

Current Issues in Linguistic Theory

# Between Grammar and Lexicon

EDITED BY  
Ellen Contini-Morava  
Yishai Tobin

Offprint

This is an offprint from:

Ellen Contini-Morava and Yishai Tobin (eds)

*Between Grammar and Lexicon*

John Benjamins Publishing Company

Amsterdam/Philadelphia

2000

(Published as Vol. 183 of the series

CURRENT ISSUES IN LINGUISTIC THEORY,

ISSN 0304-0763)

ISBN 90 272 3689 5 (Hb; Eur.) / 1 55619 960 0 (Hb; US)

© 2000 – John Benjamins B.V.

No part of this book may be reproduced in any form,  
by print, photoprint, microfilm or any other means,  
without written permission from the publisher.

# **From Number to Gender, from Dual to Virile**

## **Bridging Cognitive Categories**

Laura A. Janda

*University of North Carolina at Chapel Hill*

### **1. Introduction**

This contribution discusses the relations between cognitive change and historical linguistic change based on a case study drawn from Janda 1996. The three case studies presented in that volume demonstrate how analogical extension can occur even under the most extreme conditions, when morphemes that have been pushed to the brink of extinction stage a comeback, becoming productive resources for analogical extension. The three episodes are based on the three ways in which morphemes can be reduced to the state of marginalized relics: a) a morpheme can be limited to an irregular paradigm relegated to a handful of lexical items, b) a morpheme can be stranded after the collapse of a paradigm, and c) a morpheme can be left behind after the collapse of the linguistic category it expressed. The first two types of endangerment involve stress on or loss of the integrity of the paradigm; the third, which is the one we will examine here, involves a semantic loss. Without the freight of a linguistic category to express, a morpheme would have no signification purpose and we would expect it to cease to exist; in order to remain viable it must carry some sort of cargo. The present story is of dual morphology which appears to have jettisoned the category of number (presumably its most important original freight), to make way for a new distinction in the category of gender. As we shall see, this conceptual change was brought about by a blend (Fauconnier & Turner 1996) which capitalized on existing relations between number and gender. This tale weaves together threads from several questions about the nature of language and language change, among them:

- What is the mechanism of language change?

- What happens to morphology left behind by category loss?
- How do categories interact?

The answers to these questions will of course be suggestive rather than definitive, since they will draw only on the case study at hand.

## 2. A hypothesis concerning historical change

The concept of categorization contained in the framework of cognitive linguistics has significant implications for a theory of language change, since the nature of linguistic change must comport with the nature of linguistic phenomena. If we presume that linguistic categories are cognitive categories, and that they are structured by relation to a prototype and reference to an overarching schema, then linguistic change necessarily involves change in this prototype-based structure. Furthermore, although change can affect the prototype, it is expected to take place primarily at the periphery of the structure. As we know, cognitive categories emerge from perception, not from an unmediated experience of reality. Likewise linguistic categories, as a special case of cognitive categories, are built from percepts, both linguistic and extra-linguistic. This act of construction, which takes place in the life of every speaker, proceeds via an abductive process, that most fallible path of logic, to paraphrase Peirce, which is also the source point of human creativity. Abduction is the guess at coherence of structure from the variety of evidence, the translation of manifold into unity (cf. Innis 1994: 11–23). Because there is no single “right answer” to abduction — a given array of percepts can be organized into different coherent structures — abduction is also the window of opportunity for change in the architecture of language. The changes that can pass through this window, however, are far from random, for the abductive process is constrained by the patterns perceivable in the language. Like the category structure itself, change is not expected to be strictly predictable, but this does not mean that it is arbitrary. The outcome and direction of change are motivated by and coherent with the category structures available in the language. Via abduction the identity of prototypes and variations thereupon are renegotiated by every generation of language users. For the most part the patterns seized upon in this process are changed very little and change is gradual, but on occasion a significant shift can occur.

This article will compare changes that took place across various subsets of the Slavic language family well after Slavic disintegrated into separate subfamilies, a process generally agreed to be complete at about 1000 AD. Despite

growing regional variations, common heritage has for centuries (and in some cases to the present time) continued to motivate parallel, though not identical, changes even in non-contiguous languages and according to disparate schedules. These similar stories of change, composed independently and in various times and places, are testimony to the non-arbitrary nature of language change, while also demonstrating that change is clearly not a matter of predictable movement from a previous to a later state.

The case study presented below illustrates another important generalization about language change, namely that the history of any language is an on-going experiment in which there are no controls and all the data are contaminated. In terms of category structure and the changes it experiences, this means that no category stands alone. All categories are sewn up in a multi-textured fabric of relations to other categories and other levels of categorization. A change in a given category necessarily is influenced by and impacts upon the structure of many others.

### 3. A hypothesis concerning number and gender

Number and gender cooperate in identifying both a noun phrase (a linguistic reality) and our extra-linguistic experience of the entity it refers to. Before launching into a discussion of the nature of number-gender cooperation, the parameters of reference, ranging from linguistic to extra-linguistic reality, need to be made explicit.

As stated above, linguistic categories are cognitive categories, grounded in human experience, which is in turn entirely mediated by perception. The role of perception is crucial, since it not only connects us to reality (by giving us an experience of it), but also separates us from it, since we have no unmediated access to reality (cf. Lakoff 1987: 260–268). We know reality through percepts, which are themselves by necessity conceptually organized as they are received. Indeed, the profound interdependence of perception and conception has motivated Talmy (1996) to coin the word *ception* as a cover term for this spectrum of activities, which includes linguistic categorization such as that associated with a noun phrase. The filtering of external reality through per/conception means that the division between extra-linguistic and linguistic realities is not actually as sharp as it may seem. External reality always comes to us in a package of percepts and concepts; it is already cognitively processed to some extent, and may therefore motivate and share other cognitive structures, including linguistic ones. What makes cognitive structures or categories differ from those delivered

by experience is the relative degree to which they are conventionalized. Linguistic categories can be highly conventionalized and cognitively entrenched, whereas perceptual experience is less constrained. This difference between linguistic categories and human experience also accounts for differences among languages. Although categorization builds on experience, it does so selectively. Only a portion of experience is utilized in the cognitive structure of any language; different languages have selected and combined experiential knowledge in building up different repertoires of conventionalized cognitive structure.

Number and gender potentially serve at both ends of this cognitive spectrum, relating both to perceptual experience (for number as discrete as opposed to non-discrete, and if discrete as one or many or a collective unit; for gender this involves primarily the sex of animate beings), and to linguistic conventions (mass/count, singular/plural, collective, singularia & pluralia tantum and the like).

In this dual role, number and gender both address the individuation or specific identification of entities and the noun phrases that represent them. Gender's identification of an entity and its noun phrase can be based on both experiential and grammatical classification. Gender thus indicates something specific to and characteristic of the given entity/noun phrase; it is an identification predicated upon the individual. For inanimate entities in Slavic (and many other) languages, gender is a weak classifier of the noun phrase — a highly conventional categorization, but one that selects the entity/noun phrase as inherently a member of one of three groups. While respecting conventional constraints, number makes greater use of perceptual input; whereas a feminine noun is always such by definition, number can always be evaluated and updated. Number is therefore an overlaid concept, in its canonical use distinguishing singular from plural for countable entities. At one end of the scale is a prototypical singular **FIGURE**, discrete and highly individuated; at the other end lies a plural **GROUND**, something approaching a mass which no longer presents us with individuated entities. Of course singular entities can be **GROUND** and can also be non-discrete substances (mass nouns) or collections of otherwise discrete entities (collectives, singularia tantum), and plural entities can also be **FIGURE**, and can even be highly individuated (especially in the case of pluralia tantum), but this range of options does not obscure the generalization that singular picks out an individual with its characteristics whereas plural tends to suppress perception of individuation. We can use the proverbial *inability to see the forest for the trees*, substituting genus for gender, to illustrate the perceptual interaction of number with gender. Encountering a single tree, we see an individual which we can identify as a pine, beech, or oak. This experience can be replicated with other individual trees, but when we view them as a totality, as the trees of a forest, we

no longer differentiate all the characteristics of each individual. As the proverb suggests, the summative process of the plural is at its extreme a generalization, and like all generalizations it ignores a certain amount of lower-level noise.

The fact that gender and number are both significant parameters in the identification of entities motivates their shared and often conflated role in formal synthetic agreement patterns. The suppression of individuation in the plural motivates the reduction of gender distinctions often observed in plural vis-à-vis singular morphology of inflected languages. Both phenomena, number-gender agreement and reduction of gender distinctions in the plural, are widespread in the world's languages, suggesting that the above-described number-gender interaction is grounded in universal human perceptual experience.

#### 4. Dual as a number and virile as a gender

Even given the connection between number and gender based on individuation, the reinterpretation of a number as a gender appears to be a radical move, but there is evidence of special affinities between the two particular concepts involved. Within their superordinate categories of number and gender, both dual and virile are marked as highly peripheral. Unlike the dual in some other languages (cf. Tobin 1990), the Slavic dual has never enjoyed the status of a full-fledged number on an equal footing with the singular and the plural. As Dostál (1954) has exhaustively demonstrated, the dual never signaled merely 'two'; its meaning was closer to 'pairedness', the condition of two equal objects functioning together as a unit. Rukeyser (1997), in a survey of duals, distinguishes them as either arbitrary (e.g., *two stones*) or paral (*pair of boots*). She points out that whereas this distinction is intuitively obvious, it is not generally conventionalized in Indo-European languages, which make no morphological distinction between arbitrary and paral duals. Dostál's message, however, is that the Common Slavic dual was primarily paral; arbitrary uses were a relatively rare epiphenomenon of hypercorrect literary usage. Thus conceptually the Common Slavic number category did not present a three-way distinction of singular vs. dual vs. plural, but rather a distinction of singular vs. non-singular, where the prototypical expression of non-singular was plural, and the dual presented the option of expressing pairedness, the condition of two entities functioning together as a unit. The dual was effectively a specialized plural. As a number, the dual was not only conceptually peripheral, but morphologically defective as well; its paradigms displayed more syncretism than either singular or plural, often failing to distinguish gender, case, and person.

As we shall see, the dual has been reconceived in some Slavic languages as a virile, a subordinate category for the differential marking of male humans as opposed to all other referents. The virile thus created is a specialized member of the masculine gender category available only in the plural, and this fact bears elaboration since it points us toward the source of the change. As demonstrated in considerable detail in Janda 1996, over the past millennium much of the morphological change in masculine nominal paradigms has been invested in the articulation of the FIGURE-GROUND scale, producing distinctions of virile vs. non-virile, animate vs. inanimate, concrete/discrete vs. abstract/continuous, etc. As suggested above, if we juxtapose plurality with any scale of percepts, we obtain a reduction in individuation, limiting the distinctions available. In this instance the suppression of individuation has resulted in the differential marking only of those FIGURES at the most extreme end of the scale, specifically human males (note that this corresponds well to the number/animacy correlations noted by Rukeyser 1997 in Australian languages).

The proposed juxtaposition is not an artificial construct, but rather parallels the synthetic nature of Slavic inflectional morphology, which commingles the grammatical categories of number and gender. The argument I will present here is that it was precisely this conflation of categories that facilitated the recasting of dual morphology as virile when the dual number was lost. Here is the plot line of the story: first the dual starts out as a specialized plural marking pairedness; then the pairedness meaning is attenuated, but the dual morphology continues to exist, now merely as unusual/special plural forms; finally the special plural forms are used to mark a special FIGURE-GROUND distinction in the plural, and thus the virile is born. In other words, when the dual collapsed the morphology left behind shifted from one specialized plural use to another.

## 5. The data of the case study in language change

The Common Slavic paradigm of the numeral “two” (root *dŭv-*) illustrates the morphology of the dual relevant to this discussion (cf. Townsend & Janda 1996: 192–194):

Nominative/Accusative/Vocative	masc: <i>dŭva</i> ; fem & neut: <i>dŭvě</i>
Genitive/Locative	<i>dŭvoju</i> (sometimes contracted to <i>dŭvu</i> )
Dative/Instrumental	<i>dŭvěma</i>



The boldfaced segments are the dual endings, which (with some variations according to paradigm) were applied to nouns, adjectives, and pronouns. Note that gender distinctions are not made for the genitive/locative and dative/instrumental, and that while paradigms for the other numbers (singular and plural) might collapse genitive and locative, dative and instrumental are always distinct. This reduction in distinctions is characteristic of the Slavic dual. In a noun phrase consisting of the numeral "2" + (adjective) + noun/pronoun, all items are marked with matching morphology for number (here dual), gender, and case.

Attestations of waning usage suggest that the Slavic languages that lost the dual (Polish, Czech, Slovak, Ukrainian, Belarusian, Russian, SerboCroatian, Macedonian, and Bulgarian) did so between the 13th and 16th centuries. In most of these languages dual morphology has contributed to the creation of genitive-accusative plural and/or virile numeral constructions.

Due to phonological erosion of final segments, the nominative and accusative singular had become syncretic for most masculine nouns at the beginning of the Common Slavic period. For a variety of reasons (outlined in Klenin 1983), this syncretism was "solved" by substituting the genitive for the accusative singular ending for masculine animates, thus creating the so-called animate genitive-accusative that is the common legacy of all modern Slavic languages that preserve case. It is traditionally assumed that this genitive-accusative simply spilled over into the plural in many Slavic languages, but there are compelling reasons not to accept this simple argument. The distribution of the genitive-accusative plural is not uniform, restricted only to Polish, Slovak, and East Slavic (Russian, Belarusian, and Ukrainian), and marks virility in some languages, but animacy in others. And furthermore the genitive-accusative plural developed at a time when there was no syncretism between the nominative and accusative plural to motivate such spillage. Evidence indicates instead that the plural genitive-accusative has historically developed from a dual genitive-accusative that came to be used exclusively with viriles (Grappin 1950: 94–101; Šaxmatov 1957: 51 & 224; Janda 1996: 185–189, and especially Janda 1998). This construction originally arose to disambiguate the accusative from the syncretic nominative in collocation with the numerals *dŭva/dŭvě* "two" and *oba/obě* "both". Whereas this construction and its novel use with viriles developed in the 12th–14th centuries in East Slavic, the Polish construction, in a remarkably parallel development, began its course two centuries later. The later development in Polish provides us with the richest historical record of attestations, and will be used as the basis for this discussion. Because Czech was the literary language of the Slovaks for the period in question, adequate attestation is lacking for that language; modern Slovak usage of the genitive-accusative plural is similar to that in

contiguous Polish and Ukrainian, and we can only speculate a similar development.

The table below summarizes the historical development of the genitive-accusative plural, followed by a prose description. At the outset (Late Common Slavic), Slavic numerals were used in the following syntactic constructions: "1" behaved much as an adjective, matching number, case, and gender to the noun phrase it modified (which was usually singular, but could be plural in the case of pluralia tantum); "2" was likewise adjectival and distinguished masculine from neuter and feminine, and the number of the entire construction was dual; "3" and "4" were also adjectival (though they did not distinguish gender) and the number of the noun phrase was plural; "5" and higher and indefinite numerals headed a noun phrase which was plural and either followed the case of the numeral (if it was dative, genitive, instrumental, or locative) or appeared in the genitive plural (if the numeral was nominative or accusative). When the numeral construction was in subject position, verbal forms matched the number and gender of the noun phrase for numbers under "5", but were otherwise neuter singular. Although remnants of this system survive in all Slavic languages, it has undergone considerable evolution, and some of the changes result from the development outlined in Table 1.

Table 1: *Outline of development of genitive-accusative plural in Old Polish*

**Old Polish: *miał (dwa) (młoda) syny/a***

14th century	<i>miał (dwa) (młodu) synu</i>	[Adu replaced by Gdu for viriles and some animates]
15th century	<i>miał (dwa) (młodych) synu</i>	[Gdu replaced by Gpl for adjective]
16th century	<i>miał (dwa/dwóch/trzech/czterech/ higher and indefinite numerals in -u) (młodych) synów</i>	[spread to other numerals; Gdu replaced by Gpl for noun]

Also in 16th century:

- (1) Npl -i (with II velar palatalization and sharpening) for viriles is opposed to Apl -y
- (2) GAsg is restricted to viriles (until 17th century)
- (3) the dual is eliminated

Later: The numeral construction

*dwa/dwóch/trzech/czterech/ higher & indefinite numerals in -u (młodych) synów* spreads to subject position, replacing nominative.

We know that by the 14th century in Old Polish the morphology of the numeral and noun phrase in an expression such as “[he] had two young sons/brothers” had shifted from accusative dual *miął dwa młoda syny/brata* to genitive dual *miął dwu młodu synu/bratu*. Over the course of the 14th-17th centuries the noun phrase morphology witnessed a gradual replacement of dual forms (which were being lost in the language as a whole) with plural forms (producing *miął dwu młodych synów/braci*, with genitive plural marking on the adjective and noun), along with the spread of this genitive-accusative to constructions with other numerals (initially to “three” and “four” which are adjectival like “two”, later to numerals “five” and higher, subsequently to indefinite numerals), and eventually to plural constructions with no numeral at all. After this point the parallels among the languages break down; the plural genitive-accusative remains restricted to viriles in Polish, Slovak, and to a lesser extent Ukrainian (where the use of the genitive-accusative is a possible option for non-human masculine animates), but is further extended to all animates in Belarusian and Russian.

In Polish the virile genitive construction with the numeral is further extended to the subject position, and the *-u* ending of the genitive dual is also extended to all numerals “5” and higher, as well as all indefinite numerals, creating a series of specialized virile numerals (with numerals “5” and over the numeral is the head and the default verbal agreement is neuter singular): *przyszło pięciu/dziesięciu/wielu panów* [came-neuter-sg five-virile/ten-virile/many-virile men-Gpl] “five/ten/many men came”. The feminine noun *kobieta* “woman” shows the use of non-virile numerals for comparison: *przyszło pięć/dziesięć/wiele kobiet* [came-neuter-sg five/ten/many women-Gpl] “five/ten/many women came”. At about the same time in its historical development Polish innovated another series of virile numerals that are constructed with the nominative case in subject position, but do not stem from the extension of dual morphology: *przyszli dwaj/obaj/trej/czterej panowie* [came-virile-pl two-virile/both-virile/three-virile/four-virile men-Npl] “two/both/three/four men came”. Compare the non-virile (feminine in this example): *przyszły dwie/obie/trzy/cztery kobiety* [came-non-virile-pl two-fem/both-fem/three/four women-Npl] “two/both/three/four women came”. A parallel set of virile numerals exists in Slovak *dvaja, obaja, traja, štyria* and the final *-a* might be a remnant of the dual, but the historical record is too incomplete to be certain (Pauliny 1990: 198 and Stanislav 1967: 378–391).

In a somewhat different fashion, Bulgarian, and to a lesser extent Macedonian, have also incorporated dual morphology in the creation of numerals specialized to the task of counting human males. By the 13th century, the old dative-instrumental dual form *dŭvama* (later *dvama*; cf. the Common Slavic antecedent *dŭvěma*) “two” was generalized in Old Bulgarian as an indeclinable

numeral, and in the 14th century its use was restricted to virile referents (Mirčev 1978: 193–194). The historical record does not provide much more information, except to tell us that later on forms with a similar function were created, yielding an array of modern numerals, a representative sampling of which appears in Table 2:

Table 2: *Bulgarian virile numerals*

	<i>-ma</i>	<i>(-m) + ina</i>	<i>-m + ka</i>	<i>-m + ca</i>	<i>-ica</i>
“two”	<i>dvama</i>	<i>dvamina</i>	<i>dvamka</i>	<i>dvamca</i>	<i>dvoica</i>
“three”	<i>trima</i>		<i>trimka</i>	<i>trimca</i>	<i>troica</i>
“four”	<i>četirima</i>		<i>četirinka</i>		<i>četvorica</i>
“five”	<i>petima</i>				
“six”	<i>šestima</i>				
“seven”		<i>sedmina</i>			
“eight”		<i>osmina</i>			
“nine”		<i>devetmina</i>			
“ten”	<i>desetima</i>	<i>desetmina</i>			
“hundred”		<i>stotina</i>			
“how many”		<i>kolcina</i>			
“several”		<i>nekolcina</i>			
“few”		<i>malcina</i>			

The only virile numerals widely used in the standard language, however, are the forms for “two” through “six” in *-ma* in the first column, clearly derived from the old dual form *dvama*; most of the forms in the remaining columns contain an *m* that may be partly motivated by the same form. The virile numerals act as modifiers, combining with the normal plural rather than the counted plural form (ending in *-a* for masculines) used for numeral constructions with non-virile referents. The use of these virile numerals is preferred but not obligatory; virile referents may alternatively be counted by using the ordinary cardinal numerals, with which they tend to implement counted plural forms. For example the virile *sin* “son” can be counted as either *dvama sinove* [two-virile son-plural] “two sons” or as *dva sina* [two son-counted plural] “two sons”, but the non-virile *grad* “city” can only be counted as *dva grada* [two city-counted plural] “two cities”. Virile numerals in Macedonian are all built from the suffixes *-ca* and *-mina*, but the role of the dual in their development is uncertain, and their use is less consistent than in Bulgarian (cf. Friedman 1993: 267–268, 294). SerboCroatian likewise has developed optional virile numerals whose origin, however, is not identifiable with formerly dual morphology.

## 6. Conclusions

At a variety of times and locations, various Slavs have created virile numeral expressions, often by recycling defunct dual morphology. What makes this story particularly compelling is the fact that the creation of virile forms has been repeated spontaneously and independently in the histories of non-contiguous languages. Between the territories of Bulgarian and Polish, four languages (Romanian, Hungarian, Slovak, and Ukrainian) and a considerable geographic expanse intervene, and there are no indications of sustained direct contact between the two for the historical period in question. Both Bulgarian and Polish have created virile numerals from dual morphology, but Bulgarian has appropriated the dative-instrumental *-ma* morpheme in collocation with plural noun phrase morphology, whereas Polish has utilized the genitive-locative *-u* in collocation with genitive plural morphology. Thus although the result was in some respects "the same" for both languages — in both instances dual morphology was reworked to produce virile numerals, these were separate events following different paths. With this case study in mind, we can revisit the questions posed at the outset.

### *What is the mechanism of language change?*

Language change is a matter of diachronic adjustment of category structure. In one sense, the type of change presented here was of the most expected garden-variety type, involving pruning and growth at the periphery. The category of plural experienced the pruning of a peripheral specialized plural designating pairedness, whereas the category of masculine gender experienced growth, producing a new specialized member at its extremity, virility. Although the more interior portions of a category structure and even the prototype and schema are not impregnable to change, the exterior periphery is certainly the most vulnerable to this sort of alteration, and we would expect most language change to take place at category peripheries. Indeed, the most common historical changes are analogical leveling, with its parallel phonological merger, which involve the pruning of peripheral items in favor of a prototype, and phonological split (paralleled by semantic specialization of allomorphs) which is the growth of variation based on a prototype. What is unusual about the present case study is that both processes have occurred simultaneously while involving the same linguistic material; what was pruned from the plural has been grafted to the growth zone of masculine. It appears that a special type of blending has occurred, in which input from the plural and input from the masculine have merged to create a special plural masculine. In the process, both the formal marking (the

morphology) and the resultant concept have been linked to the masculine gender, grammaticalized as virility. The blend integrates the roles of both number and gender in individuating entities, creating a new construct to designate entities that are highly individuated even under the reduced salience of individuation in the plural. A specialized distinction under the conditions of plural has thus been recruited for the purposes of gender, and the blend has become conventional.

*What happens to morphology left behind by category loss?*

Morphology left behind by category loss is available for semantic recategorization via blending, but is not simply a "wild card" loose in the language. After all, even when the category of number was lost from the dual, it still retained some gender and case distinctions, and was therefore not entirely at sea. *Mutatis mutandis*, what Fauconnier and Turner (1996:127) have said about syntactic blends is applicable also to morphological ones: "It is important to see that the Blends are motivated by the existing Basic Constructions." Even when morphology is subject to a fairly radical semantic shift, that shift is embedded in and draws on existing structures. The blend that created the virile was constrained by the categories of number and gender, and was well motivated against the backdrop of an environment in which all kinds of FIGURE-GROUND distinctions were being cultivated for grammaticalization and the soil was particularly fertile for the development of virility distinctions by a variety of morphological and syntactic means (cf. Janda forthcoming). Although the occurrence of such a blend is perhaps surprising and certainly not predictable, it is far from arbitrary. As we see in the history of Slavic, the force of attraction of this blend was such that it was performed independently at different times and locations. The consistency of this trend highlights the fact that blending is a well-constrained and fairly regular process.

*How do categories interact?*

In a word, complexly. This case study has illustrated that linguistic phenomena are influenced by the following types of intra-, inter- and extra-categorical relations:

- (a) interactions among category levels: for example, the way in which a subordinate category such as pairedness functions in relation to the basic-level category of plural, and further how this basic-level category interacts with the superordinate category of number;
- (b) interactions among linguistic categories: for example, the function of number in relation to gender, or morphology (in the form of new virile

numerals) in relation to syntax (in the form of new virile numeral constructions); and

- (c) interactions with other patterns of distinction available in the language: for example, the motivation of virility as implementing the highest end of the FIGURE-GROUND scale.

Overall, this case study demonstrates that a given language is a tightly woven fabric of cognitive relations, and that any change pulls on many threads at once. Furthermore, both the mechanisms and the outcome of change are highly constrained if not entirely predictable.

## References

- Dostál, Antonín. 1954. *Vývoj Duálu v Slovanských Jazycích, zvláště v Polštině*. Prague: Československá akademie věd.
- Fauconnier, Gilles & Mark Turner. 1996. "Blending as a Central Process of Grammar". *Conceptual Structure, Discourse and Language* ed. by Adele E. Goldberg, 113–130. Stanford: CSLI Publications.
- Friedman, Victor. 1993. "Macedonian". *The Slavonic Languages* ed. by Bernard Comrie & Greville Corbett, 249–305. London & New York: Routledge.
- Grappin, Henri. 1950. *Les Noms de Nombre en Polonais*. Cracow: Polska akademia umiejętności.
- Innis, Robert E. 1994. *Consciousness and the Play of Signs*. Bloomington & Indianapolis: Indiana U Press.
- Janda, Laura A. 1999. "Whence Virility? The Rise of a New Gender Distinction in the History of Slavic". *Slavic Gender Linguistics* ed. by Margaret H. Mills, 201–228. Amsterdam/Philadelphia: John Benjamins.
- Janda, Laura A. 1996. *Back from the Brink: a Study of how Relic Forms in Languages Serve as Source Material for Analogical Extension*. Munich: LINCOM EUROPA.
- Janda, Laura A. 1998. "Linguistic Innovation from Defunct Morphology: Old Dual Endings in Polish and Russian". *American Contributions to the Twelfth International Congress of Slavists* ed. by Robert A. Maguire & Alan Timberlake, 431–443. Columbus, Oh: Slavica.
- Klenin, Emily. 1983. *Animacy in Russian*. Columbus, Oh: Slavica.
- Lakoff, George. 1987. *Women, Fire, and Dangerous Things*. Chicago: U. of Chicago Press.
- Mirčev, Kiril. 1978. *Istoričeska Gramatika na Bâlgarskija Ezik*. Sofija: Nauka i izkustvo.
- Pauliny, Eugen. 1990. *Vývin Slovenskej Deklinácie*. Bratislava: Veda.
- Rukeyser, Alison. 1997. "A Typology of the Nominal Dual: Evidence from Indo-European, Finno-Ugric, Semitic and Australian languages". *Davis Working Papers in Linguistics* 6. <http://philo.ucdavis.edu/LINGUISTICS/Ruk00.html>

- Šaxmatov, A. A. 1957. *Istoričeskaja Morfologija Russkogo Jazyka*. Moscow: Učebno-Pedagogičeskoe izdatel'stvo.
- Stanislav, Ján. 1967. *Dejiny Slovenského Jazyka, II, Tvaroslovie*. Bratislava: Slovenská Akadémia Vied.
- Talmy, Leonard. 1996. "Fictive Motion in Language and 'Ception'". *Language and Space* ed. by Paul Bloom *et al.* Cambridge & London: MIT Press.
- Tobin, Yishai. 1990. *Semiotics and Linguistics*. London & New York: Longman.
- Townsend, Charles E. & Laura A. Janda. 1996. *Common and Comparative Slavic: Phonology and Inflection*. Columbus, Oh: Slavica.