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ON THE COMMUNICATIVE FUNCTIONS OF NUCLEUS BEARERS

A contrastive study of Czech and English

The analysis presented in this paper is part of a contrastive study of Czech and English intonation. It looks at the role of one of the most important features of intonation, the nucleus, in functional sentence perspective (= FSP). The position of intonation within the theory of FSP has been discussed by Firbas, e.g. 1980, 1985, 1987, and 1992. Firbas considers intonation one of the factors of FSP which cooperates in determining the distribution of degrees of communicative dynamism (= CD) over the sentence. In written language, the distribution is determined by the interplay of three non-prosodic factors, i.e. linear modification, semantic structure and context. At the level of spoken language, the non-prosodic factors are joined by a fourth factor, intonation. Under certain conditions intonation is capable of modifying the outcome of the interplay of non-prosodic factors of FSP.

Degrees of communicative dynamism

Firbas (e.g. 1979, 1992) looks upon a sentence as a field of distribution of CD. Sentence elements serve as communicative units carrying different degrees of CD and performing different communicative functions. The degree of CD carried by a communicative unit reflects the relative extent to which the unit contributes to the development of communication. With the exception of the predicative verb, each sentence element corresponds to one communicative unit. The predicative verb performs the function of two different communicative units at the same time. Firbas (e.g. 1979, 1992) and Svoboda (1981) distinguish the following types of communicative units/communicative functions (starting with the unit carrying the lowest degree of CD):

- thematic units: theme proper (Thp)
 theme-proper oriented theme (Th(p))
 diatheme (Thd)
 diatheme oriented theme (Th(d))
- transitional units: transition proper (Trp)
 transition (Tr)
- rhematic units: rheme (Rh)
 rheme proper (Rhp)

In this paper a slight simplification of the scale will be adopted in the sphere of thematic units. Themes proper and theme-proper oriented themes will be grouped together and referred to as themes proper (Thp); diathemes and diatheme oriented themes will be referred to as diathemes.

Degrees of prosodic prominence

English and Czech publications on intonation and prosody (e.g. Crystal 1969, Gimson - Cruttenden 1993, Cruttenden 1986, Couper-Cuhlen 1985, Altenberg 1987, Svartvik and Quirk, 1979, O'Connor and Arnold 1973, Firbas 1992, Palková 1994, *Mluvnice češtiny* 1987, *Příruční mluvnice češtiny* 1995) present a variety of different attitudes to the analysis of spoken language and apply different systems of the prosodic transcription of spoken texts. In spite of this variety there seems to be a general agreement on some basic prosodic phenomena among most of the authors.

1. Intonation (prosody) is closely related to meaning, information structure, communicative importance, or FSP.

2. Speech is divided into intonation units referred to by different authors as *tone units, tone groups, tunes, intonational phrases, breath-groups, sense-groups, phonological phrases, clause segments, or speech segments*.

3. The tone unit represents a field of distribution of different prosodic features. Prosodic features distributed over a tone unit display different degrees of prosodic prominence. Most authors writing about English intonation work with a scale of four degrees of prosodic prominence, e.g. *absence of stress, partial stress, stress, nucleus* (Gimson 1970); *absence of stress, unaccented stress, accented stress, nucleus* (O'Connor and Arnold 1973); *absence of stress, stress, onset, nucleus* (Svartvik and Quirk 1979), *absence of stress, tertiary stress, secondary stress/accent, primary stress/accent = nucleus* (Cruttenden 1986). There is not a perfect correspondence between the different scales, but all the authors agree on the definition of the most prominent prosodic feature, the nucleus as

the last accented stress in an intonation unit. Deviations from this pattern are discussed e.g. in Firbas 1972:86, 1980:130 and 1985:19 or in Cruttenden 1986:48. Czech authors dealing with intonation and prosody work with a less detailed system of prosodic notation than authors writing about English intonation. Different melodies of speech are related to different grammatical moods of sentences and the melody is described in a graphical form. The Czech system resembles the English systems in the recognition of the last accented stress as the most prominent stress within a speech segment (tone unit). The most prominent stress is called *clause accent*, *cadence*, or *intonation centre* (Paiková 1994, *Mluvnice češtiny 3* 1987, *Příruční mluvnice češtiny* 1995).

Communicative field and prosodic field

The basic field of distribution of communicative dynamism in the theory of FSP is the sentence. The basic field of distribution of prosodic prominence is a tone unit. Short sentences are often realized within one tone unit. In such cases, one prosodic field corresponds to one communicative field. Longer sentences often extend over two or more tone units. One tone unit then forms only part of the communicative field, covering one communicative unit or part of one communicative unit. The relation between the communicative field and the prosodic field will be illustrated later on.

Communicative functions of nucleus bearers

The present study of the communicative functions of nucleus bearers is based on a prosodic analysis of the Czech and English versions of Václav Havel's play *Protest* that were broadcast on the Czech radio and the BBC. (The Czech play was translated to English by Věra Blackwell). The present author analyzed the first half of the texts, determined tone unit boundaries and nuclei and analyzed the communicative functions of the elements that carry the nucleus. She omitted several short sections of the English and the Czech texts which did not have a corresponding counterpart in the other version. The remaining material representing a small corpus of parallel texts of almost identical semantic contents, was used for the comparison of the distribution of communicative dynamism and the distribution of prosodic prominence in Czech and English.

The Czech text analyzed consists of 480 tone units. Out of these only 409 tone units (1592 words) have an equivalent in the English translation. 71 tone units were either not translated at all or deviated from the original to such extent that comparison was impossible. The English text expressing the same semantic content as the selected Czech text consists of 427 tone units (2002 words). The difference in the length of the two texts corresponds to the structural difference between the compared languages. Below is an example of such difference.

(Back-slashes, slashes and combinations of the two are used to indicate nuclear tones: fall, rise, fall-rise, rise-fall.)

05600 V ničeho jsem si \nevšiml
 05700 S Vmimochodem
 05800 S když byste je někdy chtěl \setřást
 05900 S víte kde to je /nejlepší
 06000 V \kde
 06100 S v obchodním \domě
 00000 V /ano
 06200 S vmísíte se /do davu
 06300 S v nestřeženém okamžiku vniknete /na záchod
 06400 S a tam asi tak dvě hodiny \čekáte
 06500 S nabudou dojmu že jste nepozorovaně vyšel Vjiným vchodem
 06600 S a \vzdají to
 06700 S schválně to někdy \zkuste

05600 V no I didn't notice \anyone
 057-8 S by the way suppose you want to shake them \off one of these days
 05900 S d'you know the best \place to do it
 06000 V \no
 06100 S a \department store
 06200 S you mingle with the Vcrowd
 06300 S and at a moment when they're not \looking
 06300 S you \sneak into the Vloo
 06400 S and \wait there
 06500 S then they think you've managed to slip \out
 06600 S and they give \up
 06700 S \try it

The Czech adverbial phrase *v nestřeženém okamžiku* in 06300 was translated into English by a much longer phrase *at a moment when they're not looking*. The English actor placed a tone unit boundary after this phrase and used two tone units to say what the Czech actor expressed in one. An example of a reverse process is the merger of tone units 05700 and 05800 in the English version. It has to be pointed out, however, that the two Czech tone units were not transformed into one English tone unit because the English text is shorter. On the contrary, the English tone unit 057-8 is considerably longer than the original two Czech units put together. An analysis of tone unit length in English and Czech carried out on the text of *Protest* (Chamonikolasová 1996) suggests that English tone units are on the average longer in terms of number of words.

Each tone unit contains one nucleus (as defined above). In a text of 409/427 tone units, there are therefore 409/427 nucleus bearers. Each nucleus bearer has a certain communicative function based on the factors of FSP. The present functional analysis is restricted to communicative units of the basic distribu-

tional field of the sentence. The distribution of CD over the units of nominal subfields has not been included in the results of the analysis. Given this restriction, some nucleus bearers which form only part of a noun phrase and whose nucleus is not representative for the whole noun phrase have not been ascribed any communicative function because they do not form an independent communicative unit at the level of the sentence. (For the analysis of the functional perspective of the noun phrase, see Svoboda 1987.) The examples below illustrate the difference between a representative and a non-representative nucleus.

35100 S \wedge Ferdinande

35200 V \ano

35300 S \wedge nepřekvapilo vás

35400 S že jsem se vám z ničeho nic /ozval

35500 V \trochu

35600 S \wedge mm

35700 S \předpokládal jsem to

35800 S patřím koneckonců k /těm

35900 S kteří se stále ještě tak nějak nějak drží /nad vodou

36000 S a chápu že už proto máte asi ke mně určitý \odstup

35100 S \wedge Ferdinand

35200 V \yes

35300 S weren't you weren't you sur\prised

35400 S when I suddenly rang you /up

35500 V a \bit

356-7 S yes I \thought so

35800 S after all I happen to be one of those \people who've

35900 S still got their \heads above water

36000 S and I quite under\stand that

36000 S well because of \this

36000 S you might want to keep a certain \distance from me

The sentence realized prosodically as tone units 35800 and 35900, forms a basic communicative field. Within this field, the most dynamic communicative unit is the noun phrase *k těm kteří se stále ještě nějak drží nad vodou* (*one of those people who've still got their heads above water*). This noun phrase contains two nuclei. The first nucleus is the most prominent accent of the first tone unit, the second nucleus is the most prominent accent of the second tone unit. In sentences containing more nuclei, the most prominent nucleus (with the exception of certain special cases) is the one that occurs last. (See e.g. Crystal 1969, Firbas 1985, 1992, Cruttenden 1986.) In the sentence above, the nucleus on *nad vodou* (*above water*) is more prominent than the nucleus on *k těm* (*those people*). It represents the whole communicative unit of the noun phrase at the level of the basic distributional field of the sentence. It serves as a prosodic signal of the rhematic function of the unit. Within the basic distributional field, the nu-

cleus on *k těm* (*those people*) does not have a representative function; the elements *k těm* and *those* belong to those nucleus bearers in Table 1 and Table 2 whose FSP function has not been specified.

Examples 35800 and 35900 above suggest that the most prominent prosodic feature of a tone unit need not always signal the most dynamic communicative unit. Examples of nuclei which, in the basic distributional field, represent a diathematic and a transitional communicative unit, i.e. units of a lower degree of CD than rhematic units, are tone units 05700 and 05800 above. The contact word (discourse marker) *mimochodem* (*by the way*; the English counterpart of *mimochodem* does not bear a nucleus and is part of another tone unit) has a transitional character. (More precisely, it is transition proper.) The adverbial clause *když byste je někdy chtěl setřást* serves as a scene within the basic communicative field and has the function of a diatheme; at the prosodic level, it is represented by the nucleus placed on *setřást*. The word *setřást* forms an independent communicative unit of the subfield of the adverbial clause. Within this clause the unit performs the function of a rheme proper. Communicative functions of units of subfields provided by subordinate clauses will be dealt with separately.

The survey of the communicative functions of the nucleus bearers in the Czech and the English texts of *Protest* is given in the tables below. Table 1 and Table 2 give the functions of nucleus bearers of the basic distributional field, Table 3 and Table 4, the functions of nucleus bearers of distributional subfields.

Table 1

Communicative functions of nucleus bearers within the basic distributional field: Czech text.

	Rhematic functions Rhp, Rh	Transitional functions Trp, Tr	Thematic functions Thd	No function determined	Total
No. of nucleus bearers	321	43	24	21	409
Percentage	78 %	11 %	6 %	5 %	100 %

Table 2

Communicative functions of nucleus bearers within the basic distributional field: English text.

	Rhematic functions Rhp, Rh	Transitional functions Trp, Tr	Thematic functions Thd	No function determined	Total
No. of nucleus bearers	330	47	36	14	427
Percentage	77 %	11 %	8 %	3 %	100 %

Table 3

Communicative functions of nucleus bearers within distributional subfields:
Czech text.

	Rhematic functions Rhp, Rh	Transitional functions Trp, Tr	Thematic functions Thd	Total
No. of nucleus bearers	55	3	5	63
Percentage	87 %	5 %	8 %	100 %

Table 4

Communicative functions of nucleus bearers within distributional subfields:
English text.

	Rhematic functions Rhp, Rh	Transitional functions Trp, Tr	Thematic functions Thd	Total
No. of nucleus bearers	58	1	8	67
Percentage	87 %	1 %	12 %	100 %

The analysis of nucleus bearers in parallel Czech and English texts suggest almost negligible differences between the two languages in the distribution of CD over basic communicative fields. In both languages, the most frequent communicative function of the nucleus bearer in basic distributional fields (see Table 1 and Table 2) is the rhematic function (most often the function of Rhp) representing 78-77 % of nucleus bearers of the Czech and English texts. The second most frequent function is the transitional function representing 11 % of cases. (Within the group of transitional units, discourse markers (contact words) functioning as Trp are slightly more frequent than verbal units functioning as Trp and Tr at the same time.) Still less frequent than transitional nucleus bearers are diathematic nucleus bearers representing 6-8 % of all examined units within the basic distributional field. Nucleus bearers which do not have an independent communicative function within the basic distributional field represent 5-3 % of cases. In subfields provided by subordinate clauses (see Table 3 and Table 4), the percentage of rhematic functions of nucleus bearers is still higher than in the basic distributional field.

The present study supports the existence of a close relationship between the distribution of communicative dynamism and the distribution of prosodic prominence. The most prominent prosodic feature of a tone unit tends to signal the highest degree of communicative dynamism within the basic distributional field. Almost 20 % of all nuclei, however, represent communicative units whose degree of CD is lower than that of the rheme proper. Non-rhematic nucleus bearers occur in sentences which extend over more than one tone unit. Intonation does not function independently of the non-prosodic factors of FSP and is

capable of signalling the degree of CD of communicative units in spoken language only in cooperation with the other factors of FSP. Czech and English do not display any striking differences in the relation between prosodic features and communicative functions.

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