The Logic of Language

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A Semiotic Study of Speech



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I am satisfied that in the present state of the subject, there is but one General science of the nature of Signs. If we were to separate it into two,—then, according to my idea that a 'science,' as scientific men use the word, implies a social group of devotees, we should be in imminent danger of erecting two groups of one member each! Whereas, if you and I stick together, we are, at least, two of us. I remember in my college days that the Statutes of Harvard defined a 'group' as three persons or more convening together. We shall have to try to seduce one of the linguists to our more fundamental study. -From a partial draft of a letter dated 28 December 1908, from Charles Sanders Peirce to Victoria Lady Welby (Collected Papers 8.378)

Books by Michael Shapiro

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Preface

This book is intended as a companion volume to one of my other books, *The Speaking Self: Language Lore and English Usage* (2nd ed., 2017), which incorporates revised versions of posts on my blog, www.languagelore.net. It is hoped that the present volume will serve as a basis for the exploration of language in a more systematic way. For example, a college instructor wishing to use it as a textbook may consider assigning excerpts from *The Speaking Self* by way of exemplification of basic points and approaches to analysis. I believe that the two volumes used in tandem will provide a solid grounding in the observational science of linguistics, linking theory with practice in a way that will expand a student's understanding of language as a global phenomenon.

Readers familiar with two of my earlier books, *The Sense of Grammar: Language as Semeiotic* (Indiana University Press, 1983) and *The Sense of Change: Language as History* (Indiana University Press, 1991)—both of which are no longer in print—will see that the present volume is the product of collating much of the material of these two *Sense* books and providing a fresh frame of reference in order to make the amalgamation effective and comprehensible.

My own conception of language is tinctured by my polyglot background and by my more than half-century experience as a research scholar and university professor (UCLA, Princeton, UC Berkeley, Brown, Columbia). I was born in Yokohama (Japan) before World War II and grew up speaking three languages simultaneously, Russian, Japanese, and English, in a family of Russian-Jewish émigrés who spent 25 years in Japan. My parents' habitual languages were Russian, English, German, French, and Japanese, all of which they spoke fluently. Although my mother tongue is Russian, almost all my formal education was in schools in which English was the language of instruction. Having spent the war years in Japan, I immigrated to Los Angeles at the age of 12 and attended high school, college, and graduate school in America. The only exception was a postdoctoral year (1965–1966) spent at Tokyo University, where I brushed up on my written Japanese and did some research on the contemporary language. After that I specialized in Slavic linguistics and poetics, in the first instance, and in semiotics (the theory of signs) thereafter, applying the whole philosophy of the American logician and scientist, Charles Sanders Peirce (1839–1914), as a framework for the analysis of language and literature.

Those who know the history of linguistics in the twentieth century will recognize that the title of this book has been influenced by my namesake Edward Sapir's classic *Language* (1921)—with two important modifications: the insertion of the words *Logic* and *Semiotic*. (*Shapiro* and *Sapir* are variants of the surname *Shpira*, the Hebrew/Yiddish version of *Spira* [Hebrew: שפירא pronounced Shpira], the medieval name of the city Speyer in Germany.) Here the reason may not be clear. It is in fact a nod in C. S. Peirce's direction, whose conception of logic as a normative science amounts to regarding it as a theory of knowledge. The phrase "logic of language" is, therefore, meant to show how I conceive the patterned relationships constituting the structure and history of language. The analyses of linguistic phenomena offered here will accordingly strive to make this conception clear in all of language's aspects, but most notably in its variegated uses as the instrument of thought and speaking.

This book also systematically examines the facts of language as a semiotic structure—as a system of signs—and as the passkey to all other human sign systems. By surveying the several major divisions of language (phonology, morphology, syntax, lexis, tropology) and explicating the way in which sound and meaning cohere in them, the book will guide students to an understanding of what makes language the sign system *par excellence* in the service of its most important function as the instrument of cognition and of communication.

I have also followed Sapir in keeping the technical paraphernalia of contemporary linguistic description to a minimum, without, however, utterly eschewing (as does Sapir) diacritics and other symbols needed for a thorough discussion of linguistic phenomena. Most of the examples in the book are from English, although a sprinkling from other languages will be cited when appropriate. References to "Further Reading" will be supplied at the close of each chapter for students wishing to pursue the subject in greater detail. This obviates the need for footnotes, which means that any controversies surrounding the examples discussed are silently elided in the interests of clarity and coherence of presentation.

Apropos, and given the dauntingly balkanized state of linguistics as a discipline today, it may be useful for readers to be given some clues in advance regarding the theoretical outlook that has influenced me in shaping my book's orientation. Some biographical data are germane in this respect. I started my serious study of linguistics at UCLA under the tutelage of the late Anglicist Robert P. Stockwell (1925–2012), the best classroom teacher I ever had bar none, who introduced me to the methods of American structural linguistics in his year-long course on the structure and history of English. I followed this by study at Harvard under Roman Jakobson (1896–1982), one of the founders of the Prague School of linguistic theory and arguably the most important linguist of the twentieth century, who directed my doctoral dissertation on contemporary Russian stress in the Department of Slavic Languages and Literatures. Whatever else it may be, I consider my way of doing linguistics to be Jakobsonian at its root (even though Jakobson and I fell out publicly before we reconciled at the end of his life).

Preface

Perhaps an even more profound and lasting influence on my conception of linguistic analysis has been the work of Henning Andersen, who was my fellow student at Harvard in the early 1960s. Although Jakobson is widely recognized as the first person to reveal the importance of Peirce for linguists, it was actually Andersen who pointed me in the direction of Peirce as the modern founder of sign theory, whose semeiotic insights (I use the spelling *semeiotic* advisedly) I should explore in my own investigations of linguistic theory. Despite the absence among his prolific oeuvre of a synoptic book summarizing his conception of language, Andersen's own work over many years, principally in Slavic historical linguistics, has had an indelible influence on my thinking about language and on the conduct of my own investigations. When it comes to meticulousness and analytical acuity, Andersen has no peers among contemporary linguists and surpasses even our teacher's accomplishments in this regard.

I owe a similar debt of gratitude to the Peirce scholar Thomas L. Short, whose rigorous explications of what the founder of American pragmatism and of the modern theory of signs meant in his often-crabbed language has been determinative for my work. My whole understanding, moreover, of Peirce's philosophy as a framework for the creation of a "Peircean linguistics" is underlain by Short's interpretations of the *semeiotic* (as Peirce spelled it).

Finally, I would like to acknowledge the influence on my understanding of language as a product of history of my lifelong friend and former colleague at UCLA, Raimo Anttila, the superlative Indo-Europeanist, whose book *Historical and Comparative Linguistics* (1972), with its semiotic orientation, remains the best introduction to the field and has been a beacon for me over the many years that its author and I have been friends.

This book is dedicated to the loving memory of my wife, Marianne Shapiro (1940–2003), the most accomplished and versatile American Italianist of the twentieth century.

Manchester Center, Vermont, USA April 14, 2022 Michael Shapiro

New Introduction

Recalling the singular appearance of the word *hermeneutic* in the title of any article published over the multi-year history of the journal *Language* (Shapiro 1980a), and relying anew on Charles Sanders Peirce's pragmaticism (as he called it) and his apothegm "My language is the sum total of myself," my goal herein will be to sketch a program for reorienting linguistics in the twenty-first century, prompted by the conviction that the prevailing conception of language as rule-governed behavior *tout court* has driven linguistics into barren byways which are powerless to explain speech as it is manifested in nature (in the spirit of the *physis* versus *thesis* debate in Plato's *Cratylus*). This sterility can be overcome by postulating as a fundamental principle the idea that the locus of linguistic reality is the act, the creative moment of speech—a moment made possible by the existing structure of language with its general rules but which transforms that structure, so that linguistic structure is itself always in flux, always being modified by acts of speech.

I begin by providing in outline form some postulates for what I call a "neostructuralist" perspective:

Language: Seven Postulates

- 1. Language is like a piece of music or a poem—i.e., a made (aesthetic = L *formosus*) object, a work that unfolds in time (unlike an artwork which is static), always dynamic, while remaining changeable and stable simultaneously;
- 2. Linguistic competence can only transpire in performance, and in ensembles of performances, and is not a work;
- 3. The ecology of language is constituted by discourse rather than structural relations;
- 4. The lexica (vocabularies) of speakers are discontinuous: no two speakers of a language have the same lexicon despite considerable overlap;

- 5. Multilingualism (unlike diglossia, pidgins, or code switching) introduces a new dimension in the discontinuity of lexica;
- 6. Linguistic theory is immanent in the concerted—i.e., syntagmatic—data [= performance] of language in its variety, not merely in its paradigmatic structure;
- 7. Hence the goal of theory is the rationalized explication of linguistic variety.

In coming to an encompassingly stereoscopic view of language—both ontologically and experientially—the above seven points are to be juxtaposed to the following two sets of three each:

Levels of Patterning in Language

- 1. Type (the specific *Bauplan* or underlying design of a language)
- 2. Norms (usage that is historically realized and codified in the given language community)
- 3. System (everything functional that is productive in the language, including usage that exists *in potentia*)

Modes of Being of Language

- 1. Text (language as product—érgon)
- 2. Speech (language as activity—*enérgeia*)
- 3. Grammar (language as technique—dúnamis)

Speaker's point of view	Hearer's point of view
3. Text	1. Grammar
2. Speech	2. Speech
1. Grammar	3. Text

Communicative Context (Speaker's Point of View)

Orientation	Function
Contact	Phatic
Content	Referential
Code	Metalinguistic
Addressee	Conative
Addresser	Emotive
Message	Poetic



Typology of Context (by Addressee) (Fig. 1)

	1. Self (thought)	Private speech
	2. Intimates	(personal/informal)
	3. Familiars	
	4. Subordinates	
	5. Peers	
Public speech	6. Superiors	
(impersonal/formal)	7. Anonymous	

Epistemic Repertoire (Linguistic Competence)

Phonology/Phonetics

Monolingual	1. "native" (unaccented/authentic) sounds ("one's own" speech)
	2. "non-native" sounds (speech of "others")
	(a) allolects
	• regional (incl. other countries)
	• social
	• ethnic
Multilingual	(b) foreign speech

Lexis, Incl. Derivation

Fixed	1. semantics (vocabulary)
	(a) native (differentiated by size and depth)
	(b) foreign (use of foreign words and locutions)
	2. doxastics (beliefs, presuppositions)
	(a) proverbs
	(b) quotations (incl. literary references)
	3. ludics
	(a) paronomasia (puns, tropes, neologisms/nonce words)
	(b) jokes, anecdotes, stories
Free	(c) citations of others' utterances

Syntax, Incl. Inflection

Simple	1. simple (declarative) sentences
	2. complex sentences (modes, subordinate/embedded constructions)
Complex	3. linked discourse

Stylistics (Appropriateness, Incl. Pragmatic and Aesthetic)

Fixed	1. normative
	(a) social
	• sex
	age (infant/adolescent/young adult/adult/elder)
	status/rank (superior/equal/inferior, compatriot/foreigner)
	(b) contextual (adequacy of linguistic expression to context incl. "cultural baggage")
	2. axiological (judgments of worth)
	(a) aesthetic (incl. phonostylistics and speech production)
Free	(b) evaluative (approval)

Paralinguistics

- 1. speaking
 - (a) [visible] gestures (hand and body movements, smiles)
 - (b) [audible] noises (intakes of breath, laughs, snorts)
 - (c) fillers/hesitation phenomena [other than (a) and (b)] ("y'know," "get it," etc.)

- 2. listening [in addition to 1(a) and 1(b)]
 - (a) silence
 - (b) phatic phenomena ("mm," "haa," "ehh," etc.)

Additional Considerations

- 1. eloquence and tongue-tiedness
- 2. error and imperfect learning
- 3. differentiated competence over user's life-span

The essential concept of structuralism, whether applied to physics or linguistics or anthropology, is that of invariance under transformation. This makes theory, following Peirce's whole philosophy and his pragmaticism in particular, the rationalized explication of variety: "[U]nderlying all other laws is the only tendency which can grow by its own virtue, the tendency of all things to take habits ... In so far as evolution follows a law, the law or habit, instead of being a movement from homogeneity to heterogeneity, is growth from difformity to uniformity. But the chance divergences from laws are perpetually acting to increase the variety of the world, and are checked by a sort of natural selection and otherwise, so that the general result may be described as 'organized heterogeneity,' or, better, rationalized variety" (CP 6.101).¹ Or, translating law and habit into the appropriate phenomenological category: "Thirdness ... is an essential ingredient of reality" (EP 2:345).

Once we properly understand structuralism not as the putatively debunked epistemology that originated in Geneva with Saussure, but rather as the revised, essentially correct version originating with Jakobson in Prague and Hjelmslev in Copenhagen, we can recognize the patterning of Thirdness and Secondness in language—the so-called passkey semiotic—for what it is. Consequently, the fundamental notion of alternation between basic form and contextual variant becomes understandable as immanent in theory, and not merely a construct or an artifact of description. The importance of this notion cannot be overestimated.

A child learning its native language, for instance, is exactly in the same position as an analyst. It has to determine which linguistic form is basic, and which is a contextual variant. Take a simple example from English, that of the voiceless stops.

English voiceless (actually, tense) stops are aspirated when they are word-initial or begin a stressed syllable, as in *pen*, *ten*, *Ken*. They are unaspirated when immediately following word-initial s, as in *spun*, *stun*, *skunk*. After an *s* elsewhere in a word they are normally unaspirated as well, except when the cluster is

¹The use by Peirce of the form "rationalized" (rather than "rational") as a modifier of "variety" in the quotation above should be taken advisedly. This use of the participial form, with its adversion to process, should serve as a caveat that when Peirce talks about "objective idealism," what he ought to have said is "objectified idealism." This slight grammatical change puts the meaning of the phrase (and the doctrine!) in a whole new—and completely acceptable—light.

heteromorphemic and the stop belongs to an unbound morpheme; compare dis[t] end vs. dis[t?]aste. Word-final voiceless stops are optionally aspirate.

This variation makes aspiration nondistinctive (nonphonemic) in English, unlike, say, in Ancient Greek or Hindi, where aspirated stops change the meaning of words by comparison with items that have their unaspirated counterparts *ceteris paribus*.

I think it is only by taking such variation for what it is, i.e., the working out of Thirdness in the context of Secondness, that we can we understand what Peirce had in mind with his version of Pragmatism.

Since talk of Peirce's phenomenological categories as applied to grammar necessarily brings in a discussion of linguistic oppositions, this is the place to reconsider traditional conceptual distinctions in semiotic terms, as follows.

What needs underscoring first is the role of asymmetry in the manifestation of linguistic signs, specifically in its conceptual bond with complementarity and markedness. The unequal evaluation of the terms of oppositions in language has been an important notion of linguistic theorizing since at least the heyday of the Prague School's chief Russian representatives-Trubetzkoy, Jakobson, and Karcevskij. The clearest early expression of its role is in Jakobson ([1932] 1971:15), when he characterized the asymmetry of correlative grammatical forms in morphology as two antinomies: (1) between the signalization and nonsignalization of A; and (2) between the nonsignalization of A and the signalization of non-A. In the first case, two signs referring to the same objective reality differ in semiotic value, in that the signatum of one of the signs specifies a certain "mark" A of this reality, while the meaning of the other makes no such specification. In the second case, the antinomy is between general and special meaning of the unmarked term, where the meaning of the latter can fluctuate between leaving the content of the "mark" A unspecified (neither positing nor negating it) and specifying the meaning of the unmarked term as an absence.

In focusing on the paradigmatic asymmetry of linguistic signs expressed by the polar semiotic values of marked and unmarked (superimposed on oppositions in phonology, grammar, and lexis), the early structuralists appear to have glossed over a cardinal syntagmatic consequence of markedness: complementarity. If the conceptual system which underlies and informs grammar (and language broadly conceived) consists of opposite-valued signs and sign complexes, then whatever syntagmatic coherence linguistic phenomena have in their actual manifestation must likewise be informed by principles of organization diagrammatic of this underlying asymmetry. The only aspect of the asymmetric nature of linguistic opposition that allows access to structural coherence is the complementarity of the complementary entities and of their semiotic values is assured by the binary nature of all opposition, which balances the asymmetry of the axiological superstructure by furnishing the system of relations with the symmetry needed for the identification and perpetuation of linguistic units by learners and users.

Moreover, in explaining the cohesions between form and meaning complementation of markedness values is seen to be the dominant mode of semiosis—so much so that replication is confined to the structure of desinences and the expression of further undifferentiated members of the hierarchy of categories. Given the common understanding of undifferentiated contexts, statuses, and categories as marked in value (Brondal's principle of compensation, as in his 1943), it is clear that replication is itself the marked (more narrowly defined) principle of semiosis, vis-à-vis its unmarked (less narrowly defined) counterpart, complementation.

Complementation actually has two aspects or modes of manifestation, which are semiotically distinct and need to be understood as such. The more usual effect of complementation, well known in linguistic analysis, is the distribution of phonetic properties in complementary but mutually exclusive contexts. This widespread fact of language structure serves as a diagnostic in the determination of the nondistinctiveness of a particular feature, so that, e.g., the complementary distribution of short and long vowel realizations in English before obstruents indicates the nonphonemic status of quantity (Andersen 1979a). The general effect of variation rules is augmented by their correlation of complementary phonetic properties with specific contexts. More significantly, it has been discovered (Andersen 1972:44–5) that the assignment of particular properties to particular contexts is governed by a universal semiotic principle of markedness assimilation, which assigns the unmarked value of an opposition to the unmarked context and the marked value of an opposition to the marked context. Complementary distribution can thus be understood as the semiotic instantiation of markedness assimilation.

It is not difficult to perceive that this first, familiar sense of complementation is a manifestation of symmetry, since "variation rules ... transform relations of similarity—equivalence in markedness—into relations of contiguity in phonetic realization" (Andersen 1979a:379). What has not been perceived, however, is that this form of complementation is peculiarly characteristic of the expression system of language (phonology, phonetics). By contrast, the morphophonemic system of a language largely eschews the symmetrical, replicative patterns of semiosis which are favored by phonology. Indeed, morphophonemics systematically exploits a second, lessstudied form of complementation; this is antisymmetrical in its effects, as an inversion, and can accordingly be called chiastic. The predominant use of chiastic complementation is perfectly consistent with the semiotic nature of morphophonemics, which is the part of grammar that is constituted by the "relations between the contextual variants of the same linguistic sign(s)" and is contrasted with morphology, constituted by the "relations between [basic] linguistic signs" (Andersen 1969: 807). The fact that morphophonemics permits chiasmus is, in other words, in complete alignment with its function: the manifestation of morphological alternation.

Conversely, the prevalence of symmetrical modes of semiosis in the specification of the basic signs of morphology (cf. Shapiro 1972a:356–61) accords with the semiotic status of morphological units. Thus, when the constitution of hierarchically independent (invariant) entities in grammar is at issue, correspondences which reflect relations of the content level (grammatical meaning) in the relations of the expression level (sounds) function as iconic signs. More precisely, they are a variety of icon (or hypoicon in Peirce's trichotomous classification), which Peirce called metaphors and defined as "those which represent the representative character of a

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representamen [= sign] by representing a parallelism in something else" (emphasis mine). This idiosyncratic understanding of metaphor, reflected in Peirce's typically crabbed diction, seems to imply that the more familiar kind of hypoicon—the diagram (image being the third)—is a more general species of sign which subsumes parallelistic semiosis (replication of relational values) and chiastic semiosis (alternation of relational values) as variants. If this is so, then the metaphoric relations of parallelism entail the characterization of the relations contracted by chiasmus as metonymic, because of the status of antisymmetry as a species of metonymy via its negational quotient (cf. Shapiro and Shapiro 1976:10–11).

The invocation of a framework based on markedness, to explain the coherence of linguistic entities syntagmatically, also implies the ineluctable and necessary consideration of these entities as signs, as parts of a semiotic. Heretofore, things like verb stems and desinences, including their positional shapes and alternants, have been looked upon simply as artifacts of description which facilitate an economical, mutually consistent statement of distributional facts; but the semiotic analysis presented here rests on the fundamental assumption that all these linguistic units have values—markedness values—which vary coherently and uniformly in alignment with contexts and the values (hierarchy) of contexts. The fusion of stems and desinences owes its coherence, its semiotic raison d'être, to the form of the meaning on both sides of the expression/content "solidarity," to what Hjelmslev (1969:54–6) so astutely called "content-form" and distinguished from "expression-form."

The coherence of linguistic units among each other is by no means a static one, for we have incontrovertible empirical evidence that languages change over time. But the fact of change must be correctly understood as a dynamic based on teleology, where the telos is greater goodness of fit (iconicity, coherence) between underlying structure and its overt manifestation in speech (cf. Anttila 1974:19–25). For example, the picture of contemporary Russian conjugation and of its system differs strikingly little from that of Old Russian (Bulaxovshij 1958:250–3; cf. Kiparsky 1967:180), i.e., from the state of the language with respect to verb inflection dating as long ago as 900–1000 years! Given such a long span for testing, encompassing vast upheavals in the morphophonemics of Russian occasioned by the sound change known as the "jer shift" (cf. Isacenko 1970), we have every reason to suppose that present-day conjugation has a teleological coherence which has given shape to it diachronically, and which enables it to subsist in its present form synchronically.

Finally, note should be taken of the prominence given here, covertly in the title and explicitly in the analysis itself, to the hermeneutic aspect of linguistic theory, and its application as explanans of concrete data. In the face of continued assessments of Jakobson's "Russian conjugation" as an "epoch-making" contribution to the "complete scientific description of the language" (Halle 1977:140; emphasis added) and the explicitly pedagogical aim of Jakobson himself ([1948] 1971:128), the present study and its predecessor (Shapiro 1974a) argue in detail for the view that explanation cannot be achieved by the prevailing self-confinement to goals that are fundamentally (if unwittingly) nonexplanatory. The rule formalism approach of transformational-generative grammarians may or may not demonstrate anything about "a fluent Russian speaker's knowledge of his language" (Halle 1977:140). It

is fundamentally irrelevant for linguistic theory whether it does or does not, because a theory of grammar is not a theory of knowledge but a theory of habit (in the sense of Peirce; cf. Shapiro 1976). Explanation must focus on why the data cohere as signs, and not on the mechanisms by which grammatical forms can be derived by the judicious choice and application of rules. This requirement removes predictabilityvia-rules from the agenda of theory. The entire recent history of linguistics shows with great clarity the feasibility of kneading data into a wide number of mutually compatible formalized configurations ("notational variants"). What is needed, however, is an attitude toward the object of study which matches the structure of that object.

Language is a system, both in its diachronic and synchronic aspects, that is informed by a pattern of inferences, deductive and abductive (cf. Andersen 1979a, 1984). The role allotted to interpretation in language as a structure—to its very nature and function as a hermeneutic object—demands that the methods of inquiry into and the theory of language be homologous with the principles of its organization (cf. Itkonen 1978; Anttila 1976, 1977a).

It is this very nature of language itself, the inherent organization of grammar as a patterned relationship between form and meaning, that necessitates transposing the theoretical enterprise of linguistics to another dimension, one defined by the subsumption of all linguistic analysis under the rubric of meaning or hermeneutic. As Jakobson himself put it (1977a:5; cf. 1972:76):

"Any linguistic item, from speech sounds and their constituents to discourse, partakes—each in its own way—in the cardinal, viz. semantic, tasks of language and must be interpreted with respect to its significative value."

Appendix Background material on Peirce (adapted from Fisch 1986:324–26); CP = Collected Papers of Charles Sanders Peirce, vols. 1–8, ed. Charles Hartshorne and Paul Weiss (vols. 1–6) and Paul Weiss (vols. 7–8) (Cambridge, Mass.: Harvard University Press, 1931–1958) [references by volume and paragraph number]; W = writings of Charles S. Peirce: A Chronological Edition, ed. Max H. Fisch et al., vols. 1–6, 8 (Bloomington: Indiana University Press, 1982–2009) [references by volume and page number]; EP = The Essential Peirce, vols. 1–2., ed Nathan Houser and Christian Kloesel (vol. 1) and Peirce Edition Project (vol. 2) (Bloomington: Indiana University Press, 1992–1998) [references by volume and page number].

The first published sketch of Peirce's semeiotic was in a paper "On a New List of Categories," which he presented to the American Academy of Arts and Sciences on May 14, 1867. Forty years later he described this paper as the outcome of "the hardest 2 years' mental work that I have ever done in my life" (*CP* 1.561). He first establishes, in place of Aristotle's ten categories and Kant's 12, a new list of three: Quality, Relation, Representation. He then uses these categories to distinguish: (1) three kinds of representations [i.e., SIGNS]—likenesses (which he will later call icons), indices, and symbols; (2) a trivium of conceivable sciences—formal grammar, logic, and formal rhetoric; (3) a general division of symbols, common to all three of these sciences—terms, propositions, and arguments; and (4) three kinds

of argument, distinguished by their three relations between premisses and conclusion—deduction (symbol), hypothesis (likeness), induction (index) (W 2:491–59; CP 1.545–59).

Peirce is a logician, and he concerns himself with semeiotic only so far as is necessary to place logic within the larger framework of that one of the three most general kinds of science that Locke, following the ancient Greeks, had distinguished. To that objection, however, it may fairly be replied that at no time of his life did Peirce set any limit to the intensity of cultivation of the larger field of semeiotic that would be advantageous for purposes of logic, even if the cultivating had to be done by logicians themselves because, for the time being, they were the only semeioticians.

In any case, it was not enough in Peirce's eyes for semeiotic to provide a pigeonhole for logic in the classification of the sciences. This became fully apparent in 1868–1969 in a series of three articles in the *Journal of Speculative Philosophy*: "Questions Concerning Certain Faculties Claimed for Man," "Some Consequences of Four Incapacities," and "Grounds of Validity of the Laws of Logic: Further Consequences of Four Incapacities" (*W* 2:193–272; *CP* 5.213–357).

The first two papers are there for the sake of the third. The upshot of the series is a theory of the validity of the laws of logic, including those of the logic of science (that is, of hypothesis and induction) as well as those of the logic of mathematics (that is, of deduction). Yet the first paper is in the form of a medieval *quaestio*, a disputed question, and the second begins with a four-point statement of "the spirit of Cartesianism," followed by an opposed four-point statement of the spirit of the scholasticism that it displaced. In respect of these four antitheses, "modern science and modern logic" are closer to the spirit of scholasticism. The first paper was "written in this spirit of opposition to Cartesianism." It was meant to illustrate as well as to commend the "multiform argumentation of the Middle Ages." It resulted in four denials:

- 1. We have no power of Introspection, but all knowledge of the internal world is derived by hypothetical reasoning from our knowledge of external facts.
- 2. We have no power of Intuition, but every cognition is determined logically by previous cognitions.
- 3. We have no power of thinking without signs.
- 4. We have no conception of the absolutely incognizable (CP 5.265).

These propositions cannot be regarded as certain, Peirce says; and the second paper puts them to the further test of tracing out some of their consequences. The third paper then constructs a theory of the validity of the laws of logic in the form of "further consequences" of these "four incapacities."

The central positive doctrine of the whole series is that "all thought is in signs" (5.253). Every thought continues another and is continued by still another. There are no uninferred premisses and no inference-terminating conclusions. Inferring is the sole act of cognitive mind. No cognition is adequately or accurately described as a two-term or dyadic relation between a knowing mind and an object known, whether that be an intuited first principle or a sense-datum, a "first impression of sense"

(5.291). Cognition is a minimally three-termed or triadic relation (5.283). The sign theory of cognition thus entails rejection not only of Cartesian rationalism but also of British empiricism.

The sign theory of cognition leads into a semeiotic theory of the human self, "the man-sign" (5.313), and thence into a social theory of logic. "When we think, then, we ourselves, as we are at that moment, appear as a sign" (5.383); "the word or sign which man uses is the man himself" (5.314). "Finally, no present actual thought (which is a mere feeling) has any meaning, any intellectual value; for this lies not in what is actually thought, but in what this thought may be connected with in representation by subsequent thoughts; so that the meaning of a thought is altogether something virtual" (5.289). "Accordingly, just as we say that a body is in motion, and not that motion is in a body, we ought to say that we are in thought and not that thoughts are in us" (5.289n1).

"The real, then, is that which, sooner or later, information and reasoning would finally result in, and which is therefore independent of the vagaries of me and you. Thus, the very origin of the conception of reality shows that this conception essentially involves the notion of a COMMUNITY, without definite limits, and capable of an indefinite increase of knowledge" (5.311). "So the social principle is rooted intrinsically in logic" (5.354).

Along the way, with the help of his three categories, Peirce's doctrine of signs is worked out in greater detail in these three papers, and especially in the second of them.

The semeiotic thus founded was semeiotic as viewed from the standpoint of logic and studied for the purposes of logic, and more particularly for those of the logic of science rather than for those of the logic of mathematics. But it was a semeiotic that included logic.

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Methodological Preamble

This book is an attempt to found a Peircean linguistics. By this I mean a reorientation of linguistic theory, and the ultimate goals of linguistic analysis, along lines suggested by Peirce's semeiotic in the context of his entire philosophy. As with all efforts of the kind, mine is necessarily partial, and the reader will not find treated all the subjects ordinarily encompassed by the very broad discipline of linguistics.

The book's focus is also defined to a considerable extent by the desire to present a synoptic view of my research over the past 50 years. One subject directly affected thereby is syntax, though some syntactic data are included by way of illustrating general theoretical points. There is no doubt today (as Peirce himself foresaw) that the syntax of natural languages is particularly suited to semeiotic analysis, and the methodological compass implicit in a Peircean theory of grammar certainly invites applications by specialists in this popular field.

I have made a conscious decision to avoid polemics and concentrate instead on presenting a homogeneous point of view, to which not all other approaches are equally pertinent. Practically, this means that the definitiveness of a semeiotic analysis is intended to transpire from the discussion of concrete material without comparison and contrast to the currently more favored analytical mode. In lieu of a detailed critique of my own (but cf. my earlier book *Asymmetry* [1976]), I refer the reader to the admirably forceful and comprehensive opening chapter of Talmy Givon's *On Understanding Grammar* (1979), which can now stand as representing the views of all linguists who recognize the fundamental failures of transformational-generative grammar.

Linguistic analysis carried out in an explicitly semeiotic frame cannot boast a voluminous literature, a situation perhaps belied by the growing interest in semiotics. Even less developed is the study of language structure in the light of Peirce's theory of signs. For their part, Peirce studies have traditionally been preoccupied with textual exegesis—with good reason. We are still very much at the stage today of trying to clarify not only what Peirce meant to say, but what he in fact did say.

The difficulties of giving a comprehensive summary of Peirce's semeiotic that would square with all the divergent authorial versions, as well as with numerous modern interpretations, are well known to students of Peirce. Chapter "Peirce's Semeiotic", which can stand on its own as an account of semeiotic, has been drawn with an eye toward reconciling, to the extent possible, some of the main differences between the theory of signs as Peirce held it before and after 1906. In attempting this task, I have relied on my own understanding of Peirce, aided in significant measure by the work of two interpreters, David Savan and T.L. Short, whose construal of semeiotic I have found preeminently valuable (even though they do not agree in all respects). Neither scholar is responsible, of course, for any shortcomings of my summary.

Because Peirce chose continually to reformulate his thoughts, in numerous drafts spanning several decades, we possess on most points a whole series of versions which amounts to an auto-commentary. Considering this to be a particularly valuable source for the understanding of semeiotic, I have included more than the customary number of direct quotations, as a deliberate procedure calculated to bring out as many of the variegated ramifications of Peirce's thought as possible.

It has not been my aim to illustrate all details of Peirce's system with linguistic examples, or to clothe traditional terminology in semeiotic dress. This circumstance is particularly important in the case of chapters "Phonology" and "Morphophonemics and Morphology", which are meant to be read primarily as illustrations of the way a reoriented linguistics comes to grips with real data. I have striven to imbue linguistic analysis with the *altitude* toward language that Peirce's philosophical enterprise leads the analyst to adopt. To some extent, semeiotic and the structural analysis of language form a natural partnership which attenuates some of the terminological antagonism that tends to grow when disciplines are cross-pollinated.

Although Peirce himself spelled the name of his general theory of signs in a number of ways, he seems to have preferred *semeiotic*, and this is the spelling I have used consistently when referring to Peirce's doctrine (except in direct quotations). The more familiar contemporary spelling *semiotic* is restricted to non-Peircean references; the same distinction applies to *semeiosis* and *semiosis*.

References of the form 1.187 are to the *Collected Papers of Charles Sanders Peirce* by volume and paragraph number (second printing, 8 volumes in 4, vols. 1–6 edited by Charles Hartshorne and Paul Weiss, vols. 7–8 edited by Arthur Burks, Cambridge, Mass.: Harvard University Press, 1965–1966). References of the form NE 4:241 are to *The New Elements of Mathematics by Charles S. Peirce* (4 volumes in 5, edited by Carolyn Eisele, The Hague: Mouton; Atlantic Highlands, N.J.: Humanities Press, 1976), by volume and page number. References of the form H 34 are to the pages of *Semiotic and Signifies: The Correspondence between Charles S. Peirce and Victoria Lady Welby* (edited by Charles S. Hardwick, Bloomington: Indiana University Press, 1977). References of the form MS 915:1 and L25 are to the microfilm edition of the *Charles S. Peirce Papers* (Cambridge, Mass.: Harvard University Library Photographic Service, 1966) by manuscript and letter number and page. These numbered materials are described in Richard S. Robin's *Annotated Catalogue of the Papers of Charles S. Peirce* (Amherst: University of Massachusetts Press, 1967).

Preliminaries from the History of Linguistics

Plato's *Cratylus*, the matchless dialogue on the relationship between words and things, is the first work in which one finds a detailed discussion of the question which preoccupied philosophers of language in Ancient Greece like no other, namely that of "the correctness of names" (*orthotes onomaton*). The eponymous hero of Plato's work, Cratylus, takes the position, espoused before him by Heraclitus, that language attaches form to content "by nature" (*physei*), whereas his opponent, Hermogenes, follows Democritus in maintaining that things get their (Greek) names "by convention" (*thesei*). Socrates, who inclines toward the position of Cratylus, is called upon by Hermogenes to demonstrate in his accustomed manner just how words are suited naturally to represent the things they name. For his part as moderator, Socrates, after adducing a series of examples calculated to vindicate Cratylus, comes in the latter section of the dialogue to conclude that the apparent superiority of representation by likeness over the use of arbitrary signs must be attenuated by the complementary presence of "custom" (*ethos*) or conventionality. Cratylus accepts the view of Socrates, and the question which so engaged the protagonists remains unresolved.

Later Greek philosophy continues to be preoccupied with this controversy, the Epicureans and Stoics aligning themselves with *the physei* side and the Skeptics with the *thesei* side. In the Hellenistic period the topic reappears in a somewhat altered guise as a dispute over whether language is governed by "analogy" (the Alexandrian grammarians) or by "anomaly" (the Stoics of Pergamum). (Roughly, as far as linguistics is concerned, these terms were used to mean something like "regularity" and "irregularity.")

Although the controversy ceased to have the theoretical acuity it enjoyed among Greek philosophers and grammarians in the subsequent history of linguistics, one or another form of it is implicit in thinking about the foundations of language throughout the medieval and modern period. A kind of benchmark as far as the nineteenth century is concerned is an article by the pioneering American linguist William Dwight Whitney in the *Transactions of the American Philological Association* (1879) entitled "*Physei* or *Thesei*—Natural or Conventional," in which the ancient argument is raised anew. Whitney comes down on the side of those, like Plato's Hermogenes, who view language as a system of arbitrary signs based on custom, habit, and convention. In fact, Whitney propagated this view in a number of books of the 1860s and 1870s which had a profound influence on the course of linguistic theorizing in Europe. Most prominent among those who accepted the doctrine of the arbitrariness of the linguistic sign was the Swiss, Ferdinand de Saussure.

Saussure, who along with the Poles Jan Baudouin de Courtenay and Mikofaj Kruszewski (teacher and student) is considered to be a founder of structural linguistics, made the notion of arbitrariness into a dogma of his conception of linguistic structure, which was set forth in the posthumous *Cours de linguistique generate* (first edition, 1916) compiled by Saussure's students from lecture notes. Citing Whitney at a number of points, Saussure declared the bond linking signifier (*signifiant*) and signified (*signifie*) in the linguistic sign to be arbitrary. After the publication of the *Cours*, this Saussurian principle became a staple of thinking about the nature of language and was endorsed by such important linguists as Charles Bally, Antoine Meillet, Joseph Vendryes, and Leonard Bloomfield.

However, even at its publication Saussure's principle did not meet with unanimous acceptance. The prominent Danish linguist Otto Jespersen in his review of the Cours was quick to express the opinion that the role of arbitrariness in language had been grossly exaggerated. The most-influential and oft-cited rejoinder of the interwar period was Emile Benveniste's article (1939) "La nature dusigne linguistique," which showed that what was arbitrary from the viewpoint of the outsider was necessary from that of the native speaker. Relations between components of the linguistic sign, which appear to be mere accidents to the person with no knowledge of the language involved, are seen as quite natural by the person to whom no other means of expression are available. Roman Jakobson, who himself contributed significantly to amending the Saussurian doctrine, repeats the anecdote of the Swiss-German peasant woman who was supposed to have queried her Frenchspeaking countrymen as to why cheese was called *frontage*, remarking: "Rase ist doch viel naturlicher!" ("K'dse is so much more natural!"). He reminds us also (echoing Franz Boas) that languages differ not in what they can express but in what they *must* express.

Despite the vigor and insistence, which accompanied Saussure's espousal of the doctrine of arbitrariness, there are passages in the *Cours* that represent a qualified retreat from the monolithic position usually ascribed to Saussure's teachings. A distinction between absolute and relative arbitrariness is introduced (Part II, chapter "Language Change", section on "Excursus on Value in (Literary) Semeiosis"), which attenuates the fundamental principle by allowing degrees of arbitrariness and a concomitant gradedness in the unmotivated nature of the linguistic sign. Not all signs are completely unmotivated; indeed, where words have constituent structure along the syntagmatic axis and an attendant identification of such constituents as members of paradigms, Saussure speaks of the "limiting of arbitrariness." In what seems like a striking about-face, the best possible way of approaching the study of language as a system is identified with this revisionist methodological tenet. Relative motivation is a necessary consequence of the human mind's natural propensity to introduce order into the mass of irrational facts, argues Saussure, and language

structure must therefore oscillate in actuality between two impossible extremes, complete arbitrariness and total motivatedness. On this view, a typology could be articulated whereby languages would be classified according to where they were judged to lie along the continuum between "a minimum of organization and a minimum of arbitrariness." Using strictly morphological criteria, Saussure ranges Sanskrit, for instance, as an ultra-grammatical type near one end and Chinese as an ultra-lexical type at the other end. They conform in structure to the two drifts he identifies in language, the tendency to prefer the grammatical instrument (constructional rule), on the one hand, and the opposing preference for the lexical tool, or unmotivated sign, on the other.

Even with the introduction of relative arbitrariness ("degrees of arbitrariness") into the scheme, Saussure remains unequivocally biased toward an absolutism, which is basically incompatible with naturalist tendencies, and steadfastly regards absolute arbitrariness to be indeed "the proper condition of the linguistic sign."

In the 1930s efforts were made to overcome this bias, notable among which (besides the Benveniste article mentioned earlier) was J. R. Firth's book *Speech* (1930), where the term *Phonaestheme* is coined and applied for the first time to describe the "partial" or "submorphemic" element *SI*- with affective meaning in words like *Slack*, *Slouch*, *Sludge*, *Slime*, *Slosh*, etc. Several studies by Dwight Bolinger dating from the late 1940s and early 1950s take up and develop Firth's idea, giving added impetus to Benjamin Lee Whorf's contention that "the *Patternment* aspect of language always overrides and controls the *Lexation* or name-giving aspect." However, these efforts concentrate on evidence that is at the periphery of language, on what is very much of a piece with the phenomenon known as ono-matopoeia (sound imitation), of which Saussure himself was not unmindful (together with a long list of predecessors stretching back into antiquity).

A series of studies by Roman Jakobson from the 1950s and 1960s put the doctrine of the arbitrariness of the linguistic sign in a fundamentally new perspective. Where previous investigators had left unchanged the recognition of the sign's basic arbitrariness, Jakobson succeeded in uncovering facts of language structure (primarily, Russian) that demonstrated the extensive patterns of similarity and difference in the phonic shape of grammatical morphemes corresponding to relations of similarity and difference in their meanings. In a path-breaking article, "Quest for the Essence of Language" (1965), he cited several examples of such correspondences; for instance, the relationship between singular and plural forms in all languages of the world: where the plural is formed by adding a morpheme, the singular is never distinguished from the plural by an additional morpheme. Moreover, the plural tends generally to be longer than the singular, reproducing the numeral increment by an increase in the length of the form. As pointed out by Jakobson, syntax resorts to a mimetic (imitative) representation of the order of events, with regard to time or to rank, when it records the progression of Caesar's acts by Veni, vkdi, vici, or reflects the unequal status of the subjects in a coordinated sequence like "the President and the Secretary of State attended the meeting." The mirroring of content relations in relations of linguistic expression can be seen en gros in the relationship between lexical and grammatical morphemes in all languages. A pervasive pattern dictates that the semantically more restricted class of grammatical affixes be expressed by the smaller class of sounds—vowels; and the semantically less restricted class of lexical roots be expressed by the correspondingly larger class of sounds—consonants.

English is a good example of this phenomenon: only two consonants, s and t and their combination -st, occur among the productive inflectional morphemes. Russian, with an inventory of 24 obstruents (true consonants), limits their use in the system of inflectional suffixes to just four. Moreover, corresponding to the opposition "plural" vs. "singular," Russian nouns display a relatively greater vs. lesser number of segments (sounds) in case desinences (endings) implementing these two numbers. Regardless of the specific shape of the desinences, each plural desinence contains one more segment than the corresponding singular.

Jakobson's discussion of such correspondences in "Quest for the Essence of Language" represents a major achievement in the search for principles of organization in the structure of language. His recognition that a system of sound units may diagram relations in the corresponding system of meaning units establishes in a most concrete way that *the content system of language is indeed a structure*, not just a purely additive code like an alphabet or Morse code. The use of the word "diagram" here is not fortuitous, for one of the important methodological advances Jakobson made in this programmatic essay was to couch his strictly linguistic analysis in terms of the *semeiotic*, or theory of signs, of the American philosopher-scientist Charles Sanders Peirce, who gives "diagram" a precise definition: a species of sign in which the relations of the parts of a thing are represented by analogous relations in parts of the sign itself. The main aspect of this definition of diagrams is the representation of relations by relations. For linguistics, this means the reflection of the relations at the content level (the level of meaning) in relations at the expression level (the level of sounds).

Peirce investigated semeiotic over a span of nearly 50 years (from around 1867 till his death in 1914), taking the name from Locke's *Essay Concerning Human Understanding*, where the Greek *semeiotike* is adopted by Locke to mean "the doctrine of signs, the most usual whereof being words." Peirce, with whose work the study of signs may be said to have received the most thorough philosophical grounding and the richest source of insights for application to diverse fields uninvestigated by Peirce himself, carefully defined semeiotic as "the doctrine of the essential nature and fundamental varieties of possible semiosis." He was equally careful to define precisely what he meant by the word *semeiosis*, calling it "an action, or influence, which is, or involves a cooperation of *three* subjects, such as a sign, its object, and its interpretant, this tri-relative influence not being in any way resolvable into actions between pairs." The great bulk of what Peirce actually wrote on semeiotic remained unpublished and survived in manuscript form, some of it finally appearing posthumously in the 8-volume edition of his *Collected Papers*, most of it still awaiting publication to this day.

Saussure does not appear to have been aware of Peirce's founding of semeiotic, and in his programmatic pronouncements concerning the status of language and linguistics he called for a general science of signs which he gave the provisional name *semiologie*. Saussure was convinced that linguistics stood in direct need of this more general discipline for the proper conduct of inquiry into the nature of language as a sign system. Like Locke, moreover, Saussure accorded language pride of place among human semeiotic systems. Later in the century, the outstanding Danish linguist and theorist of language Louis Hjelmslev was to capture this preeminent status of human speech when he termed it a "pass-key language," i.e., a semeiotic system which can encompass any conceivable matter, the content substance of language being capable of including the content substance of all other human sign systems.

Saussure's interpretation of sign structure, particularly of the linguistic sign, stressed the indissoluble linkage of the two components which he called signifiant "signified" and signifie "Signifying." This conception of sign and of its two components appears to constitute a wholesale adoption of a semeiotic theory with roots in Stoic logic and medieval philosophy of language. The Stoics regarded sign as an articulated whole consisting of the signifier (semainon) and the signified (semainomenon)—the former defined as perceptible (aistheton), the latter as intelligible (noeton). They systematically distinguished the relation between the signifier and the signified (which Saussure termed *signification*) from denotation (tynchanon) or reference, much as Peirce himself did when he called the former the sign's depth and the latter its breadth. The medieval adaptation of the Stoic doctrine, particularly by St. Augustine, utilized Latinized equivalents of Greek terminology: signum (sign), signans (signifier), and signatum (signified). Indeed, medieval logic and the conception of sign of the Schoolmen (Duns Scotus, John of Salisbury, Thomas of Erfurt, and Peter Abelard among others) were a continual wellspring of inspiration and insight for Peirce throughout his life, during which he acquired a thorough knowledge of Scholasticism.

Peirce was not a linguist in the modern sense. He did, however, have many penetrating thoughts on the structure of language which can be found interspersed at numerous points in his writings, particularly on the general topic of semeiotic. When, in 1903, Peirce paused to take stock of the development of the theory of signs from antiquity to the twentieth century, he lamented the great void that followed upon the successes of medieval logic and attributed this neglect to the "barbarous rage" which had engulfed "the marvelous acuteness of the Schoolmen," to the centuries-long detriment of the study of semeiotic. Indeed, Peirce was firmly convinced that had the Middle Ages been followed by periods of achievement of the same high order, such fields as linguistics, for which semeiotic forms a necessary foundation, would be "in a decidedly more advanced condition than there is much promise that they will have reached at the end of 1950."

It is tempting to speculate what course the history of linguistics in the twentieth century would have taken had Peirce's seminal writings on semeiotic not remained largely unpublished, hence unknown to Saussure (or to Baudouin de Courtenay). Saussure laid out a program of research in linguistics which subsumed the latter under the general science of signs while explicitly recognizing it as the most important subdiscipline of the wider study. In the middle of the century and a decade after the original Danish publication of *Prolegomena to a Theory of Language* its author Louis Hjelmslev, as unaware as Saussure before him of Peirce's contributions

to the foundations of semeiotic, could still call the field "practically uncharted territory."

The first linguist to become aware of Peirce's relevance to the advancement of linguistic theory was Roman Jakobson. It is in the early 1950s that mention of Peirce and brief allusions to his theory of signs crop up in Jakobson's articles and public appearances. The publication of "Quest for the Essence of Language" in Diogenes (1965) marks a milestone in the history of linguistics: while programmatic in purport, it is the first attempt to ground the essential questions of language structure in an explicitly Peircean mode. Jakobson concentrates almost exclusively on Peirce's most famous trichotomy of signs, that of icon, index, and symbol, by which Peirce meant to characterize the mutable relationship ("ground") between the sign and its object. Recasting the sign constituents as signans and signatum to conform to the Saussurian aspect under which Jakobson confronts semiology and semeiotic, he aimed thereby at a kind of trial amalgamation of the European structuralist tradition and the semeiotic legacy of the American founder of pragmatism. There are some definite points of tangency between Saussure and Peirce. Thus, for instance, Saussure originally used the term symbol in the same sense (later abandoned) as Peirce, namely a sign in which the connection between signans and signatum "consists in its being a rule," and whose interpretation depends on a convention. Saussure singled out the concept of opposition as the basis for "the entire mechanism of language." Peirce, whose scope embraced not just linguistic signs but anything that could be interpreted as a sign because of its action, considered opposition to be the essential dyadic relation. Indeed, for Peirce "a thing without oppositions Ipso Facto does not exist"; hence it is the study of oppositions, which underlies the understanding of the mode of being of things.

There is, however, a capital difference between Saussure and Peirce that is not brought out in Jakobson's comparative discussion. Saussure, as a linguist and founder of structuralism, took his cue from what he perceived to be the structure of language; he therefore emphasized the Dyadic nature of the sign, its two-sided or dichotomous character as an entity. For Peirce, however, the sign is Triadic. Semeiosis takes place when the three constituents—sign, object, and interpretant-cooperate in a "trirelative influence" that brings the sign into relation with its object, on one hand, and with its interpretant, on the other, "in such a way as to bring the interpretant into a relation to the object corresponding to its own relation to the object." The role of the interpretant in Peirce's conception of semeiotic is obviously central; there is nothing strictly comparable in Saussure, with the possible exception of his idea of Valeur Linguistique (linguistic value). In one of the shorter definitions Peirce gives of the interpretant, he calls it "the proper significate outcome of a sign." The whole of pragmatism and, therefore, the entire tangled question of the "meaning" of an intellectual concept is bound up, for Peirce, with the study of interpretants. Indeed, he devoted much of his thought and writing to elaborating a typology of interpretants in the context of what he came to call "pragmaticism," in order to dissociate it from the pragmatism of William James.

The question as to how meaning comes about in language thus receives a subtle, ramified, and appropriately complex treatment in the thought of Peirce; in this

respect no conceivable construal of Saussure's ideas about signs allows semiology to rival semeiotic in depth or breadth, whatever the object of analysis. The extraneous obstacles which prevented linguists (among others) from reaping the benefits of Peirce's lifelong study of signs have for the most part now been removed, and the investigation of language as a semeiotic system ought no longer be regarded, to echo Hjelmslev, as the charting of unknown territory.

Yet the recent history of linguistics can hardly be said to reflect the rapprochement with the wider study of semeiotic that Saussure's program, and those of Hjelmslev and Jakobson after him, invited. The quarter-century hegemony of transformational-generative grammar, particularly in the United States, has had the practical effect of keeping inquiry into language as a system of signs off the agenda of linguistic theory. One of the (unintended) impediments that TG grammar has erected to the pursuit of theory along lines suggested by European structuralists and semeioticians has been its emphasis on language as an activity rather than as a work, to echo the Humboldtian terms borrowed from Greek, *Energeia* "activity" and *Ergon* "work" respectively, in which the question has occasionally been cast by TG proponents themselves.

One of the main rallying points of TG grammar at its inception was an essentially negative one, a reaction to what was perceived as the sterile emphasis on taxonomy for its own sake on the part of the so-called American structuralists (Bloomfield and his followers). Linguistic theory was proclaimed to be advanced directly in the measure of its accounting for the creative or generative capacities of human users of language. Language was not to be viewed as a corpus of ready-made formulae and patterns that speakers of a language learn by rote, but was to be grasped as the activity in which members of a speech community create and re-create speech.

The existence and influence of linguists of all schools on both sides of the Atlantic, whose methodological inclinations predisposed them to regard linguistics as a set of prescriptions for transforming a corpus of texts into a grammar of the language in question, certainly tended to contribute to an impasse in the advancement of theory. This emphasis on language as Ergon may, indeed, have led to the opposite swing of the pendulum, away from inquiry into the structure of the building blocks of language (in traditional structural linguistics) and toward its productive potential (in TG grammar), as a means of widening the compass of theory to include usage which had not yet been realized. In effect, this new preoccupation with *Energeia* to the neglect of *Ergon* meant a narrowing of the concept of patterning in language, since the "norms of usage" (to reflect the terms propagated by Eugenio Coseriu), comprising what is historically realized and codified in a given language, did not share to the same extent in the dynamic aspect of the "functional system" of the language. The identification of codedness with unproductiveness, ultimately a tendency to undervalue the patternment of inherited linguistic material in the newly discovered interests of accounting for the creative possibilities of language use, led to the almost exclusive preoccupation with syntax and syntactic novelty that has continued to characterize the theory and the practice of TG grammarians. Not surprisingly, to the extent that this conception has contributed anything toward

moving the enterprise of linguistic theory forward, its successes have chiefly been limited to the investigation of syntactic problems.

The relative freedom enjoyed by the language user in constructing sentences has obscured the complementary restrictedness in selecting the material of which sentences are made. Along the hierarchical scale of units in language, from distinctive features at the phonological level on the bottom to paradigms of sentence and discourse types at the syntactic level on the top, there is a middle ground that is constituted by words and their forms, or morphology. In the tradition of European philology and its structuralist continuation, the study of morphology occupied a position of theoretical and practical importance. In a quite direct sense, recognized from the very beginnings of systematic inquiry into language structure, words are the building blocks of language, and it is their relatively set modes of internal construction that have fostered the perception of language as a work—an *Ergon*—in short, a *Made Object*. Since the primitive element in the makeup of words is the smallest meaningful unit, or morpheme, the relative fixity of the patterning of language has mainly to do with the fixed ways in which morphemes—grammatical and lexical—combine to constitute words and their forms.

While it is clear that language in actual use allows for the production of syntactic arrangements that are novel and the manipulation of meanings that result in semantic innovations (e.g., figural speech), at the core of language structure there is a stock of words and forms that, in their ensemble, are very much akin to a *Work of Art*. Because language shares with music, literature, and dance an unfolding along the temporal axis that is missing from the plastic arts, it is difficult to speak of it as an object, in the way that made objects—artifacts—are spoken of, due to the immediate simultaneous presence of a physical whole and all of its parts. Works of literature are closer to being physical objects, despite their dependence on time, than languages, and it is indicative of their shared statuses and characteristics that the word "work" is applied to temporal as well as to atemporal manifestations of art.

Besides the organic connection between literature and language that results from the former being constituted by the latter, the manner in which literature is studied has much to contribute to the proper understanding of the structure of language. The traditional meeting ground of language and literary texts is philology, and although the scientific investigation of language for its own sake may be reckoned to have a millennial history, it is the study of language as an instrument of culture-mainly literature-that has dominated the history of humanistic inquiry throughout the literate world. The preeminence of philology is particularly marked in nineteenthcentury Germany, where it was singled out as the paragon example of a Geisteswissenschaft, a "science of man" in contrast to Naturwissenschaft, or "natural science." The philosopher Wilhelm Dilthey took these terms and developed their conceptual purport by linking them with a methodological dichotomy that has had a great influence ever since, that of Erklaren "explanation" and Verstehen "understanding," introduced originally by the German historian-philosopher Johann Droysen. On this view, explanation is the aim of the natural sciences, whereas the sciences of man (alias "history") aspire to understanding. Although ordinary usage tends not to differentiate between the words "explain" and "understand," since practically every explanation contributes to our understanding of things, the effect of this distinction is the inclusion of *intentionality* within the compass of understanding, a consideration that generally finds no place in scientific explanation. Explanation in the natural sciences concentrates on the observation and prediction of events; understanding in the *Geisteswissenschaften* strives to encompass the goals and purposes of an agent, the meaning of signs, and the significance of social institutions or practices.

This nineteenth-century antipositivistic espousal of understanding as a methodology for the sciences of man came to be known under the name of *hermeneutics*, meaning the art of interpretation. With roots in the systematic exegesis of the Bible—a decidedly philological enterprise—hermeneutics was associated particularly with studies in the philosophy of history and the beginnings of sociology as a systematic discipline. Hermeneutics declined after the passage from the scholarly scene of its great German originators and lay dormant in European intellectual life until around the middle of this century, when it revived, particularly through the efforts of the German philosophers Hans-Georg Gadamer, Jurgen Habermas, and Karl-Otto Apel.

Perhaps the most well-known feature of hermeneutic analysis is the "hermeneutic circle," by which is meant that the analyst always starts with some pre-knowledge (*Vorverstandnis*), from which he works outward by a series of explicative steps, ultimately to loop back upon the starting point, thereby completing the circle. What is important here is that the circle is not vicious in the strict logical sense of circularity; it is more precisely a *spiral*, consisting of organically successive complementary links that enable the analyst to arrive at a grounded and articulated knowledge by a series of mutually reinforcing interpretations.

Since language is the product of historical accretion, and hermeneutic analysis takes history as a kind of paradigm object of interpretation, language is thus particularly suited to study through hermeneutic method. The pursuit of philological analysis in the wider sense promoted by such nineteenth-century hermeneuticians as August Boeckh (in his famous *Encyclopaedia*) is fundamentally a process of "recognition" or re-learning (on the model of Greek *anagignoskein* "know again, read"). The net result amounts to "knowledge of what is known," an increase in understanding or generalized knowledge by reconstruction reminiscent of Plato's concept of *anamnesis*. In the case of language, understanding linguistic structure on this view means the analytical interpretation of the sense of accomplished cognition as embodied in grammatical facts. It is a recovery or a reconstruction of the *coherence*, which enables facts to subsist as such.

The introduction of coherence may make hermeneutical analysis appear to be directed merely at uncovering the system underlying the facts, but this is not so. Even the most workmanlike investigation of linguistic structure aims at revealing the system of relations assumed to be immanent in the data. This usually results in a description, which is internally consistent and in full compliance with the admonition of Ockham's razor; such as one might, for instance, find in a good grammar book of a language analyzed in that manner, serving the ends of pedagogy and general information. A truly interpretative analysis, however, aspires to an explanatory understanding that goes beyond the cataloguing of linguistic units and the rules of their combination. Its ultimate goal is a re-cognition of the cognized relations embodied by the facts.

This is a task that structuralism, for all its programmatic ambitiousness, has never seriously addressed. It has contented itself with a fundamentally non-hermeneutic approach to linguistic theory, choosing to follow the causal or Galilean model of explanation customary in the natural sciences, rather than the teleological or Aristotelian model of the human sciences. In its adherence to the mathematical ideal type of a science, linguistics has generally allied itself with the strong positivistic strain that has characterized the methodologies of all academic disciplines, not exempting the humanities.

A reoriented structuralism is not, however, incompatible with hermeneutic analysis. In the case of language, the first step to be taken in this direction is the recognition that *language is a hermeneutic object*. What this means is that, to the extent language is capable of objectification, it is made up of a network of *inferences*, akin to the explanatory hypotheses of a scientific theory. Inherent in the dichotomic structure of the sign—the linking of the signans and the signatum—is a generalization of the type "If A then B which for linguistic signs in particular implies a kind of rule of the form "If content A then expression B." The relation between sign and object, between signans and signatum, is thus fundamentally an *illative* one ("A ergo B), a circumstance masked by the scholastic formula A *liquid stat pro aliquo* so often cited in support of the substitutive role of the signans (expression) in relation to the signatum (content).

Without limiting himself to language, Peirce is quite emphatic in his advocacy of illation as the fundamental relation of logic, hence of semeiotic. The relation between content and expression—and correspondingly between the signatum and the signans of the individual sign—is equivalent in form to the relation between a protasis ("If . . .") and an apodosis ("then . . ."). "The copula of equality," says Peirce, "ought to be regarded as merely derivative." Moreover, the relation is asymmetric and transitive, hence dynamic and unidirectional. On this view, the structure of language is a system of inferences whereby content entities are assigned to expression entities through a series of interpretative translations. It follows that at the heart of this system are the *interpretants*, the constituents of sign structure that enable linkages of signantia and signata *to make sense*.

It is through the notion of sense that semeiotic and hermeneutic converge, nowhere more clearly than in the structure of language. If we accept as axiomatic (following Jakobson) the notions that "all linguistic phenomena ... act always and solely as signs"; and, furthermore, that "any linguistic item ... partakes—each in its own way—in [sic] the cardinal, viz. semantic, tasks of language and *must be interpreted with respect to its significative value*" [emphasis added], then we ought reasonably to expect interpretation to occupy the central position in the structure and theory of grammar. This is precisely the point at which the crucial importance of the *fit* between the theory of the object and the structure of that object transpires. The role allotted to language as a structure—to its very nature and function as a hermeneutic

object—demands that the methods of inquiry into language underlying linguistic theory faithfully reflect the principles of organization of language itself.

The essence of hermeneutic is involved in Peirce's definition of meaning as "the *translation* of a sign into another system of signs" [emphasis added]. Translation is, after all, tantamount to the intercession of an interpretant. A more direct apprehension of the intimate connection between semeiotic and hermeneutic is provided in the Preface to a series of unpublished "Essays on Meaning" which Peirce drafted in 1909. In discussing what part of Logic should study the "different sorts of Meanings of signs," Peirce adduces as a model Aristotle's *De Interpretatione*, originally *Peri hermeneutic, the science of interpretations or Meanings*. Or it might be called *Universal Grammar*, the grammar of signs in general." Immediately thereafter, Peirce defines a sign as "anything which represents something else, its *Object*, to any mind that can *Interpret* it so." The convergence of semeiotic and hermeneutic via the nature of Sign is thus complete.

What remains to be determined is the precise method by which linguistics is to exploit these insights. Jakobson calls Peirce's notion of interpretant "one of the most ingenious findings and effective devices received from Peirce by semiotics in general and by the analysis of grammatical and lexical meanings in particular." Given that the "essence of language" is to be found in the inherent organization of grammar as a system of patterned relationships between sounds and meanings, precisely how are we to proceed in uncovering these relationships? A programmatic subsumption of all linguistic analysis under the rubric of meaning or hermeneutic must be augmented by a method which allows access to *the structure of meaning*.

The habitual colligation of signata with signantia in ready-made linguistic entities of varying breadth and depth (from distinctive features to whole utterances) tends to obscure a pivotal disjunction between the content system and the expression system of language. Although each system forms a structure, the kind of linguistic sign which constitutes the content system is categorically distinct from the kind of sign which constitutes the expression system. The sounds of language that organize themselves into a relational system called a phonology are made up of ultimate units, variously called "distinctive features," "diacritic categories," or "diacritic paradigms." What is of special importance is their status as Signs with a purely diacritic function. The diacritic signs of a phonological system have the requisite semeiotic structure, being comprised by a sign vehicle or signans realized as a (relational) sound property, and a meaning or signatum, namely its diacritic function. Now, although diacritic signs contract paradigms (oppositions) and combine into syntagms which are simultaneous (i.e., phonemes) or sequential (clusters, syllables, words, etc.) in ways quite analogous to nondiacritic signs, they differ from other linguistic signs in one cardinal respect. Each diacritic sign has the same unique signatum: "otherness" or "alterity," i.e., pure opposition (to all other diacritic signs).

The category to which the signs of the content system belong is fundamentally different from that of the diacritic signs, in that nondiacritic signs always have their own positive signata. The signata of content signs may consist of single content elements or of syntagms of content elements; on the basis of this division into unitary and complex signata, content signs are correspondingly divided into asynthetic and synthetic signs. There exist content signs whose signantia have a direct phonic manifestation (e.g., the different intonation contours associated with the opposition "interrogative" vs. "declarative" in many languages), but content signs must typically resort to being represented by complexes of diacritic signs, each with its own signans but devoid of a positive signatum. Content signs for the most part have no material signans; diacritic signs have no individual, positively definable signatum, their signata being strictly synonymous ("otherness"). Content signs, therefore, form oppositions and an entire system of oppositions strictly on the basis of their signata, whereas diacritic signs are opposed and comprise an entire system of oppositions strictly on the basis of their signantia.

The inherent asymmetry between the two articulations of language has a fundamental bearing on the investigation of linguistic structure and on the theory of grammar. Expression and content cannot be compared directly: the structure of language is such that purely diacritic signs possessing no meaning except otherness are used to constitute the material manifestation of content signs (more precisely, their signantia), which do possess a substantive meaning. How is this fundamental disjunction overcome by the structure of language? How is it that grammar actually presents itself as a patterned, coherent arrangement of sounds and meanings?

The answers to these crucial questions form the subject of this book. In anticipation of their greatly amplified treatment in the chapters to follow, it suffices to say here that these questions have never before been posed with the framework for definitive solutions in mind. The full implementation of the requirement of a thoroughgoing, unified theoretical approach to the problem of form and meaning was manifestly on the agenda of the early European structuralists, particularly the three leading Russian members of the Prague Linguistic Circle, Nikolaj Trubetzkoy, Roman Jakobson, and Sergej Karcevskij. But it remained largely a programmatic desideratum rather than an explicit achievement of structuralism, and the subsequent history of linguistics cannot be said to have made significant advances toward the solution of this all-important problem. (This is true no matter how broadly or narrowly one defines the scope of structural linguistics.)

Contemporary linguistic practice with regard to method has, irrespective of particular doctrines or persuasions, been chiefly oriented toward the description of languages (synchrony, the writing of descriptive grammars) and language states (diachrony), with a pedagogical aim in view more often than not. A concomitant result of this orientation has been the preoccupation of linguists with rule formulation, in concord with the prevailing conception of language as "rule-governed behavior," and the presumption that advances in theory are to be identified with the construction of formalisms of maximal generality and abstractness.

With the rise to near-hegemony of TG grammar has come the ascendancy of rules of grammar, not as prescriptive devices but as a means of capturing the systematic (regulative) norms inherent in linguistic behavior. Rules as statements of regularities appear to serve ends that can be considered preliminary to the task of understanding grammar and making sense of it. The hermeneutic treatment of linguistic facts, on the other hand, encompasses a notion of rule that strives to represent the "trirelative" bond between signans, signatum, and interpretant. The semeiotic relation between the three elements of a sign must obtain in order for semeiosis to occur: the patterned correspondence between sets of signata and conjugate sets of signantia in language owes its coherence to the sets of interpretants that inhere in every semeiosis. "Rule" in a semeiotic sense, therefore, is neither causal nor predictive, as it is in the natural sciences. "Rule" from the hermeneutic standpoint is inherent in "interpretant," but the latter concept is much wider and more productive of understanding, given that the object of study is language (or language-like in form).

The exclusion of the concept of rules as descriptive devices from the theory of grammar and its supersedure by the semeiotic notion of interpretant reintroduces questions about the patterned relation between expression and content. We know that the disjunction between expression-form and content-form (to use Hjelmslev's terminology) is overcome by language, which is able to do so because the interpretants on both sides of the sign situation, being directly comparable in kind and function, bridge the hiatus between signantia without signata and signata without signantia. Interpretants are the *agents of mediation* between sign and object, as Peirce himself realized when he equated mediation with representation. The interpretant of the expression sign—of the phonological signantia—can be compared directly to the interpretant of the content sign—the grammatical and lexical signata. Any coherence that emanates from the bond between coordinated signata and signatia in the form of linguistic entities and collocations of entities is, therefore, to be found in the patterned relationship of interpretants.

But what exactly is the interpretant of a linguistic sign? We have ascertained that every sign of language, being the kind of sign that has a "trirelative" structure, must have an interpretant. If it is interpretants that mediate between content-form and expression-form, they themselves must be ontologically unitary, whether the domain of their reference is sound or sense. Is there a dimension of language structure, which matches the function of the interpretant as agent of mediation in semeiosis, imparting form to meaning?

An answer to these questions can perhaps be traced to the traditions of European structuralism, specifically those of the Prague Linguistic Circle and its most illustrious members, Trubetzkoy and Jakobson. In 1930 Trubetzkoy discovered that the terms of a phonological opposition are not merely polar in phonetic implementation, but that their "intrinsic content" is "contraposed." He identified the unequal evaluation of the terms of a phonological opposition with the presence (or maximum) versus absence (or minimum) of a "positive mark" and called this conceptual superstructure of the phonological sign "markedness." In 1932 Jakobson extended the scope of markedness by applying it to oppositions in grammar, specifically the morphological categories of the Russian verb, and recognized explicitly the inherent asymmetry of markedness relations. Trubetzkoy designated the term of a phonological (phonetic) quality or mark as the "marked" member of the opposition, and the term characterized by the absence (or minimal degree) of that quality or mark as the "unmarked" member.

Jakobson's extension of markedness to grammar (and lexis) brought out the fact that members of grammatical and lexical paradigms are not defined individually by their absolute referential scope; rather that whole paradigms, both dichotomic and graded, diagram differences in referential substance with the "skewed projection" dictated by the asymmetry of such paradigms. The marked term of an opposition has a narrowed referential scope, while the unmarked term is broader in the scope of its application to the field of reference. One part of the referential field must be represented by the unmarked term of an opposition, but the remaining part may be represented by either the marked or the unmarked term. For instance, in the grammatical representation of time. the substantive opposition anteriority vs. non-anteriority to the speech event is rendered by the formal tense opposition "past" vs. "non-past," such that non-anteriority is unambiguously signaled by the non-past-the unmarked member of the opposition-whereas anteriority may be signaled either by the past tense-the marked term of the opposition-or by the non-past (here, the so-called Praesens Historicum). In this example it is clear that the contradictory opposites of the referential category of time are so rendered grammatically that one member of the opposition of tense includes the other member. This broader scope of the unmarked member is similarly reflected in lexical oppositions such as English man vs. woman, where the former is the generic (unmarked) designation of humankind, while the latter is reserved for the designation of only a subset of the referential field.

It can be seen that the concept of markedness facilitates the unitary conception of the structure of phonology, grammar, and lexis-in short, of language. This unitary conception is at the center of the long-standing supposition (stemming from the work of Jakobson and Hjelmslev in the 1930s) that different levels of language structure are governed by identical principles of organization, which is to say that the levels are *isomorphous*. The isomorphism is mirrored in part by the formal identity of the definition of markedness as it pertains to the diverse elements of both the expression system and the content system. Despite differences stemming from the disparity in focus-the phonic level of signantia in the case of expression and the semantic level of signata, in the case of content-all instances of the marked term share a narrowed specification and a circumscription of scope vis-à-vis their unmarked counterparts. In phonology, the marked term of an opposition constrains or narrows a certain (negative or positive) relational sound property which is relatively (and polarly) unconstrained and uncircumscribed in the corresponding unmarked term. In grammar and lexis, the narrowed definition affects a conceptual item, delimiting the referential scope of the marked term vis-à-vis the relatively unnarrowed scope of the unmarked term.

The Prague School concept of markedness is largely confined to linguistics and the study of language structure, despite some inklings as to its applicability to other areas of human behavior. Its fundamental role as a semeiotic universal is adumbrated somewhat more sweepingly (if inchoately) by Saussure's famous dictum that "language is a system of pure values." Unfortunately, Saussure failed to integrate his notion of linguistic value with his sign theory, and the subsequent development of European structuralism, both before and after the Second World War, does not include a ramified appreciation of the relationship between markedness and value. (An awareness of Peirce and of his semeiotic would no doubt have facilitated the progress in understanding grammar that is now finally emerging, owing to the wider dissemination of Peirce's philosophical writings.)

Indeed, the idea can now be advanced with some confidence that markedness is a species of interpretant, fully compatible in its own way with the system of interpretants established by Peirce (see chapter "Peirce's Semeiotic" herein). One of Peirce's (many) definitions of sign is "an object which is in relation to its object on the one hand and to an interpretant on the other in such a way as to bring the interpretant into a relation to the object corresponding to its own relation to the object." If by signification is meant the action of a sign whereby the interpretant is brought into relation with the object of the sign, it is understandable why Peirce saw the sign's "essential significant character [as] the character of causing the interpretation of its object." The being of the sign, therefore, consists in its causing an interpretation; in other words, in causing an *evaluation* of the relationship between sign and object.

The evaluative or axiological dimension of the sign's connection with a system of interpretants is implied by Peirce's discussion of semeiotic but has not been clearly perceived. The interpretants of linguistic signs are values—markedness values. While markedness is subject to grading, degrees of markedness are expressible exclusively in terms of just two values, "marked" and "unmarked," which imply each other but are fundamentally asymmetric. The asymmetry of the linguistic sign in its paradigmatic dimension of markedness emerges in its syntagmatic dimension as ranking or hierarchy. Thus the relation between signans and signatum which gives rise to signification always comports some measure of *significance* or value. If this were not true, sign relations would not conform to a pattern because there would be no overarching principle of order.

"Every single constituent of any linguistic system," writes Jakobson, "is built on an opposition of two logical contradictories: the presence of an attribute ('markedness') in contraposition to its absence ('unmarkedness'). The entire network of language displays a hierarchical arrangement that within each level of the system follows the same dichotomous principle of marked terms superposed on the corresponding unmarked terms." While this formulation faithfully reflects the original Prague School understanding of markedness as being associated with attributes or marks, and thereby with substance, the status of markedness as an interpretant points to its proper place in the form of language. Markedness is a matter of conceptual complexity and as such is to a significant extent independent of the substance of language. Conceptual complexity is tantamount to (grades of) value. Thus every linguistic opposition, besides consisting of a signans/signatum duple, has an evaluative superstructure defined by the two polar values, marked and unmarked. These values constitute inherent semeiotic definientia of a given opposition's terms. The scope of markedness as the dominant principle of conceptualization is not limited by language: it inheres in the patterning of all human semeiotic systems, hence in all of human culture. Its asymmetric character, moreover, is clearly rooted in biological and neurophysiological isomorphisms, namely the structure of the genetic code and the lateralization of the brain. The mental capacity of human beings is defined by the universal principle that there is no conceptualization without evaluation: the integration of concepts into paradigms and syntagms necessarily involves grading and ranking, i.e., markedness.

The concept of markedness can be advanced materially beyond its programmatic proclamation as the universal semeiotic principle underlying the organization of linguistic structure. One of the chief tasks set out in the chapters to follow is the aggrandizement of the Prague School notion of markedness to embrace discoveries of its nature and workings made in the last 15 years or so. The access to the principles of organization governing linguistic structure provided by markedness also affords a way of returning to the question posed at the very beginning of this Introduction, that of *physei vs. Thesei*.

Jakobson's identification of the "essence" of language with the fact that the system of signantia may diagram relations in the corresponding system of signata, and that these expression/content mapping relations pervade the entirety of language, establish language in part as what mathematicians call an "automorphism," i.e., as a structure defined by relations of symmetry between its parts. To the extent that such symmetry or congruence is manifest in language, it is an affirmation of the "naturalist" (*physei*) position. Language conforms to nature by the fact that it diagrammatizes content in expression.

The veracity of the physei-as-diagrammatization position is directly ascertainable from a consideration of the relations in a synchronic grammar. This does not mean, however, that mapping relations are irrelevant to the problem of language change, more specifically to the assumption that change is to a large extent motivated rather than arbitrary, just as relations in the structure of the linguistic sign itself. Such relations of semeiotic congruence are undoubtedly involved in the teleology of function characteristic of linguistic change, although they are typically covert and not accessible to direct observation by the grammarian while in statu nascendi. Indeed, covert patterns of correspondence determine tendencies of development, so that the drift of a language can be explicated as a gradual actualization in its surface forms of virtual patterns, patterns that are established over time as part of the linguistic competence of speakers. It is these patterns that constitute the functional system or the productive center of language, in contradistinction to its norms or unproductive periphery, and determine which deviations from the received grammar will be accepted, which rejected. The dynamics of language follows a trajectory of maximizing the patterns of diagrammatization and minimizing or ultimately eliminating those that are devoid of such semeiotic basis. This understanding of the telos of linguistic change brings synchrony and diachrony into an inalienable structural relation: change is thereby conceived as an aspect of continuity.

The presumption underlying all contemporary inquiry into language—that it is a system—also entails the search for patterns of coherence among linguistic facts. The semeiotic perspective on language structure consonant with Peirce's fundamental discoveries of the nature of signs is informed by three cardinal interconnected tenets. First, there exist semeiotic universals—principles of organization—which govern the patterning of linguistic data. Second, the patterning is coherent, which is to say

that the genuinely structured or motivated sets of facts—the functional system or structure sensu stricto, as distinct from the norm-governed adstructure—are explicable and to be understood as cohesions or correlations between expression-form and content-form. Third, the patterning of form/meaning correlations owes its coherence to a mediating interpretative component of semeiosis or "structural cement" that binds the facts together and allows them to subsist systematically alongside each other. This component, corresponding in all essential details to Peirce's interpretant, is markedness.

Why are certain specific expressions associated with certain specific contents? This utterly basic question has, remarkably, never been posed in the history of linguistics, perhaps because it seemed absurd to ask why a fact can be a fact. But that is precisely what needs to be inquired into so as to arrive at a truly explanatory theory of grammar, a theory of language facts that satisfies the requirements of the hermeneutic understanding of a hermeneutic object.

The semeiotic values that enable sounds and meanings to cohere in a pattern are markedness values. The search for principles of organization, for coherence in language structure, is thus an investigation of the ways in which markedness values arrange themselves in language, giving this most important of all forms of semeiosis its status as a system.

No linguistic entity is without its markedness value, since every linguistic entity participates in a network of oppositions whose nature and significance are directly determined by markedness. Language is a system of signs, a semeiotic; therefore all such entities are signs and contribute as parts to the whole that is a semeiotic system. While heretofore such stock items of linguistic description as stems and suffixes, including their positional shapes or alternants, have been looked upon simply as artifacts which facilitate an economical, internally consistent statement of distributional facts, now these entities must be viewed as having semeiotic values—markedness values—which vary coherently and uniformly with contexts and the values of contexts.

There is thus at the core of structure a coherence of facts, which resides in the patterned cooccurrence of contexts and units accompanied by a coordination of their markedness values. The circularity inherent, furthermore, in manifestations of coherence must not be viewed as a defect: quite the contrary, it is of the very nature of language as a hermeneutic object. To conceive of facts as cohering with other facts, as contexts do with units, is to recognize circularity as a definiens of coherence. The search for "independent motivation" in linguistic explanations is actually a distorting imitation of the Galilean mode of the natural sciences. The notion of coherence consonant with the Aristotelian mode appropriate to hermeneutic conceptualization entails circularity as a virtue, owing to its immanence in the structure of language. Both the theory of grammar and the method of analysis leading to the proper understanding of linguistic facts cannot dispense with circularity for the simple reason that it is of the essence of language.

Linguistic facts must be recognized for what they are, the actual variations of language rather than the "underlying forms" or "deep structures" posited by contemporary practitioners. A theory of grammar which places the matter of *the sense of* *grammatical alternation* at the center of its agenda considers variations of form associated with variations of meaning to be its proper explananda. It substitutes for the question "How does one get from deep to surface structure?" the question "Why are the surface facts of grammar as they are?" Seeking the answer to such a radical question presupposes the belief that "surface" variations—the actual stuff of language—do not vary haphazardly, but organize themselves into a semeiotic, a system of signs. Surface variants and alternations are thus seen not as mere agglomerations of data to be systematized by the linguist's intervention and appeal to formalisms at a putatively deeper (hence "truer") level of linguistic reality, but as entering directly into a pattern of semeiotic relations with each other.

Transposing the theoretical enterprise of linguistics to another dimension, away from the mechanistic and scientistic impasse in which it has been mired in the last quarter-century, means formulating a theory of grammar that puts fundamentally different questions to its data and frames them in a fundamentally different mode, one defined by the nature of language as a hermeneutic object. The replacement of causal explanation by hermeneutic understanding as the province of theory entails the jettisoning of conceptions of language structure and linguistic method that result in the prevailing self-confinement to goals that are fundamentally (if unwittingly) nonexplanatory. The pursuit by TG grammarians of a "complete scientific description of the language" corresponding to "a fluent speaker's knowledge of his language" expressed in the construction of rule formalisms is, therefore, fundamentally irrelevant for linguistic theory: a theory of grammar is not a theory of knowledge but a theory of *habit*, in the sense imparted to the word and the concept by Peirce's pragmaticism (see chapter "Peirce's Semeiotic"). Explanation aspiring to hermeneutic understanding must focus on why the data of language cohere as signs, not on mechanisms by which grammatical forms can be derived by the judicious choice and application of rules (ad hoc or not). This requirement once and for all removes predictability-via-rules from the agenda of theory.

The entire recent history of linguistics demonstrates with great clarity the feasibility of forcing data into a proliferating number of mutually compatible formalized configurations or notational variants. It is characteristic that these frameworks, and the schools with their adherents that they represent, take no cognizance of the principle (laid down by Jakobson among others) that *all* linguistic entities participate above all in the semantic tasks of language and must be interpreted in terms of their significative value. It is obvious, on the other hand, that even the interests of a purely descriptive linguistics are ill served by an attitude toward language that ignores its status as a semeiotic.

The grammarian writing a description of a particular language must accept the burden of showing how the various grammatical rules he formulates stand with respect to their semeiotic function. Since linguistic rules are such that one entity or structure is transformed into another entity or structure in a given context, they thereby purport to act as an interpretant which gives a means of representation (signans) to an object of representation (signatum). If this is so, the grammar writer cannot limit his task to formulating rules that merely register generalizations about the distribution of entities in texts, or which transform structures of one kind into structures of the same kind without any change in information or function. A linguistic description which lays claim to being the faithful account of a speaker's language competence cannot evade the responsibility of explicitly characterizing the semeiotic status—the "significative value"—of all the primitive elements and all the effects wrought on them by the rules formulated to encompass them.

It is a plain fact that the mainstream of linguistic practice has failed to conceive its tasks in terms of this responsibility. In so doing, linguists have ignored the fundamental truth that language is a semeiotic. It is with the amelioration of this fundamental disability of linguistic theory and method in mind that the present work is offered.

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