DIALECTAL VARIATION IN QUESTION INTONATION:
THE CASE OF SWABIAN AND UPPER SAXON GERMAN [*]

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Introduction

It is generally assumed that a question intonationally is accompanied with a certain question tune, usually characterized by a final rise in pitch (e.g. Bolinger 1978). If we consider German question intonation, the tonal characteristics of yes-no-questions seem to match the general pattern of a final rise in pitch. According to the intonational accounts of Standard German yes-no-questions ending low in pitch have not been proved (e.g. von Essen 1964, Féry 1993, Grice & Baumann 2000).[1] Although carried out in different frameworks, the studies of von Essen (1964) and of Féry (1993) seem to agree on the basic intonational properties of question intonation in Standard German. Yes-no-questions are characterized by a final rise in pitch, and the accent pattern can either be falling (1a and 2a) or rising (1b and 2b). In the notation of the autosegmental metrical model of intonation (Pierrehumbert 1980, Ladd 1996) on which the present study is based, too, the final rise is expressed by a high boundary tone as in (1) and (2).

(1)   Yes-no-question "*Entscheidungsfragen*" (von Essen 1964:45f.) with our tonal adaptation
       a.   H*L   H%
       b.   L*H   H%
             Ist der <u>Bo</u>te schon dagewesen?   "*Has the messenger already been here?*"

(2)   Fall-rise in (a), and simple rising tone in (b) (Féry 1993:91, 87)
       a.   H*   L   H%
             Mögen Sie ROGGENbrötchen?   "*Do you like ryebread rolls?*"
       b.   L*   H
             Tauschen Sie auch BRIEFmarken?   "*Do you also exchange stamps?*"

In this model, a pitch contour is decomposed into the tonal levels low (L) and high (H). Additionally, two different categories of tones are assumed, i.e. pitch accents and boundary tones.[2] Boundary tones are associated with the end of an intonation phrase and the tonal symbol carries the percentage (%) as a diacritic. Pitch accents can either be monotonal (L or H) or bitonal (a combination of L and H). Pitch accents are associated with metrical strong syllables and the tone that is associated with the metrically strongest syllable of an accent domain carries an asterisk (*) as a diacritic.

Despite the patterns in (1) and (2), yes-no-questions with *falling* intonation seem to occur in Standard German as well. In a corpus study of conversational data of Northern German, a variety closely related to the Standard, Selting (1995:234) observes 51 yes-no-questions with rising intonation but also 14 with falling intonation. We make a similar observation in our corpus of Upper Saxon and Swabian German that contains several hours of free conversations as well as map task dialogues (Anderson et al. 1991).[3] Our observed intonational variation in Swabian German (henceforth SG) seems not to match the description of Frey (1975) who has analyzed his own Stuttgart Swabian dialect. Frey characterizes a typical yes-no-question tonally as exhibiting a tonal fall towards the main accented syllable of the sentence, indicated by a small round circle, followed by a sharp rise towards the end of the sentence as in (3). This tonal pattern seems to resemble that of

(1b) and (2b), thus in terms of Frey's characterization, SG behaves as Standard German intonationally.

(3)   Tonal structure of a typical yes-no-question in SG (Frey 1975:68) with our tonal adaptation

                            L*H
'komš   ˌao   °'gvīs
Kommst du auch   gewiss?   "*Are you coming for sure?*"

Yet Peters (Ms.) observes two regionally distinct intonation patterns for yes-no-questions occuring in Palatinate German. In the northern part he analyzes a falling nuclear pitch accent (H*L) followed by a leveling out of pitch, i.e. spreading of the low trailing tone of the pitch accent until the end of the intonation phrase, while the tonal pattern in southern Palatinate reveals a low pitch accent followed by a high phrase tone and a low boundary tone (L* H̄ L%). Similar to Standard German, the tonal characteristics of Palatinate yes-no-questions show two distinct pitch accents depending on the regional distribution. Contrary to Standard German, however, Palatinate yes-no-questions are realized with falling intonation.[4]

(4)   The tonal structure of yes-no-questions in northern (a) and southern (b) Palatinate German (Peters Ms.)

        (a)   H* L   (b)   L* H̄ L%
        Ist das die Wirtsfrau?   Ist das die Wirtsfrau?   "*Is it the landlady?*"

Based on the above discussed studies, we assume that intonational patterns of yes-no-questions in German dialects differ across dialects and also compared to Standard German. Therefore, the aim of the present paper is to present evidence of intonational variation in yes-no-questions in two German dialects. We analyze the tonal patterns of yes-no-questions in Upper Saxon German (henceforth USG) and Swabian German (SG). In the second part of this paper we attempt to account for the observed phonological variation of question intonation within these varieties.

The corpus

Subjects. The speech data for the present study comes from recordings we have made in the cities of Leipzig and Stuttgart. A larger city is assumed to function as a center of a dialect and represents the regional variety.[5] Leipzig belongs to the central eastern part of the German dialect area and is classified as "Upper Saxon" (e.g. Bergmann 1998) while Stuttgart belongs to the West Upper German dialect region and is classified as "Swabian" (e.g. Russ 1998). In order to analyse the regional varieties of these dialects, we have selected subjects who are born and raised in these two urban areas. In total, twelve speakers have participated in this study, six speakers per city. The age of the subjects ranges from 21 to 67 years.

Recordings. The recordings have been made at the subjects' homes in order to achieve maximal naturalness in conversation. Two subjects have participated in each conversation. The recordings have been made using a portable Sony DAT-recorder and two Sony tie-clip condenser microphones (ECM-TS125). A recording session consists of three parts: first, subjects have to summarize a story, which has been presented before on a video screen, and to discuss whether the story is false or true; second, the map task game (Anderson et al. 1991, Claßen 2000) has been carried out.[6] Each subject functions as the instruction giver and the instruction receiver once, resulting in two map task conversations per session; third, a free conversation. The speech data chosen for the analysis here

consist of six map task dialogues and three conversations from Leipzig and Stuttgart respectively. For details of the recording procedure of the map task game see Kügler (to appear).

Data processing. Speech data have been digitized at a sampling rate of 16 kHz, 16 bit, mono format. The sound files have been transcribed and analyzed using Praat (© Boersma & Weenink 1992-2002). The speech data have been transcribed according to GAT conventions (Selting et al. 1998), i.e. a system for transcribing conversational data. Phrases have been labeled intonationally using Pierrehumbert's (1980) tone-sequence model as a basis. Labeling has been based on auditory perception and visual inspection of F_0 traces.

Materials. In Standard German as well as in the dialects of German, a yes-no-question may either have SVO or VSO/VOS syntax (cf. Der Marko weiß das? vs. Weiß der Marko das? *'Does Marko know it?'*). The former syntactical construction resembles a declarative while the verb initial position of the latter syntactically marks a yes-no-question. For the present study questions of latter type, i.e. with verb inversion, have been chosen to avoid confusion with declarative intonation patterns. This might have been the case if we would have considered yes-no-questions with declarative syntax. In total, 113 yes-no-questions with verb initial position have been detected in the corpus.

Intonation in Swabian German yes-no-questions

A tonal analysis of yes-no-questions in our Stuttgart corpus results in four distinct tonal patterns, which are summarized schematically in (5a-d). Thick lines correspond to the accented syllable, thin lines to pre- and postaccentual syllables.

(5) a.

                                                                          b.

L* H H%   H* L   H%

c.   d.

L* H L%   H*   L   L%
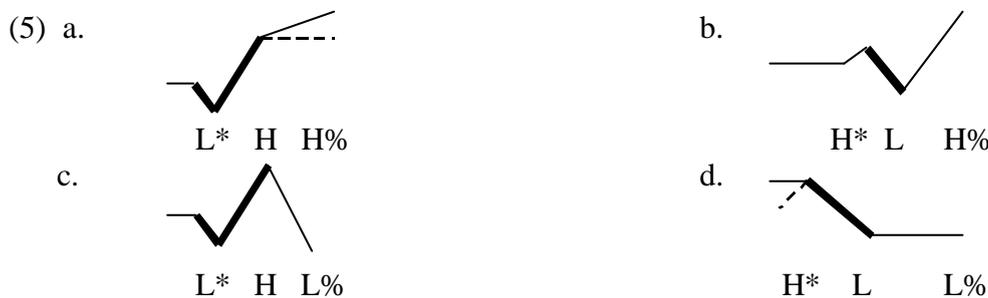
The intonation patterns in (5a) and (5b) are rising, indicated by a high boundary tone (H%), whereas the patterns in (5c) and (5d) are falling, which is marked by a low boundary tone (L%). The rising patterns (5a/b) are equal to Standard German (cf. (1) and (2)) and seem to be in line with a general tonal pattern claimed for yes-no-questions in other languages as well (cf. Bolinger 1978). However, the patterns (5c/d) deviate from the general rising pattern in that they exhibit a low boundary tone. In this respect, the patterns in (5c/d) show a similarity to the general tonal pattern of yes-no-questions in Palatinate German, but with slightly different tonal implementation (Peters Ms.).

With respect to the pitch accents, we observe that both rising (L*H) and falling (H*L) pitch accents may occur. The rising pitch accents in (5a) and (5c) show the typical tonal pattern of a Swabian rising pitch accent analyzed in statements (Kügler, in prep.): In phrase final words containing at least two syllables with word stress on the penultimate syllable (or even before the penultimate syllable) the low tone of the pitch accent is realized on the stressed syllable; it is followed by a rise to the high target of the pitch accent which is usually reached at the end of the stressed syllabe, thus forming a tonal domain of only one syllable; due to the perceptual salience of the low tone this

accent is labeled L*H. The tune-to-text association as well as a pitch contour of the rising pitch accent followed by either a high or a low boundary tone is given in (6a) and (6b) respectively.
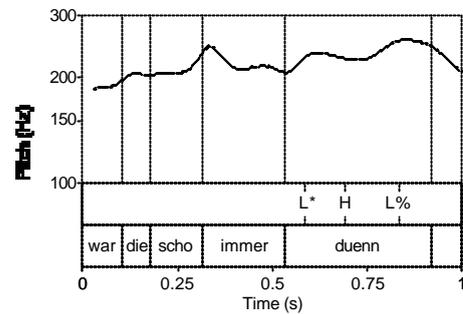
(6a)
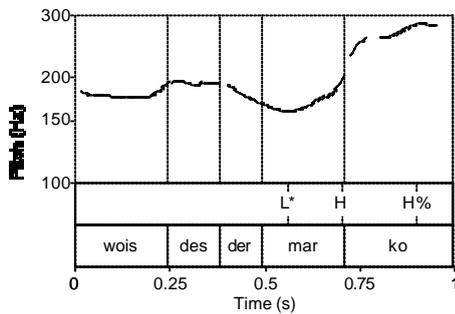

Wois des der Mar.ko ? "*Does Marko know it?*"

L* H H%

(6b)

War die scho immer dünn?   "*Has she always been thin*"

L*H L%

As for Standard German (cf. (1) and (2)) Swabian yes-no-questions may also contain a nuclear falling pitch accent. Again, a high or a low boundary tone may follow the falling pitch accent as can be seen in (7a-b). In both examples, the falling pitch accent is associated with the penultimate syllable of the intonation phrase. In (7a) the pitch falls on the penultimate syllable and rises on the last syllable marking the yes-no-question intonationally, whereas the pitch in (7b) falls on the stressed syllable and levels out on the low level to the end of the phrase.
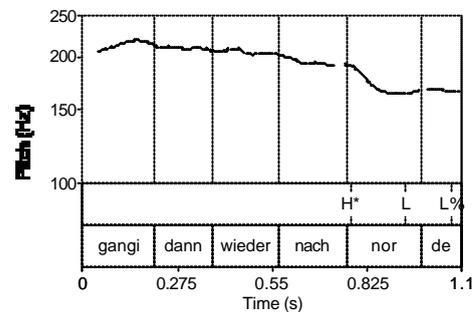
(7a)
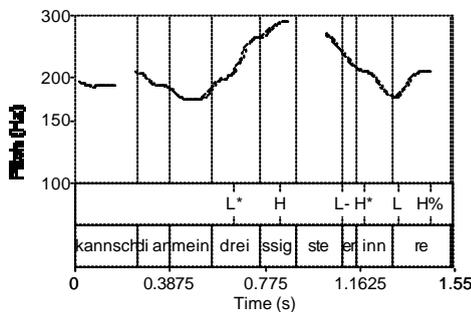
Kannsch di an mein dreißigschte erinnre?
"*Do you remember my 30th birthday*"

H* L H%

(7b)

Gangi dann wieder nach Norde?   "*Do I then go to the north?*"

L* H L%

As far as the falling accents are concerned, the high target is aligned early to the stressed syllable. The fall starts early and continues throughout the syllable. Contrary to the rising accents, the tonal domain of the falling accents spans one to two syllables, i.e. the fall may end in the stressed syllable as in (7b) or in the postnuclear syllable as in (7a). The main difference, however, is the alignment of the pitch peak comparing rising and falling accents: In rising pitch accents, the peak is anchored at the end of the stressed syllable (Kügler in prep.), while the pitch peak in falling accents is realized in the beginning of the stressed syllable.

In total, we have analyzed 66 yes-no-questions. 58 %, or 38 questions, have been realized with rising intonation, i.e. with a final rise in pitch, while 42 % end low. Concerning the accent pattern,

80 % exhibit a rising and 20 % a falling nuclear pitch accent. The most frequent tonal pattern (47 %) consists of a rising pitch accent followed by final rise (cf. (6a)).
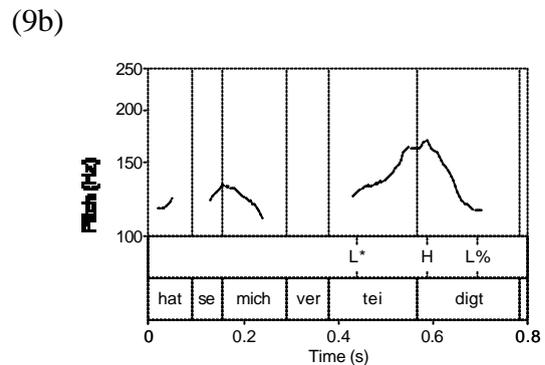
Intonation in Upper Saxon German yes-no-questions

The tonal analysis of USG yes-no-questions reveals two different intonation patterns which are shown schematically in (8a) and (8b). Both patterns contain a rising pitch accent, labeled as L*H. The starred tone (L*) is associated with the metrical strongest syllable, i.e. the syllable bearing word stress. The boundary tone, however, varies: speakers of Leipzig Upper Saxon exhibit both rising (8a) and falling patterns (8b). Out of 47 questions analyzed, the majority of cases, 72 % or 34 questions, are realized with a high boundary tone, thus with an overall rising intonation pattern. 28 % of the questions are realized with falling intonation.

(8)   a.   b.

          L* H   H%   L* H   L%
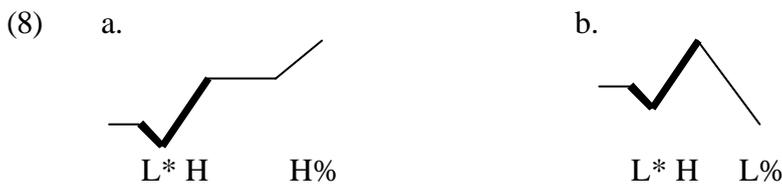
A typical example of a yes-no-question with rising intonation is given in (9a). The nuclear rising pitch accent is realized on the penultimate syllable of the phrase final word Des.pe.ra.dos (a kind of beer). The phrase contains a rising pitch accent, L*H as in (8), which is followed by a final rise on the last syllable. We analyze the final rise as a high boundary tone, H%.

(9a)   (9b)
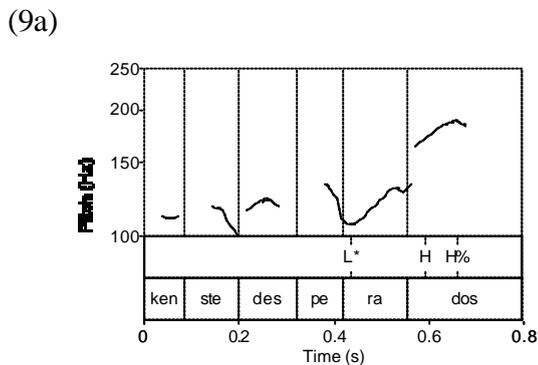
Kennst du Des.pe.ra.dos?   *"Do you know*   Hat sie mich ver.tei.digt?   *"Does she have*
                                Desperados?"   *defended me?"*
H* L H%   L* H L%

In (9b) a typical yes-no-question with falling intonation is shown. Again, the nuclear accent is a rising one (cf. (8)) realized on the penultimate syllable of the phrase final word. In contrast to (9a), the pitch falls to the end of the phrase, exhibiting a low boundary tone (L%).

If we compare the USG tonal patterns with those of Swabian German (SG), we make two kinds of observations. First, with respect to the nuclear pitch accents which may occur in a yes-no-question, SG exhibits an intonational choice between a nuclear falling or rising pitch accent (cf. (5)) as is the case for Standard German. In our USG corpus, on the other side, we have only observed rising pitch accents (cf. (8)). On the basis of our corpus we thus find a distributional restriction concerning the type of pitch accent in USG.

Second, with respect to the boundary tones in both dialects, we find variation between low and high boundary tones. A comparable variation for Standard German has not been reported (von Essen 1964, Féry 1993). From this, we might conclude that a falling intonation pattern on yes-no-questions is a dialectal property and does not hold for Standard German. However, if we compare our results with a study on prosody in conversation in Northern German, a variety closely related to Standard German, we observe clear similarities with respect to the intonational variation on yes-no-questions (Selting 1995). From this, we conclude that the intonational variation might not be related to the dialect properties. Rather, the kind of speech data seems to be responsible for the variation detected in our corpus: Since the speech materials of von Essen and of Féry are read speech and that of Selting and our study is spontaneous speech, the absence of yes-no-questions with falling intonation might be a characteristic of read speech.

Intonational variation and information structure

From the previous tonal analysis we establish a great amount of intonational variation in yes-no-questions. This variation concerns two different levels: on one level, we observe intra-dialectal variation. In USG, for instance, a yes-no-question may be produced with either falling or rising intonation always accompanied with a nuclear rising pitch accent. In SG, on the other side, we find four tonal patterns, which are a combination of either a rising or a falling pitch accent with either a final fall or a final rise in pitch. Thus, a clear-cut one-to-one correspondence of sentence mood, i.e. yes-no-question, with a specific intonation pattern does not exist. On a second level, we observe intonational variation between dialects, i.e. inter-dialectal variation. Whereas USG seems to constraint the intonational variation for yes-no-questions on two distinct patterns, SG exhibits four distinct patterns. However, a striking intonational similarity between the two dialects exists: Contrary to the accounts of Standard German, in both dialects questions with rising and falling intonation occur. Two questions arise form our previous findings: first, can we account for intra-dialectal variation, and, second, can we account for inter-dialectal variation? The remainder of this paper is concerned with the second question leaving the first question open for further research. We attempt to account for inter-dialectal variation hypothezising that this kind of intonational variation is predictable.

Recently, Grice & Savino (1997, 2003a, b) addressed the question of intonational variation analyzing yes-no-questions in map task dialogues in Bari Italian, a variety spoken in the South of Italy. Since Italian uses no distinct question syntax, the authors are particularly interested in how speakers signal confirmation and information questions intonationally. The authors hypothesize that the information status of the answer may be related to the accent pattern of the question. A sentence as (10) can be interpreted in three ways: either as a statement (10a), or as an information question (10b), or as a confirmation question (10c).

(10)   Vado a destra (Grice & Savino 1997:29)
      a.   statement   "*I go to the right.*"
      b.   QUERY   "*Do I go to the right?*"   L+H* L-L%
      c.   CHECK   "*So, I go to the right?*"   H+L* L-L%   and   L+H* L-L%

Following the notational conventions of map task speech (Anderson et al 1991), Grice and Savino distinguish between QUERIES, which can be referred to as 'information questions' (Bolinger 1989), and CHECKS, i.e. 'confirmation questions' (Bolinger 1989). They observe that QUERIES (10b) generally are realized with a rising pitch accent followed by a low phrase accent plus low boundary tone (L+H* L-L%). CHECKS (10c), on the other side, exhibit two distinct intonation

patterns: a CHECK might either be realized like a QUERY or alternativly it can be realized with a falling pitch accent (H+L* L-L%). Grice and Savino conclude that the choice of accent pattern for CHECKS depends on information structure. If a CHECK is realized by means of a rising pitch accent, the speaker is asking for new information – as is the case for QUERIES –, while a falling pitch accent signals that the question refers to given information. In recent follow up studies, Grice and Savino (2003a, b) extend their notation of information structure in that they take the speaker's consciousness into account. Thus, a three-way distinction of information status arises: besides given and new information speakers are conscious about accessible information as well. The intonation pattern that speakers use to indicate information or confirmation questions depends on the speaker's degree of confidence of the information being asked.

In line with Grice and Savino, we attempt to account for intonational variation that we have established in this paper. Therefore, we hypothezise that the intonational variation is related to the speaker's expectation of the information status of the information being asked for. In order to define the information status of the answer we have to consider the context. From the content of the conversation prior to the question we are able to discover whether the information being asked for has been subject of discussion or not. If the interlocutors have mentioned the topic of the answer before we have a case of confirmation question. If the speaker does not know the answer since the information status of the answer is open, we have a case of information question.

Consider the context of the SG example (6b) which is given in (11). In this passage of the conversation, speaker 1 (s1) and speaker 2 (s2) are talking about a third person which is a friend of s1. s2 does not know this person very well. s1 is telling s2 about that person that she is only very slim, whereupon s2 is asking whether this person has always been thin. From the context it becomes clear that just before the question of s2, the physical property of the person in question had been mentioned. From that, s2 has an expectation of the answer which then is positively confirmed by s1. This is a case where the answer consists of given information. As indicated in the transcript in line 3, this is signalled by a falling intonation pattern, in particular a low boundary tone (L%).

```
(11)    s3yg-908.15
    1   s1:    ((name)) isch bloss no n strich in der landschaft
                ((name)) is only thin as a rake
    2   s2:    jetz scho
                now yet
 -> 3          also war [die scho immer dünn
                                    L*H L%
                so has she always been thin
    4   s1:               [ja
                            yes
    5          die [war scho immer (.) schlank
                she has always been slim
```

The context of a typical example of a yes-no-question with rising intonation is given in (12), again an SG example. Here, speaker 1 (s1) and 2 (s2) are talking about a friend of s1. That person has a serious illness, and this is why she has to take strong medicine. s2 is rating the medicine as one that you cannot take in the long run. s1 agrees on that. In this situation s2 is asking whether the boyfriend of the sick person does know anything about the illness. Since this has not been previously mentioned, s2 is asking for new information, which is signalled by a rising intonation pattern, a final rise (H%).

```
(12)    s3yg-1024.86
    1   s1:    des glaub i wenn des solche haemmer sin
                I believe it if they are strong
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      2  s2:   des kasch net auf dauer nehme
                 you cannot take it in the long run
      3  s1:   m=hm
                 m=hm
      4  s2:   schlimm
                 serious
 ->   5        woiss des der marko
                            L*H H%
                 Does marko know about it
      6        woisch
                 you know
      7        hat sie da [irgendwas erzaehlt
                 does she have anything said about it
```

To sum up, the analysis of the two contexts given above reveals that speakers tend to utter two different kinds of yes-no-questions. In fact, this is true for all of the 113 analyzed yes-no-questions in our study. We observe the distinction made by Bolinger (1989) between information and confirmation questions in our SG data as well. Moreover, we observe a correlation between these two kinds of questions and their intonational shape. A yes-no-question ending with high pitch is an information question, where the speaker has no expectation of the answer. In this case, the information status of the answer has not been subject of the previous conversation. However, a yes-no-question may end with low pitch. A question like this we may classify as a confirmation question. In this case, the speaker has an expectation of the answer. The conversational or situational context provides enough information so that the speaker has an idea of the information status of the answer. The same relation between the tonal pattern and the speaker's expectation of the answer has been shown for USG as well (Kügler to appear). Therefore and for reasons of space, we do not discuss any USG example here. However, we assume the mentioned relation to hold for German the two German dialects in general.

Conclusions

For the present study, we have examined intonation patterns of yes-no-questions in Upper Saxon German (USG) and Swabian German (SG). With respect to the syntactical structure of yes-no-questions we have chosen questions with verb inversion to avoid confusion with declarative patterns (SVO-type). Yes-no-questions have been extracted from a corpus of conversational speech containing both map-task dialogues and free conversations. Thus, every question is embedded in a natural conversational context. The tonal analysis reveals that a yes-no-question in USG may be expressed by two distinct intonational patterns, i.e. an overall falling and an overall rising intonation pattern. In terms of a tone-sequence analysis (e.g. Pierrehumbert 1980), the former is indicated by a low, the latter by a high boundary tone. Concerning the pitch accents, a yes-no-question contains obligatorily a rising nuclear pitch accent (L*H). The overall falling pattern, however, occurs less frequently in the corpus than the overall rising pattern. Contrary to USG, in our Swabian German (SG) corpus we observe four intonational patterns on yes-no-questions: a combination of either a falling or a rising nuclear pitch accent followed by a high or a low boundary tone. Similarily to USG but unlike Standard German, we find the overall falling pattern in SG. However, the most frequent pattern for yes-no-questions in SG contains a rising accent followed by a high boundary tone.

Based on the results of Grice & Savino (1997, 2003a, b) we have conducted a contextual analysis to relate the distinct intonation patterns to a different information status of the answer. Unlike in Bari Italian where the choice of the pitch accent depends on information status of the answer to the yes-no-question, we find the choice of the boundary tone, thus the overall intonational pattern to relate

with the speaker's expectation of the answer. A low boundary tone signals that the speaker has an expectation of the answer, that is, he is asking for mutually known information. This is a case of a confirmation question (Bolinger 1989). On the other side, a high boundary tone signals that the speaker is asking for new information that has not previously been mentioned in the conversation. The speaker has no expectation of the answer in this particular case. This is a true information question (Bolinger 1989). Our results indicate that the choice of the boundary tone depends on the degree of confidence of the speaker as to whether the answer contains given or new material. Thus, languages differ in the phonological entities, which signal the degree of confidence of the speaker.

Further research on this topic has to consider yes-no-questions with declarative syntax (SVO-type). As mentioned before, we concentrated on yes-no-questions with verb initial position in order to avoid confusion with declarative intonational patterns. Considering yes-no-questions with declarative syntax, we have to be aware that we do not analyze simple declaratives. Using conversational data, however, provides us from this kind of error, since we may decide a declarative to be a yes-no-question on the basis of the context plus the interlocutor's behavior. If a speaker in a certain context explicitly replies a *yes* or *no*, we may claim that the previous phrase must have been a yes-no-question.[7] An analysis that is based on the intonation phrase as a domain does not need to draw on the classical relation between syntax and sentence mood. A rather pragmatic approach leads to the desired results.

Indeed, preliminary analysis of declarative yes-no-questions reveal a similar behavior, that is, we can observe an interaction between boundary tones and information structure. This may even support a claim made by Gunlogson (2001) who analyzed declaratives with rising and falling intonation in English. Her conclusion is that the interplay of sentence type, intonation and context makes a declarative function as a question. As far as yes-no-questions are concerned we have shown that, in any case, the mutually beliefs of a speaker on a known information from the previous discourse influences the choice of intonation pattern.

Finally, intra-dialectal variation has to be subject of inquiry. As we have seen, in SG as well as in Standard German different accent patterns may occur in yes-no-questions. Still, the question whether this accent variation depends on linguistic conditions remains open.

References

Auer, P., Gilles, P., Peters, J. & Selting, M. (2000). 'Intonation regionaler Varietäten des Deutschen. Vorstellung eines Forschungsprojekts'. In D. Stellmacher (ed.) *Dialektologie zwischen Tradition und Neuansätzen. Beiträge der internationalen Dialektologentagung*, Göttingen, Oktober 1998. Stuttgart: Steiner, 222–239.

Anderson, K.H., M. Bader, E.G. Bard, G. Doherty, S.Garrod, S. Isard, J. Kowtko, J. McAllister, J. Miller, C. Sotillo, H. Thompson & R. Weinert (1991). 'The HCRC Map Task Corpus'. *Language and Speech* 34(4), 351-366.

Bergmann, G. (1998). 'Upper Saxon'. In Russ, C.V.J. (ed) *The Dialects of Modern German*. Stanford, CA: Stanford University Press, 290-312.

Bolinger, D. (1978). 'Intonation across languages'. In Greenberg, J. (ed) *Universals of Human Language*, Vol. 2, Phonology, 471-524. Palo Alto: Stanford University Press.

Bolinger, D. (1989). *Intonation and Its Uses*. London: Arnold.

Claßen, K. (2000). 'Map Task – Eine Version für das Deutsche'. *phonetik AIMS*, Universität Stuttgart, 6(4), 65 – 83.

Essen, O. von (1964). *Grundzüge der hochdeutschen Satzintonation*. Ratingen: Henn.

Féry, C. (1993). *German Intonational Patterns*. Tübingen: Niemeyer.

Frey, E. (1975). *Stuttgarter Schwäbisch*. Marburg: Elwert.

Grice, M. & Baumann, S. (2000). 'Deutsche Intonation und GToBI'. *Linguistische Berichte* 181, 267-298.

Grice, M., Ladd, D. R. & Arvaniti, A. (2000). 'On the place of phrase accents in intonational phonology'. *Phonology* 17, 143-185.

Grice, M. & Savino, M. (1997). 'Can pitch accent type convey information status in yes-no-questions?' In Alter, K., Pirker, H. & Finkler, W. (eds.) *Proceedings of the ACL97 Workshop on Concept-to-Speech Generation Systems.* Universidad Nacional de Educatión a Distancia, Madrid, Spain, 29-38.

Grice, M. & Savino, M. (2003a). 'Question type and information structure in Italian'. In *Proceedings of Prosodic Interface* 2003, Nantes, France.

Grice, M. & Savino, M. (2003b). 'Map Tasks in Italian: Asking questions about Given, Accessible and New Information'. *Catalan Journal of Linguistics* 2, 153-180.

Gunlogson, C. (2001). 'True to Form: Rising and Falling Declaratives as Questions in English'. Dissertation, University of California, Santa Cruz.

Kohler, K. J. (1977). *Einführung in die Phonetik des Deutschen*. Berlin: Erich Schmidt Verlag.

Kügler, F. (to appear). 'Do we know the answer? – Variation in yes-no-question intonation'. To appear in *Experimental Studies in Linguistics*, LIP 21.

Kügler, F. (in prep.) 'The phonology and phonetics of nuclear rises in Swabian German'. To appear in Gilles, P. & Peters, J. (eds) *Regional Variation in Intonation*. Tübingen: Niemeyer.

Ladd, D. R. (1996). *Intonational Phonology*. Cambridge: Cambridge University Press.

Peters, J. (Ms.). Frageintonation in der Pfalz. Eine Reanalyse des Guentherodt-Korpus. *Manuscript, Potsdam University*, May 2001.

Pierrehumbert, J. B. (1980). 'The Phonology and Phonetics of English Intonation'. Dissertation. Distributed by Bloomington: Indiana University Linguistics Club.

Pierrehumbert, J. B. & Beckman, M. E. (1988). *Japanese Tone Structure*. Cambridge: MIT Press.

Russ, C. V. J. (1998). 'Swabian'. In Russ, C.V.J. (ed) *The Dialects of Modern German*. Stanford, CA: Stanford University Press, 337-363.

Selting, M. (1995). *Prosodie im Gespräch*. Tübingen: Niemeyer.

Selting, M., Auer, P., Barden, B., Bergmann, J., Couper-Kuhlen, E., Günthner, S., Quasthoff, U., Meier, C., Schlobinski, P. & Uhmann, S. (1998). 'Gesprächsanalytisches Transkriptionssystem (GAT)'. *Linguistische Berichte* 173, 91-122.

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[1] But see Kohler (1977:199) who explicitly points to both rising and falling yes-no-questions as a consequence of his model of intonation.

[2] A third category, phrase accents, is assumed as well. Since phrase accents are not relevant for the present study, we leave them aside here. For further discussion of phrase accents within the theory of intonational phonology, see the work of Pierrehumbert & Beckman (1988), Ladd (1996), and Grice, Ladd & Arvaniti (2000).

[3] Surprisingly, Grice & Baumann (2000) do not report any instances of yes-no-questions with falling intonation although the intonation system proposed (GToBI) is empirically based on map task dialogues as in the present study.

[4] In addition to the falling yes-no-questions, Peters mentions some sparcely regionally distributed instances where the a question ends with a high plateau.

[5] See also the research project on German dialect intonation, which focuses on urban varieties from all geographical parts of Germany (Auer et al. 2000).

[6] I am grateful to Kathrin Claßen at the IMS Stuttgart who provided me her map task files.

[7] We are aware of the fact that in conversational data a *yes* or *no* may have the status of a backchannel. However, analyzing the speakers' behavior plus additional context we may differentiate between backchannels and yes-no-questions. Still, we will certainly find ambiguous cases, which we then simply have to exclude from the materials.