

Introduction

 <https://doi.org/10.1075/sfsl.43.02int>

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**Toward a Calculus of Meaning: Studies in markedness,
distinctive features and deixis**

Edited by Edna Andrews and Yishai Tobin

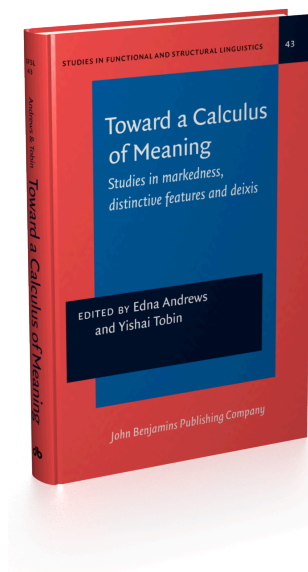
[Studies in Functional and Structural Linguistics, 43]

1996. xxviii, 432 pp.

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Introduction

On October 12-14, 1990, over twenty scholars from the United States, Europe, and Israel convened at Duke University in Durham, North Carolina, for an international symposium on general linguistics with a special emphasis on the topic: "Towards a Calculus of Meaning: Studies in Markedness, Distinctive Features, and Deixis." This volume contains most of the papers presented at the symposium as well as invited contributions.

The editors of this volume chose to convene this symposium in tribute to Cornelis H. van Schooneveld - affectionately known to his students, colleagues and friends as Kees - in honor of his retirement. This volume, however, is not a *Festschrift* in the usual sense of the word, but more a collection of articles which represents a very specific way of defining and viewing language and linguistics. The specific approach presented in this volume has its origins and inspirations in the theoretical and methodological paradigm of European Structuralism in general, and the sign-oriented legacy of Ferdinand de Saussure and Charles Sanders Peirce and the functional and communication-oriented approach of the Prague School in particular.

This volume therefore may be viewed in an historical perspective as belonging to a larger set of books and anthologies sharing these basic Saussurean and Praguean tenets which have been published in the past thirty years in the East and the West, including: Galan (1985), Garvin (1964), Mey (1986), Johnson (1987), Matejka (1976), Pomorska *et al.* (1987), Sangster (1982), Schnelle *et al.* (1983), Sgall (1984), Steiner (1982), Tobin (1988, 1989), Vachek (1964, 1983), Waugh and Rudy (1991). In particular, this volume shows how the theoretical and methodological tenets of European Structuralism have been interpreted and reinterpreted, adopted and adapted, and applied by various individual scholars and linguistic schools in Prague, the Soviet Union, Western Europe, the United States and Israel, as evidenced in the

specific analyses of a wide array of languages and issues by the individual scholars represented here.

Although each contributor to the present volume carries the legacy of his or her specific background and training - all of which are highly diverse both linguistically and extralinguistically (having been trained in Czechoslovakia, the Soviet Union, the United States, the Netherlands and Israel) - the theoretical and methodological principles that we share seem to have overcome many of our individual differences now that it is possible to find the invariance underlying our individual variations. These differences may be most apparent when one views the wide range of problems discussed in the many diverse languages and language families analyzed in this volume:

(i) Like so many scholars trained in the classical Praguean tradition of Jakobson and Trubetzkoy, many of the contributors from the United States, following the lead of van Schooneveld (1978) and other sign-oriented scholars, have carried on the Jakobsonian tradition in their analyses of Russian and other Slavic languages; these make up the largest portion of this volume (Andrews, Feinberg, Feldstein, Pugh, Sperling) as well as contrastive studies of Slavic and Semitic (Fradkin).

(ii) Scholars of the new Prague School - which is represented here in the contributions of Sgall, Bémová, and Hajičová - also discuss these basic morpho-semantic issues from a different, more syntax-oriented perspective with a particular emphasis on Czech, which is fitting for a volume uniting East and West linguistically and intellectually.

(iii) The other semiotically oriented analyses by scholars representing different sign-oriented schools in the United States and Israel include contributions which focus on other languages and language families, such as Dutch (Kirsner), Swahili (Contini-Morava), German (Fennell), Hebrew (Tobin), and Lak (Friedman).

(iv) The scholars, who were trained in the Soviet Union, but who have emigrated to the United States and Israel have contributed either work on Russian morphology (Dolgova and Maksimova) or phonology (Liberman), presenting many diverse synchronic and diachronic examples from the Germanic languages, or the application of the concept of distinctive features to selected

Russian locative prepositions in an experimental study of the language of different forms of aphasia (Leikin).

All linguists must begin with a fundamental definition of language which defines that which constitutes a linguistic problem and guides them in their choice and use of data in order to describe and explain how and why language works according to that definition. Therefore it can be said that all of the contributors of this volume basically share a definition of language as a flexible and open-ended semiotic system used by human beings to communicate.

This very general definition of language, however, has specific theoretical and methodological implications that are also shared by the scholars contributing to this volume. These implications include the concepts of invariance and invariant meaning, markedness, distinctive feature theory, isomorphism, iconicity, and the central role of communicative deixis. In short, the common denominator shared by all the contributors to this volume is our attempt "to make sense" out of form and meaning in a systematic way by linking the linguistic system to the notions of invariance, markedness, and distinctive feature theory from the deictic point of view of human communication. This view is outlined and discussed at greater length by the editors themselves in Andrews (1990) and Tobin (1990).

The papers presented in this volume are divided into three sections: (i) the presentation of a general theoretical and methodological overview; (ii) applications of the theoretical and methodological approach to Russian and other Slavic languages; (iii) applications of these same principles to other languages, language families, and aphasia.

(i) *Theoretical and methodological overview* includes papers dealing with the theoretical and methodological implications of invariance, markedness, distinctive feature theory and communicative deixis on all levels of language, examining the phoneme and morpheme (van Schooneveld), phonological markedness (Liberman), semantic features of cases and prepositions (Sgall, Bémová, Hajičová), and the human factor in invariant meanings (Kirsner).

(ii) *Studies in Russian and Slavic languages* include analyses of the iconic role of gender in Russian suffixation (Andrews), markedness in the typology of Russian verb stems (Feinberg), the semantic markings of Russian verbal

suffixes (Sperling), regular and deviant patterns of Russian nominal stress and their relationship to markedness (Feldstein), the demonstrative Russian *sej* (Dolgova and Maksimova), and morphological competition in the East Slavic substantive plural paradigms (Pugh).

(iii) *Applications to other languages, language families, and aphasia* include studies of the semantic functions of grammatical agreement in Swahili (Contini-Morava), markers of association and distance in German reported speech (Fennell), the five deictics of Lak (Friedman), a contrastive typology of person categories in Slavic and Semitic (Fradkin), the Modern Hebrew conjugation (*binyan*) system (Tobin), and an experimental study applying distinctive semantic features to the production and comprehension of locative prepositions in different forms of aphasia (Leikin).

Each of the seventeen papers, regardless of its topic or the language analyzed, follows a very basic expository line. Each paper presents a specific issue, question, or problem, and then relates it to one or more of the theoretical or methodological issues: invariance versus variation, markedness, distinctive feature theory, isomorphy, iconicity or communicative deixis, all of which comprise a basic attempt towards establishing a comprehensive view of a specific example of semiosis in the form of a calculus of meaning.

Van Schooneveld's article opens this volume with an overview of the theoretical and methodological implications of the sign-oriented approach to language by discussing the key notions of different levels of deixis, distinctive features, markedness, iconicity and isomorphism, and the role each plays in the phoneme, (bound) morpheme, word, phrase and sentence on both the paradigmatic and syntagmatic levels. Van Schooneveld first pays his intellectual debts to the Prague School, Karl Bühler, and, of course, to Roman Jakobson. He then presents an overview of the various levels of language with regard to a hierarchical set of distinctive semantic features and levels of deixis and outlines the differences between them based on these sign-oriented principles. Many of his examples are taken from Russian and Indo-European semantic structure and the ordering of semantic features in those languages. The concept of autopoiesis, or the ordering of the features based on the cognitive perceptions of identifying referents rather than merely referring to extralinguistic referents *per*

se, is seen as a major *leitmotiv* in the van Schooneveldian calculus of meaning. For van Schooneveld, "Linguistic meaning does not describe the properties of the referent, but it states identification techniques to be applied in order to zero in on the referent." Other concepts discussed in his paper include: mediacy and immediacy in the phoneme and morpheme, phonological distinctive features, linguistic units of iconicity, including the iconicity of distinctive features, the iconicity of phonemes, the morpheme and iconicity, the phrase and iconicity, a retrospective digression on semiosis in the primal categories of language including the phoneme, iconicity and the sentence, and language creating semiosis, returning in the end to the primacy of the paradigmatic structure of language systems suggested by the Prague School.

Liberman discusses the concept of markedness and the theoretical and methodological "trouble" it has caused in phonological and prosodic analyses, paying particular attention to the question of the nondistinctive aspects of distinctive features. Liberman distinguishes between the concept of the mark as it was introduced by Trubetzkoy as a means of characterizing members of a privative opposition and its later use as the presence of any less frequent, conspicuous feature in any language unit, claiming that Trubetzkoy's mark and its later use in linguistics "have comparatively little in common." One of the particular thorny issues Liberman raises is the question of neutralization and the criteria for choosing which feature is to be classified as being marked or unmarked respectively in different phonetic environments. The role of common sense hearing - as opposed to pretending not to have ears in phonological analysis - and the role of auditory registering of prosodic and phonetic features and their interpretation in prosodic analysis are discussed in Liberman's article, which is rich in examples from the Scandinavian languages. A recurring *leitmotiv* in Liberman's paper may be summarized in the "chicken and egg" question: what comes first - the determination of the mark from usage or the explanation of the usage by markedness? The greater visibility referred to by Jakobson in the development of Trubetzkoy's concept of markedness and its convenient formalization in matrices with pluses and minuses, particularly in generative phonology, is argued to have no epistemological value: "Phonological matrices, introduced by Jakobson-Fant-Halle and adopted by the generativists [including

Chomsky-Halle], take up a lot of space but add nothing to our knowledge of language." Much of Liberman's article discusses the "degradation" of phonology "from a functional discipline into a mode of description." Liberman relies on diachronic Germanic data to illustrate his pro-functional point, and presents examples of those kinds of problems that justify the existence of phonology as a useful and functional discipline. He also presents at least one functional aspect of markedness which has a direct correlate at the level of speech production, thus making it "useful". This leads, of course, to the most profound paradox in language and phonology: "While sounds overlap, phonemes are discrete," which keeps us ignorant to the most important questions of the nature of language acquisition and decipherment. Trubetzkoy tried to separate phonetics from phonology while Jakobson, on the contrary, assigns everything to phonology. Liberman also ends his paper with a return to the Prague School: "In choosing our own way, we return again to two basic concepts of Prague structuralism - distinctive feature and mark. They lie at the foundation of any phonological school."

Sgall, Bémová, and Hajičová show us in their paper how linguists in Prague today view the issue of morphological meanings - especially the meanings of cases - as a crucial point of linguistic semantics in the Czech tradition starting from Jakobson (1936) and later refined and applied by Pauliny (1943). The isomorphic and holistic "hope" derived from these studies is the "reconciliation of the sign-based understanding of semantics with that based on an interplay of morphological meanings and syntacto-semantic functions in the underlying structure of a sentence." The data presented in this article are mainly from Czech, Russian, and other Slavic and Indo-European languages; the article focuses on case (simple and prepositional) as a morphological unit displaying both a general, prototypical signifié, as well as contextually conditioned (secondary) ones. The authors present the viewpoint of various Czech and Slovak scholars as well as those of other general sign-oriented scholars, including Kuryłowicz, Skalička, de Groot, Tesnière, Šmilauer, Dokulil, Horecký, Oravec, Leška, Běličová, Komárek on this most fundamental issue of "duality" and compare them with the morphological- semantic work of van Schooneveld, Sangster, Tobin and others whom they view as a "Western

extension of the Prague School." This is followed by a discussion of Czech, Russian and Polish prepositions in general from the point of view of the Functional Generative Description of the authors and their research group of formal linguistics at Charles University in Prague in particular; they view the sentence as a complex sign. Special emphasis is now placed on two trends of analyses for cases and prepositions: working with highly abstract features intrinsically connected with each other, and stressing the symmetry in the core of the system while the other aspect of "duality" may be useful in connecting the set of morphological meanings within the domain of syntax - the core and the periphery. The result of these two trends of analysis gives us a sign-oriented linguistics which allows for an integrated description of language. Once again, it is evident from this article how prolific and diverse classical Prague School linguistics must have been in order to have inspired so many different, yet interrelated points of view both inside and outside of its own "locative" or "spatial" domain. The application of semantic features to case and prepositions and their role in the speech of aphasics is further discussed by Leikin (in this volume). Thus, this volume reflects the renewal of these intellectual contacts of scholars inside and outside of Prague who, at last, are meeting again and having direct discussions a half century later.

The next paper, representing a Western extension of the Prague School in general and the sign-oriented point of view of the Columbia School in particular, is Robert Kirsner's discussion of the human factor and the insufficiency of invariant meaning. Kirsner deals with many of the basic problems of sign-oriented linguistic research - as evidenced by the different conceptualizations of the concept of invariant meaning in the Columbian, Jakobsonian-van Schooneveldian and Guillaumean schools - focusing on the theoretical and methodological implications of these differences. The complexity of language and the problems inherent in bridging the inferential gap of an abstract invariant meaning of a sign with its diverse contextual and discourse realizations - the problem of "duality" discussed in all of the papers - are directly confronted in Kirsner's article. Kirsner is searching for a complete and cogent analysis to cover all the uses and non-uses - the total positive and negative distributional data - of linguistic signs and sign-systems. He compares and

contrasts how different sign-oriented schools and Cognitive Grammar deal with this primary and fundamental theoretical and methodological problem. In particular, Kirsner emphasizes the lack of internal and external methods of control in linguistic analysis. Kirsner then presents a case study dealing with Dutch demonstrative adjectives which he analyzed within the framework of the Columbia School and has attempted to conceptualize within the framework of Cognitive Grammar as well. Kirsner then extends his analysis of Dutch demonstrative adjectives to a third Jakobsonian-van Schooneveldian framework, and then compares and contrasts all three approaches. In his discussion, Kirsner consistently returns to the basic problem of how one bridges the gap between invariant or abstract meaning and the total positive and negative concrete use of the forms in question. Kirsner pleads for greater empiricism in language - specific analyses before any universal claims can be made, and then discusses the strengths and weaknesses of his own Columbia School position as well as the strengths and weaknesses uncovered in the alternative prototypical and universal distinctive feature-based analyses of Cognitive Grammar and the Jakobsonian-van Schooneveldian approaches, respectively. Although Kirsner's paper does not provide the reader with an unequivocal answer to the question of meaning-message "duality", the attempt to deal with this fundamental issue through a specific set of analyses, each representing an alternative way to solve the same linguistic problem, should be viewed as a promising line of research to deal directly with this most fundamental problem.

Andrews postulates a theory concerning the role of agreement and declensional gender in Russian substantives modified in word-formation. The primary argument rests on redefining gender as not only a category on the cusp between grammatical and lexical meaning, but as a vehicle of iconicity. Gender shifts in substantives with the *-iščē-* suffix in Russian serve as but one formal manifestation of how gender can be an icon, representative of the sign complex ground. Strict Peircean definitions of sign-object relations and ground are applied in demonstrating that iconicity is not restricted to only one aspect of the sign, but is a force not only running through the bond between the *signans* and *signatum*, but inherent to them as well. A detailed study of all possible gender shifts in substantives with the *-iščē-* suffix is accompanied by a proposal

concerning the invariant meaning for the suffix *-išče-*, as well as discussion of other methodological problems connected with the iconic relationship between grammatical and lexical categories.

Feinberg deals with markedness as a theoretical and methodological device in the typology of Russian verb stems. He begins with a brief overview of traditional, diachronic, or historically-based Slavic verbal classification or cataloguing of verb types and the more synchronic morphological classification of productive versus unproductive classes of Karcevski. It is also shown that Jakobson elaborated and extended Karcevski's analysis by providing an appropriate set of morphophonemic rules in order to generate the entire verbal paradigm by creating predictable variants. The role of morphology in Jakobson's approach was limited, and a new paradigm was created by Townsend, who managed to synthesize the more traditional morphological approach of Karcevski with the morphophonemics of Jakobson. The major point of Feinberg's paper is to show how "typology must transcend itself, to the extent of showing how distinct types cohere as a system." Feinberg suggests that the Russian verbal system is not organized paradigmatically around any one hub but reveals a bipolar tendency motivated by the acoustic opposition between openness versus closure, corresponding to sonority - the feature that underlies the basic consonant/vowel dichotomy. This analysis then allows for the classification of verbal stems into two basic classes: a marked (unsuffixed class) and an unmarked (suffixed class), further subdivided into verbal stems ending in obstruents (unmarked) versus sonorants (marked) and marked one-segment suffixed stems versus unmarked two-plus segment suffixed stems. This new classification based on distinctive feature and markedness theory then is shown to explain nonarbitrary phenomena related to the questions of productivity, primary versus secondary verbs, tense and infinitive formation, and prosodic differences. Feinberg's analysis presupposes a hierarchy of stems where productivity and uniformity are reflections of underlying markedness relations internally motivated by the phonological shape of stem formants, illustrating the possibility of going from mere paradigmatic catalogues to coherent systems of classification which are based on distinctive feature and markedness theory.

Sperling's paper presents a more general discussion of the semantics of the classification of Russian verbal suffixes which most directly applies a distinctive feature analysis to word-formation morphemes in the Jakobsonian-van Schooneveldian tradition of distinctive feature and markedness theory. Sperling establishes the semantic markings of the *-ej-*, *-nu-*, *-i-*, and *-ov-* (*-aj-*) verbal forms, in particular, to show that each individual word-formative morpheme functions as an invariant semantic unit. Sperling assigns the semantic feature of "Extension" to the *-ej-* suffix, the semantic features of "Cancellation" and "Demarcatedness" to the *-nu-* suffix, the semantic feature of "Preidentity" to the *-i-* suffix, and the semantic feature "Objectiveness" (cf. van Schooneveld, this volume). Her analysis further illustrates the attempt to discover a calculus of meaning based on the notions of invariance, distinctive features, markedness theory and deixis as the fundamental principles underlying language upon which this volume is based.

Feldstein, like Andrews, Feinberg and Sperling, deals with classification and categorization, but his study addresses the regular and deviant patterns of Russian nominal stress and their relation to markedness rather than with the semantic and morphonological categorization of verbs. The parameters and features being discussed include the relationship between gender, declension class and stress paradigms. Feldstein's analysis aims to reduce the number of what have been classified as the true irregularities of the declensional paradigms to a very small number by including their morphological behavior in the plural and not only in terms of his previous classification by nominative singular desinence. This new analysis then shows that what were previously considered to be anomalous stress types may now be viewed as being regular, bringing a new focus on the underlying regularity of Russian nominal stress patterns. A parallelism between all nouns is thus revealed through the use of markedness theory and relative frequency. Once again, the use of markedness theory is presented as a means to present a new typology of regular and irregular forms, but this time in the Russian nouns rather than in the classification of verbs.

Dolgova and Maksimova present a primarily diachronic analysis of the differentiation of the system of demonstrative pronouns into primitive-concrete demonstrative lexemes and local demonstrative lexemes. By placing them on a

developmental spatio-temporal-existential cline as the focal point of a study of deixis in time and space, their work compliments that of Kirsner and Leikin (this volume). In particular, the authors trace the history of demonstrative pronouns and their development into personal pronouns in the Slavic languages in general and specifically in Russian. The connection between the historical third person demonstrative pronouns and the third person personal pronouns as indicators of "remote" objects representing free word combinations is studied and focused upon in all of the historical stages of Russian. Different constructions containing these pronominal forms and their various collocations in different styles and registers are described and explained from the point of view of their various pragmatic implications in context. Special attention is also given to antonymic collocations with *sej* (e.g., "here and there", "this way, that way"), as well as the deictic qualities and the maintenance of *sej* as a deictic in contemporary Russian. The systematic synchronic usage of *sej* is further analyzed using the feature systems elaborated by Jakobson and van Schooneveld.

Pugh's paper deals with the varying degrees of formal morphological competition in the East Slavic substantive plural paradigms. By formal morphological competition Pugh means two different cases being represented by the same form and two or more forms which occur to express one and the same case meaning. The specific languages being compared and contrasted are Ukrainian, Belorussian and Russian, whose systems are reflected in the literary language or in a given dialect. From the point of view of the literary language, Ukrainian and Belorussian reflect greater degrees of variation than Russian in general, but in the plural paradigm in particular the variation appears to be the greatest in Russian and Belorussian. Pugh's paper deals with the questions of multi-membered systems in dialects, and the geographical and diachronic development of these systems and their variations. In particular, Pugh outlines the development of Indo-European stem-based nominal declension into the Slavic grammatical gender-based system, as culminated in literary systems in the seventeenth century evidenced in Ruthenian (pre-Ukrainian and pre-Belorussian) texts which present the most intricate morphological picture that reflects this formal competition most clearly. Theoretically and methodologically, Pugh's

paper shows the need to present a panchronic analysis which takes into account both synchrony as well as diachrony, or a description with explanation based on past and future trends. Pugh's analysis is based on texts by Meletij Smotryc'kyj, a polemicist, grammarian, and church figure of the late sixteenth and early seventeenth centuries.

Contini-Morava presents a Columbia School (cf. Kirsner, this volume) sign-oriented analysis of the semantic features of agreement in Swahili. This paper opens with a general introduction to sign-oriented theories of language versus more traditional sentence- or syntax-oriented approaches, comparing and contrasting their respective views of grammatical agreement in particular. The specific problem addressed by Contini-Morava is the system of agreement in Swahili, a typical Bantu language with a complex system of noun classification, in which certain elements of the sentence (e.g., demonstrative pronouns, possessives, connective particles) are said to agree with the class of a "controlling" noun. Contini-Morava's claim, of course, is that the so-called agreement markers have independent semantic content. She then illustrates her claim by focusing on those problematic cases where no "controlling" noun is mentioned in the linguistic context and where more than one candidate for "controller" status is mentioned. The semantic system proposed in this paper revolves around the "communicative purpose to help the hearer identify a referent, in the linguistic or extralinguistic context, with which to link the lexical item that the agreement marker is attached to." The data supporting the analysis are culled from Swahili novels and plays and suggest that the traditional view of agreement as an "automatic, syntactically-governed relationship between an expressed or understood 'controller' and 'target' simply does not hold for Swahili." The theoretical and methodological implications of the present study both for Swahili and for the phenomenon of "agreement" in general conclude Contini-Morava's contribution to this volume.

Fennell's paper concentrates on the concept of reported speech, which she claims "illustrate[s] the bidirectional flow of knowledge involved in linguistic and literary theory." In particular, Fennell shows how the literary devices of dialogism, polyphony, and general narrative theory both rely on and help to elucidate the more linguistic concepts of reported speech, both direct and

indirect, in their various forms, such as mixed indirect report, quasi-direct discourse, free indirect discourse, *style indirect libre*, represented speech or thought, and represented speech. Fennell adopts a modified version of "literary approaches" in order to elucidate the syntactic, morphological and discourse complexities of German reported speech, showing that morphological markers can be used deictically to signal the exclusion or inclusion of the present speaker's voice. In particular, these morphological markers or signs are shown to be exploited to signal either an association with or a distance from the context of the original utterance. Much of the paper is devoted to the use of the German Present Subjunctive (I) (which frequently overlaps morphologically with the Indicative) and the Past Subjunctive (II) and their role in the determination of direct versus indirect speech. Fennell then describes the complexity of reported speech in German due to the fact that there are formally marked cases - in which the subjunctive forms conflict - and also a discourse functionally-marked case, all of which compete in the choice of which verb tense morphology is to be exploited. Fennell contrasts and compares the German tenses in the following way: Indicative-Associative Speaker with Original Utterance, Subjunctive - neutral report (which overlaps with Indicative and represents neutral report) and Subjunctive I- Distance Speaker from Original Utterance. This system is then illustrated from journalistic as well as literary German texts and summarized by sets of features and discourse strategies marked by the various morphological choices and their meanings.

Friedman presents an analysis of the five-member deictic system of Lak, one of the five literary languages of the Daghestanian group in the Northeast Caucasian family spoken by approximately 100,000 people in southern Daghestan. The traditional description of Lak's complex five-term deictic system composed of demonstrative pronouns and related adjectives and adverbs includes two marked degrees of height with relation to the speaker in addition to a three-way opposition relative to the speaker and the addressee as: near to speaker, near to addressee, distant from both, neutral, below speaker, above speaker. This description is followed by a discussion on case assignment and the opposition between pronouns (limited to first and second person only) and demonstratives (which can fill the function of third person), agreement (cf.

Contini-Morava, this volume), and frequency of use. Friedman's study of deictic usage is based on a corpus of texts of a variety of genres including literary and expository prose, epic poetry, as well as recorded folk narratives. Friedman's paper involves the categorization of the members of the system according to markedness theory and discusses the myth of frequency as a defining criterion of markedness (also discussed in Andrews, 1990). He then categorizes the members of the system according to the van Schooneveldian hierarchy of marked distinctive semantic features of "Objectiveness", "Extension", and "Dimensionality" in relation to height, immediacy, and connection/contrast respectively. Friedman then sets up the system within a matrix of features and a hierarchical scale similar to that of the Dutch deictic system (cf. Kirsner, this volume). In this paper, we are again shown how the concepts of invariance, markedness, and the distinctive feature theory may be utilized to solve previously unresolved linguistic questions.

Fradkin develops a typology of person categories in Slavic and Semitic by comparing the morphological oppositions of person, gender and number in the pronominal and verbal inflectional systems in the Slavic and Semitic language groups from the point of view of markedness. In particular, Fradkin examines the extent to which identity of form correlates with identity of meaning in terms of the referential shifter of person from the theoretical and methodological points of view of the interaction of markedness hierarchies for person (1st-2nd-3rd), number (singular, plural, dual), and gender (masculine, neuter, feminine). The distinctions between animate/inanimate and human/non-human where gender and number frequently intersect in these languages is also discussed from the point of view of Praguean markedness theory. Fradkin takes particular interest in what data are clearly covered by the theory and what also must be further refined both theoretically and methodologically.

Following the theoretical and methodological lines underlying this book, Tobin proposes an analysis of the eight-member verbal conjugation (or *binyan*) system of Hebrew based on the theoretical and methodological concepts of invariance, distinctive feature and markedness theory, and deixis. Tobin's analysis presents the verbal conjugation system as a complex paradigmatic system composed of at least three interlocked systems revolving around the

semantic domains of the objective versus subjective viewing of actions, states, or events; the singular versus multiple perceptions of these actions, states, or events; and whether these actions, states, or events are perceived autonomously or non-autonomously by the encoder at the here-and-now point of the process of enunciation. The eight- member system is thus re-analyzed as two sets of four subjective versus four objective forms which can be further reduced to two paired forms representing singular versus multiple perceptions, which is then further subdivided into so-called "active" vs. "passive" paired conjugations, wherein each subset within the set of these objective/subjective, singular/multiple actions, states, or events is perceived as being either autonomous or non-autonomous, respectively. The above classification of these sets and subsets is iconically reflected in the partially overlapping morphological signals they share. This iconic relationship illustrates the integrity of the signal and meaning dyad of the linguistic sign as well as the integral connection between the shared sign systems of the lexicon and grammar, viewed as a continuum exploiting the same marked distinctive features throughout the language system.

Leikin analyzes selected locative prepositions in Russian from the point of view of a hierarchy of semantic distinctive features, comparing them to content words with regard to their specific semantic load. Leikin also points out the interconnectedness of their syntactic and semantic functions following the isomorphic and holistic approach found in the present volume (cf. van Schooneveld and Sgall, Bémová and Hajičová, Tobin, this volume). Leikin further discusses the connection between the semantic distinctive features of locative prepositions presented in various linguistic models and human perception. Leikin then describes various aspects of aphasia (disgrammatism and agrammatism), and then applies his analysis to a set of five experiments, each representing different verbal and nonverbal communicative tasks, to different groups of aphasiacs. Thus this paper not only presents a theoretical analysis based on markedness and distinctive feature theory, but applies it to the concepts of disgrammatism and agrammatism in aphasia, based on empirical data, which may have theoretical and methodological implications for the thorny

issue of the psychological reality of linguistic theory in general, and sign-oriented linguistic theory in particular.

It is our hope that the contents of this volume will convincingly demonstrate that linguistic theory based on sign-theory provides a rich and variegated tradition, bringing together a wide range of approaches seeking a common goal and providing a common platform for discussion. The commitment to elucidating the interrelatedness of all levels of language by continuously combining the "signification" aspects of language with its "communicative" aspects serves as the catalyst for making bold statements about the intricate dynamics of linguistic systems as living, ever-changing bodies. By constantly shifting our lens to a multifaceted range of networks which connect language systems and cultures, using both empirical and analytical data, we are able to more clearly define the essence of language structure and achieve a deeper understanding of sign systems in general.

Acknowledgments

The editors would like to express special thanks to Dean Richard White and Professor Edward Tiryakian of Duke University for their support, both financial and moral, in organizing the conference "Toward a Calculus of Meaning: Studies in Markedness, Distinctive Features and Deixis." We would also like to thank those dedicated students and staff who helped make the conference a success, as well as those who typed and retyped the many pages of articles for this volume. These special people include Sandra Bostian, Anne Croteau, John Elliott, Jeffrey Perry, Daniel Reeves, and Jay Ulfelder.

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