

# From Self-Awareness to the Consciousness of the “Speaking Subject”

Armelle JACQUET-ANDRIEU  
PhD, Linguist & Psychologist (Neuropsychologist)  
Paris Ouest University – CNRS UMR 7114 – MoDyCo  
[Armelle.Jacquet@u-paris10.fr](mailto:Armelle.Jacquet@u-paris10.fr)

Joël COLLOC  
Computer Science PR & DR of medicine  
Le Havre University – CIRTAI IDEES UMR CNRS 6266  
Le HAVRE (FRANCE)  
[joel.colloc@univ-lehavre.fr](mailto:joel.colloc@univ-lehavre.fr)

## Abstract

This paper concerns human language, which is linked to the process whereby the human brain developed and adapted to its environment *via* the body, the senses and the intelligence of the speaking subject. We can say, first, that the subject’s unconscious reaction to the impact of a sensory percept, whether complex or not, is emotional *stricto sensu* and physiological; a statement produced in response to this impact still pertains to feeling. A fundamental point in the problem posed here and one that entails an epistemological revolution is that, in self-awareness, various levels of consciousness come into play. We shall see how these concepts can be organized into a coherent and relevant whole in order to put forward the following hypothesis: the eruption of emotion, strictly speaking, anticipates the production of language.

**Keywords:** Language, Cognition, Self-Awareness, Consciousness, Emotion

## 1. Introduction

This paper concerns human language, whose origin is lost in the mists of time, as is the process whereby the human brain developed and adapted to its environment *via* the body, the senses and the intelligence. The “speaking subject” (Saussure, 1891)<sup>1</sup> expresses himself, either consciously<sup>2</sup> or not, thanks to integrated semiotic and cognitive systems<sup>3</sup>. The present study is also based on neuro-functional concepts (from anatomy and physiology) and state of the art neuropsychological knowledge (Jacquet-Andrieu, 2012), since it would be absurd to restrict the investigation of language to the field of linguistics, given that the slightest percept provokes a bodily reaction. In other

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1 “Sujet parlant”: the central concept in linguistics (Saussure, 1891).

2 In French the term “conscience” covers the concepts of “consciousness” and “awareness”.

3 *Cognition*: according to Kant (*Critique of pure reason*), cognition is an “[...] intellectual act by which one acquires knowledge.” (E. Littré. *Dictionnaire de la langue française*, t. 2, p. 440). Kant attaches great importance to this concept in his conception of metaphysics. It is worth mentioning that he is little known for his substantial work on education and didactics and that he was a professor for many years (*cf.* Bibliography).



words, when a person responds and communicates, this is immediately observable on the body (Varela, 1979; Varela & al, 1991) – but what exactly does one observe? Emotion, first of all (Damasio, 2010): it conveys meaning, just like the spoken message which it anticipates and with which it is inextricably associated, and sometimes even conflicts (Turchet, 2009): hence, the interest of a joint analysis of language and feelings, in order to approach the fundamental underlying concept of the self-awareness and the consciousness. In 1952, the Romanian linguist and philosopher Coseriu (1952/1972) defined language as a cognitive function<sup>4</sup> but Saussure, in 1891, was the first in fact to mention “language awareness”; James (1890) at exactly the same time defined the self, the self-awareness and consciousness from a psychological point of view and a little later, Freud (1915) defined the unconscious, though this contains the notion of “repression” that is absent from the strictly *linguistic unconscious* of Saussure (Arrivé, 2007, 2008, 2012). A study of *consciousness*, which is inseparable from human feelings and language, also presupposes that we consider its various degrees but also its disorders (Lechevalier et al., 1998).

In this multidisciplinary context, we can say, first, that the subject’s unconscious reaction to the impact of a sensory percept, whether complex or not, is emotional *stricto sensu* and physiological; a statement produced in response to this impact still pertains to feeling. A fundamental point in the problem posed here and one that entails an epistemological revolution is that various levels of consciousness come into play. We shall see how all these concepts can be organized into a coherent and relevant whole in order to put forward the following hypothesis: *the eruption of emotion, strictly speaking, anticipates the production of language.*

## 2. Language and Body

If, as argued by Turchet (2009, 2010), the subject’s body reacts and responds unconsciously to the slightest percept, this immediately raises another question: that of the relationship between language and the body. The advocates of the biological theory claim that this relationship is primarily based on reflexes, which are able to explain at least part of the hypothesis of universality (Damasio, 2010). However, the universality of body language is inseparable from the overarching context of linguistic production, culture and the arts. Besides, the upholders of socio-constructivism (Bruner, 2000), using examples of gestures, show how cultural differences influence body dynamics. In this case, however, gesture is situated on another level of consciousness because codification has already occurred. Turchet (2013, in press) poses the question of universality differently:

[...] Has the body a language? Indeed, to recognize the serious possibility of a body language would lead one to think that the body by itself alone can produce autonomous messages of communication (i.e. pre-verbal or non-verbal even before being co-verbal). This question seems [...] to concern several fields [...], and to cross-cut all the human and social sciences. Daring to even think of it, daring to ask it is already to consider the

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<sup>4</sup> Eugenio Coseriu, « Sistema, Norma y Habla », in *Teoría del lenguaje y lingüística general*, p. 36.



existence of a body language as a scientific object. The issue then suddenly appears in a much less harmless light because the object 'body language', as such, is still only a crossroads object, considered by several disciplines, without being central in any.<sup>5</sup>

The question "has the body a language?" must thus be put clearly. Bullinger (2004) asks the same question and posits the need to define "body language" and to demonstrate its existence. As we claimed above about consciousness, he does so by referring to diverse pathologies, such as autism and self-awareness.

## 2.1. Language and Body Relative to Autism

Broadly speaking, cognitive studies on autism focus on some central theoretical points, based on the notion of congenital deficit (Berthoz, Andres, Barthélémy, Masson, Rogé, 2005). Secondly, the theory of meta representations (Baron-Cohen, 1995; concerns the concept of "discovery of the mind", developed in relation to autism by Baron-Cohen, Leslie and Frith (1991), Butterworth (1991), then by Wilde Astington (1993/1999), a notion already present in Greek philosophy, and that is later found in Kant, Hegel, etc., in different terms. Any "theory of thought" is related to self-awareness, volition, intention (conation in the narrow sense) and attention (Cadet, 2009): it is the capacity to represent one's own mental states and those of others. The experiments by Baron-Cohen et al (1986) conclude that it is the absence of this metacognitive faculty that characterizes the autistic subject, hence his/her subsequent incapacity for socialization, which requires making voluntary and deliberate contact with others and involves human communication through the expression of thought and language. As Delacroix (1934) asserts, the development of thought requires the emergence of language or of a language:

Language (*langue*) is in the mind, not of course as a dictionary, a grammar and a specific logic, but as a set of semantic, grammatical, and intellectual habits: just as the next race is in the runner's muscles.<sup>6</sup>

Ontologically and upstream, Hobson's (1994) or Damasio's (1999/2003) theory of emotions is based on a more archaic and reactive neurobiological mode (the limbic system, the amygdala, the brain stem). They claim that the autistic child is innately incapable of decoding the emotional states of others and of displaying his own. As a result, the autistic child is incapable of acquiring a "theory of the mind" (the highest cognitive level: cortex), for lack of a "theory of feelings". Rogers (2001), in a more behaviorist approach, evokes a congenital incapacity for imitation, confirmed by a lesser activity and/or a lesser density of mirror neurons (the neurons of reflection and imitation, which are perhaps the first to be acquired/ learnt).

This issue can be explored by starting from three interrelated questions asked by Turchet, the answers to which could raise the problem of body language to the rank:

[...] of an autonomous, *universal* and scientific object, capable of being measured

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<sup>5</sup> Turchet (2013, in press), « Préalables épistémologiques à une théorisation du langage corporel », in Jacquet-Andrieu, *Sous-jacentes au langage, les émotions...* Limoges : Lambert-Lucas.

<sup>6</sup> Delacroix (1934), *L'enfant et le langage*, p. 10.



thanks to specific tools [...]. These three questions are: Can we understand each other without speech? Are words mandatory to exercise mental activity? Is it possible that bodily action may precede the act of thinking?<sup>7</sup>

## 2.2. The Autistic Subject: Emotion and Language

In the field of physiology, the first question has been addressed by many of research published on mirror neurons (Mukamel et al., 2010), studied in man after having been discovered in the brain of the monkey (Rizzolatti & Sinigaglia, 2008). It is now recognized that human beings can understand one another simply by looking; watching someone execute a gesture activates the same neuronal areas as executing the same action oneself (Berthoz & Jorland, 2004), only the intensity is stronger in the latter case. In other words, human beings understand one another without needing to communicate. Language is passed from body to body without words, without the “speaking subjects” being really conscious of understanding each other because the operation is infra-aware (Dimberg, 1990).

Turchet argues that a thought based only on words would be severely impoverished, since thought expresses itself consciously or not through multiple channels. If thought were based only on words and expressed by words, body language as an object would be devoid of substance, as would all the vectors and other means of communication.<sup>8</sup> Hence the need to answer Turchet’s second question: “are words indispensable to exercise the activity of thought?” Many observers of language pathology would answer this question in the negative (Laplane, 1997), pointing to the facts about aphasia<sup>9</sup> and its relation to intelligence.

## 2.3. Aphasia, Thought and Intelligence

In the debate on *aphasia* and *thought*, *intelligence* and *mental health*, the forensic literature<sup>10</sup> cites Trousseau (1865/1969), who defined the term “aphasia”, or Dejerine (1907), for example, who considered that intellectual functions are impaired in certain aphasias, but usually only slightly, except in total aphasia disorders (sensory and motor). Marie (1906)<sup>11</sup>, on the contrary, asserted that there is “*intellectual degeneration*”, a theoretical position followed by the linguist Jakobson (1963).

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<sup>7</sup> Ph. Turchet (2013), *op. cit.*

<sup>8</sup> This is what Birdwhistell did with kinesics, when he wrote in 1950: “[...] to envisage nonverbal communication without words is like doing physiology while excluding the heart.” It remained to establish the distinction between nonverbal language and nonverbal communication. Indeed, whatever Birdwhistell and his followers say, we can think without words. (Winkin, *La nouvelle communication*. Paris, Seuil, 1981).

<sup>9</sup> Aphasia is the loss of acquired language, generally following a cerebrovascular accident (CVA), a tumor or an accident, the three main causes of sudden onset aphasia. Degenerative aphasia has a different origin because it is more specifically bound to deterioration of the memory.

<sup>10</sup> Cf. L’aphasique et la Loi, pp. 218 & sq., also : Eustache and Lechevalier (Ed.), *Langage et aphasie*, pp. 29 et sq.

<sup>11</sup> Marie (1906). Révision de la question des aphasies : que faut-il penser des aphasies sous-corticales. Paris : Imp. Semaine médicale, pp. 42-50.



Based on a review of the literature and his medical practice, Laplane (1997)<sup>12</sup> highlighted some contradictions and a certain bias in P. Marie's work. He published accounts by aphasics who had recorded their experience of transitory or resorbed language loss. The extracts reproduced below are those by Jacques Lordat (1773-1870), a Professor at the Faculty of Medicine in Montpellier, and the reflections of the philosopher Edwin Alexander.

I realized that when I wanted to talk, I could not find the words I needed [...] The thought was ready, but the sounds which should have expressed it to my interlocutor were no longer available to me [...] Do not think there was any change in the functions of the inner sense. I still felt the same inside. Mental isolation, sadness, embarrassment, and a feeling of stupidity made some people believe I had an intellectual impairment, an imperfection which caused grief to some, satisfaction to others. [...] When I was alone, awake, I silently thought of the occupations of my life, of my studies. I felt no difficulty in exercising my mind... As soon as someone came to see me, I felt my disease by my inability to say even: Hello, how do you do?<sup>13</sup>

Alexander comments:

For the aphasic person, ideas, knowledge, understanding, meanings, semantics, thoughts, memories and reasons come first and language comes second. I won't even mention the sense organs and the perceptible emotions which come particularly with the sudden loss of language. After a stroke, the person is the same, with the same ideologies and the same prejudices. Simply, he can no longer speak. I did not know what was happening to me, but I realized that all the details of language escaped me. [...] in the ambulance, I mentally summed up what was still functioning in me [...] I felt interest in the beginning of my adventure with language and concepts. I still possessed the concepts but not the language. I had an understanding of the world, myself and social relationships, without knowing anything in fact of the grammar and vocabulary that I had used all my life. [...] For two months, I had the very clear concept of a certain Greek philosopher, but I had forgotten his name.<sup>14</sup>

Mary, an aphasic patient with whom we worked for four years, recounts:

My words are often lacking. My words, my sentences, my conjugations, my grammar is an event, like a tortoise. But my thinking is very fast, like a bird. At the same time, I feel the jubilation of thought of (in)<sup>15</sup> painting, and the hardship of language. Music, drawing, painting... [...] is a mysterious thing, the gift, thinking directly ... directly and intuition ... I discovered another world.

These three testimonies all assert that *thought is intact*, but suddenly severed from its most usual means of expression – words – and that thought thus becomes 'unspeakable' or inexpressible. They stress that the *identity* of the aphasic person, though unable to communicate, is preserved, which contrasts with the image of a person who appears to others to be physically and intellectually diminished; they also evoke the suffering and

<sup>12</sup> Laplane (1997). *La pensée d'outre mots : la pensée sans langage et la relation pensée-langage*. pp. 9-56.

<sup>13</sup> Alajouanine & Lhermitte (1964). "Essais d'introspection de l'aphasie (l'aphasie vue par les aphasiques)". *Revue Neurologique*, 110: 609-621.

<sup>14</sup> Alexander (1990). "Aphasia: the worm's view of a philosophic patient and the medical establishment". *Diogene*, 150.

<sup>15</sup> In the French text, *de* (of) should be replaced by *dans* (in).



the sorrow caused by the inability to refute this false image. Concretely, in its strictest linguistic definition, sudden onset *aphasia* affects the ability to formulate thought in words, but not *thought* itself. And the message conveyed in the expressive or communicative situation is an active demonstration of self-awareness and intelligence; its alteration in this disorder is a null hypothesis, *a priori*: should the opposite occur, we would then speak about a disorder associated with dementia, or about degenerative aphasia.

Alexander adds that language recovery:

[...] involves the reconstruction of grammar, syntax and phonemes and the recovery of vocabulary. [...] and it leaves out meaning, understanding and semiotic rules, because the aphasic subject has not forgotten what language is<sup>16</sup>.

This confirms *Mary's* account and shows that although the aphasic subject needs to re-learn the rules and linguistic units of this “*mother tongue which has become a foreign language*” (Jacquet-Andrieu, 2002 & 2003), s/he does not need to relearn *language* itself, since s/he is aware of language, though cannot use it or only with difficulty. The aphasic person has generally an intuitive awareness of the existence of this *semiological system* adapted to the expression of *thought*.

Alexander concluded that “The *aphasic person knows better than anyone what a constant struggle it is to put thought into words*”. *Mary*, whose speech is still very laborious, confirms this:

I need now / a lot of thought / then the word springs up / sometimes / never // [...] the words are mixed // mixed up [...] “sing the bird no more” / it’s very complicated / “The bird does not sing anymore” // [...] the brain is forced to compose the sentence // this is all the time / all the time / all the time.<sup>17</sup>

These accounts of how “*thought is inscribed in language*” suggest the loss of certain automatisms. It is difficult to deny that the capacity for *thought* of these patients, who are aware of their past disorders and capable of analyzing them, is intact – and impossible to deny it for *Mary*, who is even more credible: twenty years later, she still has to battle every day with aphasia, unlike Lordat or Alexander who have recovered, and whose healing memory of the drama may have blurred some painful recollections or distorted the real facts because they experienced a transitory aphasia. As for *Mary's* intact intelligence, the study of this case of aphasia, ten years after the cerebrovascular accident (CVA), was doubtless the best demonstration (Jacquet-Andrieu, 2001). *De facto*, if words are not mandatory to exercise the activity of thought, we can agree with Turchet when he says that shared thoughts can be produced “*from face to face*” and “*from body to body*”. From this perspective, body language is not simply the medium for words, nor is it simply a co-verbal language; the body language of one person may be the preverbal language of another (Turchet, in press 2013):

Thought is constructed and expressed inter-subjectively, by looking at each other, simply by looking. Body language seems sufficiently explicit to be able, by itself and

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<sup>16</sup> Alexander (1990), *ibid*.

<sup>17</sup> Jacquet-Andrieu, *op. cit.*, Ann. 12, pp. 112, sq & Correspondance.



without recourse to any other means than its circumlocutions, to produce intelligibility.

Surprisingly, the answer to the second question asked by Turchet is that words are not mandatory for the activity of thought or for the process of producing thought: indeed, we can continue to think, even if neurological lesions have affected areas specialized in the processing of verbal information. Among these areas, the most crippling, with regard to the phenomenon that interests us here, is doubtless aphasia or the loss of acquired language (Laplane, 1997), a disorder which manifests itself by the inability to express oneself and/or to understand the meaning of words. If, however, we can think without words and if we can communicate by body language alone, the activity of *body to body* exchange is neither utopian nor anecdotal: thoughts will be transferred from body to body, constituting the possible basis of a linguistic exchange, or semic-act, and opening up possibilities for rehabilitation.

The autonomous observation of body language and the findings on autism and aphasia thus provide an initial theoretical foundation that is based on a scientifically acceptable approach. However, it is necessary to answer Turchet's third question: "is it possible that bodily action may precede the act of thinking?" To which one could add: Does the emotional response anticipate the thought?

#### **2.4. From the Body to the Thought or from the Thought to the Body?**

If the body reacts even before the brain or the mind have time to cognitively assess reality, then body language becomes the first, fundamental, even original language, from the phylogenetic and ontogenetic point of view. Verbal language is based on, and around, body language, which is no longer an accompaniment to language but is constitutive of language itself. (Turchet, 2013, in press)

According to the measurements made by Lau et al. (2004), there are 230 milliseconds during which the body precedes mental awareness of the reality taking place. During this space of time the conscious brain either represses and inhibits the reflex action primed by the body, or not. In other words, we are dealing here not with the transmission of information or with bodily communication but with the spontaneous production of intelligibility in response to the impact of a percept. The relationship is first "*corps-ceptuel*", the "*corcept*" or "*bodycept*" (Turchet, 2009) and not conceptual: the "*corcept*" thus precedes the concept.

Thus, if the body possesses a language which allows us to understand one another without speaking, if the act of thought can do without words, and if the bodily reaction precedes the act of thought, then this endows body reflexes with a semantic status; body language is thus not only involved in but is the initial act in linguistic production, which it anticipates. It is perhaps in body language, which is an object of observation and a scientific object, that the intelligibility of thought can be retrieved even before its production. If indeed the body motor action precedes the act of thinking the action by some 200 milliseconds (ms), and if these 200ms are sufficient to repress, inhibit or on the contrary let the action take place, what about a mental action? How much time does a human being need to be aware that he is thinking of what he is thinking? The observation of body language can be an appropriate tool to answer this question.



Observing a human being, the “speaking subject”, communicating with his body is to observe the person understanding and thinking of what he perceives, even before being conscious of it! Certain facts based on the observation of bodily reactions and their relation to verbal language strongly suggest this. An experiment is currently underway to investigate this promising hypothesis further, using the Face-LAB<sup>18</sup> system.

These considerations concerning the universality of body language, or “Synergology”, raise the crucial problem of consciousness in verbal communication and its correlations with neurophysiology, neuropsychology and neuroscience.

### 3. From Language to Consciousness

The aspect we now will address draws on the work of the precursor of linguistics, Ferdinand de Saussure and, rather paradoxically on his oldest and least well-known papers. Sofia (2010) estimated the number of unpublished pages by Saussure at some 30,000. Arrivé (2012)<sup>19</sup>, a specialist of Saussure’s work and of the notion of consciousness in linguistics, underlines the specificities of Saussure’s thinking, characterized by a constant search for the right word in the right place to explain his conceptions of language. We will mainly refer to Arrivé’s analyses in what follows (Arrivé, 2007, 2008, 2012).

#### 3.1. Language Awareness

In Saussure’s already published work, we find at least two occurrences of the expression “language awareness” (“conscience de la langue”), in the *Cours*, 1. Riedlinger notes:

Comparison leads to analysis and results in < elements which are perceived by language awareness (*langue*)<sup>20</sup> >, sometimes a radical, sometimes a suffix etc. Language (*langue*) does not know the terms ‘radical’ or ‘suffix’ etc. but we cannot refuse it an awareness and use of these distinctions.<sup>21</sup>

Without dwelling on the difficulty of interpreting an uncontextualized text, it should be noted that when Saussure mentions “the absence in language (*langue*) of the terms radical, suffix, etc.” (Arrivé, 2012), he echoes the previously quoted aphasic subjects and is not inconsistent with Lacan’s assertion that “There is no metalanguage”. Farther on in the *Cours*, Arrivé notes the second occurrence of the expression “language awareness (*langue*)”:

However, one can assume that elements exist for language (*langue*) awareness. So, for the word *in-décor-able* (un-decor-able): since each fragment has been extracted from a

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<sup>18</sup> Cf. Appendix.

<sup>19</sup> Arrivé (2012), “Conscience de la langue” et inconscient chez F. de Saussure, *La célibataire*, 24, p. 121.

<sup>20</sup> *Langue*: Saussure defines “*langue*” as a representation of language, actualized in *speech* (*parole*). In English, the term “Language” covers the notions of language (human ability) and idiom (the mode of communication of a linguistic community).

<sup>21</sup> Komatsu (1993). *Ferdinand de Saussure*, p. 96 (our underlining).



set by a series of comparisons, these fragments are already available to speaking subjects.<sup>22</sup>

The expression “language awareness (*langue*)” can be understood in two ways: objective or subjective. Depecker opts for the objective interpretation: “Language awareness (*langue*), that is to say the awareness that speaking subjects have of language (*langue*) and of the units which they recognize. And that they express in speech.”<sup>23</sup> Arrivé opts rather for the second interpretation because, in Saussure’s book project, *De l’essence double du langage/ Upon the double essence of language* (1891)<sup>24</sup>, we read:

*La première expression de la réalité serait de dire que la langue (c’est-à-dire le sujet parlant)<sup>25</sup> n’aperçoit ni l’idée a, ni la forme A, mais seulement le rapport a/A ; cette expression serait encore tout à fait grossière. Il n’aperçoit vraiment que le rapport entre les deux rapports a/AHZ et abc/A, ou b/ARS et blr/B, etc. (ELG, p. 39)<sup>26</sup>.*

Arrivé then clarifies the discursive phenomenon, which consists in using the masculine personal pronoun (“*il/he*”) to refer to the feminine expression “*la langue*” (language): judging from the ensuing text, Saussure appears to establish a strict equivalence between “*la langue*” (language) and the speaking subject (*sujet-parlant*). Moreover, as a corollary of *language awareness (langue)*, Arrivé raises the question of the *unconsciousness of language (langue)* and its relation to language awareness.

### 3.2. “Language Awareness” and “Unconsciousness of Language (*Langue*)”

Arrivé specifies that the expression *unconsciousness of language (langue)* first occurs very early on in Saussure’s work (1891), in the text of the second *Conférence de Genève* (written at the same time as the project: *De l’essence double du langage/ Upon the double essence of language*), and then sixteen years later in the first lecture, mentioned above (1907). This leads him, in a discussion of the morphological innovation which produced the form “*je trouve*” (I find) and eliminated the etymological form “*je treuve*”, to note an intermediate state of awareness: the notion of “semi-consciousness”.

[...] The form “*je trouve*” (I find), before being produced is first required to correspond to a precise idea I have in my mind: that of the first person singular. The forms “*we push*” or “*I push*” are only thought < or rather perceived in a semi-awareness >; only the form “*I find*” is performed in speech.<sup>27</sup>

Indeed, Saussure’s interest in anagrams leads him to reflect on the notions of *awareness*, *unawareness*, and on the intentional or unintentional aspects of verbal production, the correlative intention and non-intention. Finally, given the awareness of

<sup>22</sup> *Ibid.*, p. 129.

<sup>23</sup> Depecker, *Comprendre Saussure*, p. 124.

<sup>24</sup> Ferdinand de Saussure, “De l’essence double du langage”, in *Écrits de linguistique générale*, pp. 15-88.

<sup>25</sup> Our underlining

<sup>26</sup> It can be surmised that the first expression of reality is that language (*langue*) (i.e. the speaking subject) sees neither idea *a*, nor shape *A*, but only the relation *a/A*; this expression is still quite rough. He only really sees the relationship between the two relationships *a/AHZ* and *abc/A*, or *b/ARS* and *blr/B*, etc. (ELG, p. 39).

<sup>27</sup> Komatsu (1993), Ferdinand de Saussure. *Cours de linguistique générale*, p. 90-91.



language (*langue*), is there in Saussure's work, an *unconscious of language (langue)*? Arrivé concludes that: "The functioning of the linguistic objects discovered during this research seems to escape the influence of time that characterizes linguistic signs."<sup>28</sup>

### 3.3. The Saussurean Unconscious and the Freudian Unconscious (Arrivé, 2008, 2012)

This raises the question of the link between the Saussurean unconscious and the Freudian unconscious. Arrivé points out that: 1) The Saussurean unconscious does not contain the notion of "repression"; 2) The Saussurean unconscious is strictly and exclusively linguistic. It is composed only of linguistic elements, of all kinds and of any dimension. Freud's thinking of this topic fluctuated a lot and is complex. What is beyond doubt, however, is that the Freudian unconscious is not exclusively linguistic, even if it is "structured as a language"<sup>29</sup>. The Freudian unconscious and the Saussurean unconscious have at least one feature in common however: "they are not in any way affected by time."<sup>30</sup>.

## 4. An attempt at Synthesis

In this last part, the objective is to provide a synthesis of the two fundamental approaches: that developed by Turchet, *The universal body language*<sup>31</sup> (Synergology) and that proposed by Arrivé, on linguistics and its precursor, Saussure. The core feature of both theories is "the linguistic unconscious (*langue*)" in Saussure and "the unconsciousness of gesture" developed by Turchet (2009).

Both these positions are remote from the traditional *doxa* and may therefore contribute to an epistemological revolution. Saussure's theory of language results in "an equivalence between language (*langue*) and speaking subject", as explained by Arrivé, thus making Saussure, from an epistemological point of view, one of the earliest cognitivists with respect to language. The position of Turchet, who explored and measured universals that are physically and unconsciously expressed, is akin to that of Saussure: "the linguistic unconscious" and "unconscious body language" are two notions that naturally merge to form the locus for the expression of emotions, strictly speaking, in the human body, which anticipate human language.

### 4.1. From the Underlying Emotion to the Expressed Language

These two authors, more than a century apart, echo the latest theories of emotions expounded in the recent book by Damasio (2010), whose well-documented theory resonates with the above-mentioned authors (Turchet, Saussure and Arrivé). The

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<sup>28</sup> Arrivé (2012), *op. cit.*, p. 121

<sup>29</sup> Lacan, *Écrits*, p. 868.

<sup>30</sup> Arrivé (2012), *ibid.*, p. 122.

<sup>31</sup> Turchet (2009), *op. cit.*



agreement between the data presented here and the new map of emotions proposed by Damasio, with its three anatomo-functional components (brainstem, thalamus and cortex), related to the neuropsychology of language (Jacquet-Andrieu, 2008), deserves to be highlighted.

So, as specified in our introduction and in the works of Turchet and Arrivé, human emotions and their expression anticipate verbal language and broaden the definition of language to include body, gesture and voice: raising an eyebrow, scratching oneself, a tremor in the voice, stumbling over one's words, or the hint of a stammer, are all indications which "betray" the speaker's state, and are a form of absence or loss of conscious control. Hence the emergence of the problem of consciousness, as Damasio said in his latest work:

The title of this book and its opening pages leave no room for doubt: to deal with the conscious mind, I favor the self. The conscious mind appears when the process of the self is combined with a basic mental process. When a mind has no self, it has no consciousness in the strict sense.<sup>32</sup>

According to Damasio, the creation and development of the emotional world are the result of a long evolutionary process, with the human being endowed with language at the top of the ladder. He spots two stages in this process: "the self who knows, originating in the self as object".<sup>33</sup> He defines the latter as follows:

[a] dynamic collection of integrated neuronal processes, focused on the representation of the living body, which finds its expression in a dynamic collection of integrated mental processes.<sup>34</sup>

In agreement with James (1890)<sup>35</sup>, Damasio says that the perception of all these elements is related to the fact that they generate emotions and feelings and he refers to the notion of "somatic markers". Concerning the "self who knows" and its presence, he considers it to be more "elusive", "it is more scattered, more dissolved in the flow of consciousness and sometimes so subtle that it seems not to be present"<sup>36</sup>. Finally, to allow full consciousness, a "new property" must be acquired: subjectivity, which is defined through "the feeling which marks the images that we experience subjectively"; these images are thereby perceived and represented. In addition to the notion of consciousness, the central idea is that the "body [is] the foundation of the conscious mind"<sup>37</sup>; it is connected to the sensory world, and the place where the outside world is perceived.

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<sup>32</sup> *Op. cit.*, p. 14.

<sup>33</sup> *Ibid.*, p. 15.

<sup>34</sup> Damasio specifies even: "this is the situation in which human beings whose process of the self is stopped by dreamless sleep, anesthesia or a brain disease are trapped" (*Ibidem*, p. 16, our underlining).

<sup>35</sup> James (1890), *Principles of Psychology*, p. 440 et sq.

<sup>36</sup> Damasio, *op. cit.*, p. 15.

<sup>37</sup> *Ibid.* p. 29 et sq.



## 4.2. From Emotion to Expression

All these notions seems to agree well and, for the moment, we shall continue to follow Damasio's line of thought which refers to the development of species (phylogenetic) to show how emotion is prior to cognition – and even anticipates the latter – but in close proximity, so to say, to both cognition and language, and ready to merge with them at the appropriate moment. *A priori*, there is no question here of the propositional aspect of the language act (Austin, 1962; Searle, 1969) which would involve the structure of the language (*langue*), its meaning and grammar. What we are dealing with is a dimension situated upstream, involving states of consciousness that underlie the subject's identity substratum and that are aroused on the impact of an auditory, visual, or somatosensory percept, etc. and which engender emotions, feelings and sentiments.

Emotion is thus situated at the interface between the subject's internal and reaction states, following changes in the outside world (the environment). The "coloring" of these states plays an important role in the reflex and/or explicit responses. The best known neuro-vegetative responses are a rise in cardio-respiratory activity (activation of the ortho-sympathetic system); a change in the electroencephalographic signals<sup>38</sup> (EEG: a reduction in amplitude and an increase in frequency) and magneto-encephalographic signals<sup>39</sup> (MEG: an increase in tonic activity) is attributed to the reorientation/ focus of attention, in reaction to events, which is also conveyed by unconscious "gestures and mimicry" and vocal features that can be directly observed. We therefore distinguish between unconscious gestures and mimicry which are purely emotional and anticipation of the gestures and mimicry that accompany communication, which are partly unconscious and partly controlled by social practices. These fundamental data were ignored for a long time, however, by the contemporaries of Saussure, who was so right, and by his followers; some were later taken up by Jakobson (1963), in association with Luria (1978/1947), with respect to aphasia.

But let us return briefly to Saussure and to the texts mentioned by Arrivé (2007, 2008, 2012), which are very close to the psychoanalysis of Freud and Lacan, and applied to the notion of "language awareness (*langue*)". In dialogue, the subject, as both a psychic (mind) and physical (body) entity, is alive and conscious in a specific space and time; the speaker is both interiority, with varying degrees of consciousness, and exteriority, open to the world (otherness), with the notion of self-awareness and a capacity to distinguish between the self and the non-self: this is where personal feelings and knowledge are located.

## 5. Conclusion

To conclude, we would like to point out that, from the point of view of language ontogeny, a baby feels and communicates even before birth. In any dialogue, the body

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<sup>38</sup> EEG: Electroencephalography & Electroencephalogram.

<sup>39</sup> MEG: Magneto-encephalography & Magneto-encephalogram.



speaks and unconsciously anticipates, and it sometimes says something different to the speech of the speaker who inhabits the body (Turchet); the speaker can be both identified and/or betrayed by his/her voice. In any dialogue also, emotions and feelings emerge in different ways from one language (*langue*) to another... The loss or the absence of a sensory channel entails other forms of linguistic communication, such as the sign language used by the deaf, for example, and its metaphors. Or to avoid words, the patient can choose drawing as a medium for his/her feelings, "to tell" them better, or even to discover them in certain cases (the case of Mary who became a painter). There are many different skills and various learned and memorized experiences, which can be reused, modified and widened, linked to motivations and to voluntary acts but also to the spontaneity of the emotional response, which is an effective and emotional anticipation of the verbal exchange.

It seems then that the eruption of emotion, strictly speaking, in anticipation of linguistic production is a strong hypothesis! Finally, we shall let Damasio conclude this study on language, the self-awareness and consciousness:

The grand symphonic concert of consciousness embraces the founding contributions of the brainstem, forever bound to the body, and the imagery that is vaster than the sky created by cooperation between the cerebral cortex and the thalamus, all connected, all in motion ...<sup>40</sup>

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<sup>40</sup> A. Damasio, *op. cit.*, p. 34.



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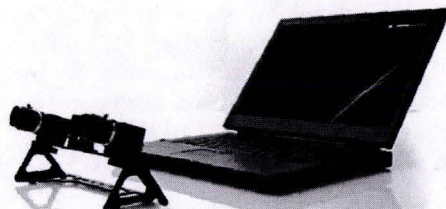
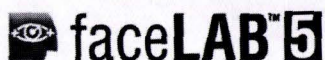


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## APPENDIX

### FACELAB™5 SYSTEM



[http://www.teaergo.com/index.php?option=com\\_content&view=article&id=167&Itemid=252&lang=fr](http://www.teaergo.com/index.php?option=com_content&view=article&id=167&Itemid=252&lang=fr)

#### Brief description

##### (1) FaceLAB™5, a non-intrusive system

- A binocular device (2 small cameras) is used to measure simultaneously in 3D and at 60 Hz:
- Head movements ( $\pm 90^\circ$  horizontal,  $\pm 45^\circ$  vertical),
  - Eye gaze direction ( $\pm 45^\circ$  horizontal,  $\pm 22^\circ$  vertical) with a precision of  $0.5-1^\circ$ ,
  - Eye behavior (saccade events, pupillary diameter, ocular vergence, parameters of vigilance)
  - Tracking the movements of lips and eyebrows.

##### (2) The system can be implemented with or without infrared lighting of the pupil<sup>41</sup>

The FaceLAB eye tracking system is particularly successful: the subject can wear glasses or contact lenses. The analysis of eye movements is of great interest for the study of gaze in numerous research contexts, in order to detect the moments when the subject looks with the dominant right eye or with the left eye, dilation of the pupil under the influence of emotion, etc.

##### (3) CAPTIV-L7000 system

This system films all the actions during an experiment, making it possible to observe the subject's reactions to the proposed percepts and to measure variations in movements. It is the observer of what takes place during the experiment.

##### (4) Additional technical data about faceLAB

The complete system (software and hardware, including a laptop or PC) can be used both indoors (fixed setup) and outdoors (portable version); it contains three sets of camera optics to position the subject within the measurement environment (up to 1.4 m from the cameras). The subject's head movements are free (no helmet).

The capture window ("head-box") allows natural movement amplitude (0.35m laterally; 0.23 m vertically; 0.6 m frontally) and the device is separated from the screen. The system also

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<sup>41</sup> FaceLAB is the only system in which the default measurement principle does not depend on infrared – it can work without IR – which makes it highly robust and limits the classic constraints related to bright sunny environments, to reflections on glasses and contact lenses, etc.



allows the automatic construction of facial models, which can be saved for re-use; the subject can therefore go out of the capture field of and re-enter it without the need for re-calibration (immediate recovery of the measurements: < 100ms).

During the tests, the subject can observe stimuli presented on any PC screen, a scene shown by an overhead projector, or the static real environment (objects, regions of interest, etc.).

A scene camera module (optional) can be used to correlate the eye fixation data from faceLAB with the dynamic simulation scenario in real-time (the real dynamic environment, human interactions, etc.).

The complete analysis software EyeWorks allows preparation of the scenarios and/or analysis of the recordings (made on screen or via the optional scene camera module): eye tracking review synchronized with the sound environment, eye fixations, regions of interest, heat maps, statistics, etc. The measurement flow available is adjusted in real time for interfacing with the customized applications (via the integrated CoreDataAPI). A 3D viewer is included for the real time display of the recording and the review of the interactions with the static environment, during the sequences of the protocol. The system is compatible with the optional module CAPTIV-L7000, for the synchronous recording of videos and the physiological measures (emotions) provided by non-invasive wireless micro-sensors.

This device can be used in diverse research contexts on cognition: psychology, linguistics (reading and writing, dialogical behavior, for example), etc.