sentential" approach – but I leave these aside to pursue predictions made by clausal analyses.

  - What's needed is a systematic comparison of "run-of-the-mill" embedded clausal responses (e.g. *I think that he did*) with embedded PRPs and embedded verbal answers (for the languages that have them).
- Below is a very preliminary starting point for such a comparison.

Goals for today's talk:
- Lay out the basic properties of embedded polar replies in English;
- Present some asymmetries between its embedded PRPs and clausal responses;
- Sketch out a tentative typology of PRP-embedding in other languages;
- Explore consequences and predictions for embedded verbal answers.

2 Describing embedded polar replies in English

When faced with a simple polar question such as (1), English speakers can respond using a (reduced) clause (1a) or a PRP (1b).[2] Verbal answers are unattested in English.

(1) Q: Did John finish his homework? *Polar question*
  a. He {did/didn't}. *(Reduced) clausal response*
  b. {Yes/No}. *Polar response particle*

Responsive clauses such as (1a) can be emedded (under a particular set of verbs, as we will see); however, the PRPs *yes* and *no* cannot be (regardless of the complementizer):[3]

(2) a. I suspect (that) he {did/didn't}.
  b. *I suspect (that) {yes/no}.

Instead, English uses a special set of PRPs in embedded contexts – *so* and *not* – which cannot cannot co-occur with an overt C^0, and are infelicitous as root/matrix responses:[4]

(3) a. I suspect (*that) {so/not}.
  b. *{So/Not}.

Later, we will see that many other languages – Spanish, Hebrew, etc. – are not sensitive to the root/embedded distinction, and use just a single set of PRPs.[5]

- But first, let's look at some constraints on the distribution of embedded polar replies.

[2]Other options are available as well (e.g. adverbial answers), though I leave these aside for now.
[3]A PRP is not embedded if it is parenthetical (i.e., it has "comma intonation": *I think that, yes, he finished it*).
[4]I put aside examples like *I don't suspect so*, which appear to involve negative-raising (i.e. an embedded interpretation for a matrix occurrence of negation).
[5]Of course, some languages lack PRPs altogether, and respond using verbal material from the question (e.g. Celtic, Chinese, etc.); I return to this later in the talk.

2.1 Semantic constraints: some properties of the embedding verbs

Since at least Urmson (1952), verbs taking clausal complements have been divided into (roughly) two fundamental groups:

- Those that contribute to the *main point of the utterance* (Simons 2007) and presuppose the truth of their complement (*factive*: Kiparsky and Kiparsky 1970)[6]
  - Commonly: *know, accept, reject, forget, etc.*
- Those that denote speaker attitudes or evidential source, and do not presuppose the truth of their complement (*non-factive* or *parenthetical*: Urmson 1952)[7]
  - Commonly: *think, believe, suspect, seems, appears, etc.*

Several phenomena seem to be sensitive to this distinction (negative-raising, slifting, etc.)

- Of particular relevance to us: answers to questions (polar or wh-) can only be embedded under the "parenthetical" type:

(4) Q: Where's John? *Wh- question*
   a. I {think/beleve/suspect/etc.} (that) he's at home.
   b. #I {know/accept/reject/etc.} (that) he's at home.

(5) Q: Is John at home? *Polar question*
   a. I {think/beleve/suspect/etc.} (that) he {is/isn't}.
   b. I {think/beleve/suspect/etc.} {so/not}.
   c. #I {know/accept/reject/etc.} (that) he {is/isn't}.
   d. #I {know/accept/reject/etc.} {so/not}.

Simons (2007) on the difference between e.g. (4a) and (4b):

- Roughly, direct responses to questions are only felicitous when the requested information constitutes the "main point of the utterance" (Simons 2007: p. 1035)
  - So-called parenthetical verbs do not change the main point of the utterance – it is carried entirely by the complement clause.[8]
  - Factive verbs, on the other hand, always contribute to the main point of the utterance, meaning their use in an answering contexts is illicit (unless of course the question is asking about e.g. knowing, rejecting, etc.).

Thus, answers to questions (including polar questions) cannot be embedded underneath non-parenthetical verbs that weren't themselves included in the question.

- PRPs and clausal replies behave alike in this respect (as do wh- fragment answers).

[6] See Simons (2007) for arguments that these properties are not lexical, but instead arise from usage.

[7] Other terms for these verbs in the literature include "weakly assertive", "hedging", "attitude/opinion" verbs, etc., although these are perhaps not entirely interchangeable.

[8] This analysis is consistent with findings in the literature on *so* as a sentential proform (not specific to responsive contexts) beginning in the late 60s/early 70s: see Lindholm (1969), Kiparsky and Kiparsky (1970), Cushing (1972), Hooper (1975), Horn (1978), Cornish (1992), a.o.

Next, we consider some syntactic constraints on embedded polar answers.

2.2 Syntactic constraints: on *so* (and so on)

2.2.1 Similarities between embedded clausal replies and PRPs

Consider (6), a non-exhaustive list of verbs capable of embedding polar replies:

(6) **Polar reply-embedders:** *appear, believe, expect, guess, hope, imagine, seem, suppose, suspect, think...*

Note: each of these verbs is independently able to take a finite-CP complement (a property of parenthetical verbs more generally?)

- For example, verbs that embed only infinitival or subjunctive (thus tenseless) complement clauses cannot embed PRPs:[9]

(7) *I $\left\{\begin{array}{c}\text{want}\\ \text{ask}\\ \ldots\end{array}\right\}$ {so/not}.

This is particularly clear with *suggest*, which has at least two distinct interpretations: one meaning "recommend" that only takes a subjunctive complement, and one meaning "submit (for consideration)" that can take a tensed complement:

(8) a. I suggest (≈recommend; #submit) that you be on time. *Subjunctive CP*
b. I suggest (#recommend; ≈submit) that John is the murderer. *Finite CP*

- When a polar response is embedded under *suggest*, the only available reading is the "submit" reading, which corresponds to a finite-CP complement, as predicted:

(9) Q: Is this analysis on the right track?
a. I suggest (#recommend; ≈submit) that it {is/isn't}.
b. I suggest (#recommend; ≈submit) {so/not}.

In these respects, embedded PRPs pattern like reduced clausal answers, lending support to proposals that treat PRPs as having clausal status.

- However, asymmetries can also be found between the two, as we will now see.

[9] They also cannot embed reduced clausal answers, due to independent restrictions on ellipsis in subjunctive complements: see Potsdam (1997).

2.2.2 Differences between embedded clausal replies and PRPs

First, for all the verbs in (6), all of their finite-CP complements can be headed by *that*.

- Verbs whose (apparent) finite-CP complements are unable to be headed by *that* – e.g. verbs that take *like*-CPs – can embed clausal answers, but are illicit with PRPs:

(10) Q: Is this analysis on the right track?
  a. It $\left\{\begin{array}{c}\text{feels}\\\text{sounds}\end{array}\right\}$ like it {is/isn't}.
  b. *It $\left\{\begin{array}{c}\text{feels}\\\text{sounds}\end{array}\right\}$ (like) {so/not}.

This is true despite the fact that *so/not* never co-occur with *that* (i.e.: *I think (*that) so/not*).

- If PRPs are the same clause type as clausal answers, then this pattern is unexpected.

Second, there is at least one verb that treats embedded clausal answers and PRPs differently despite normally taking a regular finite *that*-CP complement:

(11) Q: Was John at the party?
  a. I doubt that he {was/wasn't}.
  b. ??I doubt {so/not}.

These behavioral asymmetries could be taken to suggest that PRPs have some property that reduced responsive clauses lack.

- One possibility may be that the embedded PRPs *so/not* are finite-CP proforms specified for polarity (consistent with the early literature on *so* – see fn. 8 – but contra e.g. Kramer and Rawlins 2010)
- Their subtle distributional differences with clausal answers could be due to a difference in category: whereas clausal answers are CPs, perhaps *so/not* pronominalize some other left-peripheral projection
  - Given that they are lexically specified for polarity, we might start by considering whether they could be proforms of the high(est) projection associated with polarity (PolP/ΣP).
  - Their inability to co-occur with finite C^0 (*that*), *like*, and *doubt* could then be made to follow from selection.
- Possible empirical support: to the extent that relevant examples can be constructed, we observe that nothing can be extracted from "within" *so/not*:

(12) Q: Will anyone show up? If so, who?
  A: *John is someone who I think so.

- – Extraction from within proforms is expected to be impossible, since they have no internal structure.
- To the extent that any of these exceptional environments can be replicated in languages with verbal answers, such data might shed light on the proform treatment of embedded PRPs.

In the next section, we begin looking at embedded replies in other languages.

- The discussion is limited (for now) to embedded PRPs.

3 Toward a typology of embedded PRP strategies

We are now in a position to begin looking at how other languages handle (or fail to handle) the embedding of PRPs.

- Following the results of a small crosslinguistic survey (woefully non-diverse at the moment!), I develop an initial typology for embedded PRPs which identifies three basic language types:
  1. Languages whose embedded PRPs are homophonous with their matrix PRPs
  2. Languages whose embedded PRPs are distinct from their matrix PRPs
  3. Languages which disallow embedding of PRPs, but allow matrix PRPs.[10]

3.1 Type 1 languages: embedded PRPs = matrix PRPs

These languages have a single set of PRPs which are insensitive to the root vs. embedded distinction, and they were the most common type in my language sample:

(13) a. Je pense que {oui/non} *French*
b. Creo que {sí/no} *Spanish*
c. Crec que {sí/no} *Catalan*
d. Ani xoshev she {ken/lo} *Hebrew*
e. Ja dumaju čto {da/net} *Russian*
Lit.: '(I) think that {yes/no}'

For a subset of these languages, embedding a PRP triggers special behavior of C^0:

- For Italian, the finite C^0 (*che*) is not possible, and *di* 'of' appears instead;
- For German, the finite C^0 (*dass*) is also not possible, but nothing appears instead:

(14) a. Penso {di/*che} {sì/no}
think.PRES {of/*that} {yes/no}

[10] I do not give examples of matrix PRPs, as they can be ascertained from the relevant embedding examples.

b. Ich denke (*dass) {ja/nein}
I think.PRES (*that) {yes/no}

We see similar behavior of C^0 among the languages of the next type.

3.2 Type 2 languages: embedded PRPs ≠ matrix PRPs

These languages have two sets of PRPs: one for matrix, and one for embedded contexts.

- We have seen that English prohibits embedding of its matrix PRPs (repeated below), but it is not unique in this respect – Dutch also patterns this way:

(15) a. *I think that {yes/no}
b. *Ik denk dat {ja/nee}

- Like English, Dutch has a distinct set of PRPs for embedded contexts. But like Italian, Dutch also requires the use of a C^0 corresponding to 'of' (*van*):[11]

(16) a. I think {so/not}
b. Ik denk {van/*dat} {wel/niet}
I think {of/*that} {so/not}

- So, English and Dutch are the Type 2 versions of German and Italian, respectively.
  - Given that this special behavior of C^0 cuts across language types, it clearly warrants further study.

Before we move on, note that the embedded PRPs in English and Dutch are homophonous with the particles expressing emphatic polarity ("verum focus") in these languages

- Matrix PRPs are incapable of serving this function in English and Dutch:

(17) Asserted: "The book was (not) on the table."
a. It was {SO/NOT} on the table!
b. *It was {YES/NO} on the table!
c. Het was {WEL/NIET} op de tafel!
d. *Het was {JA/NEE} op de tafel!

Emphatic polarity of this type is a root phenomenon in these languages (**I know that it was* SO/NOT*!*), as it is in many languages (Danckaert and Haegeman, to appear).

- This evokes the root/embedded sensitivity we see for PRPs in English and Dutch.
  - It may be that embedded PRP phenomena and emphatic polarity have a common grammatical source, which would be a significant finding.

[11] For completeness, **Ik denk van {ja/nee}* is ungrammatical.

3.3 Type 3 languages: embedded PRPs = Ø

Finally, Type 3 languages flatly disallow embedding of PRPs.

- Hindi is the only language of this type in my sample:[12]

(18) *Mɛ sochtaː hũ ki {hãː/nahĩː}
I think be.1.PRES that {yes/no}

With no strategy for embedding PRPs, embedded responses in Hindi are strictly clausal:

(19) Q: Kyaː John Delhi gayaː
Q John Delhi go.PERF
'Did John go to Delhi?'
A: Mɛ sochtaː hũ ki vaha Delhi (nahĩː) gayaː
I think be.1.PRES that he Delhi (NEG) go.PERF
'I think that he went to Delhi.'

Wrapping up, we will now briefly compare the crosslinguistic properties of PRP-embedders.

3.4 Revisiting constraints on PRP embedding

Earlier, we identified a few necessary conditions for licensing embedded PRPs in English: the embedding verbs must be parenthetical and take finite-CP complements.

- Question: to what extent (if any) do these constraints hold in other languages?
- Work on this part of the project is still ongoing, but a preliminary pattern has emerged: they seem to hold across the board.
  - Among all of the Type 1 and Type 2 languages mentioned above, none appear to allow PRP embedding under verbs taking strictly non-finite/subjunctive complements, consistent with the finite-CP generalization;
  - Likewise, none of these languages appear to allow PRP embedding in factive environments, consistent with the "main point of utterance" generalization.[13]

4 Conclusion

For English, we identified a set of necessary conditions for embedding polar replies, and observed suggestive asymmetries between PRPs and clausal responses.

- PRPs are clause-like in many ways, but the correlation is not absolute.

Moving to other languages, we saw the emergence of an initial typology for PRP embedding, and the conditions stated for English PRPs seem to hold there as well.

[12]The matrix negative PRP in Hindi is homophonous with the marker of clause-internal negation.
[13]German additionally disallows PRP embedding under impersonal verbs.

The next step is to broaden the sample, gathering data from a larger and more genetically-diverse set of languages.

- A burning question: do embedded verbal answers exhibit any special behavior, or do they look like run-of-the-mill CP complements? (Stay tuned...)

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