Two aspects of sign theory

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(a) INNIS, Robert E.:
Karl Bühler: Semiotic Foundations of Language Theory, New York and London, Plenum, 1982, *vi,* 168 p.
(b) HIRTLE, Walter H.:
Number and Inner Space: A Study of Grammatical Number in English, Laval, Quebec, Les Presses de l'Université Laval, 1982, 142 p.

I. Introduction

In this review article I would like to discuss the specific books to be reviewed: *Karl Bühler: Semiotic Foundations of Language Theory* by Robert E. INNIS and *Number and Inner Space: A Study of Grammatical Number in English* by Walter H. HIRTLE, in the context of humanistic, sign-oriented linguistic theory. The historical (basically Saussurian) context of sign-oriented linguistic theory, and indeed all twentieth century linguistic theories, be they sign-sentence-discourse-text-oriented, is their shared structuralist background. I would like to point out, however, that I am using the term structuralism here in the broad sense of an umbrella term (as in LEPSCHY, 1970: Ch. 1) which includes quite diverse, often seemingly antithetical schools of linguistic thought ranging from Saussure to post-Chomskian formalistic approaches. By structuralism, I simply mean the intellectual endeavour to create a theoretical linguistic model, i.e. a theory and a methodology, to explain the concrete phenomena of language. In structuralism, both theory and methodology are based on a set of abstract hypotheses which are ultimately rooted in a specific definition of language. This definition of language provides the linguist with a hypothetical unit of linguistic analysis such as the linguistic sign on the one hand, or the sentence and its component parts, on the other, to name just two. In all structuralist approaches, the model presented for linguistic analysis must be both abstract and general enough to be able to cover a wide range of specific linguistic data.

The two books in this review article complement each other to a certain extent. INNIS's book presents the philosophical and theoretical basis of Karl BÜHLER's sign-oriented, semiotic theory of language in general; while HIRTLE presents an analysis of a very specific problem in English which exemplifies a specific sign-oriented linguistic approach known as the Psychomechanics of language or the Guillaumean School. The common denominator of both these books is their sign-oriented approach which views itself responsible for explaining the communicative, semiot-

ic function of linguistic forms, as they are related to the «human factor». This human factor includes both cognitive and behavioral aspects of man in his role of *homo loquens,* i.e. as a user of language. In short, both BÜHLER and HIRTLE may be seen as sharing the same, or a very similar, basic definition of language. For them, language may best be defined as a «system of systems», basically semantic in nature, revolving around the dyadic notion of the linguistic sign, which is being used by human beings to communicate. This definition, of course, quite obviously sets them apart from other basically structuralist modern schools of linguistic thought whose definition of language is that of a potentially infinite set of sentences consisting of a finite number of basic elements having a particular structure (CHOMSKY, 1957, 1965).

BÜHLER and HIRTLE exemplify the notion that linguistics is a humanistic science. Their basic theoretical premises aim to throw light on how the «fuzzy» or elusive human factor plays a role in the way speakers manipulate signs – each sign being an invariably paired form with a single, unitary meaning – in order to communicate coherent messages. Neither BÜHLER nor HIRTLE presents formalistic answers to explain language structure but both deal with the social and cognitive elements of man's perception and behavior in general and sign-oriented perception and behavior in particular.

INNIS gives the English reader a window to BÜHLER's thoughts in the 1930s. Being that sign-oriented linguistic theories have not dominated linguistic thought, this book should prove to be both informative and enlightening to those readers who are open enough to consider this kind of humanistic, non-formalistic approach to language which is presented here in very general theoretical and philosophical terms.

HIRTLE's book, on the other hand, presents a specific theoretical approach which postulates a system to explain the observable facts (the actual morphology) of number in English. The underlying or subconscious mental system of language *(langue)* hypothesized by HIRTLE postulates «that everything in language is movement, process, operation, or the possibility thereof» (HIRTLE, 1982: 15) within the operative time that communication is taking place. It is this particular dynamic, cognitive notion of language as «movement in operative time» and its inclusion in the Guillaumean notion of the meaning of a linguistic sign, which set HIRTLE's theory and analysis apart from BÜHLER and other sign-oriented (basically SAUSSURIAN) approaches to linguistic thought.[1]

1 Besides the Guillaumean school (GUILLAUME, 1973; HEWSON, 1972; HIRTLE, 1975; VALIN, 1981), other schools which share the basically Saussurian definition of language

II. Karl BÜHLER: Semiotic Foundations of Language Theory by Robert E. INNIS

INNIS presents BÜHLER as a scholar in search of a semiotically derived model of language. INNIS himself describes his book as consisting of «a long critical essay focusing in a highly selective and dialectical way on the scope, methodological power, and heuristic fertility of BÜHLER's language theory, principally as found in *Sprachtheorie,* and of a translation of the ‹Axiomatization› essay» (vi). This book may be described as a kind of *explication de textes* of BÜHLER's key works, one of which, «The Axiomatization of the Language Sciences», is being presented here for the first time in English translation. The book is divided into two parts: Part I: «Key Themes in BÜHLER's Language Theory» (taken primarily by INNIS from BÜHLER's seminal work *Sprachtheorie*), and Part II: «The Axiomatization of the Language Sciences» (by BÜHLER, and translated by INNIS), accompanied by a translation of Elisabeth STRÖKER's introduction to the German student edition. The book also has a brief preface and a name and subject index.

INNIS's book is important to English-speaking scholars (particularly Americans) who all too often have remained woefully ignorant of much of the work produced on the Continent, especially the work of German, Russian and Eastern European scholars working in «esoteric» languages who have not been translated into English. Thus, INNIS's book may help to alleviate the unfortunate situation whereby BÜHLER is not as well known to English-speaking linguists as are the many scholars upon whom he has exercised a profound influence (e.g. Karl POPPER, Michael POLANYI, Ernst CASSIRER, Roman JAKOBSON and MUKAŘOVSKÝ)[2].

In Chapter 1 of Part I – «BÜHLER's Axiomatic Project» – INNIS introduces the central concepts of content and form with relation to BÜHLER's goal to determine the central presuppositions of a language theory, i.e.

we have outlined previously include the Jakobsonian School (e.g. JAKOBSON 1936, 1957, 1971; VAN SCHOONEVELD, 1978; WAUGH, 1977), and the Columbia School of Form Content Analysis (DIVER, 1975; GARCÍA, 1975; KIRSNER, 1979). These three schools of linguistic thought have been contrasted and compared in TOBIN (forthcoming (b)). «The Saussurian Connection» in BÜHLER's work has been discussed in KOERNER (1984).

2 KOERNER (1984) presents a very interesting historical background to BÜHLER's work, summarizing the major tenets of BÜHLER's theory, the various successful and unsuccessful attempts to translate and/or present his basic ideas to the English speaking world (e.g. GARVIN, 1964, 1966; SEBEOK, 1981). KOERNER also points out (1984: 4–5) that because of the political situation preceding and during the Second World War, BÜHLER's work did not receive the attention due to it in the German-speaking countries of Europe as well.

an analytic framework adequate to its object, namely, language and its representational function. For BÜHLER, representational function is «the capacity to represent and communicate objects and states of affairs» (p. 3).

BÜHLER recognizes four basic axioms which serve as a point of departure for linguistic theory:

Axiom 1: The sign character of language in (speech) acts conferring «sense» based on «the social matrix of meaning in both the human and non-human spheres» (p. 6). This might be compared to the fundamental element of SAUSSURE's *langue* as a system of signs shared by a community. From the semiological or semiotic point-of-view, this entails an inherent insistence on an irreducible duality of sign giver and sign received as the key to social action.

Axiom 2: The relation between «speech actions» as a form of human behavior and language structure (similar to SAUSSURE's distinction between *langue* and *parole*). The issues discussed here include the unresolved problems of universal versus language- (or society-) specific properties of the human mind, human behavior and their representation in language.

Axiom 3: The stratified level of language: Language is presented as a stratified sequence of levels phonemic-lexical-semantic-syntactic, similar to those generally accepted today. They are discussed here from the points-of-view of language as a *sui-generis* system composed of symbols situated within a field, the familiar notion of double articulation, and the relations between words and sentences.

Axiom 4: The *Organon* model of language which deals with the different communicative functions of language: representative, appellative, and expressive from the point-of-view of specific speech acts. BÜHLER's view of what are today referred to as «speech acts» or the «communicational system of deixis» (VAN SCHOONEVELD, 1978) is not limited to language alone, but seeks to include the larger semiotic process of semiosis as it is related to biology (an issue still of interest in semiotics today).

Chapter 2 deals with «Phonology, Diacrisis, and Abstraction». As should be expected, the theoretical importance of the relationship between the abstract notion of phonology as a system based on abstractive methodological procedures to determine the concept phoneme is what is central to BÜHLER's theory. But here too, BÜHLER tries to go beyond the purely linguistic implications to the larger semiological ramifications of this process in order to understand man's perception and cognition in general. In this sense, BÜHLER is similar to Karl POPPER (p. 11) and, I also feel, to SAPIR (1921), both in his scope and mentalistic slant. Once again

BÜHLER places heavy emphasis on social performance within the larger community as opposed to concentrating on the individual speaker or operation alone, i.e. what is referred to as «subject relatedness» or «social positing». INNIS also points out the oscillation between purely semiotic versus Gestalt considerations in BÜHLER's approach in relation to word images, «tonal face», *(Klanggesicht),* and «phonemic signalling character» *(phonematische Signalement)* (p. 12). BÜHLER tries to set up an objective and intersubjective basis for a systematically constructed theory of diacrisis and Gestalt theory, comparing language structure to the Platonic ideal based both on the cognitive processes of semiosis as well as the social element as a primary motivating force of language. BÜHLER also recognizes the important role of suprasegmentals (p. 14, fn2) as well as the central role of the syllable and syllable segmentation with regard to human speech.

Chapter 3 – «The Two Field Theory of Language» – delineates the differences between the «index field» *(Zeigfeld)* and «symbol field» *(Symbolfeld).* These two fields cover the central notions of «intuitive pointing and presenting», i.e. the deixis or speech situation generating the «index field», and the context, i.e. «the abstract, conceptual grasping of the world», or «the syntactic matrix in which symbols are to be situated» (p. 19), the symbol field.

The index field deals with the four various kinds of deixis: (1) *the existential index field* which segments and identifies language signs; (2) *the functional index field* which establishes objects in common perceptual space between the sender and receiver of signals (using an allusion to a definition of definite articles as an example); (3) *the inter-relationship between the object and the sender* including the spatial domain and the psychological perception of space and position (using personal pronouns, index words and shifters (similar to JAKOBSON (1957), as well as taking the exchange of signs as part of social life (personal pronouns to signify the addressee) into account; and (4) *distancing deixis:* segmenting perceptual fields into spatial zones of proximity and distance, or the setting up of boundaries and limits (using proximate and distal deictics like «this» and «that» as examples).

The symbol field is «paradigmatically constituted by words used in their nominative or naming functions» (p. 24), or, as BÜHLER puts it, as *Begriffszeichen* or «concept signs». BÜHLER views the function of symbols in human language as being *sui generis* and tries to maintain a strict dichotomy between the indexical plane which relates signs to the situation, and the symbolic plane within which context is needed in order for signs to make sense. BÜHLER may have recognized the fact that any

distinction between situational and linguistic context may be fuzzy or blurry at times but he still tried to establish coherent criteria and categories to outline and explain his desired dichotomy. These criteria or categories include: (1) a field of praxis or an empractical *Umfeld* exemplified by goal direct behavior accompanied by appropriate linguistic behavior (such as nodding your head and saying «yes» to show agreement); (2) syntactically context free names where there is a direct «physical» connection between the name of an entity and the entity itself; (3) the synsemantical *Umfeld* which leads to the notion of «proper linguistic context» as illustrated by the process of color perception and analogies to the connections between art and language (as was later done by JAKOBSON comparing elements of language to Braque's paintings) (reference lost – Y.T.), SAPIR (1921: 220–225), or GARCÍA (1980: 351) comparing the inferential sabotage of a text to the work of ESCHER; or HIRTLE (1982: 61) comparing the impression one gets of the internal plural in English to that of drawings where the perspective suddenly changes.

INNIS also points out BÜHLER's attempts to compare the similarities of the expression of human thought in speech to the symbolic and representational operations implied in general human knowledge, painting, cartography, and the composing of music (p. 34). He also compares the notion of musical prosody with the prosodic elements of language on the word and sentence levels, showing how it is similar to grammatical and lexical collocation. Thus, we consistently see how BÜHLER tries to establish holistic connections between the various aspects of language as a unified semiotic system of systems with other aspects of human cognition and behavior. This, perhaps, is accomplished by his reliance on the larger notion of symbolic perception and knowledge on the one hand, with an emphasis on the social element of human interaction and speech on the other. With regard to language, the structuralist notions of an abstract level versus a concrete level and the sphere of abstraction are also discussed in connection to the arbitrariness of the sign, symbolic representation, iconicity, homonymy, onomotopoeia, and other central issues which are still relevant today fifty years after BÜHLER related to them from his semiotic perspective.

INNIS further compares and contrasts BÜHLER's approach to language with those of WITTGENSTEIN, MILL, HUSSERL, TRIER, VON HUMBOLDT, VYGOTSKY, LURIA, PIAGET, POLANYI, and others, from the philosophical and psychological points-of-view, as well as relating his approach to the Platonic and Aristotelian legacies of language. The underlying force, however, of BÜHLER's approach lies in his attempt to coordinate the social-subjective axis of actual language use with the abstract cognitive

ramifications of linguistic processes of concept formation in the human mind on all levels of language from the phonological to the semantic-symbolic in a larger semiological framework.

In short, it becomes consistently clear that BÜHLER is attempting to produce a model of language which deals with (1) cognitive semiosis and the individual processing of language as it is (2) shared by a community in a social reference and framework in light of its (3) functional, teleological purpose of producing effective communication. This tripartite *leitmotiv* continues in INNIS's subsequent chapters as well.

In Chapter 4 – «From Perception to Metaphor» – INNIS discusses BÜHLER's model for metaphor as a «paradigmatic form of concept formation» (p. 43), comparing this model of «binocular vision» heuristically to the work of POLANYI (1976), ECO (1979), GOODMAN (1968), RICOEUR (1977), SACKS (1979), and WHEELRIGHT (1962, 1968), making further interesting comparisons to the world of art from the point-of-view of similar «sematological» processes.

In Chapter 5 – «Clarifying Language by Contrast» – this basic pan-semiological approach serves as the theoretical foundation for the comparison of language systems with other non-linguistic sign-oriented systems including: maps, music paper, painting, acting, pantomime, sculpture, kinesetics, medicine (fever charts), and film, from the point-of-view of symbolic fields, alphabets, numerical systems, graphical representations, perceptual fields, relational fields, symbolic relationships, iconicity and images, gesture (to which sign language can also be applied) (Y.T.), material fidelity and relational fidelity, mediating ordering, with constant comparisons to semioticians such as LOTMAN, PEIRCE, ECO and many others. Linguistic notions such as anaphora, sequence, ordering, etc., are constantly being contrasted with non-linguistic phenomena. INNIS summarizes this intellectual *mélange* by stating: «In all the cases mentioned, there is a common structure of a field and elements ordered in a field – a sign field and sign elements – but here the Gestalt overtones have equal rank with strictly semiotic or sematological categories. We encounter here both the limits of BÜHLER's sematology and his challenge to a unified semiotic theory built on the model of language» (p. 65).

In Chapter 6 – «Conclusion: Some Open Questions» – INNIS continues to compare and contrast BÜHLER with other semioticians and linguists, particularly HJEMSLEV and CHOMSKY. With regard to the former, INNIS informs us that he hopes to undertake a systematic comparison of HJEMSLEVE's procedures with BÜHLER's «Axiomatization», which is indeed something to look forward to. With regard to the latter, INNIS seems to pay lip service to the T.G. use of the notion of «taxonomic» as an um-

brella term for all the so-called «pre-theoretical» or «inadequate» structuralist (particular of the North American variety) and behaviorist predecessors of the transformational generative model. It seems to me, at least, that the general degeneration of the T.G. model which has taken place over the years can be related precisely to the avoidance or possible ignorance of the holistic mentalistic and cognitive aspects of European structuralist thought which has consistently been related to the social aspect and motivation of language use as exemplied in BÜHLER's work. The transformational generative attempts to postulate an abstract or explanatory level of deep structure first based on a formalistic syntax, then a formalistic semantics, and now a formalistic pragmatics has led us to a full circle which can be seen parallely as a giant step backwards from the unified communicative-cognitive-social approach to language of the sign-oriented theories of SAUSSURE and, indeed, of BÜHLER's as well. This degeneration, of course, can be related to the shared structural heritage of all twentieth century linguistic theories and their goal of creating a model of language which will bridge the abstract notion of a theoretical system with concrete language data. The Chomskian revolution (or possibly aberration) may be paying the price for its particular desire to generate a grammar which is accountable only for *abstract* competence as opposed to the concrete phenomena of real spoken and written language in both linguistic and situational contexts.

INNIS sums up BÜHLER's role in the following way:

> In BÜHLER, in fact, we have a model that is capable of mediating between the primacy of signs in structuralism and the primacy of consciousness in phenomenology, being able to exploit the strongest points in each. Thus, the continuation of BÜHLER's work in the theory of linguistic fields would join with structuralism's insistence on objectivity of sign systems, and both could be seen within the framework of the historical embodiment of consciousness, not just in linguistic systems but in sign systems of all sorts. BÜHLER's work is fully compatible with such ideas (p. 68).

As such, this book may provide a modest beginning to help linguists of different theoretical persuasions to see language from a more integrative, sign-oriented point-of-view. I have limited myself to INNIS's first part of the book, hoping to whet the appetite of prospective readers to go through the translation of BÜHLER's «Axiomatization of the Language Sciences» themselves. This book does not make for easy reading (translations from German often tend to be difficult and awkward to begin with, and BÜHLER's «encyclopedic» approach particularly lends itself to a convoluted style); but it may well be worth the effort. INNIS has certainly provided us with a good first step in getting to know BÜHLER's work better. Reading BÜHLER's «Axiomatization» might give a certain

amount of pleasure to a linguist, as seeing a very good old foreign film which is still relevant today would, to a sensitive cinema buff.

III. Number and Inner Space: A Study of Grammatical Number in English by Walter H. HIRTLE

Walter HIRTLE's book provides us with a sign-oriented linguistic analysis for what is traditionally referred to as grammatical number in English. The book's purpose is not only to clarify and explain the well-studied singular-plural opposition in English, but to do so in a new and innovative way based on the theoretical tenets of the Guillaumean school – the Psychomechanics of language. As HIRTLE himself states in the preface:

> The aim of this study is not just to add another treatment to the long list, to add one more voice to the consensus, but rather to try a new approach to number, an approach based on the view that language is systematic in its grammar. It follows from this view that there is a system, a semantic structure underlying all the discernable manifestations of number in discourse. What prompted the present study was the realization that the generally accepted basis of number is inadequate. To consider number as a simple singular/plural dichotomy does not account for many common uses. It is the attempt to find a more adequate basis in a coherent system that is recounted here in the hope that the reader will learn something about the English language and will gain an insight into the method of analysis applied here, the Psychomechanics of language (p. 1).

What follows is a very interesting and unique analysis which can serve as a lesson in point of what basic theoretical and methodological tenets are involved in sign-oriented linguistic theory. As a matter of fact, this book is almost a lesson or handbook in «how to perform a Guillaumean analysis». HIRTLE very engagingly recreates the various stages of his analysis with almost a diary-like account of the theoretical questions and data-oriented problems which arose during his work. Thus we see that his attempts to solve these data-oriented problems led him to discover the semantic substance of inner space. It is this theoretical notion of inner space as the underlying semantic substance of the English number system which constitutes HIRTLE's contribution to the problem.

HIRTLE's basic definition of language implies that language is a «system of systems» which are basically semantic in nature since they are motivated by the meaning of the linguistic sign. Theoretically, this implies a dichotomy between (a) an abstract code *(langue)* (referred to as «tongue» by HIRTLE), composed of signals and meanings and the relationships between them, and (b) the concrete and seemingly chaotic real-

ization of this abstract code; (SAUSSURE's *parole*) (referred to as «discourse» by HIRTLE), as it is exploited by individual speakers in particular linguistic and situational contexts to communicate specific messages.

Theoretically, this definition of language, and the subsequent adoption of the linguistic sign as the basic unit of analysis, also implies that the primary tasks of the linguist are (1) to postulate the meaning of each sign, and (2) to establish the possible value relationships between the meanings of these signs as they function as parts of larger systems. Thus, it is not by chance that the titles of Chapters 1 and 6 of HIRTLE's book are «Searching for the System» and «The System», respectively.

Methodologically, the sign-oriented theoretical outlook implies a profound respect and reliance on «real» (as opposed to contrived or purely introspective) language data in actual spoken and written discourse. The second major methodological ramification of adopting the sign-orientation is having a commitment to deal with the «human factor» (i.e. both cognitive and behavioral aspects of human behavior) as it is relevant to the communication of specific discourse-contextual-situational messages derived from the use of a system of signs where each sign possesses an underlying unitary meaning. Thus, it is not by chance that the remaining chapters of HIRTLE's book are all heavily data-oriented, and are devoted to solving each of the various problems presented to the theory by the actual language data. HIRTLE's attempt to account for all the data which are not readily accountable by the traditional «singular = one» / «plural = more-than-one» dichotomy actually forms the inductive basis for the postulation of the system of inner space. Thus, Chapters 2–5 are entitled «Defining the Limits», «The Internal Plural», «Mass Nouns» and «The Use of *s*-ending», respectively. Chapter 7, the final chapter entitled «Prospects», interweaves the theoretical questions and issues raised by the analysis with the specific problematic data which are still to be resolved through further analysis of what HIRTLE postulates as other grammatical issues related to the system of number that go beyond the scope of his present study. Some of these issues include the system of the substantives noun, gender, extension, etc.

In Chapter 1, HIRTLE presents the basic tenets of Guillaumean theory in relation to the specific data unaccounted for by the traditional and other linguistic attempts to explain number in English which have postulated a «single-one» / «plural-more-than-one» dichotomy.[3] HIRTLE presents the problem in the following way:

3 With regard to other sign-oriented approaches: I have seen at least two versions of the system of number for English or in general presented by the Columbia or form-content

Like most grammatical enquiries, this one was undertaken by consulting other grammarians on the problem. It soon became apparent that grammars give quite adequate accounts of the physical sign expressing number in a noun, that is, the *s* ending and the various irregular means of evoking plurality. Many of them even mention zero ending on the noun as the sign for the singular. This initially satisfying state of affairs is due to the fact that a physical sign like *s*-, or the absence of *s*-, is relatively easy to observe. *However, descriptions of the meanings expressed by these signs turned out to be less satisfactory.*

Observers of the mental side agree, of course, on the «singular» and «plural» meanings commonly found, meanings which they explain, or imply, to be equivalent to «one» and «more than one» respectively. *Many grammars go no further than this in their observation of meaning and so were of little value to this study because they leave out most of the data. Those grammars that do go further, however, soon raise real problems. In fact, the further they go in observing meaning, the more problems they pose* (pp. 3–4). (italics mine, Y.T.)

The actual problematic data presented in this chapter include:

(1) s ≠ «more than one»:
  (a) «mass» or «non-countable» nouns, e.g. *snow, water* as well as the apparent «exceptions»: *«The Snows of Kilimanjaro», «the waters of the lake»*. (p. 4)

(2) ambiguous *s*-:
  (a) «The two *crossroads* are being watched.»
  «One *crossroads* is blocked, the other is being watched.» (p. 6)

or

  (b) «The *woods* is on fire.»
  «The *woods* are on fire.» (p. 7)

(3) singular *s*- ending:
  (a) *a wine vaults in High Street*
  (b) *that ungodly surroundings*
  (c) *a stockyards, a picnic grounds, a headquarters, a gas-works* (p. 6)
  (d) *a series, a species* in contrast to their nineteenth century «regular» plurals: *serieses, specieses* (p. 7)

(4) words ending in *-ics:*
  (a) *Phonetics is a branch of linguistics.*
  (b) *His phonetics are weak.* (pp. 6–7)

school. The first version (Reid, 1974: 46) presents the grammatical system of number adopting the traditional meanings of «one» for the zero morpheme and «more than one» for the *s*-ending. The second discussion with regard to the system of number in general appears in Diver (1981: 73) with regard to the notion of opposition in grammatical systems. In this particular presentation, the meanings presented are slightly different: ONE = singular, OTHER (THAN ONE) = plural.

I have relegated these two «analyses» to a footnote since they were only used as hypothetical illustrations for the notion of «grammatical system» and «opposition» respectively, and did not claim to be actual analyses based on data. It would therefore be unfair to present them as valid examples of form content analysis of the system of number to be compared with Hirtle's analysis.

These data confirmed HIRTLE's conviction that *-s* can express more than mere «plurality» but is, nevertheless, a grammatical morpheme. One also has merely to look at the well-known «exceptions» to the notion that the zero ending means «one» to question that analysis:

(a) «singulars signifying a group»; or «collectives»:
  (1) My family are early risers.
  (2) The Edmonton Committee are sponsoring a nine week course.
  (3) The embassy are instructed to...
  (4) The accounts department have opened an account for you.
  (5) Provided the Wheat Board are able to obtain...
  (6) The jury file in one by one.
  (7) Half the hotel were scandalized by her.
  (8) All the jungle fear Bagheera. (p. 9)
(b) «quantifying expressions»: *a bunch of, a crowd of...*
  (1) A crowd of people was/were in the street. (pp. 9–10)
or
  (2) *How a People Die* (p. 10) vs. *the peoples of Europe* (p. 11)
(c) «words that name both species (commonly referred to as ‹generic› – Y.T.) as well as individuals»;
  (1) Bear vary greatly in size.
  (2) Over 200 gazelle a day.
  (3) They shot several elk. (p. 11)
All co-existing with s-plurals: *bears, gazelles, elks...*
(d) «words with only the zero plural»: *cattle, vermin, head* (of cattle)...
(e) «zero plural for naming tribes or human groupings»:
  (1) about 2000 Eskimo living between...
  (2) three resident faculty...
  (3) with their many offspring... (p. 11)
(f) «non-singular ‹one› meaning of ‹mass nouns›».
  There is butter on the table (p. 12)

Thus, HIRTLE establishes that by observing the physical facts of the linguistic forms in actual usage: (i.e. a «zero» can be considered a «plural» and an «*s* ending» can be considered as «singular», etc.), we can see that the meanings traditionally postulated for them are far from accurate.

HIRTLE then addresses the question as to why other analyses view all the above examples as apparent «exceptions» because they accept the pre-conceived meanings as undisputable givens, therefore the «exceptional», i.e., non-systematic uses of *zero* meaning «plural» and *s*-ending meaning «singular», are tacitly accepted. He compares this approach to his own in the following way:

> As long as one takes the meaning for granted and examines only the means of expressing it, zero ending poses no problem because it is just as apt as any other sign to evoke the notion (of plural, Y.T.). ... However, if observation is thus restricted

to the signs, i.e. the physical facet of the phenomen, one's knowledge of the meaning, the mental facet, will remain what it was at the outset. As a consequence there will be no possibility of discerning the hidden system of meaning that underlies and accounts for the use of the signs . . . constituting the paradigm.

We, on the other hand, had started from the assumption that language is systematic in its grammar and that, therefore, number constitutes a system. Since our knowledge of the system was only vague and confused (we knew little more than that it contained singular and plural), the aim of all our efforts was to get a clearer view of it. We too began by observing those manifestations of the system which are more easily observed – the physical signs (-s, Ø, etc.) – but these observations served as a means of getting sight of what is less easily observed, the meanings expressed by the signs. *I repeat, we did not take the meaning for granted as though we knew all about it; on the contrary we were trying (and still are) to see it more and more clearly.* A further consequence of our starting point was that we looked at the physical means of expression from a certain angle: taking the existence of an underlying system for granted led us to view each form of a noun as part of a paradigm, as expressing part of the system. In practice this meant considering zero ending and what it expresses as an entity in itself, as a morphemic unit, and the same for *s*- ending, and then we tried to imagine how the two fit together to form a system. *Assuming the existence of an underlying, hidden system and trying to see all the facts of discourse (both the physical and the mental) in the light of it, as consequences of it, is what characterizes our approach. . . The starting point for any scientific reflection is the assumption that there is a principle, explanation, law, order, system, or what you will, which, once is clearly discerned, can account for all the disparate and even contradictory, observable facts of a phenomenon* (p. 140) (italics mine, Y.T.).

HIRTLE, therefore, is first seeking the abstract system of tongue, i.e., the postulated meaning of each of the forms which will account for all the actual polysemous and contradictory messages they convey in actual discourse. In this way, HIRTLE's approach is similar to all sign-oriented approaches. Where Guillaumean analysis differs from other sign-oriented approaches, however, is in its second postulate which relates the notion of meaning to that of movement:

> Some other approaches to language also postulate, at least implicitly, an underlying mental system but *what characterizes our approach is the further postulate that everything in language is movement, process, operation or the possibility thereof. . . . This postulate is carried to the point where a grammatical system is seen as a process,* a subconscious mental process. Hence the name *Psychomechanics* given to the theoretical approach adopted here (p. 15) (italics mine, Y.T.).

This notion of movement which is fundamental to Guillaumean theory leads us to the third tenet of the theory, i.e. these movements or operations of thought take time. It is these seemingly obvious notions of mental movement in «operative time» which are crucial to HIRTLE's analysis. He does not view the zero morpheme as statically meaning «one», but rather as a movement going from the notion of plurality to that of singularity and, symmetrically, he views the meaning of the *s*- ending not

as merely meaning «more than one», but rather as a movement going from the notion of singularity to that of plurality. This movement, of course, represents a mental operation, and therefore constitutes the basis of the abstract system necessary to understand the substance of number[4].

In Chapter 2 – «Defining the Limits» – HIRTLE deals with the essence of the validation of his theoretical hypotheses. He contends that the analysis must be consonant with the data, all the data, and must be evaluated on this basic principle, while bearing in mind that all qualitative analyses of this sort are inherently tentative:

> The initial phase of our research has provided a view of a system which gives a plausible answer to the first major problem of discourse, that of the two plurals in English. The main lines of the system – movement, form of movement, quantity of movement – have been suggested by the postulates of the theoretical approach adopted and so are a direct outgrowth of the view it provides of the nature of language. The coherence of our views on this theoretical level is thus assured. *Furthermore the system has a first successful encounter with the facts of discourse to its credit. It now remains to continue the back-and-forth movement between observed fact and proposed theory to sharpen and extend our view of both* (italics mine) (Y.T.).
>
> The next phase is often misunderstood. People ask: «But how do you *know* your theory is right? How can you be *sure* that the system is like that?» The answer of course is that one does not «know» and cannot be «sure». The sort of certainty implied by such questions may be attained in matters of personal experience or faith. Science, on the other hand, must be content with mere probability, a greater or lesser degree of it, but never full probability, which would be equivalent to certainty (pp. 33–34).

HIRTLE then expands both the range and scope of his data to examine how they fit in with the system he has proposed and may possibly affect it. The existence of data contradictory to his postulated system would mean, of course, that his proposed analysis was wrong:

> . . . *Of course it is always possible that facts may arrive that contradict the system as imagined in its very principle, in the theory underlying it; in this case adjustments must be made at this more basic level or the theory itself must be abandoned.* This situation has not arisen so far in our work and so, as the system proposed integrates more and more of the observed facts as consequences, we see its plausability, its probability further enhanced. But since one can never be sure of having observed and

4 This notion of movement in general and the particular kind of movement relevant to HIRTLE's analysis have been taken from GUILLAUME as HIRTLE points out:

> GUILLAUME had been consulted time and again both for the general method of analysis and for this reflections on the particular problem of number. In the latter case, much of our work consisted in seeing to what extent these reflections applied to English. On the whole they were found pertinent. This justified the adoption for English of the general system of a single operation in two movements – *the binary tensor device* – as it is called – proposed by GUILLAUME for grammatical number in languages like classical Greek with an internal plural (pp. 31–32).

integrated all the facts, one can never be certain that the proposed theory of number is «right». One must be content with the fact that it can account for the data better than any other theory proposed so far.

Thus, this going back and forth from observed data to proposed system and vice versa is based on the assumption that the system proposed is a valid one and involves drawing forth the foreseeable consequences implicit in it (p. 34) (italics mine) (Y. T.).

The examination of the observed data within the proposed system in Chapter 2 forced HIRTLE to question the original limits of the scope of the movement in the system. The proposed «plural» to «singular» movement for the zero morpheme as well as the «singular» to «plural» movement for the *s*-ending was now postulated to include the notion of a third or maximum scope of «generic» for both. This resulted in a new analysis of a larger movement going from (a) «maximum scope-generic» to (b) «intermediate scope – more than one» to (c) «minimum scope-one». The direction of this new extended movement went in the direction of «maximum-generic» – «intermediate-more than one» – «minimum-one» for the zero ending and conversely from «minimum-one» – «intermediate-more than one» – «maximum-generic» for the *s*-ending. The following examples (1a–b, 2a–b, 3a–b) illustrate the three scopes:

Zero Ending	*s-Ending*
(1) *Maximum Scope – «Generic»:*	
(a) Herring travel in large shoals.	(b) Herrings travel in large shoals.
(2) *Intermediate Scope – «More Than One»*	
(a) We bagged three elephant that day.	(b) We saw three elephants at the zoo.
(3) *Minimum Scope – «One»*	
(a) We came to a crossroad.	(c) We came to a crossroads.

The addition of «maximum-generic» scope to the traditional notions of plural (now viewed as «intermediate scope-more than one») and singular (now viewed as «minimum scope-one») had the following effect on the proposed system:

The nuance of meaning distinguishing Ø from *-s* may be readily observable or may be so slight as to be practically imperceptible, but there always seems to be at least some fleeting hint of meaning separating the two. *These nuances arise from the difference between the two movements: the former, a contracting movement toward the singular, gives rise initially to a «generic» sense and finally to a «one» sense, the latter movement, expanding in form and starting from the singular, gives rise initially to a «one» sense and finally to a «generic» sense. Furthermore in both cases all possibilities of variation in the scope of any particular noun – from maximum to minimum – are provided for* (p. 46) (italics mine) (Y. T.).

. . . However we hesitated to suggest that the system was based on a discussion of the singular/generic relationship rather than the singular/plural relationship because a singular/generic relationship could hardly be a number relationship. *Adopt-*

ing this new relationship would, it seemed, entail redefining the system in terms other than those of number. But in terms of what? (pp. 46–47) (italics mine) (Y.T.).

Thus HIRTLE saw that his analysis had transcended the traditional view of number but still was not able to account for all the data:

> . . . We had used the notion of «scope» without examining – without feeling the need to examine – its implications and so were ill prepared to tackle the problem (of what the actual substance of the system is) (Y.T.). Besides, there was no desire to adopt a position different from that of every grammarian we had consulted. And yet, if the observations of these same grammarians were valid, then «generic» senses had to be integrated into the possibilities of the system, and this none of them had managed to do. We were, therefore, in a bit of a quandary. Strongly in favour of the system we had worked out were its coherence and exhaustiveness – exhaustiveness from the point of view of scope and for the sorts of usage considered so far. But it should not be forgotten that the possibility of producing «mass» nouns (i.e. nouns without a singular «one» sense) had not yet been integrated into the system. Not until it was, did we get a clearer view of the basis or «substance» of the system, of what the system is all about (p. 47).

Chapter 3 – «The Internal Plural» – sheds further light on the difference between singular and plural. In this chapter, the data are not based on the notion of «verb agreement» but rather that of collocation with «determiners», establishing a distinction between «external» and «internal» plurals. This can be illustrated by the collocation of the word «people»:

> *People* also provides a justification for the distinction made above between collectives and internal plurals because it can be used in either way. As an internal plural, that is, as a noun grammatically prehended (sic) as a plural in its very make-up, *people* takes plural determiners like *many, few, these,* etc. As a collective, that is, as a noun which lexically involves a plurality of individuals but which is grammatically prehended as a singular, *people* takes singular determiners like *one, this, every,* etc. But beyond the word level, on the syntactic level, the collective people as part of the noun phrase can be taken as either singular or plural . . . (p. 64)

These and other data further clarified HIRTLE's proposed system by making a further distinction between internal plural representing a number of individuals as basically one («continuate») versus the external plural which presents them as separate individuals («discontinuate»).[5] This continuate/discontinuate dichotomy is therefore a major breakthrough for HIRTLE's analysis:

5 Here too (cf. fn.4) HIRTLE has adopted the notions of «continuate» versus «discontinuate» from the work of GUILLAUME:

> Somehow or another there is a grammatical discreteness in the *s*-plural. We realized the implications of this particular opposition thanks to a number of texts in GUILLAUME's writings (e.g. 1971, 211–212) where the system of number is presented as basically contrasting the continuate and the discontinuate (p. 76).

> One important advantage of viewing number in this way is that the continuate/discontinuate opposition is more general than the singular/plural opposition. To begin with, if we understand «continuate» in its obvious sense of «occupying a single stretch of space», then it can readily be seen that both «mass» nouns (like *butter* and *glass*) and singular «count» nouns (like *the book, a glass* and *Montreal*) are represented as continuates, the difference between the two arising from another aspect of the system, as we shall see in the next chapter. Furthermore, the continuate/discontinuate opposition can account for any ordinary zero singular/s-plural contrast (e.g. *a book/several books*): the singular of necessity evokes a continuate (a single entity), the plural, a discontinuate (several entities seen as occupying discrete places in space). Moreover, as we have just seen, this more fundamental opposition can also account for the contrast between the two plurals of English, a contrast which cannot be accounted for on the basis of the singular/plural opposition. In fact, singular vs. plural is just one particular case of the more general continuate vs. discontinuate opposition.
>
> Another advantage to viewing the basis of the system this way is that it throws further light on the potential meanings of the two morphemes involved in it. We can now see that zero ending has as its potential meaning a movement from maximum scope to minimum scope *in the field of the continuate* and that *s*-ending has as its potential meaning a movement from minimum to maximum scope *in the field of the discontinuate* (pp. 66–67).

This establishment of a continuate/discontinuate dichotomy, however, did not complete HIRTLE's view of the system. On the contrary, it forced him to face the most fundamental issue: i.e. to figure out what the semantic «substance» underlying the continuate/discontinuate dichotomy was actually composed of. This was only achieved by dealing with «mass» nouns, a still very problematic part of his data, which his proposed system still did not account for.

The answer to this most crucial question of what is the semantic substance of the number system is found in Chapter 4 – «‹Mass› Nouns». HIRTLE finds his answer in GUILLAUME's theoretical view of the parts of speech (GUILLAUME, 1971: 144). According to GUILLAUME, a noun not only signifies its lexical meaning (a person, thing, etc.), it also cosignifies (i.e. has the grammatical meaning) *space.* Thus, the concept of space and the movement within space, i.e. *inner space,* is now seen as the semantic substance of the system of number:

> . . . A noun has as its grammatical meaning a formal (i.e. grammatical) representation of space, whereas a verb has a formal representation of time. Or more simply, a noun represents something in space, a verb something in time. Reflecting on this conception of the noun brought out an obvious, even necessary, point, to represent something in space involves representing it as occupying space. *A spatial entity must be seen not only as contained in space but also as extending through some portion of the space it is in, as containing some portion of that space.* In other words, a noun signifies lexically some entity and in addition signifies grammatically (cosignifies) both the space that entity is in and the space that is in it. *Further reflections suggested*

> *that it is the latter, the space represented as contained in the lexically signified entity, which constitutes the «substance» of the system of number. Number represents inner space* (p. 90) (italics mine) (Y.T.).

From this breakthrough in HIRTLE's analysis we can now see that the notion of scope is the actual contextual sense of any given noun, i.e. its discourse sense or message. Scope is now viewed as a characteristic of a noun as actualized in discourse, while the entire potential range, i.e. from «maximum-generic» to «minimum-one» is the underlying system of tongue whose substance can now be viewed as belonging to the semantic substance of inner space.

This, in essence, completes HIRTLE's analysis. The rest of the book further clarifies and refines the subtleties of the system by tying together the loose ends of the data with the theory, and drawing attention to those still problematic points in the data which will involve further analysis of other related grammatical systems such as that of the substantive noun, the article (HEWSON, 1972) and gender. HIRTLE has thus presented us with a new abstract system of *langue* or tongue, based on a sign-oriented theory which can explain the concrete realization of the use and distribution of the zero and *s*-ending morphemes in *parole* or discourse. His analysis is innovative because of the particular theory he has adopted which provides him with the theoretical hypotheses and the methodology to explain the language data. HIRTLE himself summarizes his analysis in the following way with regard to the abstract system as it is related to the concrete discourse data:

> The very fact of proposing a system of grammatical number for all nouns means that it must be sufficiently general to accomodate the variations involved in occupying space, variations concerning both the quantity of space and the manner of occupying it. Quantitatively, the system must allow for the notion to occupy different spaces or scopes: anything from its total possible scope (equivalent to the notion's extension) to the smallest scope possible for the notion. Mannerwise, the system must allow for the space occupied by the notion to be represented as either an unbroken stretch or a series of discrete stretches. Furthermore the two parameters must be combined in such a way that any possible scope can be evoked in either manner of representing space (p. 123).
>
> . . . This is the essential of the system in tongue. It implies that any noun with the zero ending will evoke contained space as a continuum, and any noun with the *s*-ending will evoke contained space as a discontinuum. The potential meaning of each of these endings can be actualized in different ways in discourse, thus giving rise to different senses (p. 125).

Schematically, HIRTLE's system appears as follows:

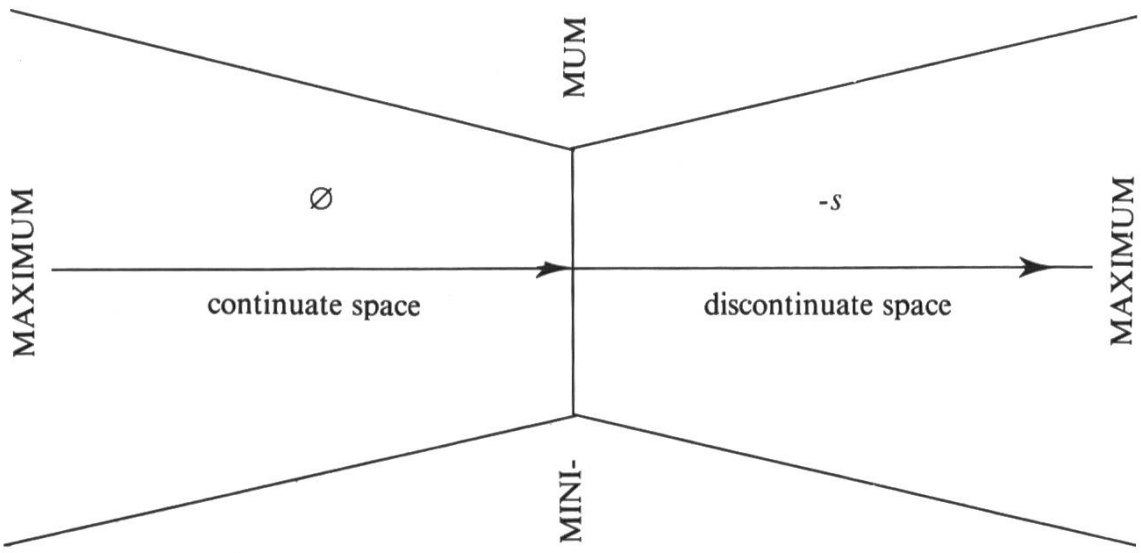

Figure 1: (taken from HIRTLE 1982: 125)

Thus, HIRTLE's analysis certainly may be viewed as representative of a particular sign-oriented school within the very notion of structuralism, as I have outlined it at the beginning of this review. There are many points where the theory of psychomechanics can be compared and contrasted with other sign oriented theories (cf. fn. 1 and TOBIN forthcoming (b)). Very briefly, the notion of sign and the kinds of meanings postulated for signs by the different sign-oriented theories may differ slightly, but the fundamental dichotomy between the abstract sign meaning (of *langue*) versus the specific messages, i.e. the actual discourse contextual senses (of *parole*) is shared by the three major sign-oriented schools I have mentioned. HIRTLE's avoidance of experimental and/or quantitative statistical data as part of the methodological validation of his postulated sign-meanings (pp. 7–8) is very different from the quantitative validations currently being presented in other sign-oriented research (GARCÍA, 1983; GARCÍA and VAN PUTTE, 1983; KIRSNER, 1983; KLEIN-ANDREU, 1983). This methodological issue of quantitative validation may prove to be very important for sign-oriented linguistic research in the future. Another striking difference is HIRTLE's basic acceptance of the traditional categories of parts of speech or variations thereof and the notion of syntax (pp. 50–51, 68–69, 74, 86, fn. 1, 89–90, 83, 137, *et passim*) and their role in his analysis. This use of grammatical categories differs greatly from some other sign-oriented approaches that reject these preconceived categories (SAUSSURE, 1959: 105–106; GARCÍA, 1979: 47; KIRSNER, 1979; 107 (fn. 2), TOBIN, 1982: 341–342).

HIRTLE's book should be essential reading to all linguists, especially those interested in sign theory. It is well-written and the author provides the reader with «signposts» to help him follow the intricate development of the analysis. The enjoyment of reading is slightly marred, however, by many typographical errors both in the text (p. 14 alone has 3), and even in the data (pp. 52, 136) as well as by incomplete or scanty references in footnotes or works noted (e.g. M. WICKENS, p. 101, fn. 1). The interested reader may also be annoyed that the many grammars consulted by HIRTLE can only be ascertained by scanning the references because they are usually only alluded to in the text. However, despite this petty cavilling, I have found HIRTLE's book to be challenging and provocative in its approach, thorough in its handling of data, and enjoyable because of the author's humility and lack of pretension. It clearly shows that theory helps us see new facts and may force the analyst to confront these facts head-on with rewarding and fruitful results. The theory of the psychomechanics of language should be better known to the linguist public, whether one agrees with it or not.

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References

BLACK, Max (1962): *Models and Metaphors,* Ithaca, Cornell University Press.
CHOMSKY, Noam (1957): *Syntactic Structure,* The Hague, Mouton.
CHOMSKY, Noam (1965): *Aspects of the Theory of Syntax,* Cambridge, MIT Press.
DIVER, William (1975): Introduction, *Columbia University Working Papers in Linguistics 2,* 1–26.
DIVER, William (1981): «On defining the discipline», *Columbia University Working Papers in Linguistics 6,* 59–117.
ECO, Umberto (1979): *The Role of the Reader,* Bloomington, Indiana University Press.
GARCÍA, Erica C. (1975): *The Role of Theory in Linguistic Analysis: The Spanish Pronoun System,* Amsterdam, North Holland.
GARCÍA, Erica C. (1979): «Discourse Without Syntax», in T. Givón, (ed.) *Discourse and Syntax,* New York, Academic Press, 23–50.
GARCÍA, Erica C. (1980): «*Marta Riquelme* cargada criolla?», *Romanistisches Jahrbuch 31,* 364–382.
GARCÍA, Erica C. (1983): «Quantity into Quality: Synchronic Indeterminancy», Paper given at Workshop on Functional Causes of Language Change and Language Variation, Amsterdam, December 20, 1983.
GARCÍA, Erica C. and Florimon VAN PUTTE (1983): «Native and Non-Native Use of an Opposition: Contrasting Proficiencies», paper read at the June 1983 Leiden Symposium «Applying Linguistics: Where Theory and Practice Meet».

GARVIN, Paul (1964): «Karl Bühler», *Language,* 40, 633–635.
GARVIN, Paul (1966): «Karl Bühler's contribution to the theory of linguistics», *Journal of General Psychology 75,* 212–215.
GOODMAN, Nelson (1968): *Language of Art,* Indianapolis, Bobbs-Merrill.
GUILLAUME, Gustave (1971): Leçons de Linguistique 1948–1949 B. Psycho-Systématique du Langage-Principes, Méthodes et Applications I, Québec: Presses de L'Université Laval.
GUILLAUME, Gustave (1973): *Principes de Linguistique Théorique.* Québec, Presses de L'Université Laval.
HEWSON, John (1972): *Article and Noun in English,* The Hague, Mouton.
HIRTLE, Walter H. (1975): *Time, Aspect and the Verb,* Québec, Presses de L'Université Laval.
HJEMSLEV, Louis (1969): *Prolegomena to a Theory of Language,* Translated by Francis J. Whitfield, Madison, University of Wisconsin Press.
JAKOBSON, Roman (1936): «Beitrag zur allgemeinen Kasuslehre», *Travaux du Cercle Linguistique de Prague 6,* 240–288. (Reprinted in *Selected Writings 2,* 23–71.
JAKOBSON, Roman (1957): *Shifters, Verbal Categories and the Russian Verb,* Cambridge, Russian Language Project, Harvard University (reprinted in *Selected Writings 2,* 130–147).
JAKOBSON, Roman (1971): *Selected Writings 2,* The Hague, Mouton.
KIRSNER, Robert (1979): *The Problem of Presentative Sentences in Modern Dutch,* Amsterdam, North Holland.
KIRSNER, Robert (1983): On the Use of Quantitative Discourse Data to Determine Inferential Mechanisms in Grammar, in Klein-Andreu 1983, 237–258.
KLEIN-ANDREU, Flora (ed.) (1983): *Discourse Perspectives on Syntax,* New York, Academic Press.
KLEIN-ANDREU, Flora (1983): «Grammar in Style: Spanish Adjective Placement», in Klein-Andreu (1983), 143–180.
KOERNER, Konrad (1984): «Karl Bühler's Theory of Language and Ferdinand de Saussure's *«Cours», Lingua 52,* 3–24.
LEPSCHY, Giulio (1970): *A Survey of Structural Linguistics,* London, Faber and Faber.
POLANYI, Michael (1976): *Meaning* (with Harry Prosch), Chicago, University of Chicago Press.
REID, Wallace (1974): «The Saussurian sign as a control in linguistic analysis?» *Semiotexte 1:2,* 31–53.
RICOEUR, Paul (1977): *The Rule of Metaphor,* Translated by Robert Czerny, Toronto, University of Toronto Press.
SACKS, Sheldon (ed.) (1979): *On Metaphor,* The Hague, Mouton.
SAPIR, Edward (1921): *Language,* New York, Hartcourt, Brace.
SAUSSURE, Ferdinand de (1959): *Course in General Linguistics,* New York, McGraw Hill.
SEBEOK, Thomas (1981): «Karl Bühler: A neglected figure in the history of semiotic inquiry». In T.A. Sebeok (ed.), *The Play of Musement,* Bloomington, Indiana University Press, 91–108.
VAN SCHOONEVELD, C.H. (1978): *Semantic Transmutations: Prolegomena to a Calculus of Meaning I: The Cardinal Semantic Structure of Prepositions, Cases, and Paratactic Conjunctions in Contemporary Standard Russian,* Bloomington, Physsardt Publishers.
TOBIN, Yishai C. (1982): «Asserting one's existence in Modern Hebrew: A Saussurian-based analysis of the domain of attention in selected «existentials», *Lingua 58,* 341–368.
TOBIN, Yishai C. (forthcoming (a)): «Phonetics versus Phonology: The Prague School and Beyond», in Y. Tobin (ed.) *The Prague School and its Legacy.*
TOBIN, Yishai C. (forthcoming (b)): «Roman Jakobson's sign-oriented theory in contrast with other contemporary sign-oriented approaches», to appear in the proceedings of the First International Roman Jakobson Conference, «New Vistas in Grammar».
VALIN, Roche (1981): *Perspectives Psychomécaniques sur la Syntaxe,* Québec, Presses de L'Université Laval.

WAUGH, Linda R. (1977): *A Semantic Analysis of Word Order: Adjective Position in French,* Leiden: E.J. Brill (Cornell Linguistics Contributions) – Preface by Roman Jakobson.
WHEELRIGHT, Philip (1962): *Metaphor and Reality,* Bloomington, Indiana University Press.
WHEELRIGHT, Philip (1968): *The Burning Fountain,* Bloomington, Indiana University Press.