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first published in:
Phonologica 1992 : proceedings of the 7th International Phonology Meeting /
Dressler, Wolfgang Ulrich [Hrsg.]. – Torino : Rosenberg & Sellier, 1994. –
(Linguistica ; [11]), S. 243-255

Postprint published at the Institutional Repository of the Potsdam University:
In: Postprints der Universität Potsdam
Philosophische Reihe ; 66
<http://opus.kobv.de/ubp/volltexte/2010/4317/>
<http://nbn-resolving.de/urn:nbn:de:kobv:517-opus-43179>

Postprints der Universität Potsdam
Philosophische Reihe ; 66

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1. Introduction

In grammars and in much of linguistic research, the intonation of questions (—most cases isolated or invented interrogative sentences) is commonly thought to be closely related to syntactic sentence types such as declarative, interrogative, imperative etc. The general assumption is that a particular syntactic sentence type in unmarked cases calls for a particular unmarked intonation; choices of other intonations are said to constitute marked cases. For instance, in German, interrogative sentences with a question-word of the English *wh*-word type are commonly said to call for falling terminal pitch in unmarked ('neutral') cases whereas rising terminal pitch in these interrogatives is claimed to be marked and interpreted as 'polite' or the like. This is exemplified by Pheby's (1980:81) examples (75a,b):

- (75) a. // \ wie heißen sie // ("neutral") b. // / wie heißen sie // ("polite")

On the other hand, interrogative sentences with subject-verb inversion (so-called 'yes/no questions') are said to reverse this picture by calling for rising terminal pitch in unmarked cases and falling terminal pitch in marked cases. This is illustrated by Pheby's (1980:887) examples (78a,b):

- (78) a. // / kommt der klempner heute // (informationally unmarked)
b. // \ kommt der klempner heute // (informationally marked)

With reference to the syntactic structure of these question types, I shall call the 'question-word' and 'verb-initial interrogative sentences' respectively.

This type of analysis was and still is widespread. Yet it is not at all confirmed by my data from natural conversational interaction; neither quantitatively, qualitatively. For reasons of space I cannot go into detail on this.¹ More recent approaches in intonational and metrical phonology such as Selkirk (1984)

Nespor & Vogel (1986) prefer not to say much about the functions of intonation (but cf. Pierrehumbert & Hirschberg 1990).

If, however, the usual analysis is unsatisfactory, what difference does it make, then, whether speakers choose falling versus rising pitch in conversational questions? Here, I shall try to give an alternative analysis.

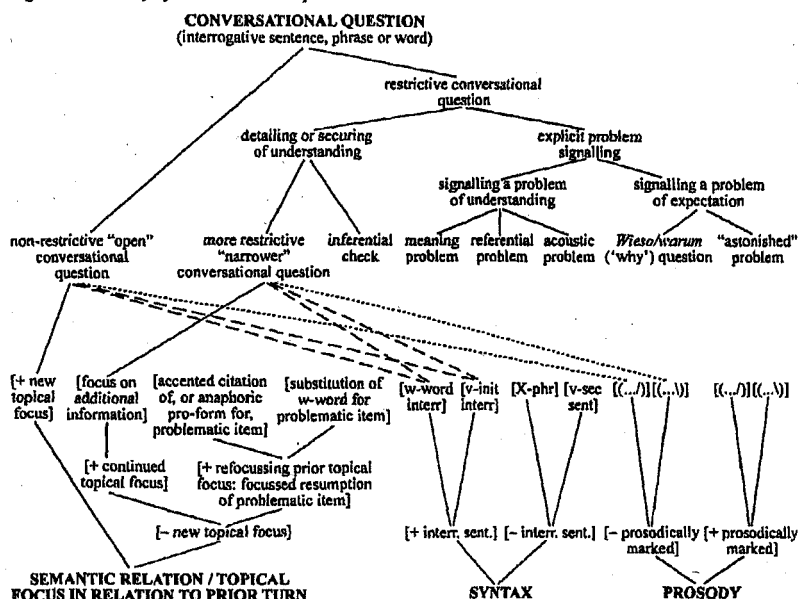
2. Aim and approach of the present analysis

I shall present evidence that intonation in conversational questions is not systematically related to grammatical sentence type, but is used as an autonomous signalling system.² In co-occurrence with constitutive cues from the other autonomous signalling systems 'syntactic structure' and 'semantic relation to prior turn', the intonation of questions seems to be used to signal and contextualize (Gumperz 1982, Auer 1992) particular types of conversational questions that make a particular type of answer by the recipient relevant in the next turn. Methodologically, the properties of this answer in the next turn can be looked upon as a validation for the differentiation of question types, and as evidence for the interpretative relevance of the different question types for the participants. My notion of 'question' and methodology are adopted from conversational analysis (cf. Sacks, Schegloff & Jefferson 1974; for an introduction see Levinson 1983: ch.6).

The analysis presented here is part of a larger analysis in which I looked at the activities in conversation which participants constitute by the use of questions with different syntactic and prosodic structures and different relations to the prior turn. My taxonomy of conversational questions is given in the Figure. There, I have mapped the interpreted conversational activities given in the upper part of the Figure with three autonomous signalling systems in the lower part. Speakers choose cues from these three signalling systems to constitute bundles of co-occurring features for the constitution of activity types in conversation (cf. also Selting 1992). My analysis here will be restricted to the two types of conversational questions, which I call 'non-restrictive "open"' and 'more restrictive "narrower"' conversational questions'.

The difference between these two types of questions results mainly from their different semantic relations to the prior turn: In 'non-restrictive "open" questions', the speaker chooses or presents a topical focus as new in relation to the last turn, and thus tries to bring about a new topical orientation for the further conversation. In contrast, in 'more restrictive "narrower" questions', the speaker does not choose or present a topical focus as new, but continues a prior topical

Figure. Taxonomy of conversational questions



focus and produces on-topic or continuous topical talk with respect to that prior topical focus.

In what follows, I shall present some extracts from natural conversations in German which illustrate the two question types.³ For purposes of the analysis presented here, it is only necessary to look at the terminal pitch movements in the question-turns; these are notated in the intonation line beneath the text line. I shall deal primarily with the questions in the starred lines of the transcripts and their answers. However, as I need the sequential context of these question-answer sequences in order to warrant my analysis, this sequential context has to be presented as well. First, I shall present cases in which the questions are responded to by the recipient as expected by the questioner. Thereafter, I shall discuss the treatment of "deviant cases".

3. Non-restrictive 'open' conversational questions

Extracts (1) and (2) exemplify the category of 'non-restrictive "open" questions': question-word and verb-initial interrogative sentences with rising terminal pitch.

- (1) K4: ((Lea has just told how a school teacher visiting in her seminar criticized her teaching style and her students.))

- 1 Lea: JA . BUMM . DA hat ich mein **FETT WECK** ne
 (\) (\) T,F(/ /)
 yes then I really got it you know
 2 ? : ((clicking))
 3 Eli: un WAS has du geSACHT
 * M(/)
 and what did you say
 4 Lea: Äh n FIEL mir ersmal **NICH** mehr viel ein
 S(/ /)
 uhm at first I couldn't think of very much
 5 Lea: dann hab ich gesacht
 M(/)
 <all ... all>
 then I said
 6 Lea: naJA ich mein das wär nich so EINFACH
 {M(/)}
 well I mean it wasn't that simple
 7 Lea: DIE **KENNT**n sich alle nich
 M(/ /)
 they all didn't know each other
 8 Lea: un BIS die mal **WARM**gelaufen wärn und ..
 M(/ /) -
 and until they had warmed up and ((Lea continues to relate the story.))

In line 5, Eli changes the topic of Lea's storytelling from Lea's talk about her visiting teacher's behaviour to her own reaction to this. In response to this question, Lea now describes at length how she reacted to the teacher's insults.

- (2) K1: ((Line 11 changes the topic from talk about Nat's friend's concussion to Ron's commuting between two towns.))

- 1 Nat: hat ne gehirnerschütterung gehabt
 2 Nat: und öh .. (?nun) is dicht ne
 3 Ida: [mhm
 4 Nat: och wußte sie vorher au nich bis sie (???) zum arz
 5 gegangen is un der da .. tausend tests gemacht hat
 6 un dann meint er s: kam von der gehirnerschütterung
 7 Ida: [dja:
 8 Nat: [(?hja) n da kann man nichts mehr machn
 9 Ida: [nee
 10 Nat: ((laughs))
 11 Nat: FAHRS du denn **AUCH** jeden tach (1.0)
 * F(/ /)
 do you drive every day too
 12 Ron: ich HAB hier: . noch ne **WOHNUNG** (0.5)
 F(/ /)
 I have here another flat
 13 Ron: also ich **WOHNE** in wilhelmshaven **ERST**wohnsitz
 F(/ /)
 so I live in Wilhelmshaven permanent residence
 14 Nat: [mhm
 15 Ron: und HAB hier (0.8) n **ZWEIT**wohnsitz
 F(/ /)
 and have here a second residence
 16 Nat: [mhm
 ✓

- 17 Ron: un:d dann bin ich am Wochenende immer in wilhelmsHAVen
S(/ /)
and then I am at the weekend always in Wilhelmshaven
(1.0)
- 18 Ron: [un:d mittlerWEile auch: . Unter der Woche einmal
F(/ /)
and meanwhile also once during the week
- 19 Nat: [mhm
V(/

In extract (2), line 11, Nat changes the topic from talk about Nat's friend's concussion to Ron's commuting between his home town and his university town. Ron answers the question elaborately.

In many cases like these, but certainly not all, answers to such questions are elaborate, and result in longish contributions. This type of question seems to be a useful technique to bring about a new topical orientation for the following talk. Only if these questions are used in series of questions or to initiate short side-sequences, does the speaker seem to expect only short answers.

4. More restrictive “narrower” questions

Next, extracts (3) and (4) show two 'more restrictive "narrower" questions': question-word and verb-initial interrogative sentences with falling terminal pitch:

- (3) K1: 99-109 ((The topic is the over-representation of women students in university seminars.))

- 1 Ida: also ICH fin das immer FÜRCHterlich wenn: . n da
F(\ \)
<all all> <l 1
well I think it's terrible if there
- 2 sone ÜBERbevölkerung von FRAUN besteht
F(\ \)
1 1>
such an overrepresentation of women is
- 3 Nat: find ICH AUCH
M(/ \)
<p p>
think I too
- 4 Ron: das is ja sowieso: . grundsätZlich ne
M(\) M(\ /)
that's the case anyway always you know
- 5 Ida: JAA . aber in: . in VIELn veranstaltungn is das so
(\) F(/)
yee but in in a lot of classes it is so
- 6 massI:V da:so *mh
<l \) <tense>
massive or so
- 7 Nat: ((draws in breath)) wastuDIERS du denn .
H(\)
* what are you studying then

- 10 Nat: irgnwie erKLÄRN kann man sich das SCHON
 somehow you can find an explanation
- 11 also ICH wär da schon LÄNGST mit hingegangen
 well I would have gone a long time ago

In extract (4), Ida has been telling the others that her ears frequently get plugged, especially when she is staying in large rooms. In line 3, Nat responds by asking if she has not seen a doctor to have this examined. After Ida's negative answer, she then asks in an elliptical verb-initial interrogative sentence whether Nat is afraid of the doctor. This question is used to continue on-topic talk by detailing the topic and checking Nat's own inferences about Ida's behaviour. After Ida's fairly short answer and common laughter, Nat takes the floor again and further develops the topic.

The two "narrower" questions in the extracts (3) and (4) seem to develop on-topic talk on a previously established topical focus and the answers tend to give shorter and more to-the-point contributions to this on-topic talk than the answers to the "open" questions in (1) and (2).

In the extracts presented so far, the recipients seemed to respond in the way expected by the questioner. The answers have been straightforward and the questioner did not give any indication that s/he was dissatisfied with the answer. And exactly this "straightforwardness" and "simplicity" of interactional work can be looked upon as evidence that in these cases the question-answer sequences are being performed as expected.

This seems to indicate that interrogative sentences with rising intonation are used for the constitution of 'non-restrictive "open" conversational questions' in order to focus upon new topical foci or to bring about a new topical orientation for the further talk. They seem to yield the turn to the recipient with unrestricted scope for a preferably elaborate answer which contributes to the further topical development. In contrast, interrogative sentences with falling terminal pitch seem to be used for 'more restrictive "narrower" conversational questions' which develop on-topic talk about a previously established topical focus. They seem to yield the floor with more restricted scope for an answer which gives detailing or additional information or which confirms or corrects the questioner's inferences and understanding. After these latter answers, which may be very brief, the first speaker often takes the floor again to continue topical talk him/herself.

5. "Deviant cases"

Yet there are many "deviant cases", in which the answerer does not seem to respond in the way expected by the questioner. This, however, only seems to be relevant if a questioner has asked a 'non-restrictive "open" question' in order to

yield the floor for an elaborate contribution to the conversation, but the answerer only answers briefly and then stops talking. In this case, the questioner can invest additional interactional work to make the recipient offer a more elaborate contribution. In my data, this happens in about a third of the cases in which questioners asked 'non-restrictive "open" questions'.

Extracts (5) through (7) illustrate the management of deviant cases.

(5) K2:

- 1 Nat: was HAS du denn da für NARbm ...
 * R (/ \ /)
 what are those scars you have there
- 2 Ida: ACH sod* . JA das: .. die SIEHT nur so:
 H(\) M(\) - F(\
 oh well well that that only looks so
- 3 SCHRECKlich aus weil die nicht geNÄHT wordn is .
 / \
 horrible because it wasn't stitched up
- 4 Nat: was HAS enn da geMACHT
 * M(\ \)
 what did you do there
- 5 Ida: da hab ich mich mal geSCHNITTn inner SCHULE ..
 < all > F(\ \ /)
 that was where I once cut myself at school
- 6 also quasi n SCHUL*UNfall sach ich da immer zu
 L, F(\ \) - <all all>
 so sort of a school accident I always call it
- ((Ida laughs for about 2 seconds, after that she tells the story of this incident.))

In extract (5), line 1, Nat asks a 'non-restrictive "open" question'. The focus here is on Ida's scars, and their possible origin. In her answer, though, Ida shifts focus to the way these scars look. In her second question in line 4, Nat focuses on the topical focus of the scars and their origin again. This question has falling terminal pitch. It seems to focus the topic more narrowly than before, and to call for on-topic talk on that topical focus. This is indeed what happens in Ida's next turn. After her short answer in line 5, Ida pauses, and after this, in 6, Ida signals her willingness to relate the story. After laughing, she tells the story about her scars in detail in the next passage, thus possibly giving the more elaborate answer that Nat wanted to elicit with her first question. In this case, then, the second question is indeed a second question insisting upon a more elaborate contribution to the first question than was offered before.

(6) K1:

- 1 Ida: na dazu geHÖR:T ja au noch . oh ..
 F(\
 well for that you also need eh

Nat's job to Ida's job. The answer to the second question, starting in line 10, is quite elaborate. But Nat's answer to Ida's first question in line 5 is only brief. Note, however, that here Ida does not take the floor again to continue talking. On the contrary, she produces a pass *NAja* and attends to her cup of coffee, thus signalling that she is not going to continue talking but leaves the floor to Nat. And indeed, it is Nat who takes it and produces a new question addressed to Ida.

The three extracts (5) to (7) showed cases in which the questioner yields the floor to the answerer for an elaborate contribution, but the answerer only gives a short answer and then stops talking. If the questioner wants to insist on the production of a more elaborate contribution by the answerer, s/he reacts as follows: S/he either takes the floor again, but only to ask a second question on the same topical focus, or to initiate repair, or s/he simply refuses to take the floor again and thereby silently implies that more talk is expected from the answerer. Reactions such as these, however, seem to occur only after 'non-restrictive "open" questions', very seldom after 'more restrictive "narrower" questions'. Methodologically, this way of treating deviant cases provides evidence that participants indeed orient themselves to the question types.

6. Conclusions

If this analysis is correct, the intonation of conversational questions has to be conceived of as an autonomous signalling system. Each syntactic sentence type, i.e. question-word and verb-initial questions, can have falling or rising intonation. In co-occurrence with the syntactic structure and the semantic relation to the prior turn, the intonation differentiates between particular types of conversational questions which suggest and make relevant particular types of answers by the recipient. Methodologically, the properties of this answer in the next turn and further participant reactions can be looked upon as warranting the differentiation of the different question types with their question-type specific intonations, and as providing evidence for their interactional relevance for participants.

Of course, the result that 'non-restrictive "open" conversational questions' seem to have rising pitch reminds us of the old lay stereotype that questions are said to have rising intonation. According to my analysis, however, this is only true of a very particular type of conversational questions, namely just those which yield the turn to the recipient for a non-restricted and preferably elaborate contribution to the topical development.

This result now also suggests that previous analyses of the intonation of questions with reference to categories such as 'politeness' or 'interest' are not entirely wrong, but unexplicated and unwarranted short-hand interpretations of the

questions' having different sequential implications for the recipients' answers. My analysis reconstructs this difference with reference to the more or less restricted scope that the question types imply for the answer by the recipient. And this more or less restricted scope for the answer can in turn perhaps be related to interpretations like 'politeness' or 'interest' (cf. Brown & Levinson 1987).

Notes

- 1 For a more thorough critique of the traditional analysis in intonational phonology see Selting (1993), for more detail on the corpus and approach underlying my analysis see Selting (in press). The overall distribution of question types in my current data base is:
 Question-word questions — with falling intonation: 42 with rising intonation: 46
 Verb-initial questions — with falling intonation: 14 with rising intonation: 51
- 2 This view has previously been put forward by Bolinger (cf. esp. 1989) and Gibbon (1984).
- 3 The following transcription conventions have been used:

Transcription symbols in the text line of transcripts:

aber DA kam	primary accented syllable of a unit
aber DA kam	secondary accented syllable of a unit
<u>si</u> cher	extra strong/loud accent
si:cher	lengthening of a sound
.	brief pause of up to ca 0.5 secs
..	each dot ca 0.5 secs pause, here ca 1 sec
(0.8)	pause timed in tenths of a second
((lacht))	para- and/or non-linguistic events
(? er kommt ?)	transcriber's uncertainty in identifying words
a(1)so	doubtful sound within a word
*	glottal stop
=	latching
[ich gehe jaha	simultaneous talk, overlapping utterances

Transcription symbols in the prosody line(s) of transcripts:

Global pitch direction: (noted before the opening parenthesis)

F, R, H, M, L ()	notation of the global pitch direction before the accent sequence delimited by parentheses: F=falling, R=rising, H=high, M=mid, L=low (Parentheses are usually noted before the first accent and at the end of the cohesive unit.)
H, F ()	combination of global characterizations
[() ()]	combined contours with only weak or no boundaries between units with different global pitch directions (e.g. 'paratones')

Accent (proto)types or unaccented local pitch movements on and after accented and/or unaccented syllables:

\	falling	-	level	/ \	rising-falling
/	rising	\ /	falling-rising		

Accent modifications:

↑\, ↓/, ↑- locally larger pitch movements than in surrounding accents, higher or lower accent peaks than usual

... sequence of unaccented syllables

(Outside the parentheses, local pitch movements function as 'pre-head' ("Vorlauf") or unstressed pitch movements after the accent sequence.)

Other prosodic parameters which are used with local or global extension, the extension is indicated by the position of the < >:

<f> forte, loud	<p> piano, quiet	<dim> diminuendo, decreasing loudness
<l> lento, slow	<all> allegro, fast	

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