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0. The purpose of this paper is to present a puzzle about negative questions (NQs) and a puzzle about tag questions (TQs) and to show that they must be aspects of a single larger puzzle, namely a puzzle about the scope of negation in questions. Some of my observations about TQs have been made before, notably by Sadock 1974, but I believe that my proposal for considering the TQ and NQ data in terms of scope of negation is new, as is my analysis of the intonational distinctions in TQs.

1.1 The first of the two puzzles is a systematic ambiguity in NQs, such as

- (1) Isn't there a vegetarian restaurant around here?
- (2) Didn't he even vote for Reagan?

The ambiguity in these is remarkably hard to keep hold of, and the following elaboration may be helpful.

- (3) (Situation: Kathleen and Jeff have just come from Chicago on the Greyhound bus to visit Bob in Ithaca)
Bob: You guys must be starving. You want to go get something to eat?
Kathleen: Yeah, isn't there a vegetarian restaurant around here--Moosewood, or something like that?
Bob: Gee, you've heard of Moosewood all the way out in Chicago, huh? OK, let's go there.

Kathleen uses the negative question *isn't there a vegetarian restaurant around here* to ask for confirmation of something she believes to be true. Compare this to the following case:

- (4) (Situation: Bob is visiting Kathleen and Jeff in Chicago while attending CIS.)
Bob: I'd like to take you guys out to dinner while I'm here --we'd have time to go somewhere around here before the evening session tonight, don't you think?
Kathleen: I guess, but there's not really any place to go in Hyde Park.
Bob: Oh, really, isn't there a vegetarian restaurant around here?
Kathleen: No, about all we can get is hamburgers and souvlaki.

Bob uses the NQ here for a very different reason: he had previously assumed the truth of the proposition *there is a vegetarian restaurant around here*, but has now inferred from what Kathleen

says that this proposition is actually false, and is using the NQ to check this new inference.

The ambiguity in (2) is between 'left-wing' and 'right-wing' readings, as seen in (5) and (6).

- (5) (Situation: A and B are former left-wing activists discussing the recent activities of a colleague.)
A: Did you hear John's decided to go to business school?
B: Yeah--I can't believe how much he's changed these days--didn't he even vote for Reagan?
A: That's what somebody told me.
- (6) (Situation: A and B are staunch Republicans)
A: What's Dick been up to these days--I haven't seen him at the Club for ages.
B: Haven't you heard? He says he's disillusioned with two-party politics--he's joined Common Cause, gave a lot of money to the Citizens' Party...
A: Didn't he even vote for Reagan?
B: Not as far as I know.

The situation in (5) is like that in (3)--the NQ is being used to confirm something the speaker believes to be true, namely that John voted for Reagan. In (6), on the other hand, as in (4), the NQ is used to check on a new and unexpected inference, namely that Dick didn't vote for Reagan.

1.2. At first glance it might appear that the different implicatures and appropriateness conditions seen in (3)-(6) are purely pragmatic, and that the apparent ambiguity results from different pragmatic inferences drawn by the hearer on the basis of knowledge about the speaker's politics, eating habits, etc. (For example, this seems to be the position taken by Hudson 1975:17.) However, I want to argue that there is a genuine syntactic/semantic ambiguity here, involving a difference in scope of negation. Specifically, in the cases like (3) and (5), where the speaker believes a proposition P and wants confirmation, the NEG is somehow **outside** the proposition under question--what is being questioned is the speaker's belief P. In the cases like (4) and (6), on the other hand, in which the speaker has just inferred a proposition -P, the NEG is **inside** the proposition under question, so that what is being questioned is the inference -P. Pragmatic differences of the sort seen in (3)-(6) would then **follow** from appropriateness conditions on what is questioned, i.e. from some as yet undiscovered general principles about what it means to question P or -P.

Given this analysis, I propose to refer to the two readings of NQs as 'inside NEG' and 'outside NEG'. Obviously, talking about the scope of operators in questions raises some fairly major difficulties for logical representation; it is not clear what it means to speak of the NEG as being outside the questioned proposition, nor is it clear, if the NEG is indeed outside, what it is doing in the sentence at all. But there is good syntactic evidence for

the proposal, and as I will show later, the concept of inside and outside NEG is relevant to various data from tag questions.¹

The most important evidence comes from the distribution of negative polarity items (NPIs) in NQs. Consider the paired negative and affirmative assertions in (7).

- (7) a. Jane's coming too. (P)
b. Jane's not coming either. (-P)

Non-negative questions formed on the basis of (7a) presumably question P, and they can only have *too*, not *either*:

- (8) a. Is Jane coming too?
b. * Is Jane coming either?

Negative questions, on the other hand, according to the proposed analysis, should be able to question both P and -P, and one would therefore predict that both *too* and *either* are possible. This prediction is confirmed:

- (9) a. Isn't Jane coming too? (questions P)
b. Isn't Jane coming either? (questions -P)

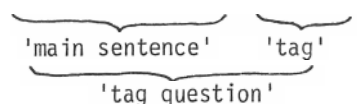
In (9a), the NEG is not in the proposition under question, and the positive polarity item *too* is used, whereas in (9b) the NEG **is** part of the proposition under question, and we find *either*. Note that the pragmatic appropriateness conditions in (9) are similar to those seen in (3-6): in (9a) the speaker believes that Jane is coming too, and just wants to confirm, whereas in (9b) the speaker had assumed that at least Jane would come and has now drawn the inference that, alas, Jane isn't coming either.

Comparable evidence comes from the distribution in NQs of lexical NPIs with no positive counterpart, such as *lift a finger*. The analysis would predict no ambiguity: since the NEG would have to be interpreted as being inside the proposition in order to 'trigger' the NPI, the outside NEG interpretation should be impossible. This prediction is also borne out, as seen in (10):


- (10) Aren't you going to lift a finger to help?

This could be used by, say, a speaker who has just inferred that the hearer is going to sit by and watch while everyone else moves the refrigerator, but it could not be used to confirm the speaker's belief that the hearer does in fact intend to help.


2.1. Tag questions (TQs) involve both interrogation and negation, and thus are of interest in the context of this paper. The particular puzzle I wish to discuss is an intonational distinction, which is correlated with a variety of syntactic/semantic differences apparently reflecting differences in scope of negation. In what follows, I will use the terminology for the anatomy of tag questions illustrated in (II):²

- (11) This is your book, isn't it?


The two types of intonation patterns for TQs are those with **nuclear** and **postnuclear** tags. Nuclear tags have a separate nucleus or nuclear pitch accent, generally preceded in the rhythm of the sentence by a noticeable pause or intonational boundary. This intonation, and an ad hoc notation for it, are shown in (12):

- (12) This is your book / isn't it.


Postnuclear tags, by contrast, have no separate nucleus, the pitch contour on the tag merely continuing the nuclear contour begun at the preceding nucleus in the main sentence; generally, too, there is noticeably less of a pause or boundary before the tag. This pattern and an ad hoc notation are shown in (13):

- (13) This is your book=isn't it?


A few earlier authors, including Sadock 1974, Rando 1980, and Millar and Brown 1979, have pointed out the existence of this intonational distinction and have suggested that it signals a basic subcategorization of TQs into two quite different types. Other writers, such as Lakoff 1975, Hudson 1975, Quirk et al. 1972, have either not discussed the intonational difference or have not considered it to be fundamental. I am assuming, with the first group of authors, that the distinction is indeed basic, but my analysis differs from theirs by moving away from impressionistic characterizations of the pitch contour ("rising" vs. "falling", "question intonation" vs. "statement intonation") toward a well-motivated phonological description that is consistent with recent work on intonation. Specifically, I consider the distinction to be primarily one of accent and phrasing--the presence or absence of a separate nucleus on the tag--rather than a question of rising or falling pitch. While nuclear tags do often fall and postnuclear tags do generally rise, the opposite possibilities also exist.³

2.2 Since the literature contains a number of discussions of the pragmatic nuances in specific TQs, there is little point in presenting numerous examples here; my purpose in this section is to establish the distinction between the two types of TQs and to show its relevance to the problem of scope of negation. Thus a single example will suffice to illustrate the general kind of pragmatic difference between the two types. TQs with nuclear tags seem to **state** or **assert** a speaker's assumption, with the tag signalling something like a hedge. They can be relatively neutral, or can imply a certain amount of disapproval, as seen in (14):

- (14) a. You speak Romanian / don't you.
b. You don't speak Romanian / do you.

In the postnuclear tags, on the other hand, the speaker is **checking** or **reconfirming** an assumption; compared to the nuclear tags, real doubt or uncertainty is conveyed. In other words, these are much closer to true questions:

- (15) a. You speak Romanian=don't you?
b. You don't speak Romanian=do you?⁴

In addition to these pragmatic differences, various syntactic differences exist, some of which have been noted by other authors (see esp. Sadock 1974: 133 and Rando 1980: 246-7). One difference that has not previously been noticed, as far as I know, is the fact that *even* is jarringly unacceptable in postnuclear TQs:

- (16) a. * He didn't even vote for Reagan=did he?
b. * He even voted for Reagan=didn't he?
(17) a. He didn't even vote for Reagan / did he.
b. He even voted for Reagan / didn't he.

Presumably these contain some sort of internal contradiction between the implicature conveyed by *even* and that conveyed by the TQ, though the details are not very clear; it seems likely that this restriction will be explainable once we get the semantics of postnuclear TQs worked out and have a better understanding of the effects of pragmatic contradiction on acceptability.

In the context of this paper, the most significant difference between the two types of TQs is the difference of acceptability and interpretation with NPIs. These data are presented in tabular form on the following page; unfortunately, there is not enough space to discuss them all in detail. Briefly, what they show is that in nuclear TQs, the distribution of NPIs can be predicted from the form of the main sentence alone--exactly as if the tag were not present. In postnuclear TQs, by contrast, we find positive polarity items like *too* and *some* occurring even in apparently negative environments (as in 21 and 25); we find negative polarity items ranging unpredictably from totally unacceptable (as in 23) to totally acceptable (as in 25); and we find unexpected meaning shifts in many cases where NPIs are acceptable (as in 27 and 29). All this naturally suggests a connection to the NQ data from the first half of the paper: specifically, it appears that postnuclear TQs may exhibit outside-NEG semantics, regardless of whether the negative element appears in the main sentence or in the tag.

This suggests a preliminary account of the difference between the two types of TQs. Those with nuclear tags appear to be, in effect, double-barrelled speech acts, with a basic assertion conveyed by the main sentence and some sort of hedge or deference to the hearer conveyed by the tag. This analysis is consistent with my intonational description, i.e. with the idea that the

Table I, Polarity Items in TQs

Nuclear tags	Postnuclear Tags
18. a. Jane's coming too / isn't she. b. * Jane's coming either / isn't she.	19.a. Jane's coming too= isn't she? b. * Jane's coming either= isn't she?
20. a. * Jane's not coming too / is she. b. Jane's not coming either / is she.	21.a. Jane's not coming too= is she? b. ?? Jane's not coming either=is she?
22. a. You're not going to lift a finger to help / are you. b. * You're going to lift a finger to help / aren't you.	23.a. * You're not going to lift a finger to help=are you. b. * You're going to lift a finger to help=aren't you?
24. a. You didn't eat anything / did you. b. ?? You didn't eat something / did you.	25.a. You didn't eat anything=did you? b. You didn't eat something =did you? (25a and 25b are roughly synonymous)
26. You didn't eat ANYthing / did you. (i.e. 'you ate nothing')	27. You didn't eat ANYthing=did you? (possible only in the sense of 'just any old thing')
28. They haven't restarted Three Mile Island yet / have they. (either neutral or pro-nuke; cf. Haven't they restarted TMI yet?)	29. They haven't restarted TMI yet=have they? (worried anti- nuke; roughly synonymous with They haven't restarted TMI already=have they?)

main sentence and the tag have **separate** intonation contours. As for scope of negation, it works within the main sentence exactly as in any assertion; the tag is formed by a simple polarity reversal.⁵ In contrast, TQs with postnuclear tags seem to be **true questions** rather than hedged assertions. Main sentence and tag are integrated grammatically and intonationally, and it is hard to identify their separate contributions to the force of the whole sentence. The scope of negation does not seem to follow the placement of the negative element in any obvious way, and it may be that postnuclear TQs are, in effect, a pragmatically specialized type of NQ with outside NEG.


3. In summary, I have presented evidence for the following

points: (i) There is a close connection between the semantics of TQs and the semantics of NQs. (ii) (a) Intonational differences in TQs are not superficial, but reflect a difference between two basic types; (b) this intonational difference is not primarily one of pitch contour, but of phrasing and accent--it is a matter of whether the tag has a separate nucleus. (iii) Consideration of the pragmatics of NQs and TQs must follow an account of the semantic role of negation in questions. This last point is, it seems to me, the most important, and I hope that this paper has laid some useful groundwork for such an account.

Footnotes

* Thanks to Tony Kroch, Sally McConnell-Ginet, and Noël Houck for helpful discussion and bibliographical tips. Thanks to Kathleen Bardovi-Harlig for helping me present examples (3)-(6) in proper dialogue form at the conference.

1. One might be tempted to equate the distinction between inside and outside NEG with the distinction between true questions and queclaratives, but I think that is probably a mistake; negative queclaratives seem to be only a special case of outside-NEG NQs. That is, some outside-NEG NQs are still true questions.
2. These terms are identical to those used by Moravcsik 1971. Sadock 1974 uses 'base sentence' where I use 'main sentence'.
3. The difference between rising nuclear tag and rising postnuclear tag can be hard to hear on the kinds of tags discussed in this paper, since they are often pragmatically very similar. But the intonational difference is nonetheless real, as can be seen from other types of tags where the acceptability judgments are clear and distinct:


 You're coming / right? VS. *You're coming=right?

Something similar is true for falling postnuclear tags: these sound odd in many cases where rising postnuclear tags are acceptable, but in the appropriate environment the distinction between nuclear and postnuclear is clear. The best example is same-polarity tags:

- (ii) You're going to the movies=are you (both rising and falling are OK)
 *You're going to the movies / are you (neither rising nor falling are OK)

Independent support for my interpretation of the intonational distinction comes from three different sources. Bing 1979 shows that a wide variety of constructions, not just TQs, are sensitive to the distinction between what she calls Type I (nuclear) and Type 0 (postnuclear) contours. Millar and Brown 1979 assume the distinction between the two types of TQs, and show that in Edin-

burgh Scots the corresponding distinction involves differences of cliticization as well as differences of pitch contour; cliticization could plausibly be affected by accent and phrasing, but seems unlikely to respond to pitch per se. Finally, Huddleston 1970, while he does not really consider intonation, implicitly supports my analysis when he mentions tags with and without a separate 'nuclear stress' (220).

4. One special use of the type in (15b) is as a polite request for incidental information; it is often found as the opener in a short interchange, as in *You don't have the time=do you?*
5. See Moravcsik 1971, Sec. 4, for a discussion of polarity reversal in tags in a wide variety of languages.

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