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Sommaire

HENRI WITTMANN, McGill University

Two models of the linguistic

mechanism*

WHEN FERDINAND DE SAUSSURE, the eminent linguist, died in 1913, no publications had resulted from his teachings in general linguistics. After his death, however, several of his disciples published his university lectures from notes taken down by students in class and from Saussure's personal notes.[1] Today, half-a-century later, the full implications of Saussure's teachings have still to be elaborated. For a long time, American scholars seemed particularly reluctant to turn to the Cours; reviews or critiques were few and far between.[2] In the words of Einar Haugen: "Rarely does one see a reference in American writings on linguistic theory to the works of de Saussure, Trubetzkoy, or other European writers, although they were the thinkers who gave us the instruments with which we work. I yield to no one in my admiration for Bloomfield and Sapir; but I regard it as a kind of provincialism to suppose that all sound linguistics began with them."[3] This state of affairs changed rather quickly with the 1959 English translation of the Cours[4] after which the work enjoyed rather unprecedented success. To give only one instance, Noam Chomsky, who had made no important references to Saussure before 1959, referred to him frequently after that date.

[1]Cours de linguistique générale (Geneva, 1916).
[2]See especially R. S. Wells, "De Saussure's System of Linguistics," Word 3 (1947), pp. 1-31; J. T. Waterman, "Ferdinand de Saussure: Forerunner of Modern Structuralism," Modern Language Journal 40 (1956), pp. 307-9.
[3]Lg. 27 (1951), p. 211.
[4]Course in General Linguistics (New York, 1959). Translated by Wade Baskin.

Chomsky, while rejecting some of the Saussurian assumptions, integrates others into his own transformational model. "The generative grammar internalized by someone who has acquired a language defines what in Saussurian terms we may call *langue*."[5] Saussure's "parole" is equated to Chomsky's own "performance"; the description of intrinsic competence provided by the grammar (langue) is not to be confused with the account of actual or potential performance, as Saussure emphasized himself. "The classical Saussurian assumption of the logical priority of the study of *langue* (and the generative grammars that describe it) seems quite inescapable."[6]

Chomsky's generative grammar consists of two components: the syntactic one and the phonological one. The syntactic component generates strings of formatives (minimal syntactically functioning elements) and specifies their structural interrelations. The phonological component converts a string of formatives of specified syntactic structure into a phonetic representation. Comparing his phonological component with the analogous parts in Saussure's theory, Chomsky concludes that their respective positions are very close to each other.[7] Thus he defends Saussure against the criticisms formulated by R. S. Wells. In broader terms, Chomsky agrees with Saussure that the linguistic intuition of the native speaker provides, in the case of a particular language, the ultimate test of adequacy for a linguistic description.[8]

Of course, we can only be pleased by Chomsky's acknowledgements. Yet, it is also our duty, however disagreeable, to examine the instances in which his intuition failed him to an extent where he had this to say about Saussure:

... the semantic aspect of *langue* was not discussed .... A more serious difference, however, is that for de Saussure *langue* is basically a store of signs with their grammatical properties, that is, a store of word-like elements, fixed phrases and, perhaps, certain limited phrase types. He was thus quite unable to come to grips with the recursive processes underlying sentence formation and he appears to regard sentence formation

[5]N. Chomsky, "The Logical Basis of Linguistic Theory," Preprints for the Ninth International Congress of Linguists (Cambridge, Mass., 1962), pp. 509–74; see p. 510. Cf. also Handbook of Mathematical Psychology, Vol. 2 (New York, 1963), pp. 327–30.
[6]Ibid., p. 510.
[7]Ibid., pp. 531, 532, 553 f.
[8]Ibid., p. 514.

as a matter of *parole* rather than *langue*, of free and voluntary creation rather than systematic rule. There is no place in his scheme for rule-governed "creativity" of the kind involved in the ordinary, everyday use of language ... He makes no distinction ... between the kind of "creativity" that leaves the language totally unchanged (as in the production—and understanding—of new sentences, an activity in which the normal adult is constantly engaged) and the kind that actually changes the set of grammatical rules (analogic change) ... Modern linguistics is much under the influence of de Saussure's conception of *langue* as an inventory of elements (de Saussure, 1916, 154, and elsewhere, frequently) .... [9]

All the diseases of modern structuralism not only are overly simplified (structuralism is said to have become "an intensive study of mere artifacts") but moreover, they are all blamed on Ferdinand de Saussure, with much assurance indeed.

My interest here is not to put forward a plea in favor of structuralism, nor do I have any ready made answers to any of its problems; my sole purpose is to set Saussure's theory back into its proper perspective. It should be noted at the outset that Chomsky used the English translation when referring to the original edition. For example, "the sum of word-images stored in the minds of all individuals" in the translation does not correspond to the French "la somme des images verbales emmagasinées chez tous les individus"; nor does "store (house)" correspond to "trésor";[10] and Saussure's "phrase" does not necessarily imply the English "sentence," as in "sentence formation," but rather "spoken sentence," or better, "utterance."[11] However, on the whole, the translation is a rather good one, and anyone who is willing to read the entire book will not be concerned with its minor shortcomings.

The storehouse (nomenclature) idea is definitely rejected in

[9]Ibid., p. 512.
[10]CLG, p. 30: "Si nous pouvions embrasser la somme des images verbales emmagasinées chez tous les individus, nous toucherions le lien social qui constitue la langue. C'est un trésor déposé par la pratique de la parole dans les sujets appartenant à une même communauté, un système grammatical existant virtuellement dans chaque cerveau, ou plus exactement dans les cerveaux d'un ensemble d'individus; car la langue n'est complete dans aucun, elle n'existe parfaitement que dans la masse." Note that image verbale, image acoustique, and signifiant are used synonymously throughout the Cours. Also "trésor," CLG, p. 171/CGL, p. 123.
[11]CLG, p. 148/CGL, p. 106; p. 172/p. 124. Note also that the "ideal type" on p. 124 is rather misleading.

another part of the book.[12] If, in Chomsky's definition of the syntactic component as generating strings of formatives and specifying their structural interrelations, we replace "syntactic component" with "système grammatical," "to generate" with "engendrer," "string" with "syntagme," and "formative" with Saussure's "signe" as the minimal syntagmatic unit, then Chomsky's definition turns out to be in the best of Saussurian tradition. Chomsky's "recursive processes" may be found under "identité synchronique" and elsewhere. Anyone expecting English "syntax" to turn up as "syntaxe" in French will be disappointed; the term to look for would be "syntagmatique," of which "syntaxe" is only a part. The notion of "rule" is to be found frequently; rules and sets of rules are said to be the constant principles of semiological (semiotic) systems such as language, the underlying principle of regularity.[13] References to the mechanism and the system of "langue" are extremely abundant throughout the work.[14] Significantly, Wade Baskin, the translator, evaluates as follows: "The atomistic conception of speech, reflected in the historical studies of the comparative philologists, had to give way to the functional and structural conception of language. Saussure was among the first to see that language is a self-contained system whose interdependent parts function and acquire value through their relationship to the whole."[15] R. S. Wells, when he discusses Saussure's syntagms and their relative motivation in his commendable review, points out that "from a smaller number of morphemes and a small number of patterns a very large number of sentences can be constructed; this is how we can understand sentences that we have never heard before."[16]

[12]CLG, p. 34/CGL, p. 16; p. 97/p. 65.
[13]Cf. CLG, p. 126/CGL, p. 88; p. 131/p. 92 f.; p. 154/p. 110. Cf. also Saussure's analogies to chess (p. 43/p. 22 f.) and algebra (p. 168/p. 122).
[14]See the indices of both editions.
[15]CGL, p. xii.
[16]Word 3 (1947), p. 9. More recently, G. Herdan, Linguistics 4 (March 1964), p. 57. evaluates justly: "Two of his (Saussure's) ideas were specially fruitful: that of the double aspect of the linguistic sign, as signifiant and signifié, whose relations are purely arbitrary, not produced by a selective affinity between sound and meaning, but merely by social convention; and that of the ensemble of linguistic signs as representing not an amorphous mass but a well-articulated matrix, an abstract system of solidarity (langue) which logically precedes and determines all particular utterances (parole). In other words, Saussure has arrived at describing language as a coding system. Most likely, it would not be far from the truth if the more recent history of linguistics was regarded as a process of progressive exploitation of these ideas . . . ." However, I do not feel

Finally, Chomsky's contention that Saussure did not discuss the semantic aspect of langue is plainly absurd,[17] which will become apparent from more detail below. If, finally, we acknowledge the transformational "concatenation" to be the Saussurian "enchainement verbal," then we are ready to have a closer look at the concepts behind these terms.

The key to Saussure's Cours is his theory of the sign. To appreciate this theory, we have to accept three premises: (1) the existence of potential referents; (2) the existence of the human organism as a system with functional entities of afferent and efferent behavior, such as audition and phonation in particular; (3) the existence of the process of concept formation in human beings. The formation of concepts implies the potential of forming concepts of concepts as well. Thus, we may obtain, potentially, an infinite string of concepts of concepts. Not only is this string infinite, but also the list of initial concepts will remain, by virtue of the nature of concept formation, an open list. Particular concepts taken on their own may be inclusive or exclusive. The inclusive concept is a concept which grasps an event as an amorphous whole; in other words, it represents a set of details none of which may occur in succession to each other. The exclusive concept is a conceptual atom, i.e. it is indivisible. Given any inclusive concept, it has the potential of being enumerated in terms of less inclusive concepts or exclusive concepts, partly or exhaustively, none of which may occur simultaneously; thus, the enumeration of an inclusive concept engenders linearity. The linguistic sign then is a psychological entity correlating two concepts; one a "signifié" reflecting the referent, the other a "signifiant" being a speech representation. The correlation signifiant–signifié of this system is an arbitrary and conventional one;[18] the signs have the

that Herdan was particularly successful in bringing Saussure's teaching into line with Bloomfield's doctrines or his own "quantitative linguistics." Moreover, I do not share his many prejudices against generative grammar.

[17]Again, Chomsky's usage of "semantics" does not have in "sémantique" its Saussurian counterpart.

[18]Objections against the arbitrariness of the correlation signifiant-signifié were raised by E. Benveniste, Acta Linguistica 1 (1939), pp. 23–9. He believes the correlation to be necessary; the correlation is said to be a tight symbiosis suggesting an organism. Does he wish to imply that this correlation is an innate one and to refute Saussure's postulate that the correlation is a learned one? The article does not give the answer. Is there any relation to Chomsky's own rather vague implication of innateness?

property of transforming non-linear elements into linear projection. We are now faced with an unordered set of signs for which we now have to find the "principe rationnel" on which it depends. This is done by feeding the signs into the "système grammatical."[19] The output will be a (linearly) ordered set of syntagms. However, the theory of syntagms (which deals with the syntagmatic contrasts of the syntacto-semantic chain) is not the sole basis for the grammatical systems; there is yet the theory of paradigms which deals with the paradigmatic oppositions of morpho-semantic selection.[20] The following level would be the "étage inférieur" of the grammatical system, the "système phonologique."[21] The output of this system is already Saussure's "phonologie,"[22] and phonology already belongs to "parole," as the phonation–audition realization model.[23] It is thus difficult to say where one begins and the other ends in this dichotomy in which, according to Wells, langue and parole stand in a chicken-and-egg relation to each other.

The principle of relative motivation was one of Ferdinand de Saussure's most important discoveries.[24] The fundamental principle of the arbitrariness of the sign does not prevent Saussure from distinguishing in a given language what is radically arbitrary or unmotivated, and what is only relatively arbitrary. Simplex signs are absolutely arbitrary; in other units (complex signs, syntagms, paradigms, and certain syntagmatic contrasts or paradigmatic oppositions of phonemes [180/130f.]) we may observe the presence of degrees of arbitrariness. The unit may be relatively "motivated." A linguistic unit is motivated when the value which it designates is characterized either explicitly or implicitly by the internal structure of the unit. Units with motivation are also called "transparent" because of their self-explanatory nature. A simplex unit understood from its central

[19]CLG, p. 187/CGL, p. 136.

[20]I have preferred here André Martinet's distinction of "syntagmatic contrasts" vs. "paradigmatic oppositions" to Saussure's own "oppositions (rapports) syntagmatiques" vs. "oppositions (rapports) associatives."

[21]CLG, p. 58/CGL, p. 34; R. Godel, Les sources manuscrites du CLG (Geneva, 1957), p. 166.

[22]Cf. Chomsky, Logical Basis, p. 532.

[23]CLG, p. 56/CGL, p. 33. Saussure's distinguishes between a "linguistique de la langue" and a "linguistique de la parole."

[24]CLG, pp. 180 ff./CGL, pp. 131 ff.

value (to the exclusion of any marginal or transferred values) is by its very nature arbitrary, since it reveals by itself nothing about the value (valeur) which it represents. Arbitrary signs can also be called "opaque" because of their lack of transparency. The principle of relative motivation may be formulated in the following way: every idiom contains signs which are arbitrary and opaque, and other units which are at least to some degree motivated and transparent. There are three main aspects of motivation: how it works in a particular language; how it can change in the course of time; how its scope varies from one language to another. The three types of motivation which may be distinguished are collateral to the three systems of langue: conceptual, grammatical, and phonological. The three types of motivation account between them for a very considerable proportion of the mechanism of a given langue: they include all patterns, derivatives, and compounds (phonological, grammatical, and conceptual) in the language.[25] Only those units which are not motivated in either of these ways can be put down as absolutely arbitrary. In fact, the whole mechanism of language is based on the principle of relative motivation: the limiting of arbitrariness. However, there is no language in which everything is motivated nor is there a possibility for a language in which nothing is motivated; the Saussurian definition of language makes it impossible to conceive of a language without a minimum of organization and a minimum of arbitrariness. The entire mechanism of language, as a social bond, is based on the opposition between the irrationality of arbitrariness and the rationality of motivation (a sort of analogy-anomaly dichotomy) and on the systemic stratification that they imply.
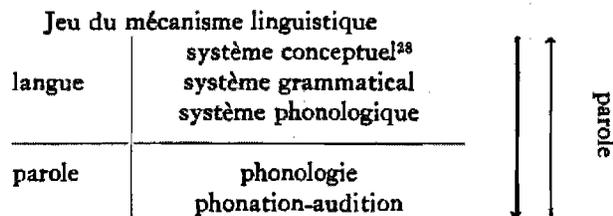
Some examples will illustrate this point.[26] English *preacher* is grammatically motivated since it may be analyzed in terms of *preach* and *-er*; it is also conceptually motivated since it may be analyzed as "person" plus "preaching". English *dogs* is motivated grammatically and conceptually since it may be analyzed in

[25]Onomatopoeic words are not motivated (CLG, p. 101 f./CGL, p. 69). Otherwise, see Ch. Bally, BSL 41, 121 (1940), pp. 75–88.

[26]In our examples, the type of motivation to be illustrated will be grammatical motivation; hence conceptual motivation will not be necessarily exemplified in simplexes and no explicit examples will be drawn from the phonological system.

terms of *dog* plus *-s* and "dog" plus "pluralness." English *feet* is conceptually motivated: "foot" plus "pluralness"; it is paradigmatically motivated because of opposition: $f(ee)t$: $f(oo)t$; syntagmatically, it is not motivated since the replacive, as a sign indicating pluralness, is no longer productive in English. The principle applies, in the words of Saussure, to even the most complex types of syntagms and sentences. English *are you going?* is motivated since it is obviously a derivative of *you are going.* As another illustration, the syntagmatic motivation of English *he jumped* can be represented as $((he)((jump)(ed)))$, $(( )(( )( )))$ being the arbitrary pattern and *he, jump, -ed* the arbitrary signs.[27] The approach is obviously a functional one. May I also point out that, in general, Saussure is more concerned with explanatory adequacy and not as much with predictive adequacy.

Saussure's linguistic mechanism may now be summarized as follows:

Jeu du mécanisme linguistique

langue	système conceptuel[28] système grammatical système phonologique	
parole	phonologie phonation-audition	

(parole)

We may now take a brief glance at the extent to which this model differs from Chomsky's transformational one. First of all, Saussure's conceptual system does not have an analogous level as counterpart in Chomsky's theory, at least not explicitly. Jerrold Katz and Paul Postal have presented an integrated theory in which a semantic component is added to Chomsky's syntactic and phonological components.[29] The question is now to determine

[27]Of course, in a Saussurian analysis, one would also have to explain how we get to the signs *he, jump, -ed.* This would correspond to showing to what extent *he, jump, -ed* are "bundles" in Trubetzkoy's terms, or products of amalgamation in Martinet's terms.

[28]The term used in the Cours is "système de valeurs." I have hesitated to substitute with "semantic" since "sémantique" occurs only once in the Cours in a very much restricted usage compared with that of "semantic" current today. "Semiological" could not be used either; the Saussurian "sémiologie" is what is known today in America as "semiotics": language is one of the "systèmes sémiologiques" studied by Saussure's "sémiologie."

[29]An Integrated Theory of Linguistic Descriptions (Cambridge, Mass., 1964).

the extent to which these three components of transformational grammar overlap with the three systems of the Cours. If the article by Katz in collaboration with J. A. Fodor is any indication,[30] then the question is going to be mainly one of interdependence of systems (components). A comment on the use of "grammar" in the respective theories is now required. Grammar in transformational analysis covers all three components whereas Saussure's grammar, in the sense of functional grammar, touches only upon the syntactic component, Saussure's grammatical system. It is interesting to note here that Saussure, for his conception of grammar, rejects the traditional morphology-syntax-lexicology distinction as imposed from the outside; these three levels are said to interpenetrate. Only the distinction established between syntagmatic and paradigmatic relations can provide a classification as a basis for the grammatical system that is not imposed from the outside. Saussure's postulate is an operational model for that part in the linguistic mechanism which may be called "mental." Though Saussure's "mind" was subject to the conservation-of-energy principle, much of his theory was to be branded as a hopeless attempt at psychologizing, an accusation which is levelled by the very same quarters against Chomsky's own conceptions. Both men appear to be sceptical of an excessively behavioristic approach and the rather unrewarding results of mere data-cataloguing. Though both have essentially the same criteria of grammaticality, the requirement for explanatory adequacy based on psycho- and socio-linguistic factors seems to be quite inescapable to Saussure, but viewed from angles which do not always conform to those taken by Chomsky. It is for this reason Saussure demonstrates a greater interest in the chicken-and-egg relations of the langue-parole dichotomy. It explains Chomsky's interest in reducing the mass of apparent idiosyncracies to underlying regularity vs. Saussure's interest in delimiting arbitrariness from rationality. It is with this in mind that we may compare, for example, motivation with the various rules in transformational analysis, or the theory of paradigms with string-replacement rules. Motivation says something about the nature of the linguistic mechanism whereas a transformational

[30] Lg. 39 (1963), pp. 170–210.

rule is a procedure to abstract the realizations of this mechanism into a formalized system.[31] Thus, both dissect reality from different angles. For Chomsky, the problem of constructing a universal language learning device can only be stated after we have determined the properties of the formalized grammar that is to be its output. On the other hand, for Saussure, problems of cognition and acquisition come first, and the properties of formalized systems second. Chomsky's starting point is the form of grammars constituting a theory of linguistic universals followed by a hypothesis concerning the specific nature of the innate intellectual equipment of the child.[32] Saussure starts from the assumption that the linguistic mechanism is a learned mechanism acquired from the outside; his synchronic linguistics is concerned with the logical and psychological relations that bind together coexisting terms and form a system in the collective mind of speakers.[33]

It appears possible to put Saussure's model into practical operation in a constructive manner and be descriptively adequate too. Adequacy is by no means the sole prerogative of Noam Chomsky. If the question is one of "interest," as I strongly suspect, is it not possible that Saussure's approach is even more stimulating from at least one angle? In any event, it would seem

[31]Transformational grammar is not in fact a linguistic theory in itself; it is rather a metalanguage in which we may make structural statements about motivation in a less ambiguous manner.

[32]N. Chomsky, "Explanatory Models in Linguistics," Logic, Methodology and Philosophy of Science: Proceedings of the 1960 International Congress (Stanford University Press, 1962), pp. 528–50. Cf. also Lg. 35 (1959), pp. 26–58. Chomsky postulates that human beings are equipped with an innate mental ability of unknown character and complexity which is specially designed for the acquisition of langue and parole; Saussure's postulates imply that, whatever the mental equipment of the child, they could have been used, wholly or partially, for the acquisition of mechanisms other than a linguistic one. Saussure finds that the innate mental equipment of the child appears to be a general-purpose faculté d'association et de coordination (faculté réceptive et coordinative) which functions (when adapted) as the faculté linguistique proper. Elsewhere, this general-purpose faculty has been called "faculty of categorization," i.e. the faculty of arbitrary segmentation of the extra-semiological continuum. When adapted to the purpose of linguistic communication, this segmentation is into signifiants and signifiés. Cf. B. Malmberg, Structural Linguistics and Human Communication (Berlin, 1963), particularly pp. 25 f., 175. Since the totality of signifiés constitutes, in Saussure's words, our système de valeurs (semantic component), the question arises to what extent the systèmes de valeurs for the various semiological systems of a human being coincide with or differ from each other.

[33]CLG, p. 140/CGL p. 99 f.

to be preferable in my opinion to re-examine the Cours occasionally, remembering the conditions under which it was edited about 50 years ago. Lastly, it seems obvious that Saussure's teachings cannot be always interpreted in terms of the "Geneva School."