

TRANSCRIPTION OF GERMAN INTONATION. THE MUNICH SYSTEM

Abridgement of „Transcription of German Intonation. The Stuttgart System“ by J. Mayer, University of Stuttgart, and accretions by Sonja Schmidt, 1.08.2005.

As our inventory of symbols is primarily motivated by phonological analysis and since the domain of processing these symbols belongs to Discourse Representation Theory, the criterion for describing fundamental frequency contours is that only those intonational events should be labelled, which are distinctive in the sense that one can assign to them a function in the domain of discourse interpretation.

1 Accents

1.1 Fixture:	H*L	fall
	L*H	rise
	(HH*L	early peak)
	Linking H*	high target on accented syllable
	..L	low trail tone
	Linking L*	low target on accented syllable
	..H	high trail tone
	x?	uncertainty: accent type
	*?	uncertainty: accentuation

1.2 Standard accents

There are two basic pitch accents H*L and L*H.

H*L a high target on the accented syllable followed by a falling pitch. If the accented syllable is the last syllable of an intonation unit (intonation phrase/intermediate phrase), the high target and the fall are realized on one syllable, namely the accented syllable. If there are syllables following the accented one within the same intonation unit, the high target is reached on the accented syllable followed by the first part of the fall, which is continued on the next syllable.

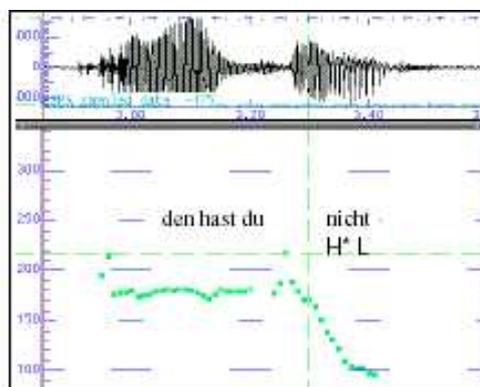


Fig. 1 Example for H*L; utterance *den hast du NICHT*; the vertical line indicates the onset of the accented syllable *nicht* which is the last syllable of the phrase.

After H*L the F0 contour runs in the lower third of the speaker's range parallel to the baseline until just before the next accented syllable or a phrase boundary.

L*H a low target on the accented syllable followed by a rising pitch. If the accented syllable is the last syllable of an intonation unit (intonation phrase/intermediate phrase) the low target and the rise are realized on one syllable, namely the accented syllable. If there are syllables following the accented one within the same intonation unit, the low target is reached on the accented syllable followed by the first part of the rise, which is continued on the next syllable. After L*H the F0 contour runs in the upper third of the speaker's range (mostly parallel to the baseline) until just before the next accented syllable or a phrase boundary.

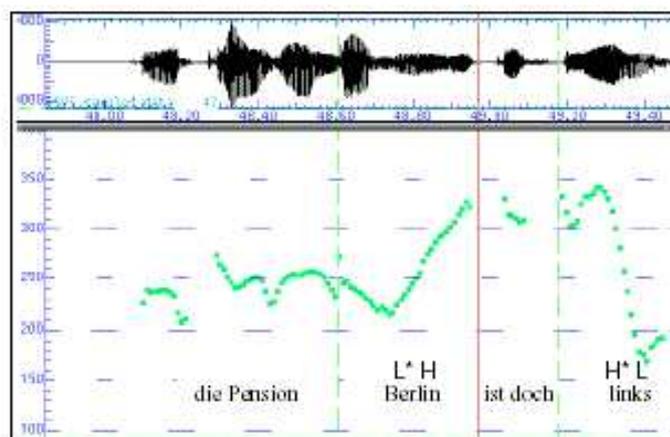


Fig. 2 Example for L*H followed by H*L; utterance *die Pension Berlin ist doch links*; vertical lines indicate word boundaries.

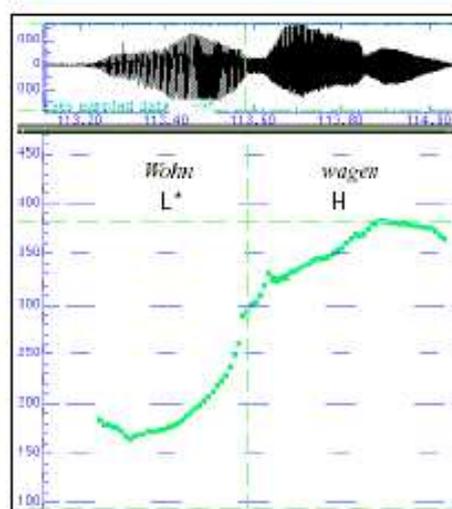


Fig. 3 Example for L*H; utterance *Wohnwagen*; the vertical line indicates the boundary between *Wohn* (the accented syllable) and *wagen*.

1.3 Besides the two basic accents there are additional 'special' pitch accents.

The following one is named early peak and appears only in spontaneous language. Probably this accent won't be necessary for read utterances:

HH*L a high target on the preaccentual syllable followed by a fall on the accented syllable. This accent type must be realized on at least two syllables: an accented syllable and a preaccentual syllable, which must be weak (i.e. not stressable). If there is no syllable following the accented one, the fall is realized on the accented syllable. If there is a postaccentual syllable, the fall is divided into two parts, one part on the accented syllable and the other part on the postaccentual syllable. In any case a high target on the preaccentual syllable must precede the fall. There can be a down stepped target on the accented syllable, but in most cases it is a plain fall starting at the height of the preaccentual pitch (or even lower but in the upper third of the speaker's range).

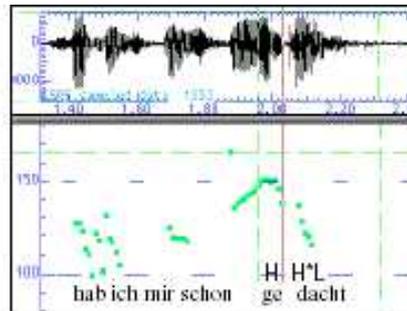


Fig. 5 Example for HH*L: utterance *hab ich mir schon geDACHT*; the first vertical line indicates the beginning of *ge*, the second line the beginning of *dacht*; a high target is reached on the syllable *ge* (prefix), the fall is realized on *dacht*.

e.g.: “Sie hat ja ge(H)lo(H*L)gen” - how we know. The label is to be situated in the middle of [o:].

(L*HL - like in “neihein” - doesn't exist in the material.)

1.4 Linking

Linking rules permit that prenuclear pitch accents can split off their trail tone, which is then either associated with the syllable before the next accented syllable (i.e. partial linking) or even completely omitted (i.e. complete linking).

H* a high target on the accented syllable that is not followed by an immediate fall. The course of the F0 contour after the high target depends on the type of linking. In case of partial linking the contour should roughly be interpolated between the stated tone (the high target) and the partial linked trail tone L, which is associated with the syllable just before the next accented syllable. This results in a smooth fall starting on the accented or the postaccentual syllable and ending on the next preaccentual syllable. In case of complete linking the F0 course depends on the next accent. The contour should

look roughly like an interpolation between the stated tone of the linked accent (H) and the stated tone of the next accent (H or L). So if H* is followed by H*L, F0 runs between the accented syllables in the upper third of the speakers range. If H* is followed by L*H, the contour falls between the two accented syllables.

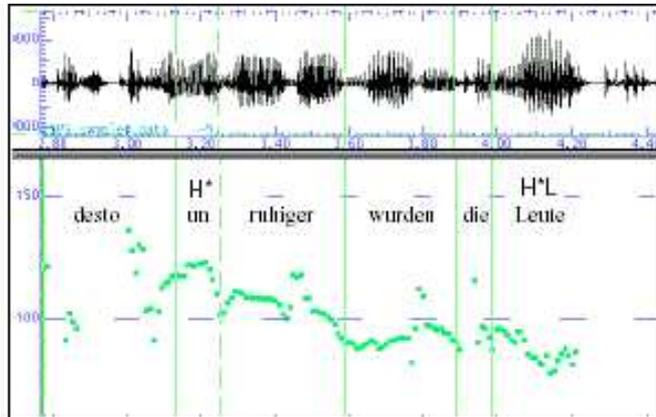


Fig. 8 Example for H* ... H*L (underlying H*L ... H*L); utterance ...*desto UNruhiger wurden die LEUTE*; the contour between the two accented syllables is high but slightly falling due to declination. (There are some instances of strong laryngalization: on *desto* the FO algorithm fails, on the second syllable of *Leute* no pitch is detected at all.)

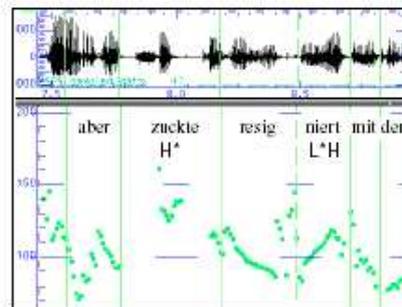


Fig. 9 Example for H* ... L*H (underlying H*L ... L*H); utterance ...*aber ZUCKTE resigNIERT mit den...*

..L partial linking: the low trail tone of an underlying H*L accent; to be assigned to the next preaccentual syllable following the linked accent.

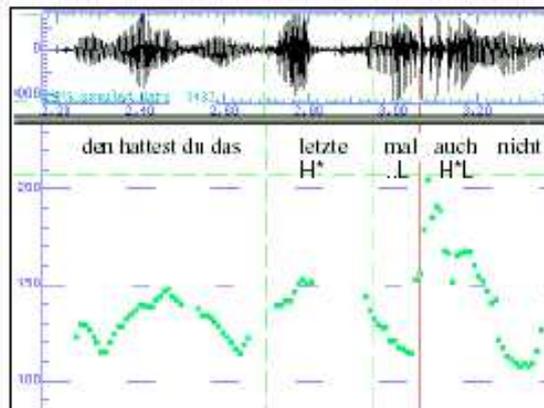


Fig. 10 Example for H* ..LH*L (underlying H*L... H*L); utterance *den hattest du das letzte mal auch nicht*; note the laryngalization at the beginning of *auch*.

L* a low target on the accented syllable that is not followed by an immediate rise. The course of the F0 contour after the low target depends on the type of linking. In case of partial linking the contour should roughly be interpolated between the stated tone (the low target) and the partial linked trail tone H, which is associated with the syllable just before the next accented syllable. This results in a smooth rise starting on the accented or the postaccentual syllable and ending on the next preaccentual syllable. In case of complete linking the F0 course depends on the next accent. The contour should look roughly like an interpolation between the stated tone of the linked accent (L) and the stated tone of the next accent (H or L). So if L* is followed by L*H, F0 runs between the accented syllables in the lower third of the speakers range. If L* is followed by H*L, the contour rises between the two accented syllables.

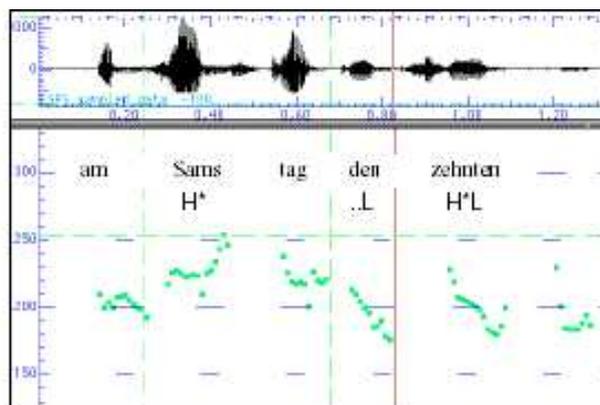


Fig. 11 Example of H* ..LH*L; utterance *am Samstag den zehnten*.

..H partial linking: the high trail tone of an underlying L*H accent; to be assigned to the next preaccentual syllable following the linked accent.

1.5 Uncertainty

The system provides two symbols for different levels of uncertainty.

? is a diacritic that may be applied to each accent type described above (it may also be applied to boundary tones; see below). ? should be added to a standard symbol, if the presence of an accent is clear but the accent type is questionable.

*? is used, when the transcriber is uncertain, whether there is a pitch accent at all.

1.6 Alignment

All pitch accents and the *? symbol are labelled approximately in the middle of the nucleus (the vocal) of the accented syllable (HH*L is also labelled in the nucleus of the accented syllable). Linked trail tones are labelled in the middle of the nucleus of the preaccentual syllable, i.e. ..L and ..H are labelled in the vocal of the last syllable without accent in front of the next accented syllable.

2 Boundary tones

Prosodic phrasing of utterances is described on two levels: intermediate phrases (ip) and intonation phrases (IP). These levels are ordered hierarchically: an intonation phrase can contain intermediate phrases, an ip contains at least one pitch accent.

2.1 Fixture:	-	Intermediate phrase boundary (ip)
	%	General phrase boundary or intonation phrase boundary (IP)
	H%	High boundary tone IP
	x?	Uncertainty

2.2 Intermediate phrase boundary (ip)

There is only one default label to transcribe the presence of an intermediate phrase boundary:

- (hyphen) indicates an intermediate phrase boundary; ip boundaries at the end of an IP are not indicated, in this case only the IP boundary tone is labelled, the ip boundary is subsumed.

2.3 Intonation phrase boundary (IP)

For transcribing boundary tones at the end of intonation phrases the two labels % and H% are provided.

% 1. Default boundary tone for transcription of IP boundaries without or with slight movement of the FO contour. IP ends with a high or low plateau (dependent on the previous trail tone) without considerable tonal movement on the last syllable. And

% 2. Low boundary tone. To transcribe a fall on the last syllable of an intonation phrase. If the nuclear accent is not phrase final, FO is low until the end of the phrase with an additional fall on the last syllable.

But since the German language doesn't discriminate between the meaning of default and low boundary tones, there is no difference in labelling boundary tones of declarative sentences.

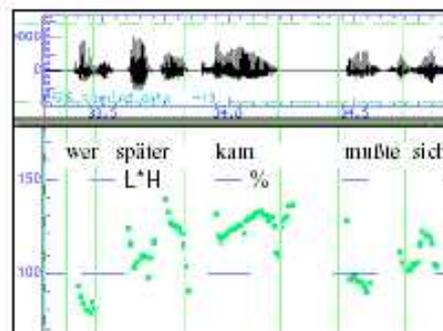


Fig. 17 Example for L*H %; utterance *wer später kam, mußte sich...*

H% high boundary tone. To transcribe a clear rise on the last syllable of an intonation phrase (usually rising above the top line). If the last syllable is assigned H*L and the IP is assigned H%, there should be a fall followed by a rise at the end of the IP. If the last syllable is assigned L*H and the IP is assigned H%, there is just a rise at the end of the IP. If the nuclear accent (i.e. the last accent) is not phrase final, two possibilities appear: if the trail tone of the nuclear accent is L, the contour runs in the lower third of the speakers range and rises on the last syllable. If the trail tone is H, the contour runs in the upper third and there should be an additional rise on the last syllable.

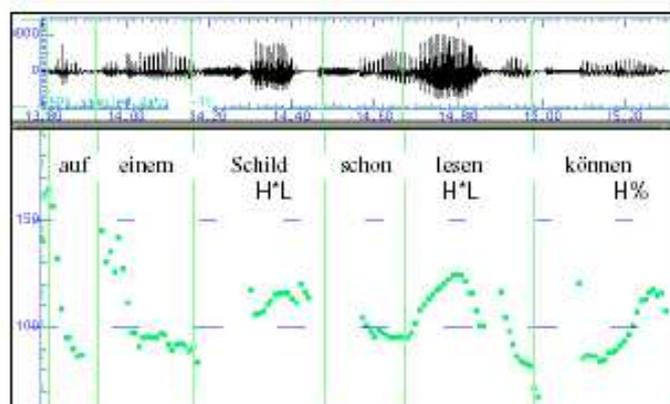


Fig. 13 Example for H*L H%; utterance *...auf einem Schild schon lesen können*; rise on the last syllable which is not an accent.

2.4 Uncertainty

The symbol ? is to be added to the respective boundary tone label, to express the uncertainty about the existence or the quality of a boundary.

-? Uncertainty whether there is an intermediate phrase boundary or no one at all

%? Uncertainty whether there is the label % for IP or – for ip

H%? Uncertainty whether there is the label H% or %

2.5 Alignment

The phrase final boundary tones are labelled at the very end of the phrase (ip or IP), they have to be situated roughly at the final boundary of the last phone segment.