ON DE SAUSSURE'S COMPARISON
OF
LANGUAGE AND CHESS[*]

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Priority of Synchronic Description :

Most of the nineteenth-century linguists were primarily con-cerned with the diachronic study of language. De Saussure, ho-wever, was concerned with synchronic study of languages, which is characteristic of most of the contemporary linguists. De Saus-sure's main objection was to the "Junggrammatiker notion" that restricted the scientific study and investigation of language to its historical aspects. In the twentieth century, this theory implied that historical considerations are irrelevant to the investigations of particular "temporal states" of language.

De Saussure illustrates this priority of synchronic study by means of comparing language to chess:

> In a game of chess any particular position has the unique characteristic of being freed from all antece-dent positions: the route used in arriving there makes absolutely no difference: one who has followed the en-tire game has no advantage over the curious party who comes up at a critical moment to inspect the state of the game;... All this is equally applicable to language

and sharpens the radical distinction between diach-
rony and synchrony. (1)

All languages are constantly changing, just as the state of a
chess board is. At any given time this state can be described wit-
hout reference to the previous positions. So it is with the language
and the study of languages, said de Saussure. This statement about
the synchronic description of language holds, but to apply the ana-
logy to chess does not go very far. It is true that any particular
state can be described in a chess game, but there are two excep-
tions. Without knowing anything about the previous moves, to gi-
ve a description of a "state" would be quite inadequate (1) in the
case of "castling", and (2) in the case of capturing an "en passant"
(in passing) pawn.

Castling can take place only if neither the king nor the rook
has been moved previously. Therefore, a person or "the curious
party" who does not know if either one of these pieces has been
moved previously cannot suggest castling. At a critical position
this becomes extremely important; i.e., a player might lose the ga-
me if he does not castle. Most of the designed chess problems, i.e.,
white mates in two, white plays and wins, black moves and draws,
do not provide this information if either one of these pieces are
given locations other than their original place on the board. If the
description shows that the king and either one of the rooks are
placed on their original squares with no other pieces in between,
it must also indicate if they have been moved prior to that particu-
lar state. De Saussure's comparison fails to indicate the excepti-.
onal importance of this move to the operation of the game. The-
refore, a "synchronic description" of a chess game will not be
sufficent. As a very simple example, the game below will illustrate
this point :

Fischer (White)   Spassky (Black)[2]

| 1. | P | — | QB4 ... ... | P | — | K3 |
| 2. | Kt | — | KB3 ... ... | P | — | Q4 |

(1)   Ferdinand de Saussure, **Course in General Linguistics**, trans. Wade
      Baskın (New York: Philosophical Lib., 1959), p. 89.
(2)   White played by Bobby Fischer, black by Boris Spassky. The game
      notation is quoted from **The Indianapolis Star** (Wednesday, August
      9, 1972), p. 22.

3.	P	—	Q4	Kt	—	KB3
4.	Kt	—	QB3	B	—	K2
5.	B	—	Kt5	P	—	KR3
6.	B	—	KR4	O	—	O
7	P	—	K3	Kt (Kt1)	—	Q2
8.	R	—	B1	P	—	B3
9.	B	—	Q3	P	X	P
10.	B	X	P	P	—	QKt4
11.	B	—	Q3	P	—	QR3
12.	P	—	QR4	P	X	P
13.	Kt	X	P	Q	—	R4 (Check)
14.	Kt	—	Q2	B	—	Kt5
15.	Kt (R4)-B3		... ...	P	—	B4
16.	Kt	—	Kt3	Q	—	Q1
17.	O	—	O	P	X	P (continued)

In this 12th game of the Boris Spassky - Bobby Fisher world chess championship, black's sixth move (O—O) is castling; however, the person playing white does not castle until the seventeenth move, as seen above. On the thirteenth move when black checks the white king, the white could have moved his king thus preventing himself from castling. Both players and the observers had to know that until the seventeenth move neither the king nor the rook has been played. This is the first point of break-down in de Saussure's analogy.

The second exceptional move which requires knowledge of the last move prior to the state which is synchronically describable is known as "capturing the passing pawn". If a pawn makes double advance for its first move, an adverse pawn which could have captured it, had the first pawn moved only one square, may capture it "en passant"; but this "en passant" capture may only be made on the immediate turn, no later.

Because of the need of "diachronic information" for a description of a chess game, as discussed above, de Saussure's comparison fails to be complete. So it can be said that some particular states of a chess game cannot be described "synchronically" without reference to the previous moves, while historical considerations are irrelevant to the investigation of particular temporal "states" of language.

There are different kinds of notations for describing chess games, as there are different ways of describing languages. Traditional grammarians described it in their own way; the generative-transformationalists are still trying to complete their notations (3). In descriptive notaion of shess, each file is given he name of the piece, i.e., K for king, Q for queen, which is originally posted on it; and the ranks are numbered from 1 to 8 away from the player. In algebraic notation, the files are lettered A to H, from white's left to right. The ranks, from white to black, are numbered 1 to 8. The algebraic is as accurate and adequate as the descriptive notation. P-K4 can be written as e2-e4. Sometimes it is possible to guess which one of the two identical pieces, i.e., rooks, knights, belongs to the kingside or to the queenside; but sometimes it is necessary to give more information just to indicate the place of the piece. So we find such notations as Kt (Kt1)-Q2 (Black's seventh move in the game given above), or P-QKt4 (Black's tenth move in the game given above), etc. Here, Kt (Kt1) means the knight located in the first rank to differentiate it from the knight at KB3 because both pieces can be moved to the same square (Q2). P-QKt4 indicates which knight's pawn is to be moved-here, it is the pawn located in front of the queenside knight as opposed to the kingside knight. From this point of view, the algebraic notation seems less redundant and shorter. As far as the adequacy of both notations is concerned, they are equal because they both describe the positions accurately. It is interesting to see that almost the same argument was laid out and discussed by contemporary linguists concerning the methods of describing languages.

La Langue, La Parole, Le Langage :

De Saussure's comparison, at this point, can be extended to illustrate his distinction between **la langue, la parole,** and **le langage** in reference to **knowing chess, playing chess,** and **chess,** respectively.

The words **language** and **chess** have different connotations and meanings. De Saussure made his distinctions among the abo-

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(3) Noam Chomsky, **Syntactic Structures** (The Hague: Mouton, 1968), p. 54.

ve mentioned terms in order to be able to define **language** unambiguously and for the sake of studying **language** scientifically. For a scientific study of chess, almost the same kind of distinctions will be necessary, as it will be examined after looking at de Saussure's distinctions briefly.

La langue is the system, the set that we have been taught by our community; in terms of this system we communicate with others within the same community by using **la parole,** which is "the sum of what people say, including individual constructions that are the consequence of a speaker's choice." (4) The distinction between the two is important in the sense that **la langue** is the complete and perfect form that cannot be found in any individual speaker, while **la parole** includes everything that a speaker might produce. That is to say, **la langue** is an abstraction. On the other hand, **la parole,** the act of speaking, is individual and variable. For a scientific study one must have an object which is not that variable, on the contrary, "holds still." **La langue** is the most common thing to all speakers of that language community; it is collective. **La parole** is momentary; it is not collective. Therefore **la parole** cannot be studied for the purpose of scientific explanation of languages. **La langue,** on the other hand, possesses all the requirements for scientific study. It is the stable pattern through time and the "consciousness of the speakers" that make up **la langue.** The total of **la parole** with the rules of la langue makes **le langage,** in de Saussure's terminology. Therefore, in order to find **la langue, la parole** has to be substracted from **le langage. Le Langage,** in this sense, does not possess a principle of unity within itself which makes scientific study possible.

While de Saussure is making these distinctions, he overemphasizes the reality of **la langue** over and above the individual. This exaggeration can be seen as he accepts the fact that changes in **la langue** proceed from changes in **la parole,** but he declares that "**la langue** is not subject to the individual's power of change." (5)

(4) Quoted in Francis P. Dinneen, **An Introduction to General Linguistics** (New York: Holt, Rinehart and Winston, Inc., 1967). p. 196. (Translation provided by F. P. Dinneen from de Saussure's **Cours de Linguistique Generale.**)

(5) R. H. Robins, **A Short History of Linguistics** (London: Longmans, 1967), p. 201.

But this criticism is not the concern of the paper, so I will return to the extentions of de Saussure's analogy.

De Saussure's distinctions can be applied to chess as an illustration. When someone says that Mr. X speaks Turkish, he does not mean that Mr. X is actually speaking Turkish. The language that he speaks will be **la langue;** while he is speaking, he will be using his **parole.** The same distinction is absolutely necessary when we speak of someone who **plays** chess and someone who is **playing** chess. Here it will be very suitable to adopt Chomsky's terminology of "competence" and "performance" since they correspond to de Saussure's distinction (6).

When Boris Spassky, the former world chess champion, lost a few games in the Interzonal Tournament, (7) did he not know how to play chess? He lost because his **performance** was not as good as his **performance** in the previous worldchampionship tournament. What is **knowing** and **playing** chess, then? Ludwig Wittgenstein comments on this question:

> Suppose it were asked: **When** do you play chess? All the time? or just while you are making a move? And the **whole** of chess during each move? —How queer that knowing how to play chess should take such a short time, a game so much longer! (8)

Whether we know how to play chess all the time or when we are making a move or during the entire game, there is still a need for distinction between **knowing** and **playing** chess. "Competence" for chess will include mastery of all the rules of the game, along with the relative values of the pieces, as well as the goal of the game. "Performance" will be any individual chess player's act of playing at any given time and space. His "competence" might be almost perfect, yet his "performance" may be poor due to various psychological and/or physiological reasons.

Yet, for a scientific study of chess, which value does one have to rely on? This is a very interesting question, because most

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(6) Noam Chomsky, **Aspects of the Theory of Syntax** (Cambridge, Massachusetts: M. I. T. Press, 1965), p. 4.
(7) **Chess Life and Review** (Vol. xxv, No. 4, April, 1970), p. 190.
(8) Ludwig Wittgenstein, **Philosophical Investigations**, trans. G. E. M. Anscombe (New York: Macmillan, 1958), p. 59e.

of the theories explaining advantages of playing such-and-such a way fail in actual piactice. At the present time, theory and practice are conjoined for the study of chess. Of course, there are computed and mechanized chess-playing machines, but they are not practical.

> ... others have also considered the problem of programing a computer for playing chess, concluding that a machine is constructable, in principle, which could play perfect chess, but owing to the astronomical number of possible moves involved, it would be impracticable. Nevertheless, one could be made which would give a mediocre player a very good game (9).

The mechanization of a chess game will depend on the "competence" of the designer, or on the description of the game. If this has been fed to the computer chessplayer, we will have a computerized chess game. In fact, such a machine was among the participants of a chess tournament organized by the Michigan City Chess Association of U.S.A. (10) The knowledge which the computer has, will be almost equal to de Saussure's **la langue,** and the "performance" which it will put out will be **la parole.**

"Language is form, not substance" :

Another conclusion that de Saussure drew from his comparison is that "language is form, not a substance." Briefly, de Saussure said that the material out of which the chess-pieces are made is irrelevant to the operation of the game. Not only the material (wood, plastic, ivory, etc.), but also their shapes are irrelevant, said de Saussure (11). How true! As long as each piece is idendified with its meaning and its role in the game, it is completely arbitrary if the knight in a chess game might look like a horse. To play chess without a chess-board and pieces is possible, as in the case of "blind-folded chess." If the relationships between the board and the pieces, and between the pieces and the entire game had been substantial, this would have been impossib-

(11)   de Saussure, **Course,** p. 110.
 (9)   Colin Cherry, **On Human Communication**   (Cambridge, Massachusetts: M. I. T. Press, 1968), p. 56.
(10)   **Michigan City Association Bulletin** (Michigan, May, 1970), p. 27.

le. But the essentiality of the roles of the pieces needs a philosophical comment:

> Let us say that the meaning of a piece is its role in the game. -Now let it be decided by lot which of the players get white before any game of chess begins. To this end one player holds a king in each closed fist while the other chooses one of the two hands at random. Will it be counted as part of the role of the king in chess that it is used to draw lots in this way? (12).

Of course, the arbitrary selection of kings to draw lots before a game does not indicate that the king has to be identified with this function. So the essentiality of this selection has no value at all to the operation of a chess game. However, Wittgenstein discusses this notion rather profoundly:

> Perhaps one wouldn't see the point of a rule by which each piece had to be turned round three times before one moved it ... (Was this prescription meant to prevent one from moving without due consideration?) (13).

Whatever the answer is to that question, it is a philosophical one; and I have no intention of discussing the theory behind this prescription. However, it explains the priority of the ordering of some rules in chess. From this point of view we can establish the correlation between the priority of rules in a given grammer, i.e., the generative-transformational model, and in the game of chess.

The arbitrariness of sound-shape-meaning in language is discussed by many grammarians, linguists, and philosophers. All the theories about the origin of language had some point of correct and logical explanations in them. The same analogy is also valid for the theories concerning the origin and development of chess. John Gallon reports that there are thirty-four variations of the

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(12) Wittgenstein, **Investigations,** p. 150e.

(13) Wittgenstein, **Investigations,** p. 151e.

chess game (14). Most of these are no longer played. Among these games, there are four-handed chess games, chess games played on on ten-by-ten chess-boards with fourty pieces, three dimensional chess, etc. The lexicon and the rules of these games of chess in which there is only one "universal" goal. The only exception to this is "Giveaway Chess" in which the rules are basically the same, but one wins by loosing all his pieces.

These variations correspond to different kinds of languages which are spoken all over the world. Language in its broadest sense is "not only a social institution but it is also a semiological institution, that is, a code" as Whitney stated, inspired by de Saussure. That is to say that "language is an instrument" (15); and in relation to this statement, chess is an instrument also.

There is only one compound substance in chess; this is the board, the pieces, and the rules of the game. These cannot be separated from each other. On the other hand, the substance of spoken language differs from the substance of written language (16). The phonic substance and the graphic substance, both having the same type of arbitrariness in their realization, make the spoken and the written language, respectively.

The arbitrariness of graphic representation of certain expression-elements can be illustrated in the following way, by using the realization of Turkish /ğ/ (so-called "soft g") :

Yağmur	rain	/ya:mur/
doğru	correct	/do:ru/
teğmen	lieutenant	/teymen/
öğle	noon	/ö:le/;/öyle/
düğme	button	/dü:me/;/düyme/ (17)

From these examples, it is obvious that the graphic represen-tation of the expression-element "ğ" changes its phonic represen-

(14) John Gallon, **Chess Variations** (Tokyo: Charles Tuttle Company, 1968), p. 17.

(15) Wittgenstein, **Investigations,** p. 151ᵉ.

(16) John Lyons, **Introduction to Theoretical Linguistics** (Cambridge: Cambridge University Press, 1968), p. 62.

(17) Özcan Başkan, **Lengüistik Metodu** (Istanbul: Çağlayan Kitabevi, 1967), p. 68.

tation: a) becomes vowel lengthening phoneme (/:/) after /a/, /ı/, /o/, /u/; b) becomes /y/ after /e/, and /i/; c) becomes /y/ or sometimes becomes vowel lengthening phoneme after /ö/ /ü/. The only way to account for the relationship between these graphmes and their phonetic equivalents is to contend that the relationship is an arbitrary one.

The arbitrary nature of the sign is explained by de Saussure with his famous example: signified and signifier, the shape of the tree **arbor** and the linguistic sign **arbor.** But he has some qualifications for the onomatopoeic formations and for the interjections. The same classification will also serve the purpose of explaining the name **bishop** in chess. This piece was called among the Persians **pil** (elephant); but the Arabs, not having the sound /p/ in their inventory, pronounce and write it **fil** or **al-fil;** so the variations reached Italy and France in the form of **alphilus, alfinus, alifiere.** But what is the relationship between the **elephant** and the **bishop,** then? The names are, then, arbitrary-- even when we say "the king is dead" or "Shah-mat," or "Check-mate."

Internal Linguistics and External Linguistics:

De Saussure points out the difference between "Internal Linguistics" and "External Linguistics" and illustrates this point again by comparing chess to language. "In chess, what is externalcan be separated relatively easily from what is internal" (18). It is obvious that the history and the origin of chess do not have anything to do with the playing of chess. One does not have to know that the queen moved only diagonally in the seventeenth century. This is an external fact. In language, the internal facts can be studied, although it is not quite so easy to separate internal from external because some of the external facts, i.e., borrowing of the prepositions from Latin into English, have some effect on the system. From this point of view, "everything that changes the system in any way is internal," (19) reflects this difficult distinction. But, of course, it is possible to "understand and to study internal linguistic organism without studying external organism," as de Saussure states.

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(18)   de Saussure, **Course,** p. 22.
(19)   de Saussure, **Course,** p. 23

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Conclusion :

As de Saussure's analogy reflects, there are very important points of resemblance between language and the game of chess. The strenghts and weaknesses of this comparison are explained in the paper so far. What I would like to offer now is a brief summary of what these points are:

1. Language is a social fact, regardless of the differences of the communities and cultures; and it has to be learned. Chess is an abstraction of a duel wherein the two players match their **performance** as opposed to their **competence;** it, too, has to be learned and practiced like language.

2. Language serves the purpose of communication, regardless of its form. Chess serves the purpose of limited mental communication between individuals, regardless of how and where and with what pieces it is played.

3. There are distinctions within the language which make the scientific study of language possible. There are distinctions within chess which help to construct theories about the game and its development.

4. The relationship between the elements of the language and their reflections are arbitrary. The pieces and their shapes and the relationship between the pieces and their moves in a chess game are arbitrary.

5. All languages contain a set of lexical entries and rules for internal organization. With the use of these finite entities, one can create an infinite number of utterances. All chess games, regardless of the number of pieces that they employ and regardless of their names, may contain an inumerable number of moves; or with the rules of chess, an innumerable number of distinct games may be played.

6. The origin of language is yet to be explained satisfactorily, and so is the origin of chess; but this does not prevent us from studying language or chess, because this is an external fact which does not affect the internal organism.

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