" ...the *Chekists* said that everyone is a man of the White Guard, and if not, it must be proved in every separate case. Here the Soviet allegiance is a marked element... "

Jakobson (letter to Trubetzkoy (1930); in: Trubetzkoy (1975: 162f.))

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ON MARKEDNESS*

0. As is well known the preoccupation with the topic of markedness in linguistics is by no means new. But characteristically, this topic was not pursued in continuation since its first appearance; but disappeared again from the linguists' field of interest relatively soon. Since that time the topic has come up again at irregular intervals. In recent years the topic has been discussed vividly above all in connection with language change.

Of course, it is not possible to give a comprehensive history of the concept of markedness in linguistics here. However, some of its landmarks of it are to be mentioned :

- The first stage in the developement of the concept of markedness (in German: Markiertheit) was the concept of 'featuredness' (in German: Merkmalhaftigkeit), established by Jakobson and Trubetzkoy in the famous Prague Circle during the thirties. Its aim was to characterize the nonequivalence of the members in such oppositions, where one phoneme has a (positive) feature that the other phoneme does not have (cp. Trubetzkoy (1931)). Later the concept was transferred to the members of grammatical oppositions (morphological categories) by Jakobson (cp. Jakobson (1971a)).[1]

- The next step in the history of markedness is Jakobson's concept of phonological laws of founding (phonologische Fundierungsgesetze) presented in his book "Kindersprache, Aphasie und allgemeine Lautgesetze" (1941). Jakobson demonstrates the implicative structure of phonological systems (which represents a markedness structure) by analyzing facts from the linguistic areas of language acquisition, aphasia, and language specific phonological systems, interestingly enough without mentioning the term 'Merkmalhaftigkeit' (or 'Markiertheit').

- A very decisive contribution to the further development of the concept is represented by the famous 'Chapter Nine' in Chomsky/Halle's "Sound Pattern of English" (1968). The authors outline a formalized phonological markedness theory, consisting of a set of universal 'markedness conventions', and with it the first linguistic markedness theory at all. It is also noteworthy that Chomsky and Halle make a clear distinction between "the Praguian conception of markedness" - that is Merkmalhaftigkeit, and "our own (conception of markedness)" - that is Markiertheit (Chomsky/Halle (1968: 400, Footnote 4))[2]

- Then the works of natural phonologists of different schools like Stampe, Bailey and others in the first part of the seventies must be mentioned (cp. Stampe (1972) and Bailey (1973)). In these works the concept of markedness is extended to context sensitive markedness; the contradictions between context free and context sensitive markedness evaluations resulting from this are also discussed. A further topic is the 'place' of markedness theory in linguistic theory, i.e. the interrelations between markedness theory and the theory of grammar. It is also important to note that it was within natural phonology that the connections between markedness and language change were paid attention for the first time. Thus Bailey formulates the first version of a 'natural' change principle that says that non-socially conditioned change proceeds from more marked to less marked grammatical structures (Bailey (1973: 37)).

- In the late seventies and early eighties the school of natural morphology, represented by Dressler, Mayertahler, Wurzel and others, picked up the thread of natural phonology and transfered the concept

of markedness to morphology, thereby resuming many of Jakobson's fruitful ideas from the early thirties. A series of principles determining the markedness of morphological forms were postulated (cp. Dressler (1982), (1988); Mayerthaler (1981); Wurzel (1984); Dressler/Mayerthaler/ Pannagl/Wurzel (1987)).

- Finally Vennemann's concept of preference belongs to this tradition, presented in various publications from 1983 to 1990. Vennemann applies it to the complicated area of syllable structure. It is important that he formulates phonological markedness principles ('preference laws') which for the first time do not only distinguish between marked and unmarked, but assign gradual, relative markedness values to phonological entities (cp. Vennemann (1983), (1988), (1989)).

The concept of markedness presented here draws on within this linguistic tradition. It uses the findings of the different approaches to markedness without agreeing completely with any of them.

1. In present-day linguistic publications and discussions the terms markedness and marked occur relatively frequently. However, the term marked is often used simply to characterize linguistic entities, which are felt to deviate from the 'normal' in some sense. It is evident that this use of the term marked is pre-theoretical. The term as such doesn't explain anything. Before a linguist speaks about markedness, she or he has to say, in which sense she or he uses the term.

If one wants to clarify what markedness means, one has to make clear first of all that the phenomenon of markedness in grammar may and must be viewed on different levels of consideration, which must be distinguished carefully for methological reasons - one of the main points of this paper. Here the following three levels are relevant:

(i) the level of evidence: the facts;

(ii) the level of the actual theory: markedness theory;

(iii) the level of foundation: explanation of markedness theory by neighbouring disciplines of linguistics.

In a large part of the discussion on markedness, these levels are ignored and mixed up again and again, which leads to needless misunderstandings and confusion.

1.1. Let us start with the first level, the level of the facts underlying markedness theory. We will discuss a phonological and a morphological example, which we will follow up thoughout a series of linguistic areas of facts.We start with the phonological example. It concerns the relation between the front unrounded vowels /i/ and /e/ and the front rounded vowels /y/ and /ø/. Cp. the facts from the different areas:

(i) **The structure of language-specific systems**: Front unrounded vowels are found in all languages which differentiate front and back vowels (that means in almost all languages; the differenciation is for instance not found in Caucasian languages like Adyghe that only has /i̯/, /ə/ and /a/), front rounded vowels are found only in a little subclass of them[3] In other words: the occurrence of front rounded vowels is implied by the occurrence of front unrounded vowels, but not the other way round:

(1) $\begin{bmatrix} V \\ -\text{back} \\ +\text{round} \end{bmatrix} \supset \begin{bmatrix} V \\ -\text{back} \\ -\text{round} \end{bmatrix}$

Examples of languages without front rounded vowels are (as is known) English, Polish and Italian, languages with front rounded vowels German, French, and Hungarian. In languages with front rounded vowels their number is either equal to the number of front unrounded vowels (as in French with three each and Hungarian with two each) or

is smaller than the number of front unrounded vowels (as in Finnish with two front rounded and three front unrounded vowels and in Lezghian with one front rounded and two front unrounded vowels. Cp. the following vowel systems:[4]

(2) (a) Hungarian:	(b) French:	(c) Lezghian	(d) Finnish:
i y u	i y u	i y u	i y u
e ø o	e ø o	e	e ø o
ɒ	ɛ œ ɔ	a	æ ɑ
	a ɑ		

(ii) **Language change:** There are many phonological changes in different languages where front rounded vowels become front unrounded vowels independently of the context, that is not conditioned by other segments.. Thus the Middle High German front rounded vowels have changed to front unrounded vowels both in most Upper and Middle German dialects as well as in Yiddish:

(3) (a) Middle High German *brücke* 'bridge' > Upper Saxon *bricke*, Yiddish *brik*
schoene 'nice' > *scheen*, *schejn.*

The same developement may be noticed in the history of English:

(3) (b) Old English *brydge* > New English *bridge*
soekan > *seek* .

In contrast, no context-free (nonassimilatory) transitions from front unrounded to front rounded vowels occur in language change. (Of course there exist assimilatory conditioned changes in this direction; we will come back to this below.) Thus we can record:

(4) $$\begin{bmatrix} V \\ -\text{back} \\ +\text{round} \end{bmatrix} > \begin{bmatrix} V \\ -\text{back} \\ -\text{round} \end{bmatrix}$$

(iii) **Language acquisition:** Front rounded vowels are mastered by the child after front unrounded vowels, as for instance, investigations of Dutch and French speaking children demonstrate (Jakobson (1971b: 365)). The same results hold for German-speaking children as well.

(iv) **Aphasia:** Speakers suffering from central speech disorders frequently loose front rounded vowels, whereas front unrounded vowels are retained as corresponding research has shown (Jakobson (1971b: 369)).

(v) **Slips of the tongue:** In languages with front rounded vowels, like German, slips of the tongue of the type [ti:r] instead of *Tür* and [le:zn] instead of *lösen* are found more common than slips of the type [ty:r] instead of *Tier* and [lø:zn] instead of *lesen*. (These generalizations hold independently of the dialectal origin of the speaker.)

The morphological example concerns the relation between the different types of category markers; we will restrict ourselves here to the main types, additive, modificatory and subtractive markers:

(i) **The structure of language-specific systems:** Inflectional forms with additive category markers (affixes and reduplication) appear in all languages that have an inflectional morphology, i.e. in all agglutinative and fusional languages. Inflectional forms with modificatory markers (vowel and consonant alternations, alternations of suprasegmental structures) are found only in a subclass of these languages, namely only in languages which are not strictly agglutinative like Turkish. Examples of languages with such modificatory markers include German, Latin and Arabic, but also in Finnish and Estonian. Remember that the appearence of forms with additive and modificatory markers is the basis for the classical typological classification of the languages. Inflectional forms with subtractive markers occur only in a small subclass of the languages with modificatory markers. However the occurrence of such subtractive markers is not systematic, but peripheral; cp. the often cited formation of Genitive Plural-forms in Russian (and other Slavonic languages) like *slovo* 'word' - Genitive Plural *slov* and *ryba* 'fish' - Genitive Plural *ryb* and the formation of Accusative Singular-forms in Old Norse (and New Icelandic) like *hundr* (New Icelandic *hundur*) 'dog' - Accusative Singular *hund*. As is known, there is no language type that is characterized by the occurrence of inflectional forms with subtractive category markers. That means the following implication between the occurrence of the three marker types:

(5) $\text{Marker}_{sub} \supset \text{Marker}_{mod} \supset \text{Marker}_{add}$

(ii) **Language change:** In the history of languages many morphological changes are known that proceed along this implicative chain from subtractive to additive symbolization of categories. Thus the subtractive G.Pl.-forms in Slavonian clearly show the tendency to be replaced by additive forms. In Sorabian this change has become regular, cp. Low Sorabian *słowo* - G.Pl. *słowow* and *ryba* - G.Pl. *rybow* (only of a small group of nouns zero forms are still possible in some contexts). In Russian a group of nouns make their G.Pl.-forms regular with an additive marker instead of the old subtractive one, cp. *oblako* 'apple' - G.Pl. *oblakov* and in colloquial Russian often all subtractive G.Pl.-forms are replaced by the corresponding *ov*-forms: *slovov*, *rybov*. In Continental Scandinavian (not in the more conservative Icelandic) the A.Sg.-forms with subtractive markers of the type *hund* versus N.Sg. *hundr* were removed as early as in tne Middle Ages in such a way that the accusative forms are transferred to the nominative, cp. later Old Swedish N.Sg. *hund* - A.Sg. *hund* (this levelling happens before all other nominative-accusative-levellings and before any other levellings between the case forms)[5]. A replacement of inflectional forms with modificatory markers with additive markers is the transition form strong to weak conjugation of German verbs that starts in Middle High German and is still continuing today; cp. older *bellen* 'bark' - preterite *(er) boll* > *(er) bellte* and *kreischen* 'screech' - preterite *(er) krisch* > *(er) kreischte*; more recent *melken* '(to) milk' - *preterite (er) molk* > *(er) melkte* and *gären* 'ferment' - preterite *(es) gor* > *(es) gärte*. Parallel changes are found in English and Continental Scandinavian. Thus the direction of the change in marker types is this:[6]

(6) $\text{Marker}_{sub} > \text{Marker}_{mod} > \text{Marker}_{add}$.

(iii) **Language acquisition:** Language acquisition also works along this chain of implication between the marker types. Thus Russian speaking children acquire not only the additive G.Pl.-forms like *stolov* from N.Pl. *stol* 'table' and *domov* from N.Sg. *dom* 'house' earlier than the subtractive ones like *slov* and *knig*, but also transfer such forms

to words of the type *slovo* and *kniga*. The same holds for the acquisition of the strong via transitory 'regularized' weak forms. So in German child language we observe verbal forms like *er gebte* and *er schwimmte* from *geben* 'give' and *schwimmen* 'swim', instead of the correct forms *er gab* and *er schwamm* in German child language.

(iv) **Aphasia:** In aphasic speech inflectional forms with subtractive and modificatory markers are disturbed more often than forms with additive markers. Here also the mastery of the strong and weak verbs in German (as in other Germanic languages) is a good example. With aphasics the formation of strong verb forms is often disturbed, whereas the formation of weak verb forms is totally intact.[7]

(v) **Slips of the tongue:** In producing slips of the tongue significantly more inflectional forms with subtractive and modificatory markers are replaced by forms with additive markers than the other way around. Thus, in Russian current slips are *slovov* instead of *slov*, but not **stol* instead of *stolov*, and in German *ratete* from *raten* 'advise', instead of *riet,* as well as *greifte* from *greifen* 'grasp' instead of *griff*, but not **wiet* of *waten* 'wade' instead of *watete* as well as **riff* from *reifen* instead of *reifte*.

These facts from five different linguistic areas show that grammatical entities of the same class, in this case of the phonological class of front vowels and of the morphological class of category markers respectively are not simply equivalent, 'equally good' for the speaker. Certain grammatical entities are obviously dealt with more easily by speakers than other grammatical entities, which is illustrated by the three psychogrammatical areas language acquisition, aphasia and slips of the tongue, and they are obviously prefered to other grammatical entities by the speakers, which is illustrated by the structure of language specific systems and language change - two sides of the same coin. All languages are full of such relations in all parts of their systems. This may be interpreted to the effect that there exist markedness relations between the corresponding grammatical entities. In the examples discussed front rounded vowels are marked and front unrounded vowels are unmarked; subtractive category markers are more marked than modificatory ones, and modificatory markers are more marked than additive ones. From the facts presented above we can conclude that

- the existence of (more) marked grammatical entities in a language system implies the existence of their less marked/unmarked counterparts[8],
- (more) marked grammatical entities are replaced by their less marked/unmarked counterparts in language change[9],
- (more) marked grammatical entities are acquired before their less marked/unmarked counterparts in first language acquisition,
- (more) marked grammatical entities get lost before their less marked/unmarked counterparts in aphasia,
- (more) marked grammatical entities are more likely to undergo slips of the tongue than their less marked/unmarked counterparts.

What can we tell about markedness at this level now which I called above the level of facts or of evidence? We may now answer the question which effects markedness has, but we have not yet answered the question what markedness is. Since - to come back to the first example - the front rounded vowels are not marked, because they behave as stated, but they behave as stated, because they are marked. Their specific behaviour within the scope of facts from language systems, language change, language acquisition, aphasia, and slips of the tongue is an epiphenomenon of markedness. What markedness is, does not result directly and theory-independently from the facts, but just from a theory on the facts. Of course this should be trivial, but the use of the notion of markedness in present-day linguistics is pretheoretical in this sense for a large part.

It is important to note that already the facts at this level of consideration show that markedness (Markiertheit) cannot be identified with 'featuredness' (Merkmalhaftigkeit), which is done especially in publications written in English frequently, but not only there. 'Featuredness' of a grammatical entity means that this entity has a feature (in the broadest sense), which is absent from another entity of the same class. In our example of rounding of front vowels markedness and 'featuredness' agree: The front rounded vowels have one more positive feature than their unrounded counterparts, namely the rounding of the lips. The relations between the nonlow back vowels are quite different, however. Here, of course, the round vowels /u/ and /o/ are 'featured' (merkmalhaft) compared with their unrounded pendants /ɯ/ and /ɤ/ . But in the class of nonlow back vowels the rounded ones are unmarked and the unrounded ones are marked, which is suggested by phonetic facts discussed below. The distribution of markedness and 'featuredness' for the vowels mentioned above is as follows:

(7)

[- round] 'unfeatured'		[+ round] 'featured'		[- round] 'unfeatured'
i	y	u		ɯ
e	ø	o		ɤ
unmarked		marked		unmarked
marked				

The same can be easily demonstrated for morphology by the plural formation of the English nouns. As is well known the normal plural formation is carried out by the additive category marker *-s,* cp. *dog - dogs* and *cat - cats*. But there exists a small group of animal names with zero plurals like *sheep - sheep* and *fish - fish*. It is evident that the English plural forms with the marker *-s* are 'featured' and the forms without the marker are 'unfeatured'; the relevant feature is just the *-s* .But in English plural formation with a category marker is unmarked, and plural formation without a marker is marked as we will see later on in detail.[10] Again, the values of markedness and 'featuredness' do not coincide.

1.2. This brings us to the second level of consideration, the level of markedness theory. Markedness theory lays down the markedness relations between grammatical entities of the same class by assigning markedness values to them. (As is known the phonological markedness theory of Chomsky/Halle (1968: 401ff.) operates in a different manner on that score.) A markedness theory consists of universal principles or laws, which (at least in some cases) may be ordered hierarchically. These principles are to be called markedness principles here (they are called 'marking conventions' by Chomsky/Halle (1968) and 'preference laws' by Vennemann (1983, 1988, 1989)). These markedness principles evaluate grammatical entities. They do so not generally but always regarding certain parameters. Markedness theory - in this point misunderstandings also appear frequently - describes the markedness relations in the language system, it does not explain them (cp. Vennemann (1983: 13)).

Markedness is fixed theory-internally. That does not mean, however, that this fixation may occur arbitrarily. It is hedged in a twofold manner:
- firstly, markedness theory has to explain the independently given facts;

- secondly, markedness theory itself has to be explainable independently (at least in principle).
A markedness theory, also one that meets these conditions, may be outlined in different ways. We will soon come back to the question of what such a theory could look like.

1.3. The next level of consideration, is that of founding markedness theory in terms of support from adjacent sciences. Not only the examples stated above, but masses of grammatical facts from every known language system suggest that markedness reflects grammatical complexity that strains the human language capacity. In other words (more) marked grammatical entities strain the language capacity stronger than their less marked/unmarked counterparts. It is in this sense that grammatical entities are not equivalent or 'equally good' for the speaker. Less marked/unmarked grammatical entities may be acquired and dealt with more easily by the speakers and are hence unconsciously preferred by the speakers. Markedness, or more precisely: the degree of markedness of a grammatical entity, is thus the relative measure for the straining of the language capacity regarding a certain parameter.

In the case of our phonological example this is understandable without difficulties: Front vowels are articulated with a tongue position in which unrounded (spread) lip apperture may be executed easier than round lip apperture; rounding of the lips requires an additional articulatory effort. The vowels /y/ and /ø/ are articulatorily more complex than the vowels /i/ and /e/ and strain language capacity stronger. In contrast, the nonlow back vowels are articulated with a tongue position in which a rounded lip apperture may be executed easier than an unrounded one and the avoidance of lip rounding requires an additional articulatory effort. Thus, the unrounded vowels /ɯ/ and /ʏ/ are articulatorily more complex than their rounded pendants /u/ and /o/ and strain the language capacity stronger. In sum, phonological markedness is founded on phonetics, that means the articulatory and/or auditive complexity of the phonological entities. Thus phonetics can give justified statements, if /i/, /e/ or /y/, /ø/ and if /u/, /o/ or /ɯ/, /ʏ/ is articulated easier, independently of any markedness theory.[11]

Also, the three mentioned types of category markers in our morphological example strain the human language capacity to different degrees. They are handled differently easy by the speakers and especially by the hearers because of their particular sign shapes. In the case of additive markers the category is symbolized directly by a special formal entity, a morpheme of its own, within the word. In comparison, modificatory markers symbolize their categories indirectly by a formal change of the base morpheme; this morpheme then symbolizes its lexical meaning and the category together. Finally, subtractive markers symbolize the category indirectly by the absense of a morpheme present in the base form; in contrast to the other marker types there is no formal part of the word at all to which category semantics is limked. The sign relations in words with the three marker types differ in their complexity. Morphological markedness is based on semiotic complexity, more precisely: on the complexity of the mutual assignment of semantic and formal elements within the scope of the largest morphological sign, the word. Also, semiotics can give justified statements, for instance if a morphological sign with additive category symbolization like the Russian genitive plural form *stolov* from *stol* 'table' or a morphological sign with subtractive category symbolization like the genitive plural form *knig* from *kniga* 'book' is more complex regarding its sign relations. Again this is valid totally independent of the existence of a markedness theory. It shall be added that syntactic markedness is also based on semiotic complexity, i.e. the complexity of the mutual assignment of semantic and formal elements in the scope of the syntactic signs, the syntactic constituents.

Finally the semantic markedness of grammatical categories (number, case, tense, mood and so on) is founded on the cognitive complexity of the underlying concepts. Also, corresponding independent statements are possible here, such as, if the concept 'more than one', underlying the category of plural, or the concept 'more than one and exactly two', underlying the category of dual, is more complex. Thus the category of dual is semantically more marked than the category of plural (cp. the implicative relation between the occurrence of these categories in natural languages).

It must be conceded that the situation is not so clear in all cases, especially if it concerns semiotic and cognitive complexity, but it is decisive that grammatical markedness relations may be reduced in principle to independently given facts and explanations of adjacent disciplines of linguistics and can be explained itself in terms of their theories.

Now we can answer the question what markedness really is: markedness is nothing but straining of the human language capacity, conditioned by the articulatory-auditive, semiotic and cognitive complexity of the respective grammatical entities.

2. As promised we'll now return to the question, what a markedness theory could look like. A markedness theory is a grammatical evaluation theory consisting of universal markedness principles which assign markedness values to grammatical entities. I will assume that the general form of the markedness principles is as following:

(8) **General form of markedness principles**
A grammatical entity G_j is the less marked regarding a markedness parameter M_i the stronger the degree of its property P_k is.

Grammatical entities in the sense relevant here are:
- in phonology: segments, segment clusters, syllables, phonological words, suprasegmental structures;
- in morphology: morphological markers, morphemes, inflectional and derivational forms;
- in syntax: syntactic phrases and sentences;
- in semantics: inflectional and derivational categories.

As already stated it is decisive that markedness principles do not evaluate the grammatical entities in general, but regarding certain markedness parameters that make up essential aspects of their structure. There is no 'markedness as such', and the statement 'G_j is marked' is either an abbreviation or simply meaningless. Markedness parameters refer to certain properties of grammatical entities. Markedness then results form the realization of these properties. (The relation between a markedness parameter and the corresponding property is a practically and theoretically interesting point which unfortunately can't dealt with here for different reasons.) The properties relevant for markedness evaluation are frequently not found in binary realization (G_j has the property P_k or not), but exist in gradual realization; cp. the example of different marker types. Therefore markedness itself also must be understood to be basically gradual, the common distinction 'marked versus unmarked' is not sufficient. Thus, relative markedness evaluations of the type 'G_1 is more/less marked than G_2 regarding a markedness parameter M_i' arise. As as a rather simple example of a markedness principle, the phonological principle relating to the rounding of front vowels independent of context may be quoted:

(9) **Rounding of front vowels**
A front vowel is unmarked regarding rounding, if it is unrounded, and marked if it is rounded.

Here the property relevant for markedness only occurs in binary distinction; we only have rounded and unrounded vowels.Therefore the distinction 'marked versus unmarked' is sufficient in this special case. But there are many cases also in phonology which unambiguously indicate that this binary distinction is not enough. One of them concerns the phonological substance of unstressed syllables in accent-counting languages (like English and German among others); cp. the following markedness principle:

(10) **Phonological substance of unstressed syllables in accent-counting languages**
In accent-counting languages a phonological word is the less marked regarding the phonological substance of its unstressed syllables, the less phonological substance these syllables have.

The following facts demonstrate the markedness gradation with an example of phonological realizations of the word *geben* 'give' in different stages of German language history and in Modern German varieties From left to right there is a continuous reduction of markedness in the different forms:

(11)

Germanic	Old High German	Middle/New High German	Colloquial New High German
*'*gebanan*	> *'geban*	> *'geben* ['gebən] ['ge:bən]	> ['ge:bm] > ['ge:m]

In reconstructed Germanic words of this type still have two unaccented syllables and thus are relatively strongly marked regarding principle (10). In Old High German there is only one unaccented syllable with a full vowel left. In Middle High German and in Standard New High German these words show even only one unaccented syllable with the reduced vowel [ə], and in colloquial varieties of New High German the unaccented syllable consists only of a nasal consonant or has disappeared altogether. The resulting monosyllabic form ['ge:m] is completely unmarked regarding the principle.

Let us return to our morphological example now, the markedness relations between the three discussed types of category markers. The relevant morphological markedness principle can be formulated in the following way:

(12) **Category marker types**
A morphological category marker is unmarked regarding its marker type, if it is additive; it is the more marked, the stronger it deviates from the additive type.

Following the arguments for the different complexity of the three marker types, it is plausible to assume that a subtractive marker deviates stronger from the unmarked additive type than a modificatory one and therefore is more marked than a modificatory marker.

It is substantial for the understanding of markedness (and also for its consequences for the theory of language change) that different markedness principles may assign varying, contradictory markedness values to the same grammatical entity. Thus, to continue our example of front vowels, besides the principle (9), there is another markedness principle concerning the rounding of front vowels in a certain context. It can be formulated in the following manner:

(13) **Rounding of front vowels preceeding rounded consonants**
A front vowel preceeding a rounded consonant is unmarked regarding rounding if it is rounded and marked, if it is unrounded.

With that we get the constellation that, preceeding a rounded consonant, a front unrounded vowel is unmarked according to the context-free principle (9) and marked according to the context-sensitive principle (13), whereas a front rounded vowel is marked according to the context-free principle (9) and unmarked according to the context-sensitive principle (13). It is easy to see that unmarkedness according to both principles at the same time is not possible. The example shows that a phonology that is optimal in every respect can't be achieved; the same is valid for the whole language system. Here a markedness conflict results. Markedness conflicts of this type (there also are other types) in phonology are solved in general by following the maxim that a markedness principle applying to a larger grammatical entity overrides a principle applying to a smaller entity. That means that there is a hierarchical order between the corresponding markedness principles. In our case this means that the context-sensitive principle (13) is stronger than the context-free principle (9). That this assumption is correct may be seen for instance in the Berlin dialect that (unlike Standard German and most other languages and dialects) has a rounded palato-alveolar fricative [ʃʷ] and consequently shows [y] and [ø] instead of Standard German [i] and [e] preceeding this round consonant); cp. (the examples meaning 'fish', 'mix'; 'ash tree' and 'laundry'):

(14) Berlin dialect: [fyʃʷ], [myʃʷn] - Standard German: *Fisch, mischen* ([i])
[øʃʷə], [vøʃʷə] *Esche, Wäsche* ([e])

There is strong evidence that such hierarchical relations also exist between morphological markedness principles. This is expressed by the following two principles:[12]

(15) **Constructional Iconicity**
A semantically more complex, derived morphological form is unmarked regarding constructional iconicity, if it is symbolized formally more costly than its semantically less complex base form; it is the more marked, the stronger its symbolization deviates from this.

(16) **System Adequacy**
A morphological form is less marked regarding system adequacy the more it corresponds to the system-defining structural properties of the respective morphological system.

Principle (15) states (among other things) that in noun inflection the forms of the derived (nonnominative) cases should be symbolized formally more costly than the nominative form. This should be valid also for the dative and accusative forms in German.However, this is correct only partially, cp. the type *(der) Bär* 'bear' - *(dem/den) Bären vs.* the type *(der) Hund* 'dog'- *(dem/den) Hund, (die) Kuh* 'cow' - *(der/die) Kuh, (das) Pony* 'pony' - *(dem/das) Pony* and so on. Thus, dative-accusative forms like *(dem/den) Bären* with case suffix are unmarked regarding constructional iconicity, dative-accusative forms like *(dem/den) Hund* without case suffix are marked (whereby the degree of markedness is irrelevant here).

In German noun inflection only case symbolization by the inflected article is system adequate, and symbolization by suffixes on the noun is not system adequate

(concerning the subparameter of marker type).Thus, principle (16) implies that dative-accusative forms like *(dem/den) Hund* are unmarked, whereas forms like *(dem/den) Bären* are marked regarding system adaquacy.[13]

From this it follows that the German inflectional forms cited above have contradictory markedness values regarding the two parameters: Forms like *(dem/den) Bären* are unmarked regarding constructional iconicity and marked concerning system adequacy, and forms like *(dem/den) Hund* are unmarked regarding system adaquacy and marked regarding constructural iconicity. Both types of forms are marked, but in a different manner. If we want to know which type of markedness 'weighs heavier', i.e. which markedness principle is stronger, we may look for historical changes in this area. And indeed, such changes do occur: Presently, the case forms of the type *(dem/den) Bären* are replaced by forms like *(dem/den) Bär* without case suffixes, but there are no changes from *(dem/den) Hund* to **(dem/den) Hunden* or another corresponding form. This confirms our claim that the principle of system adequacy overrides the principle of constructional iconicity.

Also, in morphology there obviously exist hierachical relations between markedness principles reflecting the quantity of the domain relevant for markedness evaluation. Thus for markedness evaluation regarding system adequacy the whole morphological system of noun, verb etc. is relevant, for markedness evaluation regarding constructional iconicity only two morphological forms are relevant, the respective base form and the derived form. There are good reasons to assume that due to its maximal domain the principle of system adequacy is the strongest morphological principle whatsoever (Wurzel (1984: 186f.)). As for the hierachical relations between the other morphological principles there exist some more far-reaching hypotheses that cannot be discussed here (cp. Wurzel (ibid.) and Dressler (1985), (1988)). In this area, much work has yet to be done.

Let us conclude with the assessment that markedness principles form a specific class of language universals which may be characterized as evaluation universals. Whereas the theory of universal grammar (UG) explicates what kind of grammatical entities must occur, may occur or cannot occur in natural languages, markedness theory (MT) explicates what kind of grammatical entities from the universal 'offer' are prefered or more or less disprefered by the speakers and thus by the natural languages.This way MT explains the systematic asymmetry in the use of universally available grammatical means, observable in the structure of all languages and in language development. Markedness is not only a descriptive device in linguistics that a linguist may use or ignore ad libitum; it is one of the most important properties of natural language structure and belongs - to take over a formulation of Roman Jakobson, one of the 'pilgrim fathers' of the markedness concept - to the "essence of language".

Footnotes

* This paper is dedicated to Manfred Bierwisch - who led me on the path of markedness 30 years ago (time flies!) - on the occation of his 65th birthday.

1 An interesting account of the role of markedness (understood in Jakobson's and Trubetzkoy's sense) in natural language and beyond it in all semiotic systems is given in Waugh (1982).

2 A comprehensive theory of markedness based on Chomsky/Halle's concept of phonological markedness is outlined in Kean 1981).

3 For the statistical distribution of front unrounded and front rounded vowels in the languages of the world cp. Chrystal (1993: 167).

4 Vowel systems are based on Trubetzkoy (1939: 86ff.) and Lass (1984: 134ff.).

5 In Swedish nouns all morphological distinctions between nominative and accusative (and dative as well) were levelled. But whereas the levelling between nominative and accusative in paradigms of the *hundr -hund* type already took place in Old Swedish, the nominative-accusative distinction in paradigms without subtractive accusative symbolization (for example in the type *bonde* 'farmer' - accusative *bonda*) was still intact in the 16th century and was not levelled until the emergence of New Swedish (Wessén (1969: 137ff. and 185ff.)).

6 This implication gives only the direction of the changes in marker type, not nessessarily their stages. It does not claim that a subtractive marker cannot be replaced directly by an additive one. - Of course there are also transitions from additive to modificatory and to subtractive markers in language history, but they are always conditioned by phonological changes. Cp. the development of German nouns like *Apfel* 'apple': Old High German *apful* - N.Pl. **apfuli* > *aphul - ephili* (in normal Old High German orthography) > Middle High German *apfel - epfele* > New High German *Apfel - Äpfel* and the development of nouns like *Ring* ' ring' in South East Thuringian dialects: Middle High German *rinc* [riŋk] - N.Pl. *ringe* [riŋgə] > [rink] - [riŋə] > [riŋk] - [riŋ]. All the relevant transitions are the result of phonological reductions. For a parallel case in Upper Hessian cp. Schirmunski (1962: 417).

7 These observation are based on research in the former working group of aphasiology (headed by Egon Weigl) at the Berlin Academy of Sciences.

8 Of course this is valid only for 'natural grammatical change', i.e. change that is not initiated socially. The role of markedness in language change is treated in detail in Wurzel (1994).

9 Vennemann (1988: 3f.) points out that there may be certain exceptions to this under special, restricted conditions. "Nethertheless the normal situation occurs with sufficient frequency..."

10 The English plural forms without markers are marked both regarding constructional iconicity and system adequacy; cp. markedness principles (15) and (16) below.

11 As is known, in terms of phonetics front unrounded vowels belong to the class of primary cardinal vowels, the class of front rounded vowels to the class of secondary cardinal vowels.

12 Cp. this markedness principle with principle (12) concerning marker type: Whereas principle (15) refers to the whole morphological construction, principle (12) only refers to the category marker within this construction. For the principle of constructional iconicity and its consequences cp. Mayerthaler (1981: 23ff.).

13 For the notion of system adequacy and the markedness relations regarding system adequacy in German noun inflection cp. Wurzel (1984: 81ff.)).

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