NEW VISTAS IN GRAMMAR:
INVARIANCE AND VARIATION

Edited by

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and

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Preface

After Roman Jakobson's death on July 18, 1982, a group of his colleagues decided that a fitting tribute to his memory would be an international conference devoted to a major topic of his scholarly work, namely the role of invariance and variation in grammar. Rather than being a specific record of his work in the field, it would reflect the state of contemporary scholarship on the subject while acknowledging the legacy of Jakobson as a major figure in modern linguistics. Linda Waugh's "Introduction" to the present volume details the theoretical issues that eventually became the focus of the conference.

An organizing committee was formed for the conference, consisting of Joseph H. Greenberg (Stanford), Stephen Rudy (NYU), C. H. van Schoonveld (Indiana), Edward Stankiewicz (Yale), Linda R. Waugh (Cornell), and Dean S. Worth (UCLA). It was decided to hold the conference at New York University, and Stephen Rudy was appointed the secretary of the committee. He and Linda Waugh served as the conference's coordinators.

The conference, which was entitled "New Vistas in Grammar: Invariance and Variation", took place on October 10–13, 1985. After welcoming remarks by the Dean of the Faculty of Arts and Sciences at NYU, C. Duncan Rice, and opening remarks by the conference coordinators, three public lectures were given by Edward Stankiewicz, Hansjakob Seiler, and Igor Mel'čuk. In the present volume those lectures are incorporated by topic into the panel sessions which made up the bulk of the conference and which form the parts of the present volume: I. The Question of Invariance; II. Invariance and Grammatical Categories; III. Grammar and Discourse; IV. Grammar and Pragmatics; and V. Typology and Universals.

In two instances papers delivered at the conference were not included in the volume (Henrik Birnbaum's "*Gesamtbedeutung* — A Reality of Language or a Linguistic Construct?"; Maurice Gross' "Projecting a Lexicon Grammar on Texts"). Several scholars who had been invited to attend were unable to do so, but their papers have been included here (Ivan Fónagy, Thomas V. Gamkrelidze, Joseph H. Greenberg, and Pierre Swiggers). For each of the conference's five panels, official discussants were invited to give their reactions to the papers, which had been distributed in advance. In the present volume it was possible to include only selected comments by the

discussants, but we would like to thank all of them for their active participation: Edna Andrews (Duke), Paul Hopper (Carnegie Mellon), Flora Klein-Andreu (SUNY Stony Brook), Henry Kučera (Brown), Madeleine Newfield (Cornell), Hansjakob Seiler (Köln).

The proceedings of this conference are related broadly to two other international conferences held in tribute to Roman Jakobson. They are: *Language, Poetry and Poetics. The Generation of the 1890's: Jakobson, Trubetzkoy, Majakovskij* (Proceedings of the First Roman Jakobson Colloquium at the Massachusetts Institute of Technology, October 5–6, 1984), edited by Krystyna Pomorska et al. (Berlin: Mouton de Gruyter, 1987); and *Roman Jakobson* (Proceedings of the Conference on Roman Jakobson: Linguistics and Poetics held at the Università di Roma "La Sapienza" in November 1986), edited by Pietro Montani and Massimo Prampolini (Rome: Editori Riuniti, 1990).

This volume is dedicated to the memory of Krystyna Pomorska Jakobson, without whose support the conference could not have happened and whose devotion to Roman Jakobson's scholarship was the chief animator of all of these proceedings.

Stephen Rudy
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Introduction

Linda R. Waugh
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1. Within the last few years, there has been renewed interest in the semantics of grammatical categories, in particular, in morphological and syntactic categories such as tense, aspect, mood, voice, word order, and the like.[1] This work has inevitably questioned the unity of the categories examined, for grammatical categories occur in such a wide variety of contexts, with such evident differences in interpretation both within a language and across languages, that it remains problematic whether they may all be viewed as manifestations of the same phenomenon. So, the fundamental question of sameness within difference (equivalence in difference) or invariance in the midst of variation, and conversely, variation correlated with invariance, is thus a central one in grammatical semantics.

It seems to be accepted by the majority of linguists that grammatical categories such as person, tense, number, and case recur within a given language and are shared by a number of languages, and that even certain specific categories such as third person, past tense, plural number, and accusative case can be defined in such a way as to be applicable to a variety of uses in diverse languages and to different contexts in one language, even when they have non-uniform stylistic, pragmatic, and sociolinguistic values. Thus, the notion of passive voice, whether within one language or across languages, assumes, if only implicitly, a correlation with some common denominator, despite distinct forms, uses, and interpretations across contexts. This viewpoint is based on the assumption, whether directly stated or not, that there is some communality, or invariance, which lies behind the variation.

In this most general formulation, the assumption of invariance has played an important role in the analysis of grammatical categories. Thus, for example, debates about whether English has one present perfect or two or

three (cf. McCoard 1978) all assume that invariance is to be posited with respect to variation, whether it is one invariant or two or three invariants. To be sure, there is disagreement as to whether the present perfect is to be treated as a single form associated with a single meaning (and of course the exact nature of that single meaning is also open to debate) or as a set of two or more homonymous forms each associated with its own specific meaning, but no one has assumed that every occurrence of the form called present perfect is different in kind from every other. In other words, the assumption of homonymy, though it enlarges the number of forms, nonetheless presupposes the concept of invariance.

But invariance is a fundamental principle of linguistic research not just on the level of grammatical semantics. Indeed, it arises also in the study of phonology, syntax, and lexical semantics. Thus, the feature [+ nasal] is assumed to correspond to some invariant physical property of nasality, whatever the differences in frequency, intensity, duration, etc., that occur within the contexts in which [+ nasal] is present. In like fashion, any discussion of whether "bachelor" is one word or two or three accepts in principle the notion of invariance. And studies of basic word order involving subject, verb and object assume the equivalence of all those linguistic elements that can function as subject, verb or object, respectively.

2. While invariance in this most general formulation is implicitly or explicitly at the basis of most work in grammatical semantics, there is a much stronger, and thus more interesting, hypothesis about invariance with respect to grammar, first advanced by Roman Jakobson in his studies of Russian grammatical categories in the 1930s and elaborated by him in later studies.[2] Invariance is the leitmotif which, as Jakobson himself said (1971b, 1981), unifies his work in such diverse domains as phonology, grammatical analysis, poetics, language acquisition, aphasia, and semiotics. He repeatedly pointed out that "invariance in the midst of variation" is one of the cardinal problems in linguistics, first addressed in the 1890s, and destined to be one of the major themes at issue (implicitly and explicitly) in modern thinking; and in fact, his name is the one probably most linked with this theme in twentieth-century linguistics.

For Jakobson, the questions of invariance and variation are central to the issues of the structure of language and of its usage, since communication and intersubjectivity in general require an agreement to endow linguistic forms with perceptual and conceptual constants. Moreover, linguistic creativity — in particular, the use and understanding of a given form in a new context — requires that some inherent value be associated with that form. If this were not the case, neither speaker nor hearer would be able to produce or interpret a new usage. This is particularly true of grammatical categories.

Grammatical categories, whether morphological or syntactic, are those which are obligatory for the construction of well-formed (grammatical) utterances in a given language; grammatical meanings are those meanings which are necessarily conveyed by a user of the language (1959b). Thus, in the Russian finite verb, the grammatical category of tense is necessarily conveyed, providing the user with a choice between the past and the non-past tenses. Lexical categories are optional in the sense that the user may decide whether a given lexical category is to be conveyed or not. The differences between languages reside, then, not in what can be conveyed, but in what must be conveyed —whether a given concept is grammaticalized or not.

Grammatical categories are not only those which are obligatorily and thus inevitably expressed, they are also those which evidence the most tightly constrained conceptual structure. According to Jakobson, for each grammatical category there is a single, general invariant meaning, a *Gesamtbedeutung*, a "common denominator of meaning". Any particular, specific meaning or interpretation of that category — its basic and marginal meanings, its literal and figurative meanings, its frequent and infrequent meanings — are contextually determined variants, correlated with, but not the same as, the general invariant. Thus, according to Jakobson, the perfective in Russian has as its conceptual invariant a concern with the absolute completion of the narrated event (1932, 1957: 137); specific instantiations — such as inchoative event, quick events occurring in a sequence, shortlasting event — are its contextual variants. A grammatical invariant, then, is a general to be defined in relation to a hierarchized series of contextual specifics.

Secondly, Jakobson claimed that invariant meanings, rather than being associated with grammatical categories as isolated and absolute entities, are based on the interrelated concepts of opposition and markedness — e.g., the perfective aspect in Russian possesses its invariant meaning insofar as it is opposed to the imperfective. And in normal declarative sentences, the perfective is the marked term in this relationship. Grammatical paradigms are underlain by sets of recurrent binary oppositions where one pole of the opposition is marked (more focused on a narrowly specified and delimited conceptual item) and the other unmarked.[3] A grammatical invariant, just as a phonological invariant, is relational and oppositional in nature.

Thirdly, Jakobson advanced the theoretical and thus methodological claim that, in general, singleness of form is associated with singleness of meaning, except in certain, well-defined cases of homonymy. This principle has come to be known as the one form–one meaning hypothesis in relation to Jakobson's work, but it has also been variously labeled in general linguistic research: for example, "one-to-one symbolization" (Chafe 1970), "isomor-

phism" (Haiman 1980), "formal determinism" (Sangster 1984), and so forth.[4] A grammatical invariant, then, is closely and in many cases iconically related to the form(s) which carry it.

Whether one agrees or disagrees with Jakobson on these questions of grammatical semantics, it is fair to say that his work has been seminal and is to be reckoned with by anyone seriously concerned with this area. Indeed, his profound influence will be evident in many of the papers included here, although the specifics of his hypotheses are still the subject of much controversy.

3. Ever since the 1930s the debate over the semantic analysis of grammatical categories has repeatedly returned to questions concerning invariance and variation. One common focus of discussion has been the nature of the invariants proposed. Many scholars have worried that the invariants are so general, vague, or abstract, that they may cover not only all the possible uses of a given category, but also predict impossible ones. This becomes particularly apparent when comparing what seems to be the same grammatical category, but which nevertheless evidences systematic differences in closely related languages. Moreover, when there are competing analyses, what evidence is to be used to verify a particular one or to decide between them? What constitute confirming or disconfirming data with respect to a particular invariant posited? And where do such methodological issues as the question of economy, the role of formalization, the status of quantitative data, and so forth fit in?

A second area of discussion has been the question of how much and what kind of variation exist in grammatical systems. In other words, how far must contextual meanings diverge before they may be viewed as different invariants associated with homonymous forms? What in fact is the crucial evidence for homonymy? Polysemy has been advanced by some as proof of the presence of wide-ranging but still related variation, while for others it is proof of homonymy. A further focus is the question of how to formulate an invariant which holds not just within one grammatical category but across categories and how to understand the differences it manifests. Similarly, questions arise about the claim that the same invariants show up in quite different grammatical systems or even in both grammatical and lexical systems.

A third issue has to do with the relation between invariance and variation: is either one of these to be seen as more central than the other? Furthermore, there is the question of the pathway between invariance and variation, and of the prediction from the interaction of the invariant and its context to the particular variants which exist — and vice versa. Is the basic meaning to be used as that variant from which the others can be derived in some way?

Do, in fact, the variants derive one from another, or do they derive from the invariant — and in any case in what way would such derivation operate? Furthermore, many studies assume a hierarchy within the variants, such as basic (nuclear or core) vs. marginal, literal vs. figurative, (proto)typical vs. non-(proto)typical; others either treat all contextual variants on an equal footing, or conversely ignore all but the basic, literal, (proto)typical variants.

This leads to the question of what kinds of interaction with the linguistic context exist and the problem of competing analyses based on whether, for example, the sentence or the discourse is taken as the contextual factor to be considered. What indeed are the contexts which are important for grammatical analysis? These issues are implicated further in the question of how invariance and variation are to be related to other major dichotomies of language — in particular system and usage (code and message, langue and parole, competence and performance), grammar and lexicon, morphology and syntax. Do the variants belong to usage only or are they to be seen as integral to the system; is the lexicon treatable in terms of invariance/variation in the same way that grammar is; is morphology essentially different from syntax in the ways in which it is structured with respect to invariance?

A further set of issues revolves around the question of opposition and markedness. What is the role of binary oppositions and markedness in grammatical systems? What about ternary or n-ary oppositions or continua? How is markedness to be defined? Are all grammatical systems based on opposition and markedness between grammatical pairs, as Jakobson claimed? And can grammatical semantics be done in terms of semantic features at all?

There are also a number of questions concerning the importance of the formal correlates of grammatical categories as determinants in grammatical semantics. Is the difference between morphological and syntactic categories a crucial one? What about periphrasis and grammatical words (particles, clitics, auxiliaries) as members of paradigmatic grammatical classes? And what about the ways in which allomorphy may be correlated with semantic relations between grammatical categories?

In addition to these language-internal questions, there are the cross-linguistic issues of invariance. Various theories of universals assume cross-linguistic invariance and address the range of cross-linguistic variation and its limits. Typological studies, on the other hand, attempt to categorize languages according to this variation and to make universal statements about it. This brings up the question of what the relevant parameters are for typologies with regard to grammar, what the limits on variation are, what possible types of changes there are, and so forth.

There also emerges the question of variation with respect to the usage of language, that is, the pragmatic consideration, and in particular the relation

of language to the speech situation in which it occurs. This is particularly important with regard to those categories which most explicitly bring in the speech situation, such as shifters (deictic categories) in the verb, noun, pronoun.

And finally, there is the "human factor": what is the relation between invariance and the mind, between invariance and our perceptual system? What role does invariance, and perforce grammatical invariance as one of its central components, play in human thought and human life as a whole?

4. The present volume is centered around these issues of invariance and variation in grammar. It concerns in particular the present understanding of invariance and variation as general theoretical questions of grammar, as reflected in the synchronic and diachronic analyses of specific languages, as evidenced in questions pertaining to the relation between grammar and discourse and between grammar and pragmatics, and as realized in work on typology and universals.

Notes

1. As an example of this interest we could point to the textbooks on tense, aspect, and mood and modality published in the "Cambridge Textbooks in Linguistics" series (Comrie 1976, 1985, Palmer, 1986).
2. See Jakobson 1932, 1936, 1953, 1957, 1958, 1959a, 1959b, 1960, 1962, 1965, 1976, 1977, Jakobson & Waugh, 1979. See also Waugh 1984.
3. See Newfield & Waugh (this volume) for further discussion concerning the nature of markedness in Jakobson.
4. See Anttila 1972, Matejka 1975, Parret 1980, Haiman 1980, Waugh & Newfield ms, for further discussion.

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PART ONE
THE QUESTION OF INVARIANCE

The Concept of Structure in Contemporary Linguistics

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1. The study of structure, i.e., of the interrelations of the various elements of language, has been one of the central concerns of modern linguistics and has largely defined the direction of its development. It has given rise to a number of structuralist schools and has spilled over into several related disciplines, such as anthropology, semiotics, and poetics, for which it has become a method of inquiry and a badge of identity.

The term "structuralist" itself was apparently first adopted by the Prague Circle, which sought to describe language as a network of relations and treat it in conjunction with its multiple functions. A "functional" and "structural" approach to language consequently became the hallmark of the Prague Circle, affecting the overall course of 20th-century linguistics.

The rise of structuralism as an intellectual trend and method of research was not limited to the science of language. It emerged around the same time in a number of disciplines in reaction to the blunt empiricism of the late 19th century, which treated even logic as an inductive science and which combined a strong belief in observable facts with an equally strong distrust of abstraction and inference. However, a new current of thought was by then in the making and, according to the testimony of Charles Sanders Peirce, it made itself felt first in the abstract sciences, such as mathematics, logic, physics, astronomy and music. "Their ideal," wrote Peirce, "was the universal and abstract...in contradiction to the ideas formed upon outside experience" (Peirce 1966: 263). The new ideal soon gained sway also in linguistics, which had been dominated for some time by the Neogrammarians, for whom historical change and the accumulation of "real objects and facts" (*einzelne Faktoren*) were the only true objects of linguistic research.

The forerunners of contemporary structuralism (such as Michel Bréal, Ferdinand de Saussure, and Jan Baudouin de Courtenay), who were themselves outstanding comparativists, rejected the piecemeal methods of the Neogrammarians by shifting attention to the synchronic state of languages

that would provide an insight into language as a whole, rather than to those of their elements that throw light on their origin or historical development. Within this new synchronic approach the question of the relation of the parts to the whole and of the interdependence of the elements of a system could not but impose itself with particular force.

The view of language as a system and the questions it entailed received the sharpest formulation in the *Cours de linguistique générale* of Saussure, and it is this book (published by Saussure's students in 1916) that became the *vade mecum* of most structural linguists. The problems raised in the *Cours* had already been anticipated in Saussure's youthful study on the Indo-European vowels (*Mémoire sur le système primitif des voyelles dans les langues indoeuropéennes*), which changed our whole view of Proto-Indo-European while it advanced some basic proposals on the interdependence of its elements. The words used by Antoine Meillet with regard to this book have since become one of the most quoted passages in contemporary linguistics and a kind of expression of structuralist faith. "Le Mémoire," wrote Meillet, "apportait par innovation, un système cohérent qui embrassait tous les faits. Dès lors il n'était plus permis d'ignorer, à propos d'aucune question, que chaque langue forme un système où tout se tient." (1927: 475). The claim that language is a tightly organized system in which "tout se tient," and which Saussure subsequently compared (in the *Cours*) to a game of chess, gave rise, nevertheless, to some serious reservations on the part of his followers. It was in effect Saussure's own disciple, Charles Bally, who pointed out that language is not as closed as claimed by his master since it combined different styles, older and innovating forms, and a variety of dialectal and foreign words (1932: 9ff). Edward Sapir, you may recall, put it more simply when he declared that "all grammar leaks." The problems of structure and of the types of relations that hold between the elements of a language were then put on the agenda of various schools of linguistics which gave them quite different solutions, particularly since the *Cours* had defined them in highly suggestive but largely inadequate terms.

While most structuralists would readily accept the basic, yet age-old proposals of the *Cours*, namely that language is a system of signs consisting of two facets, a *signans* and *signatum*, that it is a tool of social interaction endowed with a conventional force, and that there is a difference between *langue* and *parole*, they differed from Saussure on a number of issues, including the treatment of language as a structured whole. The import of the various structuralist schools that sprang up in Europe and the United States between the two World Wars and after may in fact be judged by the content they imputed to the concept of structure and by the type of relations they attributed to language.

Although the structural approach has in recent times been challenged by other approaches, there is little doubt that the concepts and methods developed by the former have deeply modified the science of language. From the perspective of time, furthermore, it would appear that among the various structuralist schools it was the school of Prague and its direct and indirect followers who have made the most lasting contributions to our understanding of language. The significance and continuing vitality of that school is largely due to the work of Roman Jakobson, who transplanted the structuralist ideas of Prague to these shores and who gave them the most encompassing and compelling interpretation. Foremost among them is a cluster of concepts which grew out specifically from concerns with structure, and which include such notions as invariance and variation, opposition and hierarchy, markedness and neutralization. It is not by chance that these notions have become the catchwords and the stock in trade of most practicing linguists and have found their way into a number of disciplines. These concepts and the problems they helped to illuminate have opened new perspectives into the science of language and will no doubt continue to guide its research. One such perspective was recently pointed out by Jerzy Kurylowicz. He wrote

Il est clair que le structuralisme dit classique, la doctrine la plus robuste qui ait succédé à l'école néogrammairienne, ne saurait être borné à la description et l'histoire de langues particulières. Il est en même temps évident que justement dans le domaine du comparativisme il est loin d'avoir épuisé toutes les possibilités. (1977: 5).

The possibilities which this "robust" and "classical" structuralism has opened up obviously do transcend the field of comparativism, though at this point one can hardly envisage their direction or limits. But since the problems of structure pertain to the fundamental relations of language, one can hardly assume that their investigation will cease, no matter under what name such studies will ultimately evolve.

In the following remarks I shall give a short survey of the history of ideas that have gravitated in one or another form toward the problems of structure, and then offer some proposals of how the overall problems of structure might be tackled and further pursued.

2. The questions of structure, like most European grammatical ideas, were first advanced by the Greeks, who formulated the concept of phonetic invariants (*stoikheia*), of grammatical categories, and of parts of speech. Together with the description of paradigms and cases, they posited the question of oppositions and the difference between marked and unmarked cases (*ptōsis*). They were also the first to recognize the two-fold nature of the linguistic sign and of the diverse functions of language. The concept of

language as a structured whole arose most clearly during the Renaissance when the new national languages came to vie with each other and with the classical languages. It was at that time that the phonetic and grammatical properties of a language became the subject of extensive research, and that each language began to be seen as an ordered, autonomous, and systematic whole (*una struttura diversa* or *adunanza regolata* [Stankiewicz 1982: 177ff]).

The true forerunner of modern linguistics was, no doubt, Wilhelm von Humboldt. It is curious that Noam Chomsky claimed to find an affiliation between himself and von Humboldt, for the ideas of the latter were in every respect different from the logistic and universalist approaches of the eighteenth century grammarians in whom Chomsky justly saw his true predecessors. Imbued with the esthetic ideas of the Romantics (who saw an inseparable bond between the content and form of a work of art), Humboldt rejected the Rationalist belief in concepts that existed prior to and apart from their material expression and in expression which did not serve some functional end. The unity of meaning and form was for him an unshakeable axiom which determined the so-called "genius" of a language and which accounted for the diversity of the languages of the world. Consequently he also rejected the eighteenth century belief in a universal language which was propounded by the "philosophical" or "rational" grammars. "Il serait entièrement chimérique," he wrote, "de vouloir former de toutes des différentes qualités une même langue universelle, qui deviendrait vide, si elle faisait abstraction des caractères distinctifs, et contradictoire, si elle admettait tous à la fois." (1906a: 308). In recognizing the basic diversity of linguistic systems he did not, however, deny that they shared a number of common, universal traits which he tried to capture by studying languages of the most diverse linguistic types. As a consequence he replaced the concept of an *a priori* universal grammar with that of empirically attested linguistic universals. The study of individual languages also led him to emphasize, in the same way as Saussure, the interdependence of the various elements of a language and the sense of cohesion they bring to the whole: "Es gibt nichts Einzelnes in der Sprache," he wrote, "jedes ihrer Elemente kündigt sich nur als Teil eines Ganzen an" (1969: 2). Although he shared with his era some typically idealistic ideas (such as the belief in the preformation of languages, or in the striving of so-called "inner form" for phonetic realization), his concept of structure remained throughout flexible and open-ended: "Die grammatischen Elemente," he asserted, "bilden dagegen mit dem Character des Ganzen nicht gleich sichtbar verbundene Teile" (1906b: 372).

The above-mentioned ideas of Humboldt hardly found an echo in the contemporary German milieu, where a one-sided historicism and the discovery of Sanskrit came to replace Humboldt's typological and structure-oriented approach. The harbinger of the new "archeological" and historical

approach was the well-known booklet of Friedrich Schlegel (*Über die Weisheit und Sprache der Indier*, 1808) which found in the *Ablaut* of Sanskrit and other Indo-European languages the expression of a primordial "organic" (*synthetic*) unity which it deemed to be intrinsically superior to the "mechanical" nature of the modern analytic languages (especially of French). Influenced by Georges Cuvier's "principe de corrélation des formes" and by the latter's belief that the fragment of any extinct biological organism may provide an insight into its original complete structure ("*déchiffrer et restaurer [le tout]...par un seul fragment d'os*" [Lepschy 1962: 179]), Schlegel became the initiator of that comparative method for which the study of the modern languages became merely a means to an end, namely to the reconstruction of the lost protolanguage. "The decisive point which will illumine all," Schlegel wrote, "is the *inner structure* or *comparative grammar* which will throw light on the genealogy of languages in the same way in which comparative anatomy has illuminated the history of higher nature" (1808: 15).

The subsequent fate and achievements of comparative grammar are, I believe, well known. The gradual perfection of the comparative method gave us an ever more reliable and precise instrument for the reconstruction and genetic comparison of languages, but diverted our sight from the actual, synchronic nature of languages, as well as from the problems of language as a whole. By the time the Neogrammarians came around, linguistics had become a science of "blind" phonetic laws, of limitless and continuous change, of star-studded pages of reconstructed forms (in the words of A. H. Sayce 1890: xvi, "an empty clatter of roots and suffixes"), and of catalogues of haphazard grammatical forms. The study of abstract relations, wrote Hermann Paul, could not yield any fruitful results; the task of the linguist is "die Wirksamkeit der Faktoren isoliert zu behandeln." (1960: 24). By identifying the study of sounds with that of physiology and the problems of analogy with that of psychology, the Neogrammarians had in fact lost the sense of their own discipline. It is not surprising that in calling for a renewal of linguistics, Saussure insisted above all that it must become a science "*en elle-même et pour elle-même*". This science was, according to the *Cours*, bound to recognize two principal truths: first, that language is a system of signs (and therefore also a part of the more general science of *sémiologie*), and second, that it is a system of oppositions which define the very character of the linguistic elements. The importance of going beyond the mere observation of facts was similarly emphasized by Saussure's contemporary, Baudouin de Courtenay. "The linguist," Baudouin wrote, "must not be content with the registration of haphazard facts but must attempt to discover the genuinely distinctive properties of language...the laws hidden in the depth, in the intricate combination of various elements" (1972: 276).

Contemporary linguists have repeatedly paid tribute to the pioneering work of Saussure, while Baudouin's work was hardly known in the West and received short shrift even from such linguists as Nikolai Trubetzkoy. Yet it is apparent that the basic insights into the structure of language came from Baudouin, whose approach was, to begin with, more flexible and profound than that of Saussure. The differences between the Swiss and the Polish linguist stemmed partly from the fact that Saussure's theory had a sharper polemical edge and was largely divorced from his practice (he wrote little and only on historical problems), whereas Baudouin combined descriptive and historical work and achieved a more significant synthesis by deepening linguistic analysis.

In reacting to the historical methods of the Neogrammarians, Saussure attributed a systematic character only to synchrony, declaring diachrony to be a matter of contingency and chance; at the same time, he set up a gulf between *langue* and *parole,* ascribing the latter to the idiosyncrasies of the speaker. He hardly touched upon problems of phonology and relegated syntax to the realm of *parole.* Though Saussure emphasized more strongly than Baudouin the importance of phonological and grammatical oppositions, he interpreted them in a highly formal and schematic way. The phonemes of a language, he claimed, *"ont une valeur purement oppositive, relative et négative"* (1949: 164), while in language as a whole, *"il n'y a que des différences sans termes positifs"* (1949: 166). The disregard of the positive, phonetic and semantic properties of language made him treat all the elements of language as equally abstract algebraic symbols, and prevented him from seeing their diverse roles in the hierarchy of a system. His separation of abstract *"valeurs"* from their underlying substantive properties affected profoundly the field of phonology, which was seen to consist, on the one hand, of purely relative and psychological *images acoustiques,* and, on the other hand, of an extralinguistic physical substratum.

Such a dualistic conception of language continued to dominate at least two schools of structuralism which came in a direct or circuitous way under the influence of the *Cours*: Louis Hjelmslev's glossematics and American descriptivism. The first took the more idealist road by recognizing as relevant only the study of relations devoid of semantic content and phonetic expression; whereas the second, with its more pragmatist and behaviorist traditions, saw as its foremost goal the identification of linguistic units, reducing the question of their relations to the lowest denominator, to that of their linear distribution. As a result, the first lost sight of the specificity of language, treating it on a par with any system of signs, while the second never went beyond the study of "items and arrangements", which it treated in a similar, homogeneous way on all levels of language.

Baudouin de Courtenay was in every respect more flexible than Saussure.

In the first place, he saw language itself as a variable, dynamic and open system both in the makeup of its parts and in its social and historical layers. Unlike Saussure, who identified synchrony with statics and diachrony with dynamics, Baudouin insisted on the presence of dynamics in synchrony, and on the significance of invariance in diachrony. Historical change was not for him a matter of *parole* and accidental drifts, but was, on the contrary, closely related to the stratified organization of the linguistic code. "There is a limit," he wrote, "to the changeability of sounds," for certain features and oppositions persist and are immune to change throughout the history of a language. The relation of the stable and variable elements of a system was discussed by him in two masterful works (*History of Latin Phonetics* and *Survey of the History of the Polish Language* (1893, 1922), which became the foundation of a new structural approach to linguistic diachrony. Another insight which grew out of his work on phonetic alternations (and which he elaborated together with his student Mikołai Kruszewski) was the recognition of the interplay between the phonological and morphological elements of a language. By adopting a consistent functional approach he was able to show that the variants of sounds which are in one stage determined by their phonetic environment acquire new morphological functions when the original phonetic conditions are changed. He thus went beyond the phonetic biases of the Neogrammarians, as well as beyond contemporary "systematic phonology", which attempts to define all variants of morphemes in terms of phonetic rules. The interplay of phonetic and morphological change was discussed by Baudouin in a number of other pioneering studies. Finally, Baudouin was, the first to pin down the nature of phonological relations, by showing that they do not involve global units, but units that are defined by their common and distinctive traits. "Requirements of scientific analysis," he wrote, "do not allow us to stop with the phonemes. The phonemes consist of ultimate psychological (articulatory and acoustic) elements," which are "interconnected with each other" and which "form a system of oppositions" (1972: 267). The psychological bias of his time did not, however, allow him to explore the consequences of his insight, and he too failed in the end to see the inseparable link between the invariants and variants of a phonemic system.

Baudouin's work had a decisive influence on the Prague Circle, which pursued his ideas to their logical conclusion and taught us to see language as a complex of levels and as a network of formal and functional relations. That Baudouin was the primary influence on Prague is apparent from the very areas of its research, which included phonology and morphophonemics, the relation of synchrony and diachrony, linguistic diffusion and the broadest approach to the questions of structure. But it is, of course, thanks to their own work and especially that of Jakobson, that the linguists of Prague

imposed on contemporary linguistics a new stamp by converting its early emphasis on description and synchrony into a quest for predictive and universal laws.

The absorbing concern with structural relations which define the very elements and levels of a language was tellingly described by Jakobson in one of his "Retrospects":

"Perhaps the strongest impulse toward a shift in the approach to language and linguistics was for me, at least, the turbulent artistic movement of the early century.... Those of us who were concerned with language learned to apply the principle of relativity in linguistic operations [and learned] from cubism that everything is based on relationship with the interaction of parts and wholes" (1962: 631–632).

The structured patterning of phonological systems was formulated by Jakobson as early as in 1929 (in the *Remarques sur l'évolution phonologique du russe comparée à celle des autres langues slaves*) when he pointed out the implicational relations of phonemic oppositions according to which the presence of a category A (such as pitch) presupposes the existence of a category B (such as length), or excludes the presence of another category (such as the presence of stress excludes the occurrence of length). Although some of the established correlations have proven to be too extreme, the problem of interdependence of elements was given a precise and compelling form, which was subject to empirical verification on the languages of the world. The formulation of implicational laws required thus at the same time an advance in typology, where the hypothetical and empirical aspects would abet and complement each other.

The above-stated implicational laws acquired even greater explanatory force with the introduction of the concept of markedness. According to this concept the marked members of an opposition are endowed with features that are absent in their unmarked counterparts and are less likely to combine with other features or categories; they are also more susceptible to historical change. It is easy to see that underlying the concept of asymmetry is the notion of symmetry since there is, apparently, a balance in the amount of information linguistic forms may convey. Jakobson's consistent application of distinctive features revealed, finally, not only the relational nature of phonemic oppositions, and the interdependence of variants and invariants, but also their hierarchical organization, which defines the limits of phonological systems. As a result the phonological systems of natural languages appeared themeselves to be variant realizations of universally available phonemic possibilities.

Two more studies by Jakobson have, in my opinion, a special bearing on the problems of structure, as they specify the relations between various linguistic components and levels. One of them ("Prinzipien der historischen

Phonologie" 1931) raises the question of the interdependence between phonemic variants and invariants which are liable to switch their functions in the historical development of a language, whereas the other study ("The phonemic and grammatical aspects of language in their interrelations", 1949) makes it clear that the phonemic system of a language cannot be fully comprehended apart from its role in morphology. Thus certain phonemes or features carry a heavy morphological load (e.g., the role of dental consonants in the English inflectional endings), whereas the others are used for purely lexical ends. These works of Jakobson, as well as those of a number of linguists whom I have here ignored for lack of space, have significantly advanced our understanding of language by pointing up the intimate unity of elements and relations both in their synchronic and diachrònic stages.

3. After this survey of the concept of structure as it evolved in the history of our science, I shall now advance some ideas of how we may broach the problem of structure in language as a whole, i.e., with regard to the relations between the various levels and the relations between the elements of each particular level. My discussion will of necessity be schematic because of the limitations of time and because some of the problems require further and far more detailed analysis.

Students of so-called "rich systems" — of which language is one — have defined them as consisting of a number of parts that interact with each other in complex ways. The interrelations between the parts (the so-called "intercomponential relations") are in such systems looser than the relations that hold between the elements belonging to the same part (the "intra-componential relations") (Simon 1962: 468ff). This definition applies eminently to language if we substitute the notion of "level" for that of "part".

The primary problem we face is the determination of the kinds and number of levels, since there is no general agreement on the matter. A lack of functional criteria would make it almost insurmountable. A case in point is the treatment of morphophonemics, which some linguists have defined as a level that is no longer phonology and not yet morphology. Some approaches to transformational grammar have done away with morphology, and have lumped together phonology and morphophonemics; word formation and lexicology are treated by some scholars as different levels.

Since function is in my opinion the only solid criterion for the discrimination of levels, I shall distinguish only three traditional levels: a level of phonology, a level of morphology (in the broad sense of the word), and a level of syntax. Phonology deals with the sound system of a language (i.e. with those elements which pertain to its "second articulation" and which are known in Russian linguistics as *niže znaka*). It is the level that includes

both the phonemes and their variants, or in other terms, the distinctive, as well as the redundant, configurational, and expressive features. Morphology is the study of those elements which carry a meaning, or in Peirce's terms, those which have an "interpretant". This level encompasses the grammatical and lexical elements of a language, or those which hinge on the word as the carrier of grammatical and/or lexical meanings. The word itself is, however, a heterogeneous and ill-defined unit and requires for its interpretation reference to the underlying grammatical structure of a language. The level of syntax, finally, deals with the various types of sentences and their internal relations.

The three linguistic levels are hierarchical and transitive: they form so-called "*structures emboîtées*" in which the lower levels are in the service of the higher levels without relinquishing their own autonomy. Consequently, each level can be, and has historically been, described both in terms of its internal structure (its intra-level relations) and in terms of its relations to the neighboring level(s), and to language as a whole.

The hierarchical status of the three levels finds further reflection in their relative complexity and in the freedoms and constraints each of them presents. The phonological level is maximally coded and allows minimal interference on the part of the speaker. The morphological level is far more complex, involving both meanings and forms, and allowing various degrees of freedom and choice. It is minimally coded in the field of word formation and maximally constrained in its grammatical categories. But even in this area it allows the substitution of marked by unmarked terms, and a choice between synonymous forms (e.g. such as the use of modals for commands).

The level of syntax allows a whole gamut of freedoms because the limits of a sentence are not strictly defined. Furthermore, the form of a sentence may vary according to verbal or situational context (as in the use of ellipsis), according to the relation of the speakers, and according to the prevailing written or spoken norms. It is not by chance that syntax has often been invoked to illustrate phenomena of linguistic creativity.

Despite their functional and formal differences, the three levels of language exhibit a pervasive isomorphism. Thus each level is heterogeneous, comprising different components and functions; each contains primary and obligatory elements, and elements which admit a greater or lesser degree of variation; each comprises monofunctional units, as well as units which carry more than one function; and each consists of a number of subsystems which vary in their hierarchy and mutual relations. It is the hierarchy, parallelisms and interdependence of the levels that make language into a cohesive, as well as a highly flexible system.

I shall now develop some of these points beginning with the level of phonology.

4. A century of inquiry into phonological systems has given the field of phonology an almost finished form and has made it, as Jakobson put it, into "a methodological model for all other areas of linguistic analysis" (1960: 428). Thus there is no need for me to repeat what I have in part stated above and what are its indisputable methodological achievements. What I would like to emphasize, however, is the coexistence of complementary and asymmetrical relations and the articulation of sound systems into partial patterns. The coexistence of different and partial patterns is to some extent due to the fact that in addition to the marked and unmarked members of opppositions, phonological systems include equipollent and neutral terms. To the former belong phonemes which are equally marked or unmarked (e.g., the labial vs. the velar consonants, or the stressed vs. the long vowels), whereas the latter include phonemes which remain outside a given phonemic opposition or which combine the features of the opposite terms (e.g., syllabic sonants, which combine the features of vowels and consonants). Another source of internal asymmetry is the lack of correspondence between markedness and neutralization. While such a correspondence often does prevail, it is by no means a general law. Thus, for example, we find more prosodically marked (stressed or long) vowels than unmarked (unstressed or short) vowels, which are easily prone to reduction and loss. Further asymmetries arise in the paradigmatic and syntagmatic behavior of phonemes. Thus vowels and sonorants are generally neutral with respect to voicing, whereas in some languages they behave syntagmatically like voiced consonants (e.g., the voicing of final voiceless conosnants before *n* in Greek and Japanese or before initial vowels in southern Polish dialects). There are, furthermore, reversals in the markings of some phonemes. Thus, nasal consonants are optimally diffuse (*m*, *n*), whereas nasal vowels are optimally compact (α, α); palatal consonants are optimally spirants (*š*, *ž*), whereas nonpalatal consonants are optimally stops. Another source of linguistic asymmetry lies in the relation between the distinctive and redundant features, for the wider the scope of phonemic distinctions (within a given set or subsystem of a language), the narrower the range of redundant variation. Otherwise, the redundant (concomitant) features regularly support the distinctive features in sharpening the various phonemic oppositions (e.g., long vowels are regularly tense, while short vowels are lax; stops are mellow, while spirants are strident; back vowels are rounded, while front vowels are unrounded). Some distinctive features or phonemes are, on the other hand, inherently multifunctional in that they simultaneously perform distinctive and configurational functions (e.g., the prosodic features of most languages mark the unity or boundaries of words; the English phonemes *h* and *ŋ* signal respectively the beginning and end of a word). Thus, the phonemic system of a language resembles, in effect, a typological field with a number of coexisting