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The 'Social' and the 'Cognitive' in Language *A Reading of Saussure, and Beyond*

Franson Manjali

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The paper explores in depth the intertwining of the social and the cognitive aspects of language in Ferdinand de Saussure's classic *Course in General Linguistics*. This text has been put to new use recently by philosopher Patrice Maniglier, *La Vie énigmatique des signes*. The central problem for Maniglier is the resuscitation of the Saussure's central notion of the 'sign' in the context of AI / Cognitive Science. The main question is whether a naturally and mechanically arising linguistic 'sign' can remain indefinitely open-ended in the sense of the poststructuralists, and whether new cognitive 'cultural milieus' are continuously created on the basis of human contacts. Saussure seems to have much to say on this.



Working Papers Series

The 'Social' and the 'Cognitive' in Language

A Reading of Saussure, and Beyond

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July 2012

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The text

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Abstract

The paper explores in depth the intertwining of the social and the cognitive aspects of language in Ferdinand de Saussure's classic *Course in General Linguistics*. This text has been put to new use recently by philosopher Patrice Maniglier, *La Vie énigmatique des signes*. The central problem for Maniglier is the resuscitation of the Saussure's central notion of the 'sign' in the context of AI [artificial intelligence] / Cognitive Science. The main question is whether a naturally and mechanically arising linguistic 'sign' can remain indefinitely open-ended in the sense of the poststructuralists, and whether new cognitive 'cultural milieus' are continuously created on the basis of human contacts. Saussure seems to have much to say on this.

Keywords

linguistic sign, social and cognitive aspects of language, Saussure, cultural milieu

Le « social » et le « cognitif » dans le langage : une lecture de Saussure et au-delà

Résumé

Ce papier analyse en profondeur l'imbrication entre les aspects sociaux et les aspects cognitifs du langage dans le classique *Cours de linguistique générale* de Ferdinand de Saussure. Ce texte a récemment fait l'objet d'une nouvelle lecture par le philosophe Patrice Maniglier dans *La Vie énigmatique des signes*. Le problème principal pour Maniglier est la résurrection de la notion centrale de « signe » de Saussure dans le contexte de l'intelligence artificielle et des sciences cognitives. Les questions décisives sont les suivantes : est-ce qu'un « signe » linguistique émergeant naturellement et mécaniquement peut rester indéfiniment indéterminé dans le sens des poststructuralistes ? Est-ce que les nouveaux « milieux culturels » cognitifs sont continuellement créés sur la base des contacts humains ? Saussure semble avoir beaucoup à dire à ce sujet.

Mots-clés

signe linguistique, aspects sociaux et cognitifs du langage, Saussure, milieu culturel

Structuralism, or structural linguistics to be more exact, along with the Paninian grammar are two currents in theoretical linguistics which have appeared and reappeared in modern times in many different avatars. It is indeed the hallmark of any profound theoretical work to have a long lasting impact in its intellectual field. It has been noted by scholars that the Paninian grammar was reborn in the last 150 years in three distinct and somewhat contrary interpretations. First, with William Dwight Whitney, it was understood as a grammar based on historical principles, then Bloomfield (who described Panini's grammar as 'one of the greatest monuments of human intelligence') viewed it as a structural-descriptive grammar, and finally with Chomsky and his followers, it was reinterpreted as a generative grammar.¹ Curiously, the fate of structural linguistics does not seem to be anything different. It all began, as we know, with the posthumous publication of the lecture notes (of a series of three courses given during the period 1906-11) from the master of Geneva, Ferdinand de Saussure, *Cours de linguistique générale* (1916), edited and published by his students, Charles Bally and Albert Séchehaye. (We should add here that according to certain accounts, and this is what further confounds matters for any historian of linguistics, Saussure, who was an impeccably qualified Sanskritist, himself was influenced by Panini and by his latter-day follower Bhartṛhari). Structural linguistics (especially the version that was established in the United States) is said to have taken a behaviourist turn in the works of Leonard Bloomfield. Saussurean structuralism and the idea of the 'sign' were eventually subjected to diverse treatments under the influence of Prague school linguistics with the able and erudite leadership of the Russian linguist Roman Jakobson. It should be remembered that Jakobson was also responsible for bringing to light the Semiotic works of the American mathematician

1. See what the late linguist P.B. Pandit had commented in his review of a book of selected papers of J. R. Firth: "Reading contemporary notions into earlier writers, though currently fashionable, is a hazardous occupation. Panini has undergone three American avatars: the historical avatar with Whitney, the descriptive avatar with Bloomfield and now the generative avatar!" (Pandit, 1970: 283) Evidently, he was referring to Chomsky's attempt at connecting up with (if not appropriating) the work of Panini: "... it seems that even Panini's grammar can be interpreted as a fragment of such a "generative grammar" in essentially contemporary sense of this term." (Chomsky, N., 1965, p. v)

Charles Sanders Peirce. In France, philosophers and philosophically-inclined scholars extended structuralism (in what came to be known as 'generalized structuralism') in diverse directions. Of these, Maurice Merleau-Ponty (philosophy), Claude Lévi-Strauss (anthropology), Jacques Lacan (psychoanalysis) Louis Althusser (political theory), and Roland Barthes (literary and cultural semiology) were the key initial figures. Perhaps, somewhat less significant were the Greimasian school of Semiotics that sought to fulfill the Lévi-Straussian dream of a pure narrative semiotics and Christian Metz's efforts in a semiotics of the cinema.

Certainly, this can still be not an exhaustive account of the flourishing destiny of structuralism, which was only ruptured by the critical trajectories initiated in the 1960's by the poststructuralists Michel Foucault, Gilles Deleuze and Jacques Derrida. Of these well-known philosophers, Foucault in fact maintained an ambivalent and uncertain relationship with structuralism (especially during the phase of his work on 'archaeology'), even if this was only at the beginning of his short but illustrious intellectual career.²

More recently, Structuralism was submitted to yet another ambitious project of creative transformation in the work of Jean-Petitot who applied René Thom's Catastrophe Theory in the domain of phonology, syntactico-semantics, and Greimasian narrative semiotics, with the goal of developing a topologico-dynamical (morphodynamic) paradigm in the cognitive sciences, and especially for reinterpreting Langacker's and Talmy's space-based cognitive grammars in terms of this paradigm. Petitot's *Morphogenesis of Meaning* (1985/2004 tr.) was intended to open a new domain of cognitive linguistics/semiotics, owing itself to the catastrophist notions of bifurcation and archetypal morphologies, where Saussure's seminal notion of the 'sign' was all but ignored.

We should imagine that the productivity of an intellectual work (in the present case, structuralism) attests to its depth and richness. It is also to be noted that structuralism as a linguistic

2. Foucault, M.: «What I have tried to do, is to introduce the analyses of a structuralist style into those areas where they haven't penetrated until now, that is to say into the domain of the history of ideas, the history of knowledge systems, the history of theory. In this way, I have undertaken to analyze the birth of structuralism in terms of structuralism itself» (Translated by Stuart Elden from *Dits et écrits* I: 583)

movement has perhaps spawned the largest number of histories. I shall not be able to provide a list of all these, but simply refer to the work of one of the better known historians of structuralism, Jean-Claude Milner.³

It is in the context of all this and perhaps more that Patrice Maniglier's extraordinarily erudite work *La Vie énigmatique des signes* (Léo Scheer, Paris, 2008) attracts our attention. Maniglier approaches Saussure as a philosopher, and no other philosopher except Jean-Claude Milner has attempted to touch the heart of the work of this quintessential modern scholar. The thesis that Maniglier defended under the watchful eyes of a jury that consisted of reputed contemporary French philosophers Etienne Balibar, Alain Badiou and Sylvain Auroux, is undoubtedly of exceptional merit, and would invite any philosophically-inclined scholar to a reading or rereading of Saussure's seminal work.

Maniglier's interpretation of Saussure's work, like what was the case of others that preceded him, is indeed a product of his times. Thus, understandably and legitimately, he solicits two contemporary philosophical currents in his support: cognitive science, primarily, and poststructuralism, to a lesser extent. He yields rich dividends from the project. However, even while he contemporizes Saussurean structuralism in terms of the connectionist approaches to cognitive science, and poststructuralism's critique of cultural and linguistic closures, he remains at heart a classicist. This is because he remains faithful to Saussure's own version of the classical notion of the sign. This lets him explore the most crucial and the least understood aspect of Saussurean linguistics: *the paradoxical nature of the sign*. As Maniglier shows, the nature of the sign is indeed not just paradoxical, that is, not that we can say two contrasting things about it, both of which are correct, but the very existence of the sign presents itself as an enigma, in our not being able to draw a conclusive statement about it: it seems to be present and at the same time not present, dead but at the same time living, fixed and static but at the same time dynamic and mutating (synchronic and diachronic); the signs are formed as if by a predetermined *mechanical* action, but at the same time they seem to have an infinitely open-ended *life* of their own; and they have a reality

that is simultaneously 'psychological' (cognitive) and 'social'.

Thus the linguistic sign, and the sign in general, is *enigmatic*, in our not being able to decide as to what it is. And according to Maniglier, following Saussure, it is not as much the sign that is enigmatic, but it is the 'life of signs' (*CGL 1*, p. 15, translation modified; *Cours*, p. 33) that is the enigma. The sign seems to lead two different kinds of lives, one mechanical, more or less following the laws of physics with predictable outcomes, and the other social or cultural, in which the laws can be easily abandoned, and where unpredictability reigns. This unpredictability of signs in historical time in Saussure's formulation, Maniglier wants to show, is the site of culture. (That is, even if Saussure does not speak directly of culture: he is more readily concerned with the 'social,' with historical time, and with the 'speaking mass'). In other words, following the position taken by the poststructuralists and those influenced by them, this unpredictability is a defining feature of culture.

Maniglier's project, in the first instance, is to embed structuralism in connectionist cognitive science, and then to understand the incessant learnability that characterizes the connectionist cognitivist enterprise in terms of the open-endedness of culture itself. 'Cultural machines' of connectionism are machines capable of producing open-ended cultural values. They are open-ended not in a solipsistic sense, but rather intersubjectively, involving the endless production of 'sensible milieus' between two or multiple agents. Culture in this perspective is made up of the sensible milieus that exist and evolve between linguistically capable agents.

As per Saussure's well-known formulation, the sign is a two-sided psychological⁴ entity consisting of a formal side (signifier) and a meaning side (signified). These are inseparable like the two sides of a sheet of paper. The sign comes to be not by any preexisting necessity that connects the signifier and the signified. Saussure views it as 'a whole that results from the association of a signifier and a signified,' and since "the link between the signifier and the signified is arbitrary" he is

3. Milner, J.-C., *Le Périphe structural - figures et paradigme*, Seuil, Paris, 2002.

4. It is useful to note that Saussure uses the term 'psychological' in the traditional sense to refer to the state or activity of the mind. It is what comes to be or stored in the mind, or performed by it. It does not refer to the process of knowing, cognition, or its result.

led to conclude that “the linguistic sign is arbitrary.” (*CGL 1*, p. 67, italics in the original; *Cours*, p. 99-100) In other words, the sign is what emerges in the mind on the basis of a chance bonding between the formal part and the meaning part, without the latter playing any determining role with respect to the former. Before one can have a concept that would determine the shape of the signifier, the linguistic sign has already been formed and is in use by the individual and the social community. (Of course, Saussure does not rule out a period of apprenticeship for a child who is learning the language.) The ‘conceptual image’ that corresponds to the signified of the linguistic sign precedes the formation of any well-formed concept. The individuated signs emerge naturally in one or several human minds, even before human individuals can begin to reflect upon the separate existences of the form and the meaning that constitute the sign. Sign is thus the result of a pre-reflective and individuated⁵ psycho-social emergence from or, extension of life, just as a life itself may be regarded as an individuated extension of already existing life or lives (physico-psycho-social) or of non-biological matter. Furthermore, the signs cannot exist in any single individual, but only in a ‘collectivity.’ We must assume that from this perspective, the bonding of the signifier and the signified in one individual spreads by way of some sort of a communicative contagion to all other members of a community. That is why Saussure insists that the “concrete object of linguistics is the social product deposited in the brain of each individual, i.e., langue or linguistic structure.” (*CGL 1*, p. 24, translation modified; *Cours*, p. 44) In the course of time, this ‘social product’ of langue is deeply implanted in the minds of the individual speakers, and with the aid of which they speak their language, without having to be overtly conscious of it and therefore with mechanical ease. This is also what prevents speakers from being able to introduce their own individual variations in their language. And hence according to Saussure, “the distinguishing characteristic of the sign — but

the one that is least apparent at first sight — is that in some way it eludes the individual or social will.” (*CGL 2*, p. 17; *Cours*, p. 34) Language or langue, Saussure notes, cannot be directly derived from speech, nor can the latter be reduced to the former; language is essentially the result of the ‘social crystallization’ of speech. This last phrase must be taken seriously for, while Saussure agrees with Whitney that language is a social institution, he differs from him in saying that it is not like all other socially formed institutions, because here participation in it is not voluntary. And perhaps we could add that unlike the family, the social institution of language encompasses all members of a community simultaneously. Language is passively and unconsciously registered (without any premeditation) in the minds of the members of a community. Though it emerges in and is maintained through social interactions, individuals cannot voluntarily create or reject its particular structures.

Saussure himself had pointed to the ‘double essence’ of signs in proposing a “science that studies the life of signs at the core of social life” (*CGL 1*, p. 15, translation modified; *Cours*, p. 33) or Semiology. Semiology was meant to be a science that will include primarily the science of language or linguistics, as well as (secondarily) the study of other secondary systems of signs. According to Saussure, “Semiology would show what constitutes signs, what laws govern them.” (*CGL 2*, p. 16; *Cours* p. 33) Since it was meant to be a study of the signs simultaneously present in the minds of socially related individuals, semiology was expected to be a part of social psychology, which in turn would be a branch of general psychology.

Evidently, Saussure (like many who preceded and followed him) was struggling to identify the proper (scientific) object of linguistic study: “Language is a well-defined object in the heterogeneous mass of speech facts.” (*CGL 2*, p. 14; *Cours*, p. 31) It is essentially an object of social psychology. He invites us to picture the nature of this object:

If we could gather the sum of the linguistic images stored in the minds of all individuals, we could identify the social bond that constitutes language. It is a treasure deposited by the members of a given community through their active use of speaking, a grammatical system that has a potential existence in each brain, or,

5. I use this term in the sense of Gilbert Simondon in his work on ‘Ontogenesis’. According to Simondon : “The individual would ... be grasped as a relative reality, a certain phase of being that supposes a preindividual reality, and that, even after individuation, does not exist on its own, because individuation does not exhaust with one stroke the potentials of preindividual reality. Moreover, that which the individuation makes appear is not only the individual, but also the pair individual-environment.” (Simondon, G., 2009: 5)

more specifically, in the brains of a group of individuals. For, the language is never complete in any single individual, but exists perfectly only in the collectivity. (*CGL 2*, p. 13-14; *Cours*, p. 30)

This takes us to Saussure's yet another definition of language:

It is not to be confused with human speech [*langage*], of which it is only a definite part, though certainly an essential one. It is both a social product of the faculty of speech and a set of necessary conventions that have been adopted by a social body to permit individuals to exercise that faculty. Taken as a whole, speech is many-sided and heterogeneous; straddling several areas simultaneously — physical, physiological, and psychological — it belongs both to the individual and to society; we cannot put it into any category of human facts, for we cannot identify its unity. (*CGL 2*, p. 9, translation modified; *Cours*, p. 25)

And further, the well-defined object of language,

... can be localized in a limited segment of the speaking-circuit where an auditory image becomes associated with a concept. It is the social part of speech, outside the individual who can never create nor modify it by himself; it exists only by virtue of a sort of contract accepted by the members of a community. (*CGL 2*, p. 14, translation modified; *Cours*, p. 31)

For Saussure, society is 'inert by nature,' and therefore it is a 'prime conservative force.' (*CGL 2*, p. 74; *Cours*, p. 108) And since 'the life of signs' is at the core of the social life, and since it 'blends with the life of social collectivity,' (*CGL 2*, 74, translation modified; *Cours*, p. 108) language among all social institutions is the least amenable to initiative. Language chooses its own signs, but this is a Hobson's choice, for what it chooses is the only sign that can possibly be chosen. The principle of the 'arbitrariness of the sign' implies that in a language the signifier/signified and their relations are chosen arbitrarily, but the choice that the language makes is mandatory for its speakers. 'Choose,' but 'the freedom of choice is limited to the particular sign that will be chosen.' Or even, 'choose' but 'do not choose.' This is similar to what Derrida calls the 'double bind' in another context: 'Translate..., but do not translate.' Neither can the Individuals alter the choice made by a language, nor has the social body the authority to

change even a single word, because it is bound to its language. The contract of conventions and the laws of language are such that they are not freely chosen by a community, but are imposed upon it, unlike what is the case in other institutions. Since the conventions and laws of language are inherited by a community from its deep and indefinite past, its origin can never be known, nor can the social body or the individuals ever voluntarily change them.

Since the language that is spoken in any given epoch is the result of what is inherited from a seemingly endless succession of generations, no one can ever know when a contract was at all established. The setting up of the contract can only be assumed and cannot be empirically determined. Signs are deeply rooted in the historical tradition, ensuring their continuity in time.

According to Saussure, the 'social forces' tenaciously conserve the character of the signs arbitrarily formed in language. Therefore there is their unchanging continuity in historical time. The community's insistence on the character of the signs inherited from the past generations ensures their continuity and stability in time. The signs that have been chosen freely and arbitrarily are fixed more definitively by the passage of time. The transformation of the nature of a sign from its chance origins to its necessary existence in a language is thus a function of the passage of time. Because the sign emerges arbitrarily, it has to depend on the force of tradition which in turn ensures that the sign is enduringly arbitrary.

However, even if the social forces establish and maintain the stability of the arbitrarily formed sign in time, the continuity of the sign also leads to its unpredictable mutations with the passage of time. Thus, Saussure's most astonishing statement on the relationship between the Immutability and the Mutability of the sign:

In the final analysis, these two facts are intimately connected. The sign is subject to alteration because it continues through time. But what predominates in any alteration is the persistence of the earlier material. Infidelity to the past is only relative. *That is how the principle of alteration is founded on the principle of continuity.* (*CGL 1*, p. 75, translation modified; *Cours*, p. 108-9. Emphasis with italics by the present author.)

After providing sufficient examples of alterations in time, Saussure notes that these invariably “result in a *shift in the relationship between the signified and the signifier*” (*CGL 1*, p. 75; *Cours*, p. 109. Emphasis in the original). Such shifts are due to the arbitrary nature of the linguistic sign, since “arbitrariness of the linguistic signs implies theoretically the freedom to establish any connection whatsoever between phonic substance and ideas” (*CGL 2*, p. 76; *Cours*, p. 110). And furthermore, it is because “each of the two elements joined together in the linguistic sign retain its own life to a degree unknown elsewhere” (*CGL 2*, p. 76, translation modified; *Cours*, p. 110-11) that the linguistic system consisting of arbitrary signs is “radically powerless to defend itself against forces which constantly tend to shift the relationship between the signified and the signifier” (*CGL 2*, p. 75, translation modified; *Cours*, p. 110). This is why languages everywhere and always alter or evolve “under the influence of all factors that affect either the sounds or the meanings” (*CGL 2*, p. 76, *Cours*, p. 111). This evolution is inevitably and intrinsically part of the semiological life of all languages, from their very beginnings. “The continuity of signs through time, linked to their alteration in time, is a principle of general semiology.” (*CGL 1*, p. 76; translation modified; *Cours*, p. 111) However, unlike the continuity of signs in time which are ‘in principle available for observation,’ their alteration through time cannot be observed as such. Therefore it is better to abandon the attempts to observe precise alterations, and to account for shifts in relations. For, Saussure avers, time changes all things, and language cannot be an exception to this universal law.

Saussure notes that what makes possible the ‘life of language’ is not just its emergence in the community of speakers (which makes it only ‘viable’), but also its development in historical time. Sure, viewing language in time but without taking into account the speaking mass or the community, its elements cannot be seen to change. It is the social forces plus the development of language in time that bring about linguistic alterations. Time and social forces work together, to induce the alterations. Saussure goes on to show with the aid of a schema that

Language is no longer free, because the passage of time allows social forces at work on it to carry out their effects on it, and what we arrive at is a principle of continuity that cancels

freedom. But continuity necessarily implies alteration, more or less considerable shift in relations. (*CGL 2*, p. 78; *Cours*, p. 113)

Perhaps, what Saussure envisages is the necessary continuity of the arbitrarily formed signs of language in historical time, where alterations, theoretically inevitable owing to the mutual independence of the signified and the signifier, are wrought by the more or less blind social forces. Language is ‘constrained’ to continue in its historical path and to undergo alterations. Be it in continuity or in change, freedom is denied to languages. And moreover, even when there are alterations in the structure of a language, from a diachronic point of view what precedes and what follows are not two entirely differently languages. For, Saussure notes: “the river of language flows incessantly.” (*CGL*, p. 139, translation modified ; ‘... le fleuve de la langue coule sans interruption...’ *Cours*, p. 193.)

We must account for two more fundamental aspects of Saussure’s theory of the sign which may appear contrary to the preceding descriptions. The first of these is the division of signs into categories that are *absolutely* and *relatively* arbitrary. This is where, as it has been noted Saussure’s semiotic theory begins to approximate to that of C. S. Peirce’s division of signs into *icons*, *indices* and *symbols*. Saussure maintains that not all signs are arbitrary to the same degree; he redefines them in terms of their degrees of motivation, that is, the natural connection between the signified and the signifier. He admits that only a small set of signs consisting mainly of the individualized lexemes, is really absolutely arbitrary or unmotivated. And no sign is absolutely motivated. The majority of the signs are intermediate between absolute and relative arbitrariness, or which is the same thing, between immotivation and motivation. As per Saussure’s famous example, “the French word *vingt* (‘twenty’) is unmotivated [therefore arbitrary], but *dix-neuf* (‘nineteen’) is not motivated to the same degree because it evokes the terms with which it is composed and others to which it is associated, for example, *dix*, *neuf*, *vingt-neuf*, *dix-huit*, *soixante-dix*, etc...” (*CGL 1*, p. 130; translation modified; *Cours*, p. 181) Saussure’s emphasis here, as distinct from the instances of motivation such as onomatopoeia or phonaesthetics discussed in the main section on the arbitrariness of the sign, is on morphological and syntactic iconicity on the basis of

which languages can vary on an axis indicating those with maximum arbitrariness or 'immotivation' (the 'lexicological' ones) at one end, and those with minimum arbitrariness or high level of motivation (the 'grammatical' ones) at the other. In this context, Saussure observes that

... the entire system of language is based on the irrational principle of arbitrariness of the sign which if applied unrestrictedly greatly complicates matters; but the mind has succeeded in introducing a principle of order in certain parts of the mass of signs, and it is here that the relatively motivated has its role. If the mechanism of language were entirely rational, we could study it as such; but as it is only a partial correction of a naturally chaotic system, we accept the point of view imposed by the very nature of language, by studying this mechanism as that which limits arbitrariness. (CGL 2, p. 133, translation modified; Cours, p. 182-83)

What is interesting here is that Saussure is correcting a view that he elsewhere introduces as a 'principle of primordial importance' (CGL 2, p. 68, Cours, p. 100): *arbitrariness of the sign*. Arbitrariness is an irrational principle of irregularity that governs most of the linguistic signs, but the human mind has invented a rational principle of motivation or regularity based on iconicity (where like meanings have like forms) for the purpose of ordering a naturally chaotic system. In Saussure's classification, the classical languages like Sanskrit and Latin are ultra-grammatical, that is less arbitrary, and more motivated, while English and French (as compared to German) are highly immotivated or more arbitrary. In its historical movement, French has abandoned the highly motivated and 'grammatical' character of Latin and adopted its own highly 'lexicological' character, e.g. Latin *inimicus* (more iconic and more motivated: *in* + *amicus*) became French *ennemi* (less iconic and less motivated). In other words, French language, shunned the internal order and regularity that it should have inherited from Latin, and abandoned itself, like English, to embrace what would be a relatively 'chaotic system' marked by a high degree of arbitrariness, whose extreme example, in fact, would be the Chinese language. (See CGL 2, pp. 133-34, Cours, pp. 183-84)

Significantly, Saussure's text does not say if the induction of order and regularity in language by

means of motivated signs is a case of language change due to active human intervention involving the speaking agents. If that were the case, then his strict distinction between *parole* and *langue* cannot be maintained, and motivation can be understood as a function of conscious human agency, even if the temporal process of change is of considerably long duration. However, he prefers to view it merely as something wrought by the human 'mind.'

But elsewhere, in his discussion of linguistic evolution due to analogy or analogical innovation, Saussure explicitly accepts at least a partial role of the speaking subject. He says:

Nothing enters the language before having been tried out in speaking. All evolutionary phenomena have their origin in the sphere of the individual. This principle... particularly applies to analogical innovations. Before Latin *honor* becomes a competitor capable of replacing *honōs*, a subject must improvise it and the others imitate and repeat it, until it becomes obligatory in usage. (CGL 2, p. 168, translation modified; Cours, p. 231)

Analogical variations take place in language always and often in large numbers. But most of them are not successful in effectuating a change in the structure of a language. Analogical change is based on the imitation of a real or assumed regularity. Since new forms are attempted to be created on the basis of existing elements and old regularities, these analogical changes do not amount to linguistic renovation. Thus, their effect in real linguistic evolution is indeed minimal. Saussure provides us with a most apt imagery to understand this renovative and simultaneously conservative process of language evolution: "A language is a dress covered with patchworks made with its own material." (CGL, p. 171; translation slightly modified, Cours, p. 235)⁶ In the particular kind of life that language is supposed to be, it revives itself constantly by transforming itself with pieces of its own material, each time used differently. Its parts degenerate and disappear only to regenerate

6. Consider a comparable analogy on language in L. Wittgenstein: "Our language can be seen as an ancient city: a maze of little streets and squares, of old and new houses, and of houses with additions from various periods; and this surrounded by a multitude of new boroughs with straight regular streets and uniform houses." (*Philosophical Investigations*, p. 8).

and reappear in another form, without there ever being distinct phases of life, growth and death.

Maniglier has correctly focused on the significance of this position. Referring to Saussure's concept of 'life,' he points out that:

The system has its own virtue, a kind of intrinsic reality that resembles more the activity of an anthill than an organism's. It is their capacity to regenerate themselves from their own refuse that gives systems a life, not their capacity to reproduce.... Saussure compares language to an "anthill where if one plants a stick and it would be instantly repaired from its breaks" (Saussure, 2002, p. 266). (Maniglier, 2011, p. 170.)

While discussing the geographical aspects of language change, Saussure also accounts for the propagation or dissemination of features from other languages and cultures. Here, he disavows any specificity for the linguistic phenomenon. The intercultural changes are "subject to the same laws as any other habit, such as fashion" (*CGL 2*, p. 205; *Cours*, p. 281) One can observe in any community two opposing forces either favouring the changes or opposing them: parochialism and the force of intercourse. If languages submit themselves to only parochial forces that want to remain faithful to its own core traditions, then it can lead to an infinite variety of linguistic particularities. But it is countered by forces of intercourse that obliges people to communicate with each other. Saussure notes: "Intercourse brings to a village visitors from other localities, displaces a part of the population on the occasion of a festival or fair, unites people from different provinces under one flag. In short, it is a unifying principle which counters the disuniting attitude of parochialism." (*CGL 2*, p. 206, translation modified; *Cours*, p. 281-82) Intercourse aids in the 'extension' (by accepting and propagating innovations) and the 'cohesion' (by preventing dialectal fragmentation and suppressing innovations as and when they arise) of a language. Here again, Saussure seems to be accepting the role of the social speaking agents.

Maniglier's admirable attempt summarized in his recent article on "Processing Cultures: Structuralism in the History of Artificial Intelligence" (Maniglier 2011) is to bring some of the central tenets of Saussure's work in contact with some of the recent, interesting trends in Cognitive

Science. The notion of structure is inevitable for AI. What Maniglier proposes to draw from structuralism is the notion of mind as collective (social and cultural) and as historical. How can we theoretically proceed from the sign as a social-psychological and historical object to machines that are both cognitive and historical? How can cognition/intelligence be conceived of as a socio-cultural and historical emergent property that is amenable to processing by machines?

The first step is to define culture as a sensible milieu. Such a model of 'cultural emergence' has been suggested in the AI model of Luc Steels (discussed in Maniglier 2011, p. 160). From the continuous production of sensible data in two or more different agents, there can be random emergence of sensible milieus on the basis of an internal/objective 'feeling of agreement' between the agents. From differences in the sensible data one is led to their unpredictable felt sameness. This would be the basis of an artificial 'common mind'⁷ or intelligence as a collective phenomenon. Now, Maniglier attempts to show that this process has already been described in Saussurean structuralism.

For Saussure, as we have already tended to see, from the perspective of linguistic study, mind is something like an 'empty'⁸ mechanism with a social axis as well as a historical axis. It is empty because the linguistic sign, the semiological entity, is prereflective and preconceptual. But the sign with an empty cognitive content has a reality only as part of a collectivity ('*Masse*') and as something always liable to change in Time. This is also why, as Maniglier notes, this complex system made up of potentially empty signs can

7. I am referring to a notion suggested by Phillip Petit. According to Petit, 'common mind' can be understood in the material and everyday sense, and as 'shared or social mind,' 'not insulated or solipsistic,' that 'emerges on the basis of interaction and community between them... so that the fact that one individual is minded entails that others are minded too.' (Petit, 1993: 342)

8. As Maniglier informs us, Saussure states this problem slightly differently. "Linguistic phenomena can never be reduced to specific spatio-temporal phenomena like the individual articulatory gestures ... linguistic events are *incorporeal*." (Maniglier, 2011: 164). Saussure had noted that even "the linguistic signifier in its essence is nothing phonic, it is incorporeal, constituted, not by its material substance, but uniquely by the differences that distinguish its sound image from all others." (*CGL 2*, p. 118-19, translation modified; *Cours*, p. 164) Later, Maniglier further clarifies: "Linguistic entities are *unobservable* realities in the precise sense of being unmeasurable." (Maniglier, *op. cit.*: 164)

never be mastered by any single individual. And moreover, whether or not the social body wishes to conserve or change its linguistic structure by means of different mechanisms, the force of time, in due course, can change almost everything in language. As we have seen, the arbitrariness of the sign (and the concomitant instability of the relation between the signified and the signifier), the force of time and the uncertain activity of the social body, all these together, ensure that languages are in a state of permanent variation.

The fundamental point that Maniglier makes is that for Saussure the linguistic changes that constantly take place are not changes at the physical or the psychological level of the signifier or the signified respectively, but changes are the level of the linguistic structure, they are semiological changes. The empty and incorporeal character of the sign implies that each time a word is uttered its material manifestation bears a different relationship with the entity of the linguistic sign. In this sense, speech or language-use consists of only variable entities. This is what leads Maniglier to claim that “the domain of semiology is characterized by this peculiar form of object with *variable entities*.” And further, “semiology is the science that studies how signs never cease to change as long as they are used and are ‘circulating.’” (Maniglier, 2011: 165) The point is that linguistic variation is not just a matter of sociolinguistic or dialectal variation, or even individual stylistic variations, but rather that variation in time is constitutive of the basic structural element of language, that is, the sign.

Of course, there is still the unresolved question of the relationship between the psychological part of the linguistic sign and conceptual thought. As per Maniglier’s interpretation of Saussure, as the mental structural element of language changes, thought also undergoes a change. In his view, derived from Saussure: “Language is certainly made up of signs, but signs are themselves parts of *thought*—not just a material carrier used to express it. More surprisingly, thought exist only in time and it never stops changing. It is as if what allows us to think would also lead us to think something else without us even noticing it...” (*ibid.* p. 165).

The question of the relation between the ‘mental’ that is intimately part of language, and the mental that is more generally associated with thought or intelligence is theoretically indeed the most

difficult question to solve. Maniglier invites us to observe here two ‘conflicting’ modalities of the emergence of signs and their series, first in terms of the appearance of ‘terms’ or the sign-units by way of a ‘play of *differences*’ (for, as Saussure puts it “*in language there are only differences*” (CGL 2, p. 120; *Cours*, p. 166. Emphasis in the original)) and then by way of the appearance of ‘values’ by way of a ‘play of *oppositions*.’ The ‘terms’ emerge as a function of the pure differences between sensible qualities, while the ‘values’ are a function of the positional appearances of terms in a closed system that language is at any given point of time. Qualitative differences are embedded in a system of oppositions, rendering the language to be a mere ‘form’ without there being any substance or any ‘positive terms.’

What is significant about the system of oppositions is that it is highly language specific. ‘Values’ emerge relative to a series of terms within a particular system. There is a dynamic and evolutionary relation between the differentially produced qualitative entities or terms, and the oppositionally produced serial and systemic values. According to Maniglier, this is where the essential instability or the variability of the systems and its elements are to be located:

The serial organisation of the “terms” (the post-processing) is carried out on the basis of the concrete qualitative differences that constitute them. These differences can be altered — for a number of stylistic, physiological, sociological, etc. reasons — without changing the structure of the oppositions. That is why the overall equilibrium is *susceptible* to change, but *only in as much as a new interpretation intervenes, only inasmuch as someone will create* — on the basis of new differential terms — a previously nonexistent series of oppositions that will modify the possible analysis of linguistic performances. (Maniglier, *op. cit.*: 167)

Thus, the definition of language that Maniglier derives from Saussure is that of an infinitely differentiating and varying complex system consisting of incorporeal or mental elements that are organized as states of qualitative and serial variations. The variations of the complex system, as in the connectionist AI, are a response to its exposure to the outside world, that is, *the sensible social/cultural milieus*. But as far as the system is concerned the variational ordering processes are involuntary, and from a Saussurean point of view, they “are

rigorously *mechanical*: they are based on an innate faculty... a non-specific faculty, namely the semi-logical faculty." And further... : "Languages are involuntary by-products of the linguistic faculty's exercise." (*ibid.* p. 168)

Thus, signs as *terms* are the products of the differentiating mechanisms of the individual humans' innate cognitive faculty, and they emerge only in sensible (cultural) milieus, but their values are in continuous oppositional and serial variation, which negates the possibility of any teleological social-cultural stabilization. In other words, owing to the potential differentiability and the variability of the signs, our thoughts which are part of the sensible cultural milieu cannot be fixed and stabilized, and conversely, since our cultural cognitive milieus are exposed to ever new contexts, alterations in terms of qualitative differentiations and serial variations happen incessantly. According to Maniglier, Saussure's position "straddles between individualizing cognitivism and the holism of the objective spirit." (*ibid.* p. 169)

What all this portends is the indefinite and infinite cultural, cognitive and linguistic variability of human social life, even when the rigorous mechanical laws and their unpredictable internal evolution are common to both humans and machines. Maniglier suggests that the pool of variable intelligences of the future, could consist, not only of what can be derived from a multiplicity of human cultural contexts, and from the evolving intelligent machines, but also from cultural milieus emerging from man-machine cognitive and social interactions. I think, perhaps the picture will be more perfect if we can expand it to triangular cultural milieus that include the lived world of the animals too. We should look forward to a not-so-foreseeable future, where animals, humans, and machines can converge in contingently evolving cultural milieus where all can live happily thereafter.

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