

STRUCTURALISM IN LINGUISTICS

Introduction

It is not my purpose here to give a historical treatment of linguistic ideas, nor it to distinguish and analyze the various approaches and schools of thought generally subsumed under the heading of Structuralism. Rather, I propose to look at the general features characterizing structuralism as seen and treated by structuralists and further to see how it has come to be viewed by Chomsky and other transformationalists.

Structuralism in linguistics has come to be used to mean various things, from the capacity for abstraction in organizing a model for ‘the cataloguing of languages structures and ... the comparing of structural types’ (Harris, 1951:3) to what the transformationalists have come to label as ‘taxonomic’ model with its ‘reliance on procedures of segmentation and classification, and on statements of syntagmatic and paradigmatic distribution’ (Chomsky, 1964: 11). In a first step, it is useful to talk about the general features of structuralism rather than the details elaborated by various structuralist practitioners, for the latter ‘are talking about the same thing, and struggling toward the same goal’ (Haugen, 1951: 214).

Structure and system

The idea of structure presupposes the reduction or breaking down of linguistic segments or features. Also, to speak of a structure presupposes a notion of unity existing above particular segments or features, of a whole above the composing and functioning elements. The latter, connected with each other and their regular occurrences arranged on distributional grounds and relations, are ordered in a system. The notion of system here is to be contrasted with the idea of inventory – a non-ordered list of elements – that was important and prevalent at one stage in the development of linguistics (e.g. Neogrammarians, followers of Darwinian theory, or even in the introspective and normative approach so much in use in traditional linguistics during the Renaissance and after).

It is expedient, when speaking of structuralism, to assess de Saussure’s and Bloomfield’s views and conceptions, and then see the development from there to newer directions in modern linguistics. In fact, the origin of the tendency towards a scientific linguistics is frequently seen in ‘une double influence : celle de Saussure en Europe, celle de Bloomfield en Amérique. Les voies de leur influence respective sont d’ailleurs aussi différentes que les œuvres dont elles procèdent’ (Benveniste ; 1966 : 7).

De Saussure

De Saussure did not explicitly use the notion of “structure”; for him the essential notion was that of “system”. He was, however, a pioneer in making explicit some fundamental and indispensable dimensions in linguistic study. One important foundation is the double distinction ‘synchronic/diachronic’ and ‘langue/parole’. The first distinction points the necessity of studying linguistic phenomena either from the synchronic point of view (axis of simultaneities) or from the diachronic point of view (axis of successions). Both studies can be said to be important and scientific but, de Saussure says, ‘the basic difference between successive and coexisting terms, between partial facts and facts that affect the system, precludes making both classes of fact the subject matter of a single science’ (De Saussure, 1959: 87). Thus, ‘the synchronic and diachronic “phenomenon” ... have nothing in common. One is a relation between simultaneous elements, the other the substitution of one element for another in time, an event’ (De Saussure, 1959: 91). The comment to make here is that this requirement need no longer be of necessity, or as one linguist explains, “that structural dialectology need

not be restricted to historical problems ... Consequences of partial differences between varieties can be synchronic as well as synchronic' (Weinreich, 1954: 390).

The second distinction is between "langue" – the whole set of linguistic signs and habits 'deposited' within each individual in form and determining the use of grammar, phonology and vocabulary –, and "parole", seen as speech-utterances, i.e., as the actualization of "langue" at a precise moment by a particular individual. The linguistic signs have two important characteristics: they have an "arbitrary" nature and a "linear" nature.

In another statement observed in structural linguistics, elements are seen as composing a network and are identified and known synchronically by their place in the 'syntagmatic' relation and in the 'associative' (paradigmatic) relation. To be more specific, and to quote de Saussure, 'whereas a syntagm immediately suggests an order of succession and a fixed number of elements, terms in an associative family occur neither in fixed numbers nor in a definite order' (De Saussure, 1959: 126). (It should be noted here that the term "paradigmatic" was suggested by Hjelmslev (1936), and has become a current term for de Saussure's term "associatif").

Bloomfield and Post-Bloomfieldians

At this stage, and with respect to the issue of defining linguistic elements and categories and the relations that hold between them, it is expedient to talk about American structuralism. Here, the name of Leonard Bloomfield must be mentioned although it is commonly held that American structuralism is more post-Bloomfieldian than Bloomfield per-se. The post-Bloomfieldians (cf. Bloch, Harris, Hockett, and others) developed a system of mechanical procedures for the analysis of linguistic structures, and methodological statements (frameworks) with distribution as the criterion of relevance: that was an attempt to get away from analytical operations that would have to refer to 'meaning' as was the case for Bloomfield, for whom 'the study of speech-sounds without regard to meaning is an abstraction' (1933: 139), and whose trouble was that 'the statement of meaning is ... the weak point in language study, and will remain so until human knowledge advances very far beyond its present state' (1933: 140).

Phoneme, morpheme, and linguistic analysis

Bloomfield used two fundamental units of linguistic description with which American structuralism became particularly associated: 1) the phoneme ... 'a minimum same of vocal feature ... or distinctive sound' as a unit of phonology, and 2) the morpheme ... 'a recurrent (meaningful) form which cannot in turn be analyzed into smaller recurrent (meaningful) forms' as the unit of grammatical structure (Bloomfield, 1926: 156-157). Bloomfield later defined the morpheme (or 'simple form') as a 'form which bears no partial phonetic-semantic resemblance to any other form' (1933: 161).

Post-Bloomfieldians concentrated on both concepts and found fault with Bloomfield's morpheme when applied to languages other than agglutinative languages like Japanese and Turkish. In fact, the latter are not complicated by much morphophonemic change at the easily established boundaries between bases and endings, which is neither the case for the highly inflectional (synthetic) languages like Latin nor for the uninflected (analytic) languages like Chinese. Equally, 'Bloomfield's view of the phoneme as a feature present in the sounds or sound-waves has been shown to be untenable (cf. Twaddell's *On Defining the Phoneme*, 1935) and is no longer widely accepted among descriptive linguists' (Bloch, 1948: 4).

However, many contributions have been made in morphology after Bloomfield, particularly in the 1950's which saw developments in morphological studies just as the 1940's saw a big interest in

phonology. In 1954, Hockett, in his “Two Models of Grammatical Description”, distinguishes two ‘frame(s) of reference within which an analyst approaches the grammatical phase of a language and states the results of his investigation’ (p.386):

- 1) ‘Item and Arrangement’ (IA) whereby the inventory of morphemes is specified before the sequences and the clusterings they form. Thus, ‘the structure of the utterance is specified by stating the morphemes and the arrangement’ (387). This frame of reference is seen to be inadequate for fusional languages, thus not satisfying the criterion that ‘a model must be general: it must be applicable to any language, not just to languages of certain types (398).
- 2) ‘Item and Process’ (IP) gives priority to one form or item and derives others from it by means of a process represented by a ‘marker’ which ‘consists of the differences between the phonemic shape of a derived form and the phonemic shape(s) of the underlying form or forms’ (396). One criticism leveled against IP comes precisely from this: ‘How are we to tell under what conditions to interpret a derived form as involving two or more underlying forms and a binary or higher-order process, and under what conditions to interpret it as involving a single underlying form and a singular process’ (397). We may, en passant, say that this criticism could also be leveled against transformational-generative grammar with its IP approach, and this despite the strange claim made by Postal that IA and IP ‘are equivalent; differing only terminologically with the term “process” replacing the term “construction”’ (Postal, 1967: 29), and despite his rejection of both IA and IP as Phrase-Structure Grammar (PSG) systems.
- 3) One important development in morphological studies was the revival of interest in ‘Word and Paradigm’ (WP) – a third model mentioned but not explored by Hockett -, and its formalization later by Robins (1959). In WP, the word is ... ‘central unit, and the grammatical words (...) are the minimal elements in the study of syntax. At the same time, the intersecting categories form a framework or matrix within which the paradigm of a lexeme may be set out’ Matthews, 1974: 67). The word then is taken and analysed as a whole, and its features and properties are neither morphemes in ‘arrangement’ nor requiring a ‘process’, but properties of the word as a whole.

In structuralist studies, the morpheme came to be defined on distributional grounds (and similar treatment of the phoneme was to follow), for distribution is the criterion of relevance in linguistic description (cf. Harris, 1951, Methodological Preliminaries). In phonology and looking back a little, bearing in mind the distinction between the notions of inventory and that of system, one may say that de Saussure’s *Cours* had all the prerequisites of a phonological theory but no phoneme theory. Daniel Jones’s theory itself – the phoneme as a group of speech-sounds established for practical purposes, namely phonetic transcription – proved inadequate for linguistic purposes, for it comprised an inventory (a non-ordered list) rather than a system with a network of relationships between the units concerned. The same criticism will come to apply, although at a different level, to the Saussurean concept of “langue” as an inventory or a repository, or, to quote, as a ‘sum of impressions deposited in the brain of each member of the community, almost like a dictionary of which copies have been distributed to each individual’ (de Saussure, 1959: 19).

Later, new directions in structural linguistics led in the area of phonology to the development of phonemic distinctiveness. This was a fundamental concept significantly elaborated by Trubetzkoy in his theory of the phoneme. In this respect, his “Rules for the Determination of Phonemes” (1969, Part I) are important, and the whole work points to the idea of system (as opposed to Daniel Jones’s inventory, for example). Systems are viewed as psychological realities and analysed independently. In a single system, one looks for phonological symmetry, seen as a patterned exploitation of distinctive or “pertinent” features. Trubetzkoy asserts that ‘the phonemic inventory of a language is actually only a corollary of the system of distinctive oppositions. ... In phonology the major role is played, not by the phonemes, but

by the distinctive oppositions. Each phoneme has a definable phonemic content only because the system of distinctive oppositions shows a definite order or structure' (Trubetzkoy, 1969: 67).

The phoneme thus became a theoretically fundamental element in linguistic description and analysis. In America, and following Bloomfield, phonemic analysis received careful attention and many valuable insights are found in Bloch's (1948) important article. However, like the morpheme, the phoneme is defined by distributional procedures (and we shall see some criticisms when dealing with 'taxonomic phonemics')

IC analysis and PSG

When attempting to define structuralism in linguistics, it is also necessary to talk about Immediate Constituents (IC's for short) and, following this, Phrase Structure grammar. In IC analysis the sentence is to be divided into its constituent elements. This operation is carried out with the help of the concept of "substitution" or "expansion" so central in structural studies. The approach is mechanical, a discovery procedure whose fundamental aim is to 'analyse each utterance and each constituent into maximally independent sequences – sequences which, consistently preserving the same meaning, fit in the greatest number of environments and belong to focus-classes with the greatest possible variety of content' (Wells, 1947: 190). Here, 'the focus is any sequence ... replaceable by other sequences; correlatively, the rest of the sentence is the environment of such a sequence' (189).

Phrase structure grammar, formalized by Chomsky (1957), is seen as based on IC analysis in its segmentation and parsing procedures. However, it is more "powerful" than IC analysis, but it is still inadequate 'as a means of describing English sentence structure' (Chomsky, 1957: 35). It must be remembered nevertheless that formalized PSG plays a necessary part in transformational theory.

Structuralist approach: a résumé

In résumé then (and before looking at structuralism as seen by Chomsky), a structuralist approach in its general framework looks at the syntactic relations which are defined and exhibited in terms of operations. Substitution, or expansion, is a fundamental means of doing this. To analyse the syntactic cohesion between elements, the concept of co-occurrence is exploited to form higher levels – constructions such as word and phrase. For this, two kinds of syntactic cohesion are generally (if not necessarily) sought and applied: syntactic dependence and paradigmatic reducibility. In other words, 'the assignment of syntactic categories to the constituents of a sentence is determined by their syntactic potential, i.e., by precisely the same syntagmatic and paradigmatic relations which characterize their groupings in sentential functions' (Haas, 1972). Incidentally, this fairly comparatively 'recent' formulation shows that, even way into the 1970's, there still was some revival in the interest for analytical (operational) structuralism, 'interrupted in its progress by the rise of generative transformational grammar' (Haas, 1978: 304).

'Taxonomic' model

Now, structuralism as seen by Chomsky is a fairly different picture. Chomsky and other transformationalists refer to structural linguistics as 'taxonomic'. This means that structuralism is a procedure of classification, somehow an end in itself. The important operations are based, as explained above, on paradigmatic and syntagmatic distribution. Also, the taxonomic model is seen as a context-free formalization which, in its syntactic component for example, has an unordered set of rewrite rules (cf. rules as developed in Harris, 1946).

For Chomsky, structural linguistics failed to consider the “creative” aspect of language. In dealing with “competence”, he would have one form basic and derive the others by rules which are ordered. The syntactic component of a grammar ‘generates SD’s (structural descriptions), each of which consists of a surface structure and a deep structure’ (Chomsky, 1966: 16). In the argument concerning the goals of linguistic theory and the means of achieving them, Chomsky says that structural linguistics is concerned with “observational adequacy”, thus achieving the “lowest level of success”. To put it differently, it is concerned with ‘that layer which is immediately apparent to the analyst. This ... layer ... constitutes surface grammar’ (Hockett, 1958: 249). In other words, Chomsky would say that the taxonomic model lacks a “deep structure”.

In the related area of phonology (‘taxonomic phonemics’), Chomsky finds that structuralists rely much on ‘procedures of segmentation and classification (identification of variants)’ (1964: 75). In this respect, and for example, the concept of bi-uniqueness – getting uniquely from phoneme to phonetics and uniquely from phonetics to phoneme – poses many problems; it is found, particularly, to be inconsistent with the principle of complementary distribution so central to taxonomic phonemics. In fact, Chomsky says, the principle of complementary distribution is ‘the principle of bi-uniqueness converted into a procedure’ (91). Other conditions (in what Chomsky calls a “perceptual model”) like linearity and invariance are found to be limited. And when any fault was found in concepts or principles of taxonomic phonemics, there have been ‘ad hoc revisions of a basically inadequate notion’ (86). On parallel lines, taxonomic phonemics insists on the separation of levels of linguistic analysis as a methodological argument, which can be interpreted as ‘requiring that the level of systematic phonetic representation must be “rationalized” and converted to a level of taxonomic phonemic representation without reference to any morphological or syntactic information’ (100). Conditions like this (in what Chomsky calls an “acquisition model”) and the attempt to define grammatical relations in terms of co-occurrence and, in general, ‘...the emphasis on elementary procedures of segmentation and classification’ (111) along with the conditions stated above in the “perceptual model”, have led both models to the failure ‘to come to grips with the “creative” aspect of language use, that is, the ability to form and understand previously unheard sentences’ (111).

A concluding remark

It may be noted that it is difficult to assess structuralism easily. There are many conflicting views and dimensions which, as Chomsky himself notes, ‘illustrate a general ambivalence concerning goals, (and this) makes evaluation of modern taxonomic linguistics on its own terms rather difficult’ (1964: 98). It is also difficult to disparage structuralism as having totally failed in putting forward important and new ideas in the linguistic field, just as it would be absurd to claim that the transformationalists have created a totally original way of looking at language. The gains of both are important to linguistic theory. It should be fair to say that ‘even the most radical innovations of the more recent past could not do otherwise than adopt the original achievements of structural linguistics and make them the basis for their new departures. Modern linguistics IS structural linguistics’ (Haas, 1978: 294).

Chomsky has practically tried to reject structuralism (I should say model of structuralism) on the grounds that it is behaviouristic, atomistic, taxonomic, mechanical, etc., and tried to build a theory ‘supported’ by connotatively converse labels to these. However, and whatever the label, linguistics needs ‘in the near future more particular theories and less Theory’ (Bolinger, 1975: 553). This ‘adolescent science ... has temporarily outgrown itself’ ... (and) adolescence is noted for appropriating the past and repudiating any debt to it, for discovering loyalty, faith, love, and the verities as if they had never existed before’ (554).

References & Bibliography

The abbreviation *RIL* followed by figures at the end of an item corresponds to *Readings in Linguistics*, edited by M. Joos (1957). The pagination used in the text will then refer to the pagination in *RIL* for that particular item.

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