
Izvorni znanstveni rad

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**THE INTONATION OF TURN-YIELDING AND TURN-HOLDING IN
GERMAN AND CROATIAN RADIO PHONE-IN PROGRAMMES**

SUMMARY

This study investigates intonational realizations in turn-yielding and turn-holding in the German and Croatian language in phone-in programmes. The signalization of turn-yielding is investigated in the intonational phrases appearing immediately before transition to the next speaker, and the signaling of turn-holding in those intonational phrases where syntactic completion is not realized in this, but in one of the intonational phrases that follow. With the comparison of intonational realizations of turn-yielding and turn-holding, it is shown that the relationship of two tones, the boundary tone and the tone realized in the syllable which precedes the last prominent syllable is distinctive in both languages and cannot be presented within the existing systems for notating intonation.

Key words: *intonation, turn-holding, turn-yielding, German, Croatian*

INTRODUCTION

At least since 1974, when the American sociologists Sacks, Schegloff and Jefferson published their pioneer thesis on the mechanism of turn-taking in English, did it become clear that intonation plays a key role in the organization of turn-taking. It is generally accepted that the signaling of turn-yielding, viz. 'completion', is associated with falling and high rising intonation, whereas turn-holding, viz. 'continuation', with level and intonation rising to mid. This is believed to be universal in speech. However, a lot of findings contradict this belief, such as the falling-rising-to-mid H*+L M% contour, which signalizes the intention of turn-yielding in Mannheim dialect of German in exclamations, emphatic complaints, or expressing feedback confirmation in teaching or reference (Gilles, 2005:345). It has been observed in the literature (Cruttenden, 1997:130) that turn-holding can be accomplished by means of a high-rising tone at the end of the utterance, and it is commonly found in Australian, New Zealand and American English, where it signals the speaker's checking whether the listener is successfully following the narration (cf. Cruttenden, 1997; Wells, 2006).

The above cases of deviation from the idea of universal intonation patterns for turn-holding and turn-yielding represent motivation for comparative analyses of intonation of turn-yielding and intonation of turn-holding in German and Croatian, even though there are no hypotheses about possible deviations from universal patterns in German and Croatian, or differences concerning turn-holding and turn-yielding strategies between the two languages.

The research of the intonation of turn-holding and, respectively, turn-yielding in German and Croatian presented in this paper has partly been motivated by certain intonation models that offer descriptions of intonation in individual languages in the form of 'Finite-State' grammar of intonation. This kind of approach determines all the possible intonation contours, that is, all combinations of the phonologically relevant pitch accents, phrase tones and boundary tones contained in the tone inventory, without establishing the phonological representation of the known functions of intonation in a given language. An example of this kind of model is the autosegmental-metrical model of intonation of German – GToBI (Grice & Benz Müller, 1995; Grice & Baumann, 2002; Grice et al., 2005). Among the studies describing the intonation of turn-holding and turn-yielding in German is that of Selting (1995), which deals with the prosodic description of conversations of Northern-Western varieties of German. As for Croatian, the intonation of turn-holding and turn-yielding in Croatian has never been truly explored.

At this point, it is necessary to introduce a brief typological comparison between the two languages. The German language belongs to the West Germanic language family. It is an intonational language, and, much like Croatian has free stress. The Croatian language is a South Slavic language, it is a pitch-accent

language and is syllable-based, as opposed to German, which has stress-based rhythm.

The present paper is placed within a wider theoretical framework of the theory of contextualization (Gumperz, 1982; Auer, 1992, 1986, 1996a "Kontextualisierung"), in which intonation is conceived of as a contextualization cue. Together with other kinds of contextualization cues, it places the utterance in a particular context, leading the listener to decide on the belonging of what has been uttered to a specific scheme of the totality of our knowledge. For intonation realizations identified in nuclei and tails of the turn-final and turn-medial intonational phrases, it is assumed that they do not have one distinctive function across contexts, but that they form contextualization cues, together with syntactic, pragmatic, semantic, segmental phonetic, nonverbal, and other prosodic means. The participants of conversation are not aware of individual functions of contextualization cues, what is different from the "holistic outcome of an interpretative process" (Auer, 1996b:58) that, in this case, represents the signaling of turn-yielding or turn-holding. The same also applies to non-intonational contextualization cues:

[...] in particular, their 'meaning' is not that of decontextualized (transcontextually stable) referential symbols, but rather that of indices which must be interpreted in relation with a specific local environment; they may (and indeed often do) co-occur (i.e. there is often a certain amount of redundant signaling) [...] (Auer, 1996b:58).

Contextualization cues can occur individually or in combination with other cues, when the means for organizing turn-taking are not fulfilled or there are no clear indicators of the speaker's intention: "More interesting are cases in which the two (sets of) parameters may be 'out of phase'" (Auer, 1996b:59). These cases are certainly more interesting, especially with reference to intonation, because they show intonation realizations that control turn-taking by itself. However, identification of the independent variable is methodologically impossible in the case of turn-holding, because it is impossible to establish the speaker's intention on the level of organizing turn-taking without taking into consideration the non-intonational contextualization cues.

In analyzing independent variables, in this paper, we shall be following the methods of ethnomethodological conversation analysis, empirically oriented direction with sociological background which, in research of structures and mechanisms in conversations, uses categories which conversation participants use on their own in participation and interpretation during interaction (see Levinson, 1983:284–369).

Intonologists generally agree that the basic acoustic stimulus for intonation is the frequency of periodic changes in air pressure, resulting from the vibration of the vocal folds (F0). For intonological purposes, its changes through time are commonly identified with tonal changes – the proof of which may be found in numerous works on intonation where intonation research relies completely on instrumental measurement of F0. However, it is also well known

that the acoustic stimulus for intonation can be found in sound intensity, degree of sonority, and the duration of speech sound (Mertens & Alessandro, 1995:228), while cues for intonation can be found in loudness and tone quality, since loudness and tone quality can change with the change of F0. Furthermore, changes of F0, due to variable hearing sensitivity dependant on the hearing area, are not in linear correlation with the changes of perceived pitch. All of this taken into consideration, in this paper, intonation and F0 will not be considered identical. Therefore, the way intonation is perceived in this paper closely follows Selting's definition: "Intonation is conceived of here as the contour or melody of speech in terms of the temporal organization of perceived pitch of utterances" (Selting, 1987:779).

CRITERIA FOR DEFINING AND LOCATING TURN-YIELDING AND TURN-HOLDING IN THE PHONEMIC LAYER OF TEXT

The verbal organization of turn-taking typically takes place at several independent levels, within the text layer of the speech. It occurs simultaneously in its phonemic sub-layer as well as within its prosodic sub-layers, to create, together with the non-verbal organization of turn-taking (with facial expression or gesticulation) a holistic product. This product is interpreted from the participants' point of view as the turn-yielding or, respectively, turn-holding. In the text layer of the speech, the organization of turn-taking is done by syntactic (Sacks et al., 1974), pragmatic (Ford & Thompson, 1996), semantic (Gilles, 2005), and segmental phonetic means (Local et al., 1986). In the prosodic sub layers, this function is performed by means of intonation, loudness, rhythm and tempo (Local et al., 1986). Prosodic means, especially intonation, which represent the dependant variable of the present analysis, are not taken into account in this paper when locating independent variables (turn-yielding and turn-holding), because the prosody of organizing turn-taking is yet to be explored in Croatian. Also, certain means in the phonemic layer of the text are not reliable criteria for locating independent variables. The reason for this is that they, like segmental phonetic and syntactic means, are not always realized, or because they do not always have clear indicators of the speaker's intention on the level of organization of turn-taking, characteristic of pragmatic and semantic means.

Due to this, the intonational patterns analysis during turn-yielding in present paper will be restricted to those intonational phrases in which turn-yielding follows a predicate which is completed by an obligatory verbal complement, or by optional complements before the point of syntactic completeness. The next criteria are the transition to the next speaker after the first point of syntactic completeness as well as the meaningfulness of the utterance up to the point of reaching the first complete syntactic unit within a given intonation phrase. What will further be observed in the case of turn-yielding are the intonational phrases that do not appear before the point of global pragmatic completeness (like for example the end of storytelling) and which, on the

In the above-given conversation between the caller and the host of the show the caller summarizes the upshot of her call in line 7 (solution of political crisis in Croatia) and expands on it all the way to line 11, offers how to solve the political crisis in Croatia (by 'importing' politicians from Sweden, Finland and other northern countries) in lines 12, 13 and 14, and after this, the possible result is mentioned in line 15. At the end of her turn, in lines 16 and 17, the caller talks about her view on the reason for the whole problem. Due to this, intonational phrase *people are the problem* does not appear before the point of global pragmatic completeness, that is, in the middle of sharing her thought on solution of the political situation in Croatia, and does not contain lexical and/or syntactic explicit formulation of continuation. In the text layer of the speech, for this intonational phrase, and for this context, the meaningful action is completed. After the first realized syntactic completion point in this intonational phrase (after filling the place of obligatory verbal complement *problem*, which is opened by the full verb *biti* (to be) in the third person plural), transition to the next speaker without overlap and disruption occurs in line 18, in which the host of the show expresses gratitude to the listener for sharing her opinion. According to above mentioned indicators, intonational phrase in line 17 undoubtedly signals turn-yielding.

In the case of turn-holding, the analysis is limited to intonational phrases where syntactic completion does not occur, and where it is reached only in one of the next intonational phrases. The intonational phrases after which transition to the next speaker does not occur, must not be characterized by the meaningfulness of the uttered action, and on the semantic level they must not have lexico-syntactic formulations that explicitly serve to end a turn.

Here is an example of identifying intonational phrases accomplishing turn-holding in German transcribed according to convention of notation system for conversation analysis "GAT":

Transcript 2: "CARNEVAL ON TELEVISION"

- 01 H: tag herr -HENSchke. (-)
good day mister henschke
- 02 L: schön gutn ↓'T[A:G,
a very good day
- 03 H: <<p,t>[[^]WAS] sagen sie->(---)
what do you say
- 04 L: ja ich ^hAbe eigentlich ⁿIchts↓ gegen karnevalsendung
I don't really have anything against shows on carnival
im ^{FERN}sehen-(.)
on television
- 05 doch in den 'lEtzten 'jAhren sind mir die
but in the past few years I have gotten tired of
übertragungen etwas zu ^{VIEL} geworden-(.)
broadcasting this too much

- 06 H: ˘JA: , =
o.k.
- 07 L: =denn fast ˘JEde re'gION in 'dEUtschland überträgt ja
because almost every region in Germany now broadcasts

nun eine ˘kArnevalsending in der aer'dE und im
˘zEdeef(--)
a show on carnival on the first and second German
national TV channel
- 08 das ˘MUSS eigentlich nicht ˘sEIn.(--)
That's not necessary
- 09 und ich 'FRAge mich-
and I wonder
- 10 warum senden nicht erte↓'EL oder sat↑'EINS↓ die
˘vielen karnevalsending.
why RTL or Sat 1 (private German broadcasters) don't
broadcast these many shows on carneval

In this example the host of the show invites the caller in line 3 in the form of a question to express his opinion about the topic of the programme. Lines 4-5 express the callers dissatisfaction with the television programmes of carnivals (too much of these kinds of shows on television). After the host's 'continuer' in line 6, in line 7 the caller offers his explanation for the great number of the above-mentioned programmes on German television, and in line 8, his opinion about it. In lines 9 and 10, the caller confirms in the form of a main and a dependant clause in a rather indirect way the correctness of his claims considering the fact that even private German television broadcasters, Sat 1 and RTL, do not broadcast carnival shows. Within the intonational phrase *und ich frage mich (and I wonder)*, the places opened by the verb *sich fragen (to wonder)* are not filled with obligatory complements, nor fillable with items in the previous bits of talk, so it is syntactically incomplete. Also, within this intonational phrase, for this context, the meaningful action is not completed. Also, the intonational phrase in line 9 does not contain lexico-syntactic explicit formulation of turn-ending, and after it, the transition to the next speaker does not occur, so it undoubtedly signalizes turn-holding.

DATA, TRANSCRIPTION SYSTEMS AND THE PROCEDURES IN THE ANALYSIS

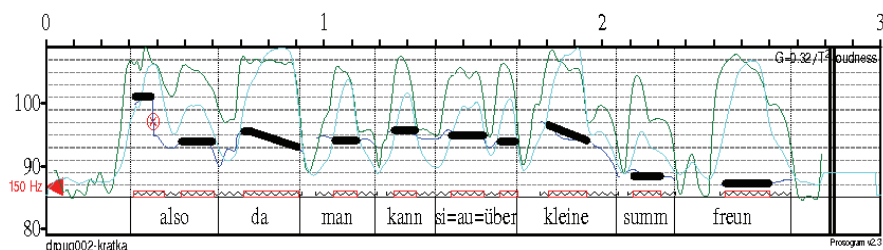
The data analyzed in this paper have been collected from the "Hrvatski radio" and the "Deutschlandradio" phone-in programmes ("Debatte" and "U mreži prvog") – both national radio stations with the main offices in Zagreb, Cologne and Berlin, respectively. These radio stations were chosen based on

the assumption that they use standard language in their radio shows, as it is required of these media.

In order to obtain spontaneous conversation, the author chose shows involving live telephone calls. In a strictly empirical conversation analysis of a real, spontaneous conversation, such telephone conversations are commonly taken to make up the corpus. This choice is further justified by the fact that, during telephone conversation, people do not make up for the lack of visual signals by means of intonation (Duncan & Fiske, 1977). The main feature of these conversations is asymmetry (lack of equality) in the status of participants in conversations, where the caller, who is on-air, is usually 'inferior', and this can affect the intonational realization. The theory of contextualization (Auer, 1986, 1996a) departs from the assumption that the context of conversation, and along with it the relationship of participants in conversation, is not given by default, but, rather, established in the actual communicative situation by the employment of interactional resources such as interruption, overlapping, or infrequent turn-transition. Therefore, conversations characterized by this kind of asymmetry were excluded from the analysis.

The corpus of this paper includes 120 clips from the exchanges between the host (male or female) of a radio show and callers (male or female), with 30 intonational phrases having the function of turn-yielding and 30 intonational phrases with the function of turn-holding for each language.

For the transcription of the complete corpus, para- and extra- linguistic appearances in the excerpts, and for the purposes of locating the independent variable, the author used the transcription system mainly used for discourse and conversation analysis in Germany "GAT" (Gesprächsalytisches Transkriptionssystem) (Selting et al., 1998), and for the notation of intonation as a dependent variable, the autosegmental-metrical notation system- IViE (Intonational Variation in English; Grabe et al., 2001). The software used for the instrumental analysis of intonation patterns were "Praat" and "Prosogram", the latter showing the human perception of intonation contours shown by "Praat" (Figure below shows such a prosogram). In this paper, diagrams of stylization model "Prosogram" are used for presentation of final results of intonational instrumental analysis. This model functions as upgraded script within a software program "Praat" and aside for presentation of simulation of human tone perception it also serves as a means of semi-automatic transcription of intonation and as a means of automatic segmentation of vowels. Values of perceived tones and their variations "Prosogram" achieves by calculating algorithms that contain all the latest findings in psychoacoustics in the field of perception of tone and intonation (for example House, 1990; 't Hart et al., 1990; Mertens & Alessandro, 1995; Mertens, 2005).



also (da) man ˈkAnn si=au=über ˈKLEIne ↓summ ˈfrEUn.=

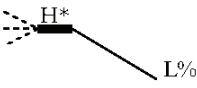
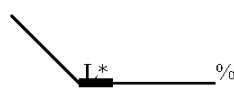
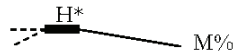

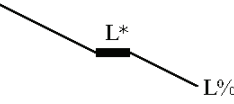
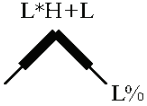
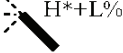
Figure 1. Simulation of the human perception of intonation contour using stylization model of "Prosogram" (thick lines represent the perceived intonation on vowels)

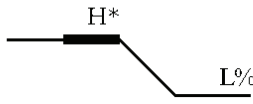
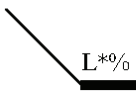
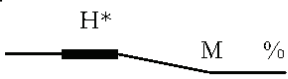
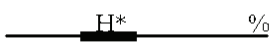
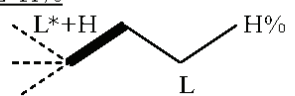
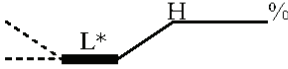
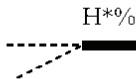
Slika 1. Simulacija ljudske percepcije intonacijskog oblika pomoću stilizacijskog modela "Prosogram" (debele linije predstavljaju percipiranu intonaciju u vokalima)

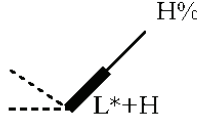
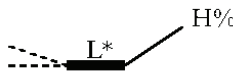
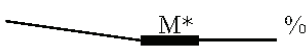
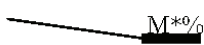
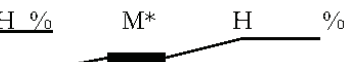
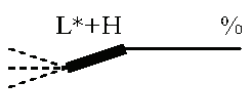
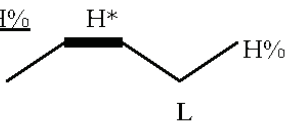
RESULTS


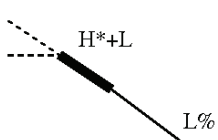
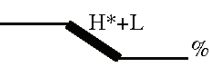
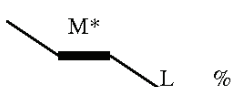
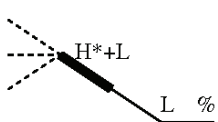
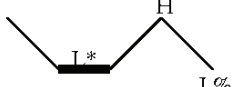
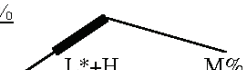
Comparing the phonological order (i.e., broad transcription) of intonation contours transcribed with IViE that are realized at the end of TCUs preceding turn-yielding to those preceding turn-holding, for each of the two languages, it has been observed that most of the tone sequence types of the head appear in both turn-final and in turn-medial contours. This happens irrespectively of the fact that the place and the number of prominent syllables has varied from one intonational phrase to another. Because of that, in the second part of comparative analysis, Schegloff's transition relevance space (1987) is considered, and it stretches from the last prominent syllable before the possible transition relevance place until the possible transition relevance place, which is, in the case of turn-yielding the real ending of a turn (from *out* until transition relevance place in Schegloff's example (1987:103) *he's about the only good regular out there.*). Considering that in intonational phrases with the function of turn-holding the possible transition relevance place does not appear because of the syntactic incompleteness, the stretch between the last prominent syllable and the boundary of the intonational phrase will be analyzed. Thus, the tone sequences relevant for turn-taking turned out to be those occurring within the nucleus and within the tail, provided there is one. These tone sequences are schematically shown and exemplified in table 1.

Table 1. Schematic diagrams of nuclear tone sequences with examples
Tablica 1. Shematski prikazi nizova jezgrenih tonova s primjerima

Schematic diagram of nuclear tone sequence	Example
$H^* L\%$ 	<p>auch irgendwo $\%L$ mal(.) zu-RECHtfinden muss. $H^* L\%$ <i>somehow has to find one's way</i></p>
$L^* \%$ 	<p>↓da ↑wird n ex'PERte $\%L H^*+L$ ↓-vOrgestellt=- $L^* \%$ <i>expert is being introduced</i></p>
$H^* M\%$ 	<p>a a z `DRUge strane pitate se(-) $\% H^* M\%$ <i>and on the other hand you wonder</i></p>
$L^*+H L\%$ 	<p>am 'LEbn zu erhalt'n. $\%H L^*+H L\%$ <i>to be kept alive</i></p>
$L^* L\%$ 	<p>oni !'NE!maju(-) `Otiči(.) `kA↓mo- $\%H L^*+H !H^* L^* L\%$ (-) <i>they have nowhere to go</i></p>
$L^*H+L L\%$ 	<p>[da`] (-) dadurch(.) be^WEISen; (-) $\% L^*H+L L\%$ <i>prove myself by that</i></p>
$H^*+L\%$ 	<p>i 'dA li <<len>ovoga> em dobiva $\%L L^*+H$ slobodan `DAN; (-) $H^*+L\%$ <i>whether one is getting a day off</i></p>

<p>$H^* L \%$</p> 	<p>aso mathe kann man 'Immer(.) $\%L$ L^*+H <code>^Immer <<dim>ver^wEndn;</code> H^* $L^* \%$ <i>so math can always always be used</i></p>
<p>$L^{*0}\%$</p> 	<p>=dAs is nicht der ^WEG-(-) $\%H^*$ $L^{*0}\%$ <i>that's not the way</i></p>
<p>$H^* M \%$</p> 	<p>^nEšto što smo ^LAni vidjeli- $\%H^*$ $!H^* M \%$ <i>something we saw last year</i></p>
<p>$H^* \%$</p> 	<p>und ähm(-)dass ^DIE natürlich: $\%H$ H^* ähm ihrzeug ver^kAUfen wollen, H^* $\%$ (---) <i>and that they of course want to sell their stuff</i></p>
<p>$L^*+H L H\%$</p> 	<p>dass ich(--)^GROB ^und $\%H$ L^*+H ^STARK^(.)bin, (.) L^*+H $L H\%$ <i>that I'm big and strong</i></p>
<p>$L^* H \%$</p> 	<p>und ich ^FRAge mich-- $\%L$ $L^* H \%$ <i>and I wonder</i></p>
<p>$H^{*0}\%$</p> 	<p>((...))aber ich glaube $\%$ ^NICHT- (---) $H^{*0}\%$ <i>but I don't believe</i></p>

<p>L^*+H $H\%$</p> 	<p>dass äh der mo'dErne 'BAUstil, %H L* L*+H H% (--) that the modern style of building</p>
<p>L^* $H\%$</p> 	<p>Alles zu ver'BIETen,= %L* L* H% to forbid everything</p>
<p>M^* $\%$</p> 	<p>=tatsächlich 'SCHaffe-(---) %L M* % I really managing it</p>
<p>$M^*\%$</p> 	<p>em jednostavno se 'ZNA- %H M*% it's simply known</p>
<p>M^* H $\%$</p> 	<p>↓ge'RECHnet wird-(---) %L M* H % is calculated</p>
<p>L^*+H $\%$</p> 	<p>'Očito- %L*+H % it's obvious</p>
<p>H^* L $H\%$</p> 	<p>=die: a' die sich an diesen % 'sachen be↑TEIligt ↓warfn?(--) L* H* L H% which were involved in these things</p>

<p><u>L* M %</u></p> 	<p><<f>wenn 'FRAUen mit 'diEsen: %H L*+H H* 'ja: so>(-)den typisch ↓weiblichen ↓'Eigenschaften-(--) L* M % when women with these typical feminine characteristics</p>
<p><u>H*+L L%</u></p> 	<p><<f>'SAM je krif;> % H*+L L% it's his own fault</p>
<p><u>H*+L %</u></p> 	<p><<dim>↓da 'NE↓maju->(.) %H H*+L % they don't have</p>
<p><u>M* L %</u></p> 	<p>=i u ↑tom ↓po'GLEdu bili % L*+H 'ZA↓padu-(.) M* L % and in this context to the West</p>
<p><u>H*+L L %</u></p> 	<p>↑da je ↑'svOjevremeno(.) 'PRIJE % H*+L H*+L tok ↓rata-(--) L % that once before that war</p>
<p><u>L* H L%</u></p> 	<p><<all>to jest 'stvAr<<dim>no'1> % H*+L ↓'Lice↑mjer↓no-2> L* H L% that is really hypocritical</p>
<p><u>L*+H M%</u></p> 	<p>'žalosno je; %L*+H M% it's sad</p>

However, the presence in intonational phrases of both functions has also been confirmed for the nuclear accent, considering that in German, in intonational phrases with the function of turn-yielding, there is no pitch accent M* in the nucleus, and in intonational phrases with the function of turn-holding, there are no pitch accents H*+L and L*H+L. The tone sequences realized in the nucleus and a possible tail, have been less frequent in both types of intonational

phrases which is evident in table 2, but are still rather significant, if one takes into consideration that intonation within nucleus and the tail is distinctive and that one should not expect the same combinations of tone sequences in intonational phrases for both functions.

Table 2. Tone sequences of the nucleus and possible tail in broader transcription for both functions in German and Croatian (gty – function of turn-yielding in German, gth – turn-holding in German, cty – turn-yielding in Croatian and cth – turn-holding in Croatian)

Tablica 2. Niz tonova u jezgri i mogućem intonacijskom završetku u široj transkripciji za obje funkcije u njemačkom i hrvatskom (gty – funkcija prepuštanja uloge govornika u njemačkom, gth – zadržavanje uloge govornika u njemačkom, cty – prepuštanje uloge govornika u hrvatskom i cth – zadržavanje uloge govornika u hrvatskom)

Tone sequence	gty	gth	cty	cth
H* L%	30%	10%	13,3%	3,3%
L* %	10%	-	6,6%	-
H* M%	3,3%	3,3%	3,3%	46,6%
L*+H L%	6,6%	3,3%	3,3%	3,3%
L* L%	6,6%	3,3%	16,6%	-
L* H+L L%	3,3%	-	3,3%	3,3%
H*+L%	10%	-	10%	-
H* L %	13,3%	-	10%	3,3%
L*%	10%	3,3%	-	-
H* M %	3,3%	-	-	10%
H* %	-	23,3%	-	10%
L*+H L H%	-	3,3%	-	-
L* H %	-	3,3%	-	-
H*%	-	6,6%	-	-
L*+H H%	-	6,6%	-	-
L* H%	-	6,6%	-	-
M* %	-	6,6%	-	-
M*%	-	3,3%	-	3,3%
M* H %	-	3,3%	-	-
L*+H %	-	3,3%	-	3,3%
H* L H%	-	6,6%	-	-
L* M %	-	3,3%	-	-
H*+L L%	-	-	16,6%	-
H*+L %	-	-	6,6%	-
M* L %	-	-	3,3%	-
H*+L L %	-	-	3,3%	6,6%
L* H L%	-	-	3,3%	-
L*+H M%	-	-	-	6,6%

After it has been established quantitatively that the same combinations of tone sequences of nucleus and possible tails often appear within the intonational phrases for both functions, there follows a comparison of narrow transcription of nuclear contours for both functions, assuming that broad transcription was not narrow enough to include intonational patterns that would be distinctive in turn-taking. The comparison of narrow transcription of nuclear contours for both functions has shown similar results: nuclear contours, despite the considerable variations of place and number of prominent syllables in intonational phrases, appear relatively often in intonational phrases for both functions.

The next step was the comparison of the perceived pitch of nuclear accent and the boundary tone, expressed in semitones. The starting point was that, for example, in the tone sequences H*L% or mH-1%, where the boundary tones L% that is 1% are low compared to the previous tones, the differences of the perceived pitch of the nuclear accent and boundary tone are greater in the intonational phrases with the function of turn-yielding than in those with the function of turn-holding. However, these differences in the degree of the perceived pitch were not sufficient to be dealt with by means of IViE. Also, this presumption turned out to be incorrect, considering that nuclear contours, realized in intonational phrases with the function of turn-yielding, had shown the same degree of differences between the perceived pitch in the nuclear accent and boundary tone as well as nuclear contours realized in intonational phrases with the function of turn-yielding.

The perceived pitch value in the last prominent syllable of the intonational phrase when compared to the perceived pitch value of syllable preceding it, varied to the same degree in both language functions, viz. 12 semitones of lower perceived pitch values of the last prominent syllable, compared to the preceding syllable of up until 20 semitones of higher perceived pitch values of the last prominent syllable. Therein the following tendency has been observed: nuclear contours realized in intonational phrases with the function of turn-yielding in both languages have shown, on average, fewer differences of perceived pitch compared to the nuclear contours with the function of turn-holding. It is assumed that this is because of the falling trend of intonation in nucleus and tail of intonational phrases with the function of turn-yielding.

However, the issue that proved to be the key for the distinctiveness of intonation, concerning the function of turn-taking, with a few exceptional cases that will be discussed later, is the relationship of the perceived pitch values of the other two tones: the boundary tone and the tone realized in the syllable that directly precedes the last prominent syllable in the intonational phrase. Relationship of these two tones is schematically shown in figure 2.

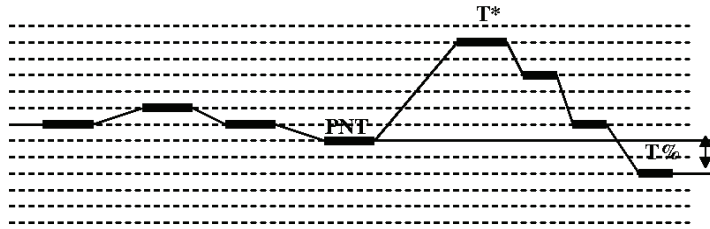


Figure 2. Schematic diagram of a turn-yielding intonation contour with the marked nuclear accent (T^*), the tone realized in the syllable preceding the last prominent syllable (PNT) and the boundary tone ($T\%$), showing the difference of their perceived pitch values

Slika 2. Shematski prikaz intonacijskog oblika prepuštanja uloge govornika s označenim jezgrenom naglaskom (T^*), tonom ostvarenim u slogu koji prethodi zadnjem istaknutom slogu (PNT) te graničnim tonom ($T\%$), prikazujući razliku njihovih percipiranih tonskih vrijednosti

There are usually one to sixteen syllables between these two tones, whereas the tones can occur on the falling level or rising trajectory, independently of the function of turn-taking, discounting the last prominent syllable in the intonational phrase. In cases where the first syllable of the intonational phrase is the first and the last prominent one in the intonational phrase, what matters is the relationship of the tone value realized in that syllable and the tone value of the boundary tone. Although in the present work there are no one-syllable intonational phrases, it is assumed that the fall of tone value is possible to occur, which is specific to the function of turn-yielding, and to occur within one syllable, this is, the fall, rise and yielding of the same tone value associated with the function of turn-holding. If we leave out a few exceptional cases, the boundary tone is, in the intonational phrases with the function of turn-yielding in German, lower than the tone realized in the syllable preceding the last prominent (pre-nuclear) tone by a minimum of 4 (two degrees in the prosogram marked with dashed horizontal lines) and a maximum of 18 semitones. In Croatian, the smallest difference between these two tones is also 4 and the biggest difference is 16 semitones. If we do not take into account the exceptional cases in the intonational phrases with the function of turn-holding in German, the value difference between the boundary and prenuclear tone ranges from 5 semitones (for the higher boundary tone) to 3 semitones (for the lower boundary tone). In Croatian, the boundary tone is higher than the prenuclear tone by the maximum of 4 semitones, and lower by the maximum of 3 semitones.

Phonologically relevant relationship between these two tones for turn-yielding, that is turn-holding, in German and Croatian is schematically shown in figure 3.

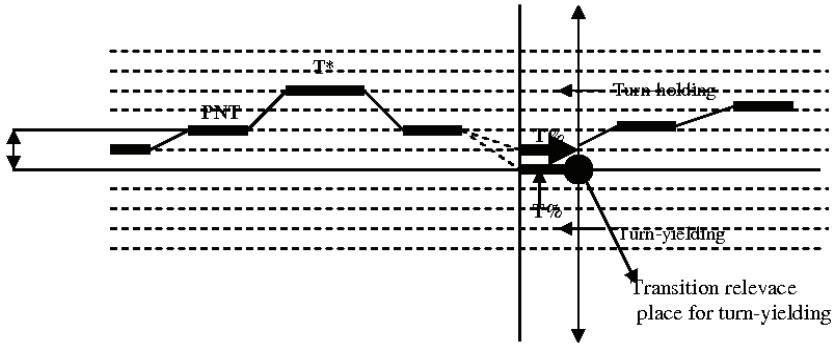


Figure 3. Schematic representation of intonational space for turn-yielding and turn-holding (—● represents one of the possible boundary tones in turn-yielding, and ➔ represents one of the possible tones in turn-holding)

Slika 3. Shematski prikaz intonacijskog prostora za prepuštanje i zadržavanje uloge govornika (—● predstavlja jedan od mogućih graničnih tonova u prepuštanju uloge govornika, dok ➔ predstavlja jedan od mogućih tonova u zadržavanju uloge govornika)

Therefore, the phonological representation of boundary tones in German and Croatian can be expressed by the following formulae, where Th% represents the turn-holding boundary tone; Ty% represents the turn-yielding boundary tone; PNT stands for the concrete prenuclear tone and T% represents the concrete boundary tone:

$$\text{Th}\% > \text{T}\% = \text{PNT} - 4 \text{ ST}$$

$$\text{Ty}\% \leq \text{T}\% = \text{PNT} - 4 \text{ ST}$$

It is important to emphasize that, in the present paper, the boundary tone in case of turn-yielding represents the last tone before the transition relevance place and the last tone of the intonational phrase. In case of turn-holding, the boundary tone can be associated only with the last tone of the intonational phrase, as the possible transition relevance place does not occur in intonational phrases with the function of turn-holding. It is also important to add that in all of the above-given comparisons of tone values, the rightmost values were taken for tone values in the falling, rising, falling-rising and rising-falling tones, that is, the ones which were last realized within a given vowel. This applied to cases of comparison of tone values of nuclear accents and boundary tones, as well as comparisons of tone values of prenuclear tones and nuclear accent, or comparisons of tone values of the prenuclear and boundary tone.

The only observation that remains to be made concerns exceptional cases which deviate from the above-given regularities. In case of turn-yielding, the tone value of the boundary tone is, in exceptional cases, equal to that of the prenuclear tone, or is lower by one, two or three semitones, and in case of the turn-holding boundary tone, it is lower than the prenuclear tone by five, six, ten, twelve or even 26 semitones. It is most convenient to observe the cases of turn-yielding where the movement of the last tone toward a lower value is realized within a sonorant (it is usually the case with the alveolar nasal [n]), which is not recorded by the software program "Prosogram". This is the case with intonational phrase gty005 and with gty023, where the tone value within [n] is only partially recorded, and with cty008 and cty022. In gty005, gty006 and gty008, there is an occurrence of noisy breath after the utterance of the intonational phrase, which can be interpreted as a willfully transmitted additional contextualization cue of turn-yielding. In both languages, the turn-holding boundary tone is considerably lower than the prenuclear tone in just a few intonational phrases. In gth025, gth027, cth005, cth013, cth014, cth015 and cth016, that is, in the complete conversations from which they were separated, there is some noticeable agitation in the callers. Thus, alongside the average 0.5 second pause realized immediately after the utterance of the intonational phrase, a boundary tone considerably lower than predicted by the above findings should be interpreted as a marked form of the contextualization cue for turn-holding. No solution is found for gth028 and cth023. Therefore, it can be assumed that the boundary tones in these cases function as redundant contextualization cues whose relationship to the height of the pre-nuclear tone varies depending on the context and other contextualization cues for turn-holding that could not be identified and isolated in these two intonational phrases.

CONCLUSION

The regularity established for both German and Croatian is that boundary tones higher, equal or lower by maximally 3 semitones than the prenuclear tone contextualize turn-holding, and that boundary tones lower than the prenuclear tone by minimally 4 semitones contextualize turn-yielding. This shows that intonation in these cases does not always function as a contextualization cue whose form necessarily varies from context to context, depending on other contextualization cues with the same function. In most of the cases observed, there turned out to be some regular pattern. This implies that the redundancy achieved by multiple contextualization by means of the different forms and subforms of contextualization cues does not bring into question the regularity of the phonological representation of intonation as a contextualization cue. These findings at the same time emphasize the need for indicating the relevant phonological relation between the prenuclear tone value and boundary tone value in notational systems. It may be observed that the currently existing notational

systems, without exception, fail to mark this relation and are incapable of doing so using the currently existing tonal labels.

The author suggests that the boundary tone be marked as Th% for turn-holding and Ty% for turn-yielding. Finally, it has also been proven that, besides the already-known falling intonation of turn-yielding and rising intonation of turn-yielding (which is not presented in this paper because questions are not taken into consideration) and the level and slightly rising intonation of turn-holding in German (Selting, 1995), there is also the slightly falling intonation of turn-holding, which is shown, by all the above presented contours occurring in nuclei and possible tails, that occur in both German and Croatian.

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INTONACIJA PREPUŠTANJA I ZADRŽAVANJA ULOGE GOVORNIKA U NJEMAČKIM I HRVATSKIM RADIJSKIM KONTAKT-EMISIJAMA

SAŽETAK

U ovom se radu istražuju intonacijska ostvarenja pri prepuštanju, odnosno zadržavanju uloge govornika u njemačkim i hrvatskim radijskim kontakt-emisijama.

Teorijsko polazište ovoga rada je da prozodija predstavlja signalizacijski sustav neovisan o drugim lingvističkim sustavima, ali da se njeni oblici mogu (ali i ne moraju) suostvarivati s određenim gramatičkim ustrojem ili određenim ustrojem teksta.

Signaliziranje predstojećeg prepuštanja uloge govornika istraženo je u intonacijskim jedinicama koje odlikuje sintaktička potpunost i smislenost izrečenog, i koje ujedno neposredno prethode zamjeni govornih uloga. Signaliziranje zadržavanja uloge govornika istraženo je u intonacijskim jedinicama koje sintaktički i smisleno nisu potpune, pa stoga neposredno i ne prethode zamjeni govornih uloga.

Intonacijska ostvarenja analizirana su instrumentalno, najprije softverskim programom za analizu i sintezu govora "Praat", a za prikaz krajnjih rezultata instrumentalne analize modelom stilizacije osnovne frekvencije "Prosogram", koji prikazuje simulaciju čovječje percepcije tonova i njihovih mijena u vremenu. Rezultati instrumentalne analize naposljetku su provjeravani auditivnom metodom.

Usporedbom intonacijskih ostvarenja prepuštanja uloge govornika i intonacijskih ostvarenja zadržavanja uloge govornika u oba jezika zasebno, utvrđeno je da je odnos graničnog tona i tona koji je ostvaren u slogu koji neposredno prethodi posljednjem istaknutom slogu intonacijske jedinice razlikovan. U radu se postavlja pitanje bilježenja fonološki relevantnog odnosa ovih dvaju tonova koje sustavi za bilježenje intonacije beziznimno ne bilježe, i s postojećim tonskim inventarima nisu ni u mogućnosti bilježiti. Stoga se u radu predlaže bilježenje graničnog tona prepuštanja uloge govornika s $Ty\%$ i graničnog tona zadržavanja uloge govornika s $Th\%$.

Ključne riječi: *intonacija, zadržavanje uloge govornika, prepuštanje uloge govornika, njemački jezik, hrvatski jezik*

