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The Expansion of a New Paradigm
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Unpacking markedness*

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0. Introduction

Markedness pervades vast sectors of the linguistic literature, unrestricted by the theory or tradition of the authors who evoke it. In the course of its history (traced back 150 years in Andersen 1989), its meaning has become increasingly diffuse, and its application virtually limitless. For example, markedness has been used to describe the relationships that hold among distinctive features, among phonemes, among allophones, among allomorphs, among semantic features, among the terms of case, number, person, tense and other morphological categories, among inflectional and derivational paradigms, among parts of speech, among syntactic constructions, among case systems, among vowel systems, and even among grammars. And markedness is said to manifest itself in a no less impressive array of phenomena, including neutralization, assimilation, reversal, syncretism, direction of language change, order and success of language acquisition, productivity, and universal ordering of elements (i.e., a language that has a marked element must have the corresponding unmarked element, but the converse is not true). Clearly, markedness plays an essential role in language, at all levels of language, both synchronically and diachronically. Its importance is inescapable.

But what is markedness? One thing that it seems *not* to be is a theory, and most scholars who have written on markedness from whatever theoretical standpoint agree on this. In introducing the concept Battistella (1990: 5) states that "markedness has so far resisted a satisfying treatment, and no clearly defined theory of markedness has emerged." Lapointe (1983: 228-9) comes closer to a characterization of the problem, stating that "markedness principles are ... analogous to physical laws, like the ideal gas laws of nineteenth century physics - they themselves are not assumed to be fundamental statements of the

theory, but are seen instead as signposts along the road in search of the more basic theoretical principles which they follow from." Indeed, if markedness is anything at all, it is a collection of empirical observations, and an increasingly varied one at that. Scholars who use the term markedness theory (and they are in the minority) have promoted empirically observed correlations to the status of theoretical constructs and laid aside all of the existential questions, such as *Why should markedness exist? How are phenomena of markedness consistent with the structure of language as a whole? What is responsible for the distinction between marked and unmarked terms?* Even in the markedness theory camp scholars admit that markedness as a theory is only weakly realized at best, cf. Tomić (1989: 9), who states that markedness theory "is actually nascent rather than existent."

To return to Lapointe's metaphor of markedness as a series of signposts along the road in search of basic theoretical principles, I would like to suggest that we have been taking steps down the very same road in laying out the theoretical framework of cognitive linguistics. The basic theoretical principles of cognitive linguistics are indeed those that will provide a unified theory of linguistics integrating markedness phenomena as a logical and expected result of the way in which linguistic knowledge is constructed. There have been indications of the possible ramifications of cognitive linguistics for markedness coming from various directions (cf. Battistella's (1990: 26) inclusion of prototypicality as a criterion in determining markedness relations, van Langendonck's (1989: 180) remark that "markedness theory and prototype theory are in accordance," and Lakoff's (1987: 59-61) and Mayerthaler's (1980: 26) mention of this correlation), but the issue is sufficiently complex and diverse in detail to merit closer examination.

1. Existential questions

Comrie (1983: 85) has suggested that there are two possible approaches to markedness. One is to give up and say that it is a property genetically inherited by human beings. The other is to "try to account for markedness in terms of other, independently verifiable properties

of people, the world, or people's conception of the world." Comrie favors the second approach, and, because the goal of cognitive linguistics is to account for *all* linguistic phenomena in terms of other, independently verifiable properties of people and people's conception of the world, certainly cognitive linguistics is an appropriate framework to serve the needs of such an approach. The theoretical constructs of cognitive linguistics that will figure prominently in explicating markedness are the radial category, the idealized cognitive model (ICM), the basic level, and metaphorical mapping.¹

1.1 Why and how does markedness exist?

Markedness is usually defined as an asymmetric relationship between two or more elements. Few now hold to the Jakobsonian notion that all relations are privative and binary, and most scholars will admit that markedness relations can be scalar. Thus markedness presupposes some sort of contrast among two or more elements that are somehow related. Cognitive linguistics postulates that most, if not all, linguistic information is organized in cognitive categories with a radial structure of increasingly peripheral members related to a central prototype. If two elements are related to one another, then they are either members of a single category or two categories that form a single superordinate category. The internal structure of the category (or superordinate category) provides inclusive asymmetrical relationships that contrast the elements and also assigns markedness values as a function of distance from the prototype. The relations are inclusive because they incorporate the elements into a single category; and they are all asymmetrical with respect to the center vs. periphery of the structure of the category. Thus markedness is a necessary result of the structure of cognitive categories, a structure that has been independently verified by Rosch's (1973a and b) work in psychology, and by many of the contributions to cognitive linguistics. In Janda (1993a) I have demonstrated in detail that markedness correlates with distance from the prototype of a category, with the least marked elements closest to the center, and the most marked elements in the most peripheral positions.

This account should satisfy Comrie, and is also consistent with Andersen's (1989: 37-8) observation that "all paradigmatic relations in language ... are established as inclusive oppositions. As a consequence, they all incorporate asymmetrical value relations even though, from a functional ... point of view, many of these paradigmatic relations are non-inclusive and hence symmetrical." This account further realizes Andersen's (1989: 39) goal of recognizing "in the ubiquitous markedness values the effect of a cognitive strategy which takes precedence, ontogenetically, over the functional (and logical) analysis of the experiential dimensions encoded in language and culture," in other words, at some level the marked and unmarked elements, even if they are logical opposites, are members of a category, be it basic-level or superordinate. In the discussion that follows it is important to bear two things in mind: (a) that both basic-level and superordinate categories are responsible for constructing markedness relations, and (b) that most (if not all) linguistic elements hold membership in more than one category, thus bringing markedness values into dynamic contrast.

1.2. Where do we get the "expectations" that distinguish marked from unmarked?

In trying to define the difference between marked and unmarked elements in a relationship, scholars use two measures: either distribution or simplicity (be it phonological or semantic). I agree with Andersen (1989: 28-30), Comrie (1989: 85) and Andrews (1990: 136-165) that the distributional phenomena of markedness (neutralization, assimilation, etc., to be discussed below) are merely symptoms, not defining properties. An essential definition of what makes an element marked is far more elusive. Comrie (1989), through a series of examples, demonstrates that unmarked elements correlate with expected meanings and situations, whereas the opposite is true for marked elements. Andersen (1989: 39) compares the unmarked element to the thematic ground against which the rhematic figure stands out. In cognitive linguistics we already have a construct that tells us what to expect when dealing with a category: the idealized cognitive model. The ICM gives the category its shape, determining what is the most prototypical, or

expected, and therefore unmarked, element that should occupy the central position.

Geeraerts (1988) provides a clear example of how ICMs can determine the prototype and the shape of the category based on that prototype. Dutch has two factitive verbs, *vernielen* and *vernietigen*, which both denote “destroy” and appear in the same range of uses and collocations. The semantic categories of these two verbs, however, are motivated by two different ICMs and vary in both the identity of their prototype and in details of their infrastructure. *Vernielen* is motivated by the ICM of “throwing down” and its prototypical uses involve physical destruction and damage, whereas *vernietigen*, motivated by the ICM of “set to naught”, expresses the more abstract concepts of annulment and cancellation in its prototypical uses.

1.3. Why does markedness recur at various levels of language?

Markedness was first observed in phonology, but has since been recognized in phenomena of morphology, syntax, and semantics. Schupbach (1984: 64) commented that “there is no *a priori* reason why relationships at a lower, or more basic level in a system should recapitulate themselves at higher levels of complexity.” Cognitive linguistics, however, gives an *a priori* reason for the repetition of markedness throughout language. All of our linguistic knowledge is organized and stored in cognitive categories,² and their structure results in markedness relations. This fact, in conjunction with restrictions on variation in certain domains of human experience, also explains markedness universals, both general and specific.

1.4. What kinds of markedness are there?

It has been observed by many that as markedness has come to be recognized at various levels of language, subsequent problems of defining markedness have arisen, due not “to the markedness relationship per se, but rather to a conflation of oppositions and indiscriminate application in different domains” (Tomić 1989: 2; cf. also Battistella 1990: 6). What this points to is a need for a typology of markedness

that recognizes the fact that markedness is not an entirely uniform phenomenon. I will outline a suggested typology constructed in the framework of cognitive linguistics.

It is essential to distinguish the level of the category that produces the markedness relationship, for this affects the nature of the markedness relationship. I distinguish three main types of markedness, on the basis of the level of category membership, and there are subtypes (in which, for example, categories have zero structure) as well.

Basic level - The marked and unmarked elements are members of a basic-level category. Examples here would include: values of a distinctive feature, allophones of a phoneme, allomorphs of a morpheme, submeanings of a morpheme, lexical items that are members of a basic-level category. This is the simplest type of markedness.

Superordinate level - The marked and unmarked elements are categories in their own rights, and can be equipollent at the basic level, but are related via a superordinate category. Examples here include the terms of a vowel system, a case system, a tense/aspect system, a number system, a person system, and lexical binomials like *black/white*, *up/down*, *good/bad*. Here the effects of markedness are less immediate and require more careful analysis.

Conflated - The marked and unmarked elements are members of more than one category, often at more than one level. An example here would be the members of an inflectional paradigm, which participate in the categories of morphemes, and in superordinate linguistic categories such as number, gender, person, etc. Other examples include the relative markedness of syntagms, in which the markedness of each element interacts with others. Markedness in conflated categories is highly complex, and there are some languages (those that are agglutinating and isolating) that strive to avoid paradigmatic conflation at the morphological level. The following data from Turkish (as an agglutinating language that avoids conflation) vs. Russian (as a flexional language with conflated categories) serve to illustrate this point (Turkish data here adapted from Lyons 1968: 188):

Turkish		Russian	
Nsg	<i>ev</i>	Nsg	<i>stol-∅</i>
Absg	<i>ev-den</i>	Gsg	<i>stol-a</i>

Turkish

Npl	<i>ev-ler</i>
Abpl	<i>ev-ler-den</i>
where:	<i>ev</i> = 'house'
	<i>den</i> = Ablative
	<i>ler</i> = pl

Russian

Npl	<i>stol-y</i>
Gpl	<i>stol-ov</i>
where:	<i>sto</i> = "table"
	\emptyset = Nsg masc
	<i>a</i> = Gsg masc
	<i>y</i> = Npl masc
	<i>ov</i> = Gpl masc

Here we see how these two types of languages handle concurrent expression of case and number. For the agglutinating language, each morpheme has one and only one grammatical value and that value is independent of context. For the language with conflated categories, a single flexional morpheme carries more than just one piece of grammatical information, and, furthermore, the interpretation of that information is frequently dependent upon context (i.e., \emptyset can indicate, in addition to Nsg masc, Gpl fem or Gpl neut).

In addition to basic-level, superordinate-level and conflated categories, which provide language-specific markedness relations, there appear to be some universal optimality networks structured by human experience that represent universal relations between possible elements at the superordinate level, for example, a network with optimal/'ideal' vowel systems in the center, and deviations working toward the periphery. Also consider a network with clusters of word-order patterns, with optimal/prototypical combinations of head/dependent marking for each of SOV, SVO and VSO, and a range of less preferred combinations. These, however, are only partially encoded in the linguistic conventions of any given language.

1.5. Why do markedness values vary from language to language?

Like the question about the recurrence of markedness throughout language, this fact is hard to motivate outside cognitive linguistics. The answer is that only the type of structure observed in cognitive categories is constant, but the determination of what the members of a category will be and their relative positions in the category are variable.³

Cross-linguistic similarities are attributable to similar perception in the human experience, i.e., single is perceived of as more simple (and therefore unmarked) than plural for most count nouns. Assignment of markedness values in a given language is never arbitrary, but neither is it predictable. One goal of cognitive linguistics is to explore the factors that motivate markedness relations.

1.6. If markedness tends to be lost, why does it not reduce to zero?

As long as linguistic knowledge resides in cognitive categories, we will always have peripheral, marked elements. If our cognitive categories were to collapse, there would be only symbols with no fabric of meaning to interpret them. This answer is obvious, but the answer to a weaker version of this question is more subtle: Why is there no drastic reduction in the amount of markedness in language, and what motivates the creation of new marked elements? Cognitive categories are recognized to be plastic, allowing for both the growth and the pruning of members at the periphery. We know also, however, that categories can conflict and interact (recall for example Lakoff's (1987: 132) account of the semantics of the English words *thrifty* and *stingy* which contrast because they derive from two different ICM's concerning the management of personal finances). The evolution of new marked elements is likely motivated by the interaction of various categories. Stein (1989: 80) has documented a case in which "the cost for abolishing marked structures on one level is the creation of marked structures on another level": the rise of *do*-support in English. He has shown how in order to reduce the use of marked consonant clusters in inflected verbs, a marked syntactic structure (*do*-support in *wh*-questions) was developed. Thus avoidance of markedness in the phonology of English has led to a rise in the markedness of its syntax.

In the history of the Slavic languages we see that a reduction in the complexity of the case system of Macedonian and Bulgarian correlates with an increase in the complexity of the verbal system, whereas elsewhere in Slavic the trend has been to increase case distinctions while decreasing distinctions among verbal categories. Language contact likewise plays a role in creating new marked

elements. The historical change described in 3.1.3. below provides an example of this. Here $s > x$ in a highly circumscribed set of environments. Borrowings of foreign words with x in positions not predictable by environment were very significant in helping to establish x as a new, marked phoneme.

2. Symptomatic patterns of markedness

There are several phenomena that have been observed to depend in some way on markedness which involve an alignment of markedness values with the distribution pattern of marked and unmarked elements. The cognitive linguistic framework provides key insights in explaining the mechanism of such alignments.

2.1. *Brøndal's Principle of Compensation*

Brøndal's Principle of Compensation states that there is more differentiation among unmarked members than among marked members of a relationship. In a basic-level category, the reason for this is obvious. The central prototype occupies a privileged position in terms of the number of relations that it bears to other members of the category, and it is ultimately related to all other members of the category. The most peripheral and therefore marked members of the category bear fewer relations to neighboring members, and in the limiting case, a peripheral member may be related to only one other adjacent member of a category. Peripheral members bear a high cost of contextualization, restricting the amount of possible expansion at the periphery. Brøndal's principle, however, is most frequently invoked with respect to complex, superordinate-level categories, where the overall effect is similar, but more weakly felt, since the terms are entire related categories, rather than members of one category. The structure of the cognitive category both predicts the tendency named in Brøndal's principle, and allows for the exceptions occasionally observed. Thus Brøndal's principle can be translated into cognitive terms as a tendency for greater differentiation and variation in central portions of a

category and a limitation of variation and multiple relationships at the periphery.

2.2. *Universal ordering, acquisition, and productivity patterns*

Universal ordering, acquisition, and productivity patterns all suggest that the presence of a marked term of an opposition is dependent upon the prior⁴ and more vigorous presence of the unmarked term. The position of the prototype in the radial category explains the priority of the unmarked element. Without it the category cannot exist and the marked elements have no category membership relations to anchor their meaning.

2.3. *Allophony, allomorphy, and neutralization*

Allophony, allomorphy, and neutralization are all symptoms of the cost of contextualization associated with the marked periphery of a category. Allophones and allomorphs exist only in specific contexts and index those contexts. Neutralization takes place in what is conceptually a zero context. Here the unmarked element is selected, because only it bears no cost and indexes no context.⁵

2.4. *Syncretism and other diachronic loss of markedness*

The same forces are responsible for syncretism and other diachronic loss of markedness. Here we see that peripheral items have been pruned from a category over time. Certainly we would expect that the peripheral marked elements would be most susceptible to loss, both because they have the least essential role to play in the structure of the category, and because of the cost of contextualization with which they are associated. We would not expect the loss of terms at or near the center of a category. This explains why it is usually the marked terms that are reduced or revalued.⁶ Historical linguistics provides no shortage of examples to illustrate this phenomenon in which irregular paradigms are gradually eliminated in favor of regular paradigms; the loss of strong verbs in English is just one such example.

2.5. Diachronic markedness reversal

Diachronic markedness reversal is said to have occurred when the marked and unmarked elements of an opposition have had their markedness values switched in the course of time. An example offered by Lehmann (1989: 183-4) is taken from the history of German. Here the genitive case has been succeeded by the *von*-phrase as the unmarked element. Lehmann presents the following data and analysis:

- (1) der Chef meines Mannes
 the boss-NOM my-GEN husband-GEN
 ‘my husband’s boss’
- (2) der Chef von meinem Mann
 the boss-NOM from my-DAT husband-DAT
 ‘the boss of my husband’

Originally, only the genitive was admissible in nominal attributes. Later, the preposition *von* ‘from’ was grammaticalized and acquired the function of English *of*, being used in nominal attribution instead of the genitive. At first, *von* was more expressive in attribution than the mere genitive. Nowadays, the genitive is becoming increasingly old-fashioned...

In terms of cognitive linguistics, what is observed here is a shift in the center of gravity of a category with a very simple structure. We have a category with two elements, bare genitive vs. *von*, and the interpretation of which of the two is prototypical or primary has changed over time. We would not expect to see such reversals involving central and peripheral members of a category with complex structure.

2.6. *Markedness alignment*

The cooccurrence of unmarked elements is frequently referred to as “markedness assimilation”, and the cooccurrence of marked elements has been labeled both “markedness assimilation” and “markedness reversal”, the reason being that in a marked context, the appearance of more marked elements is unmarked, so the value appears to be reversed. I will call both phenomena markedness alignment, and reserve the term *reversal* for the type of historical shift just described above. The frequent occurrence of markedness alignment is another example of a markedness phenomenon that has heretofore lacked theoretical explanation. Cognitive linguistics, however, has a theoretical construct called metaphorical mapping, which operates to select and connect counterparts of different domains on the pragmatic level, and we can postulate that similar mapping operates between categories, producing the alignment of central members with central members and of peripheral members with their marked counterparts (as implied by Lakoff’s (1987: 283) “Spatialization of Form hypothesis”). The postulation of this type of mapping is also consistent with what we know about mapping functions between neural nets in the brain (cf. Churchland 1986: 453-456), and thus is an expected phenomenon in the framework of cognitive linguistics.

This mapping is termed “metaphorical” because it establishes relationships based on abstractly perceived equivalence. In other words, metaphorical mapping entails the identification of an unmarked member of category A with an unmarked member of category B, and the identification of a marked member of category A with a marked member of category B. Lakoff (1987: 276) speaks of mapping as an essential part of metaphor and Lakoff (1989: throughout, but see 89-91 for particularly vivid illustrations) speaks more specifically about metaphorical mapping (there the genre under discussion is poetry, but grammar can operate in a parallel fashion). Because an unmarked member of category A is thus equivalent in some sense (via mapping) to an unmarked member of category B, their cooccurrence in the same context is cognitively well-motivated, and the same holds for the marked members of the two categories. Again we see a parallel to poetic metaphor where mapping motivates the juxtaposition of equiva-

lent items from different domains, as in: “My wife ... whose waist is an hourglass” (where mapping connects “hourglass” to “waist”; this example from Lakoff 1989: 90).

Although cognitive linguistics anticipates the existence of markedness alignment, it merely provides a motivation for this phenomenon, rather than predicting its occurrence. In other words, markedness alignment must be understood as a possible, but not a necessary option in language. There are certainly other factors that come into play, such as the prevailing form-meaning patterns in the language. Thus markedness alignment is part of the conventionalized structure of a given language. It, like language-specific markedness values, can be likened to language-specific category structure, which is neither predictable nor arbitrary, but rather motivated (cf. Lakoff 1987: 96 and Janda 1993a).

The intent of this discussion of markedness alignment is most definitely NOT to provide a theoretical construct that predicts the occurrence of this phenomenon. I am merely attempting to demonstrate that markedness alignment is cognitively well-motivated in language. This does not mean that we can predict that markedness alignment should appear in any specific environments, or even that it should be widespread at all. It does mean that where markedness alignment does exist it is not arbitrary but rather has a sound cognitive anchor. To return to the parallel drawn with poetic metaphor above, the fact that there is a topological similarity between a female torso and an hourglass does not mean that anybody will ever make that connection. However, once the connection is made, it is recognized as natural and well-motivated. In linguistics we see two forces at work in grouping elements: the existence of shared features and the existence of radially-structured categories. A shared feature can be responsible for the shared behavior of a natural class of sounds. In addition, parallel position in categories (identified via markedness alignment) can be responsible for the shared behavior observed by a group of segments that lack a shared feature. See 3.1.3. below.

3. Case studies

This section contains analyses of some particularly intricate markedness phenomena that can be neatly accounted for when the explanation is informed by the theoretical framework of cognitive linguistics.

3.1. Markedness alignment

When it occurs, markedness alignment can be quite elaborate, with mapping functions spanning a range of phonological, morphological, and semantic categories. This phenomenon will be the subject of the first three case studies.

3.1.1. Nominative singular nominal stem affixes in Russian

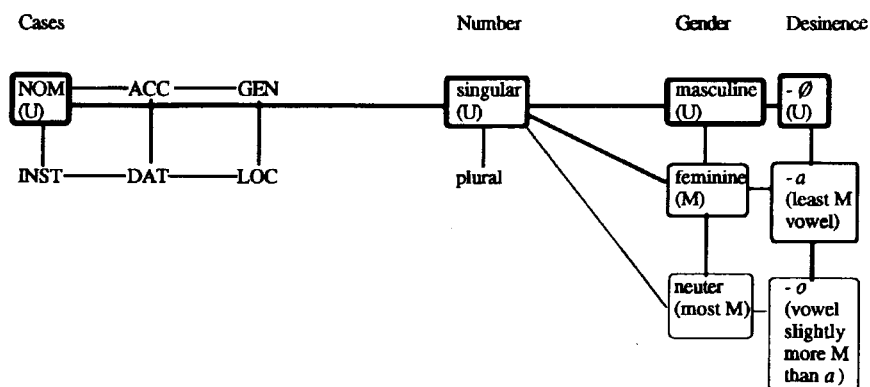


Figure 1. NOM sg nominal stem affixes in Russian

In Russian we see an alignment of the most unmarked case, the nominative, with the most unmarked number, the singular, the most unmarked gender, the masculine, and the most unmarked desinence, the zero ending, i.e., the nominative singular masculine desinence is zero. Keeping the first two terms constant, if we gradually increase the

markedness of the gender term, we see a corresponding gradual increase in the markedness of the desinence. With the feminine we have the least marked non-zero desinence, which consists of the single vowel *a*, and with the most marked gender, the neuter, we have a desinence consisting of a vowel somewhat more marked than *a*, namely *o* (cf. Schupbach 1984: 66-67). The mapping function is responsible for aligning corresponding members of the respective categories into harmonious syntagms.

3.1.2. The second locative in Russian

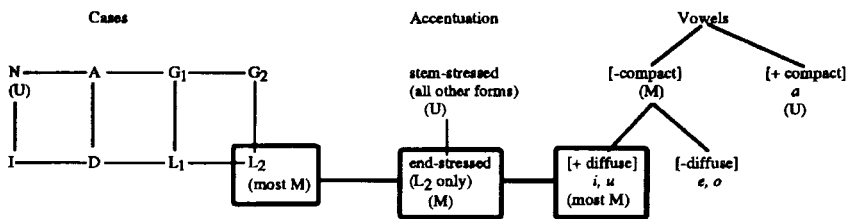


Figure 2. Exx: *sadú*, *grudí* = L₂ of 'orchard', 'breast'

A small group of nouns in Russian have a special locative form, commonly called the second locative, that is restricted to a small set of non-modified uses. The second locative was initially considered by Jakobson (1936/1984) to be the most marked case in the Russian declensional system. Although Jakobson subsequently (1958/1984) revised his analysis, positing the second locative as less marked than the locative in order to reconcile two of his original features (directional and formative) into one (directional), Worth (1984: 298) has argued that this was "an enticing mistake." Worth presents a solid argument backed up by both distributional evidence and a semantic analysis of the second locative and second genitive vs. the locative and genitive. I concur with Worth that the second locative is indeed the most marked case in the system. Further, Feldstein (1990) has noted that the second locative displays marked expression, both in terms of accentuation

(where it is end-stressed as opposed to all the other forms of the singular paradigm), and in terms of the segments that realize it, the highly marked vowels *i* and *u*. Again, the mapping function motivates this alignment of marked features.

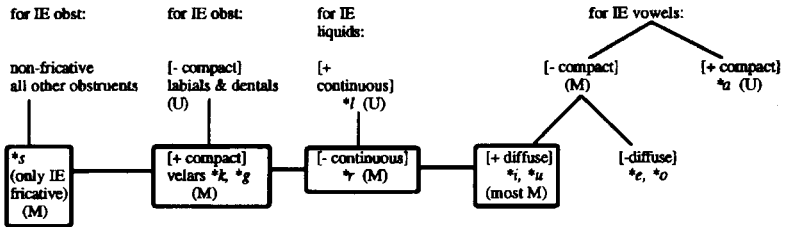
The description of the accentuation of the second locative above gives the prevailing trend, but it is not without exceptions. Here is a full account, produced by examining the accentuation patterns of all of the nouns listed as having second locative forms in Švedova *et al.* (1982, 1: 488-489):

- The second locative occurs almost exclusively with monosyllabic and nonsyllabic stems. There are ten nouns with polysyllabic roots, but all of these derive from monosyllabic stems (via word-formation or plephony of **tort* groups).
- When a second locative form occurs, the desinence is always stressed. What is at issue is whether the stress in the singular falls on desinence or stem in other forms of the paradigm (i.e., whether the desinence stress of the second locative is distinctive and marked as opposed to the stress of other singular forms - note, however, that the second genitive, which has similar characteristics and involves many of the same nouns, will be ignored in this discussion). In the vast majority of cases, the accentuation of the second locative form is indeed marked. The ending of the second locative for masculines is *-ú* as opposed to locative *-e*, and for feminines the distinction between second locative and locative is carried entirely by the stress, thus the second locative ends in *-í* and the locative in *-i*.
- There are 160 words that commonly take the second locative ending; 148 are masculine first-declension nouns, and 13 are feminine third-declension nouns. For the feminine nouns the second locative is always the only desinence-stressed form in the singular paradigm. Therefore it is only the masculine nouns that can present exceptions to the trend for marked accentuation. The following is the distribution of masculine nouns for which the singular paradigm is fully or partially end-stressed:
 - 9 are end-stressed
 - 1 is end-stressed in preferred usage, but allows stem stress

- 4 are end-stressed due to constraints imposed by a diminutive suffix (in all cases the non-diminutive form of the word is also a member of the group of nouns with a second locative)
- 6 are end-stressed due to a vowel-zero alternation in the root
- 2 are stem-stressed, but have a special end-stressed genitive singular form used only with the numerals 2, 3, and 4
- the remaining 138 nouns, or 86.25%, are unambiguously stem-stressed throughout the singular, and for these nouns the second locative has marked accentuation.

3.1.3. The *ruki* rule

IE *s > SI *x / $\begin{matrix} *i \\ *u \\ *r \\ *k \end{matrix}$ _____



s develops a relatively compact (M) allophone, the resultant (M) *x* is subsequently exploited in (M) affective derivation, e.g. *valja-x-a* 'lazybones' (from *valja/sja* 'loll')

Figure 3

In the prehistory of Slavic a phonological rule with an unusual conditioning environment brought about the change of *s* to *x* after *i*, *u*, *r*, and *g*. In a landmark article, Andersen (1968) suggested that this was a complex case of markedness assimilation, in which the most marked elements of various subsystems of the phonemic inventory were being brought together to participate in this sound change. Thus, the only fricative (itself marked) was conditioned to develop a marked allo-

phone in the environment of any of the following: a marked obstruent, a marked liquid, or a marked vowel. The resultant marked x was established as a phoneme and subsequently exploited particularly in affective derivation, which is of course marked with respect to non-affective (or affect-neutral) derivation. Andersen solved the mystery of how such an odd collection of segments (clearly not a natural class of sounds) could all conspire to condition a single sound change by suggesting that markedness alignment was responsible for selecting them. We can take the level of explanation one step deeper if we invoke the mapping function to account for how such an alignment could take place, as diagrammed in Figure 3.

3.2. Category interaction

As mentioned above, many linguistic elements participate in more than one category, and this can also lead to striking and seemingly contradictory patterns of markedness. The following three case studies all present data that have heretofore been commonly claimed to illustrate markedness reversal. Within the framework of cognitive linguistics, however, it is apparent that these phenomena result from category interaction.

3.2.1. Gender in Russian nouns

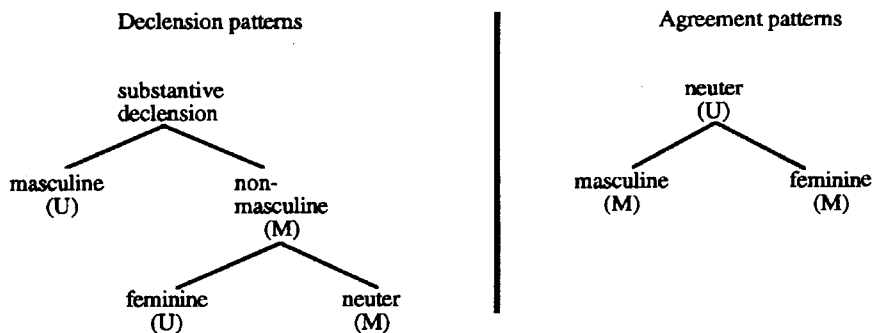


Figure 4. Gender in Russian nouns

It has been argued that gender in Russian nouns undergoes markedness reversal because the neuter has a marked inflectional paradigm, but serves as the default gender in the agreement patterns of impersonal sentences. In the framework of cognitive linguistics, however, I would argue that what we are observing is not a reversal but a case of multiple-category participation. Gender participates in two categories that are variously structured, as diagrammed in Figure 4. The first category is that of substantive declension, for which the masculine declension is the most unmarked term, and the feminine is the unmarked term among non-masculine declensions, leaving the neuter as the most marked term. This category is the result of formal conventions of the grammar of Russian. Gender participates in a second category which determines agreement patterns on the basis of either grammatical or referential gender. Both masculine and feminine must be positively associated with a referent having grammatical or actual gender; if no such association is made, the unmarked neuter term is selected.

3.2.2. Verbal aspect in Russian

It has been claimed that with respect to verbal aspect in Russian, imperfective is unmarked and perfective is marked, but that there are exceptions in which these values are reversed. Here, again, I would argue that we are not observing a reversal. In this case the observed phenomena can be attributed to the interaction of the semantics of the verbs with the ICM's of activities, achievements, and illocutionary force.

The major building blocks of Russian verbs are simplex stems; prefixes which delimit a path for the verbal action, thus perfectivizing the verb;⁷ and imperfective suffixes, which add a durative or iterative meaning to the verb. The pattern of prefixation and suffixation given below is typical for a majority of verbs. Note, however, that the derived imperfective is relatively marked, for it represents an extension of the delimited meaning of the prefixed perfective:

<i>bij-t'</i> 'beat'	<i>raz-bij-t'</i> 'break' ('apart-beat')	<i>raz-bij-vaj-t'</i> 'break' (iterative/durative)
simplex	prefixed	derived
imperfective	perfective	imperfective
unmarked	marked	most marked

If we look more closely at the semantics of the simplex stems, we find an explanation for the generalization about markedness stated above. The vast majority of simplex stems in Russian denote activities, and the ICM for activities would naturally indicate that imperfective is unmarked. There are, however, some simplex stems that denote achievements, *dat'* "give", for example. The ICM for achievements indicates that we should expect perfective aspect to be unmarked, and it is; the corresponding imperfective *davat'* is derived by suffixation and is marked relative to *dat'*.⁸ Thus:

<i>dad-t'</i> 'give'	<i>dad-vaj-t'</i> ⁹ 'give' (iterative/durative)
simplex perfective	derived imperfective
unmarked	marked

Once we recognize the role of the ICM such apparent exceptions cease to be exceptional.

Another presumed reversal is observed among imperative forms. Perfective is said to be unmarked in commands, but in negative commands the imperfective reappears as unmarked. Again, I would argue that this is not a reversal but the result of the operation of an ICM, here the ICM of illocutionary force, which also distinguishes between achievements and activities. In positive commands, this ICM tells us that the speaker expects a result, and this naturally entails the use of the perfective as unmarked. In negative commands, this ICM tells us that the speaker wants the hearer to avoid an activity. Because the emphasis is on the activity rather than the result, imperfective is the unmarked choice. Thus:

positive commands

‘Do X!’

ICM: speaker expects a result/achievement

perfective is unmarked

Otkrojte okno!

‘Open (perf.) the window!’

negative commands

‘Don’t do X!’

ICM: speaker wants hearer to avoid an activity

imperfective is unmarked

Ne otkryvajte okno!

‘Don’t open (imperf.) the window!’

3.2.3. English 3sg -s

The final example of an apparently reversed use of markedness is the often cited 3sg -s of English present-tense verbal inflection. More insight into the motives for this conflict between formal and semantic marking is to be gained if we look beyond the verbal paradigm, and in particular, if we consider its relationship to the substantive paradigm, where -s is also the only morphological marker. When we start comparing the paradigms, we see a collection of factors that necessarily interact:¹⁰

- There are many verb-noun doublets with no derivational morphology to distinguish them, e.g., *stream, smell, blossom, sound, groan*, etc.
- There are constructions that lack syntactic means to distinguish verbs from nouns, e.g., the *there* construction in which order is free. We can say both *There goes John* and *There John goes*. If English were to mark plural with -s for both verbs and nouns what would this sentence mean:

*There blossoms smells.

(a) 'Blossoms smell there.'

-or-

(b) 'Smells blossom there.' ?

We wouldn't be able to tell, because if both words are capable of being both noun and verb, then we need a distinction in inflectional morphology to distinguish them in this construction.

- Nouns are considered to be relatively marked as opposed to verbs (cf. Andrews 1990: 144-147).

Given all of the above, and given that the alternation of *-s* with zero is used to distinguish parts of both the substantive and verbal paradigms, I would like to suggest that English employs a pattern that distinguishes the inflection of verbs from nouns by means of an inverse relationship between formal and semantic marks:

- The substantive is the most marked and has the least marked inflection
- The verb is less marked and has marked inflection.

4. Conclusion

To sum up, within the framework of cognitive linguistics, markedness appears not as an ad hoc assemblage of phenomena, but as a natural by-product of the way in which linguistic knowledge is organized. Markedness can be accounted for by using theoretical constructs already established for cognitive linguistics.

Notes

- * I wish to thank Eugene Casad, Lawrence Feinberg, Victor Friedman, George Lakoff, Margaret Winters and two anonymous reviewers for their comments on earlier versions of this paper. All faults which remain must, of course, be attributed to me alone.
1. These terms are used with the same meanings as in Lakoff (1987: 83-4, 68-74, 31-40, 46-54, 283-284). There are other theoretical constructs of cognitive linguistics that, while they do not play a salient role in the present discussion of markedness, are relevant to this discussion and have been assumed herein. Among them are: (a) the prototype (which motivates the existence of radial categories), (b) the figure vs. ground distinction, (c) the view of linguistic units as categories with internal structure, (d) the view of grammar as a part of a semantic continuum that includes phonological, morphological, syntactic and lexical units, and (e) the possibility that the use of a linguistic unit may be multiply motivated. Although a radial category at some level must be present to structure the inclusive opposition present in markedness relations (see 1.1.), radial categories are not the only type of categories relevant to linguistic structure. The category of imperfective in Russian (see 3.2.2.), for example, may well be an "everything else" category with little internal structure, but it does participate in the superordinate radial category of aspect, thus producing the observed relations between perfective and imperfective.
 2. For an indication of how far-reaching this type of cognitive structure is, see Rudzka-Ostyn (1985).
 3. In Janda (1993a) I have shown that the internal structures of the dative case and instrumental case categories in Czech are not identical to those that exist in Russian; in Janda (1993b) I have compared indirect object constructions in eleven languages across Central and Eastern Europe and found striking differences in the way in which this category is structured. For an illustration of a diachronic change in markedness values, see 2.5.
 4. Here "priority" has an immediate sense and refers mainly to salience and prototypicality. It is not to be understood as a diachronic term.
 5. It may be argued that the neutralization involved in word-final devoicing, for example, indexes not a zero context, but rather a boundary or pause. I would counter, however, that a boundary or pause is the minimal possible speech environment and thus conceptually zero.

6. Diachronic loss of peripheral marked elements is also predicted by generative linguistic theory and is certainly the most commonly observed phenomenon. It appears, however, that there are many counterexamples to this generalization; cases in which a peripheral, marked item not only fails to disappear, but actually becomes highly productive instead. A case in point is the non-past 1sg desinence *-m* which was restricted to the five athematic verbs in Old Church Slavonic: it later lost ground in the East Slavic languages as expected, but served as source material for analogical extension in the West and South Slavic languages, where ultimately most verbs came to bear this desinence. It seems that when there is category loss or marginalization of peripheral members, the marked items involved have two options, one of which is to become obsolete and the other is to be revalued as a member of another category. The pattern of form-meaning relationships in the language appears to be a deciding factor in determining which option will be realized. The question of what motivates such unusual examples of analogical extension is the topic of future research by the author.
7. For an analysis of the semantics of Russian verbal prefixes and their role in perfectivization, see Janda (1986).
8. I am using the words "activity" and "achievement" as terms in the senses defined by Vendler (1967). Vendler provides schematic representations of each term which could serve as ICM's for the purposes of this discussion.
9. In the Russian examples here and above, I have presented a morpheme-by-morpheme transcription. Regular rules of truncation eliminate *d* and *j* to yield *bit'*, *razbit'*, *razbivat'*, *dat'*, *davat'*.
10. This discussion is limited to synchronic analysis of markedness. The question of how the present situation developed and what motivated this development would also be worth investigating from the point of view of markedness. It appears that the identification of *-s* as a plural marker for substantives was prior to and more straightforward than the development of the 3sg desinence. Sound changes and the use of alternative means for expressing syntactic roles caused on the one hand a loss of distinctiveness in nominal paradigms and a greatly reduced need for such distinctiveness on the other. The *stān-* declension had salient and resistant *-s* endings and served as analogical source material for the other declensions. The story of the advent of 3sg *-s* is much more complex, and discussion of what motivated this development in terms of its meaning for markedness values would have to take into account the concomitant loss of 2sg forms, the role of this desinence in distin-

guishing indicative mood from the subjunctive, and the way in which this desinence traveled south from Northumbria, as well as its interaction with the substantival plural desinence.

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