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## **Abstract**

Psychosomatic disorders are classically related to the body outside the brain. Yet, there is no reason why the circuits of the brain should not be affected by a psychosomatic process. For Lacan the psychosomatic phenomena are related to the creation of a conditioned reaction of the organism through signifiers, which having *frozen* and therefore lost their signifying function, are transformed into signals, which coming from the Other, obtain an imperative quality for the organism, thus disturbing its function. These signals could affect through conditioning certain cerebral circuits as well. Peirce's *Phaneroscopia* helps us conceptualise this procedure as a semiotic reduction which proceeds from the *thirdness of the signifier* to the *secondness of the signal* or even go further to the *firstness of complete automation of stimuli*. *Thirdness* is the specific semiotic modality for humans and when *thirdness* is reduced, the body gets ill. This process could apply to *mood disorders* and other clinical conditions likewise.

*Keywords:* Neuronal plasticity ; Psychiatry; Psychoanalysis; Psychosomatic disorders ; Semiotics ;

## **The concept of psychosomatic illnesses of the brain**

*Lacan was a man of his time, involved in his era's debates, a fact that remains a lesson to the contemporary psychoanalyst.*

Alain Vanier (2001: 265)

### **1. Are we our brain?**

The idea of us being our brain, that the subject that we are is in fact the area of our body we call the encephalon, is a widespread belief nowadays. The origin of this idea can probably be found in the history of possessive individualism which postulates that we are the sole proprietor of ourselves, with no debt towards society. According to Fernando Vidal (2005), this idea is the logical consequence of 17<sup>th</sup> century philosophy on identity and matter: John Locke's theory that our identity is individual and related to our conscience and memory is supplanted by Charles Bonnet's one, according to whom it is our brain that defines our identity. This progressive *cerebralization* of identity, also supported by Alain Ehrenberg (2004), has probably contributed to the development of neuroscientific research. Therefore, last decades' findings in neurosciences sought to legitimate in return the idea of the subject's *cerebrality*. Neuroscientific research revealed, among other things, changes in cerebral structures and modifications in neurotransmitters in some psychiatric diseases. The notion of us being our brain provided some strong arguments for neurology and psychiatry to get back

in bed together after years of separation but no definitive divorce<sup>1</sup>. On the other hand, that same idea confined psychosomatic disorders to the peripheral soma; since if we identify our psyche - and ourselves - with our brain, only the peripheral soma remains to suffer from such illnesses. Stéphane Thibierge (2007) notes however that the functioning of the brain depends upon the structure and physiology of neurons, whereas psychic functioning depends upon language structures, symbolic and external to individual brains. When Henri Ey formulated the act of separation between neurology and psychiatry in France, he did let some doors open for a possible reunion: in his theory regarding the conscience for example, dementias remained in the psychiatric territory. Jacques Lacan<sup>2</sup> (1966), with his speech on psychic causality in Bonneval, as well as a decade later<sup>3</sup> (1966: 572) when he maintained that the only organic factor in relation to psychosis is the one that motivates the structure of signification, never really managed to present a final objection to that “diseased conscience” which Ey thought some mental disorders to be based upon.

## **2. Psychosomatics and brain**

During the 1960 decade, with the first advances in neurosciences, some may have thought that psychosomatic processes could affect the brain: for example, American psychiatrist and psychoanalyst Silvano Arieti (1959) had postulated that schizophrenia and to a second degree manic-depressive psychosis could be considered mental disorders in which there is a psychosomatic involvement of the brain. This idea was already implicitly present in Carl Gustav Jung's (2001) postulate of an endotoxin hypothesis for schizophrenia. According to Jung, at the start of the disease, there is an ideo-affective complex which produces a strong affect which in turn will cause the initial mood disorders. These mood disorders, by way of a metabolic X factor, stabilise and automate the ideo-affective complexes, just like other psychic phenomena of a mainly affective nature. This idea was adopted by Arieti (1974) in his - explicitly psychosomatic - hypothesis regarding schizophrenia, where he posited an integration of the higher cerebral functions to a lower level. That being so, paleological reasoning, perceptions and present surface in lieu of a more complex interpersonal symbolism. Since then, authors like Dejourn and Abdoucheli (1990), Cacciali and Froissart (2006), Mentzos (2010), Pally (2000) and Widlöcher (2002) have explicitly mentioned the possibility of a “psychosomatics of the brain”, and others like Ali (1987), Hartocolis (2002) and Verhaege (2004) have underlined the relation between psychosis and psychosomatic afflictions.

Still, how can more recent psychosomatic theories enlighten us on these states? We have decided to favour the Lacanian theory over other ones, as it will allow us to link our argument to semiotics and to introduce the semiotic reduction concept which will be the guiding thread of our discussion. If we look at the premises of Lacan's (1973: 1985) work regarding the issue of psychosomatics, it seems that the strongest idea of his teachings is the "solidification of the signifying chain" which he thought related to psychosomatic phenomena (as well as to other clinical states like paranoia and mental retardation). According to Lacan, signifiers don't refer, by way of a binary operation, to things (as is the case for signs), but to other signifiers through the dialectics of the desire of each subject, desire which grips to the desire of the Other. It is therefore a ternary operation. The chief example of that dialectic is the infant who, as subject of desire, deals with the mother (or with the next closest helping hand), and through her, with a third term, the desire of the mother for the father for example.

According to Lacan, the dialectic of the desire stops when the solidification of the signifying chain occurs, and consequently, the "signifier of the desire of the Other" acquires a certain opacity, becomes mysterious. In this state, it ceases referring to some other signifier and becomes an inductor, a signal which results in the disturbance of the soma's needs instead of rekindling the dialectic of the subject's desire. Lacan explicitly referred to Pavlov's conditioning theory with regard to his hypothesis on the solidification of the signifying chain in psychosomatic phenomena. He saw an analogy between the solidified signifier and the signal in Pavlov's experience (the bell in place of the piece of meat) when the experimenter attempted to condition the domesticated dog (therefore sensitive to the signals coming from the other, the human). This theorization allows one to put Lacan's psychoanalytic theory on psychosomatics in relation, firstly to semiotics, and secondly to neurophysiology. We (2013) have named the reduction from the signifier to the signal, even down to the stimuli, "semiotic reduction process". As it has been said previously, in this kind of process the signal thus produced acquires an imperative "capacity" for the subject and conditions the soma; it can therefore cause the disruption of some functions, even lesions. By needs, we do not only mean hunger or the need to be exonerated, but several homeostatic circuits of the organism that may be disturbed by desire and drives. We believe our own contribution to be the generalization of the Lacanian theory, by postulating that this type of semiotic process may also affect the brain's homeostatic circuits. That is to say that the signal may condition not only the homeostatic circuits of the peripheral soma, but those of the brain as well. As we will see below, the circuits that regulate our mood might be, in that regard, a favoured target.

### 3. The semiotic reduction process and Phaneroscopy

Nevertheless, before carrying on with the subject of cerebral circuits regulating mood, let's see what happens with regard to the reduction of the signifier into a signal or into a stimuli. We believe that the process in question can be explained by means of Peirce's (1978 : 22) Phaneroscopy (the theory of categories in his phenomenology) and its three categories: firstness, secondness and thirdness. Firstness is "the way of being of what is, as it is, positively and with no reference to anything else". Secondness is "the way of being of what is, in relation to a second thing, but without taking into consideration any third one". Thirdness is "the way of being of what is, in connection to the reciprocal relation between a second thing and a third one". Firstness is related to immediate sentiment, secondness to reaction and actuality, and thirdness to language, law and representation. Thirdness would be an exclusively human category. Semiotics of the human being is determined by these ternary dialectics since, beside the dialectics of his desire mentioned above, processes like the modality of different sensory fluxes, shared attention, play pretend, the so-called meta-representations, jokes, the structures of kinship etc. (Vidal, 2011) are all ternary processes. In the case of animals, it is the secondness of the signal that determine their semiotic systems. According to Jean-Marie Vidal (2011), "these registers of signals, of which each is in close relation with the stimulus it signals, to such an extent that it functions in the same way, are derived from "dyadic links" systems or from the secondness principle, whereas stimuli themselves act solely as "monads", according to the principle of firstness". In the case of signals, shifting between them is restricted to a relation of synchronic presence (temporal or spatial contiguity, for example), and not to a (diachronic) relation in reference to the absence of something, to words for example. The function of language, according to Lacan<sup>4</sup> (1966: 299), is not to inform but to evoke. Therefore, natural or conditioned reflexes, and more generally, immediate reactions to a signal, belong to the secondness category. Stimuli do not even need another signal in order to be efficient; they act in closed-circuit (as monads) and are thus able to self-maintain themselves. Vidal (2011) posited that autistic patients de-symbolize or *de-ternarize* symbolic forms by replacing them with dyadic ones<sup>5</sup>. With the help of Peirce's Phaneroscopy, we therefore suggest that several psychopathologies are related to a gradual transition from thirdness towards states that fall under the secondness or firstness category, i.e. a transition towards more and more automatic states.

More precisely:

- On the semiotic level, going from thirdness to secondness would mean going from the signifier to the signal, and on the clinical level, we observe conditioning phenomena, and more generally, reaction phenomena. In this regard we have some classic psychosomatic phenomena like conditioned anxiety crises, some conditioning phenomena in the case of drug addicts, reactive depressions or reactive manic states, the repetition syndrome in traumatic neuroses, certain “action-like symptoms” etc.

- The transition from thirdness or secondness to firstness would even go beyond this reduction “stage”. We could probably say that we go from the signifier or the signal to the stimuli themselves. In this event, we have even more automatic states, like automatic mood disorders: e.g. stable delusional mood or athymhormia in the case of schizophrenia, manic and depressive states that have become autonomous from their initial triggering causes, automatic states of panic, some automatic psychosomatic phenomena etc. In all of these situations, the signs do not come from the other, unlike conditioning where the triggering factor is the signal from the other. In this case, stimuli in a way self-maintain themselves.

Needless to say that we do not maintain that there is continuity between animal and man on the basis of such an eventuality of semiotic reduction. Thirdness, even in the case of those extreme situations, does persist, since it plays a constituent role for the human being, who cannot escape it. In human beings, ternary structures subjugate (and in some way, “denaturalize”) ethological signalling systems (signals and stimuli). The fact that when thirdness is compromised, as is the case in the states previously mentioned, the human body makes itself sick can be regarded as a strong proof of such an assertion.

#### **4. Logic of the signifier vs. Logic of the sign**

Independently of Pierce’s Phaneroscopy, we can specify this semiotic reduction process in relation to the psychoanalytic concepts of “deferred action” and “repetition”. The symbolic, i.e. the signifiers’ network of a particular subject, is not an enclosed system. Each encounter with chance may modify the string of its signifiers. Each signifier can change the whole of the signifying chain of a subject. In the case of psychoanalytic therapy, the isolation of the signifier (of a “padding button”) may allow the subject to provide a new, retroactive meaning of his whole history. This conceptualization is a more radical interpretation of the “deferred action” concept of events, of Freud’s *Nachträglichkeit*. If we consider that for a given subject

some signifiers have played a special role, they can be assigned different meanings during different stages of the subject's life, but they never cease being of decisive importance to him. They are, to that particular subject, a boundary, a symbolic castration. However, this recurring re-determination, around the different possibilities the symbolic dictates to the subject, opens up at the same time new dimensions, on condition that he manages to "admit" to himself his inscription in the symbolic, in other words that he manages to accept the limit of the castration that his personal history dictates him. Thus, if the subject stops considering that every possibility is open to him (and in that regard, the problematic of the obsessive is particularly revealing), it allows his contingencies to emerge (to be inscribed), and therefore transforms his contingencies into necessities for his future. The logic of the signifier is thus a logic that "prepares" the subject for the randomness of the encounter, for the unpredictability of the contingent surfacing of the desire of the Other and for singularity. This logic is diachronic and of recurring retroaction, in the sense that the end result can influence its own cause and change it after the fact<sup>6</sup>. On the other hand, the logic of the signal or that of the sign is a linear logic, valid for the reflexes, be they natural or conditioned, and entails an objectification, a certain universality of reactions. This logic also entails a synchrony and/or a spatial contiguity and determines the learning process in animals.

We may therefore consider the "semiotic reduction" also in relation to its consequences regarding the termination of the "padding"<sup>7</sup> by the signifying chain. The termination of the "padding" may occur in various contexts and we will see below what may happen in the case of the schizophrenic. The padding buttoning dictates a subjective and diachronic assumption as far as it puts in relation through the signifiers. The padding is also an assumption of contingency, of whatever new happens to the subject. According to Georges Lanteri-Laura's (1992) expression, it is therefore a creative automatism. When the padding buttoning stops, the encounter with the signifiers of the desire of the Other acquire a certain objectivity and a certain reality of presence, the latter having the force of an order, in other words the characteristics of a signal. These solidified and "imperative" signifiers are pseudo-signifiers, "cut off" from the subject's history (its diachrony). They are actually signals that can trigger psychosomatic processes. This is another way of conceiving the "actual neuroses"<sup>8</sup>, since the signals, unlike the signifiers, act in a synchronic and actual manner. More specifically, in the case of mood disorders the semiotic reduction (or the stop of the padding buttoning) might be that the affects which are linked to the subject's signifiers – although in an indirect manner – lose that connection; they become estranged from the signifying function, and are changed

into emotions (of the secondness order) or into mood (of the firstness order). We will see hereinafter this idea applied more specifically to schizophrenia.

### **5. The brain's psychosomatic involvement in schizophrenia.**

Could there be a neurophysiological plausibility to our thesis? But then, why should this plausibility be sought, since it is in no way essential to our psychoanalytical argument? We believe that this neurophysiological plausibility may show a path which allows us to distinguish between the neurophysiology, or even the neuropathology found in psychiatric disorders and those found in neurological ones. For example, Robert Post (1992) has shown how the neurophysiological mechanism called *kindling* may be of use in the comprehension of mood disorders and other psychiatric pathologies. Concerning mood disorders, he postulated that the progression of the manic-depressive disorder may evolve from a reactive mode of functioning to an automatic one. This progression occurs through the evolution of the dysthymic episodes: at first they are the result of a reaction, conditioned by certain particular circumstances, and in a second phase, if repeated frequently enough, the episodes may become autonomous, i.e. automatic. Automation is determined by the excited state which tends to sustain itself, hence the use of the term of kindling. Stephan Stahl (2002) maintains that this neuronal excitation may even become toxic, leading to the destruction of some neurons. According to that author, excitotoxicity can cause a neuronal apoptosis in certain clinical situations e.g. schizophrenia, depression, bipolar disorder, panic disorder, Alzheimer's disease, Parkinson's disease and other, rendering these states, at least in part, irreversible. This last author clearly amalgamates neurological disorders and psychiatric ones.

If, however, we consider things through the prism of what we described as process of semiotic reduction, the progression from reaction to automation might be conceived, in the case of some psychiatric disorders, as a psychosomatic process. In this article, we will restrict ourselves to the example of schizophrenia. In other articles (2005 ; 2009), we have mentioned how the failure of the signifying function under the foreclosure of the Name-of-the-Father<sup>9</sup> in schizophrenics can lead to alterations of the body image, alterations which will prevent him from dealing with certain events. As a consequence, the subject is overwhelmed by signs as even stimulations that he should be able to ignore become prominent. Several authors [Fink, 2007 ; Hemsley, 1993, Kapur & Mamo, 2004, Lambert, 1990 ; Pansepp, 1998, Van Os, 2009 ; Vergotte, 1998, Widlöcher, 1997) have supported such a hypothesis from very different perspectives. In the early stages of the work for his thesis, Lacan (1975: 137) had labelled this



phase “a nearly pure emotional state”. We believe it to be a transition from the signifying thirdness to the secondness of the signs. From that moment on, the subject can construct an organized delusion that can be, according to Freud (1993), a pathway towards recovery. Nevertheless, if the subject doesn’t manage to find a pacifying outcome via the symbolic - i.e. via delusional metaphors - or via imaginary compensations and other types of substitutes<sup>10</sup>, the previous state - where signs overwhelm him - may trigger two mood processes we regard as psychosomatic processes of the brain. Here, we move from the secondness of the signs to the firstness of the mood. The first of these processes would be a “stable delusional mood” that causes the subject to have a tendency to look for coincidences (e.g. a synchrony or superficial similarities) between signs around him. It is a full-scale interpretative tendency. Some neuroscientists (Stahl, 2002 ; Kapur & Mamo, 2004 ; Panksepp, 1998) have correlated this process with a hyperactivity of certain dopaminergic cerebral structures of the mesolimbic system. The second mood process would be what psychiatric tradition (Guiraud, 1950) calls athymhormia (or emotional dullness). It entails an estrangement in comparison to the previous state, the one where the subject is overwhelmed by signs. The “apathetic” subject doesn’t pay attention to the signs anymore, he has become de-sensitized to them. Stahl (2002) postulates that this may be caused by a dopamine deficit at the mesocortical projection areas’ level and that the phenomenon may be related to the excitotoxic hyperactivity of the glutamatergic systems. Still, as we have said before, Stahl (2002) and some other authors (i.e. Jouvét & Carton, 1994 ; Luauté & Saladini, 2001) with their transnosographic interpretation of emotional dullness or athymhormia) may reach some interesting conclusions to be used by psychopharmacological research, yet they run the risk of confusion between neurological and psychiatric disorders.

We could describe similar psychosomatic processes in the case of depression, manic-depressive psychosis, panic states, traumatic neurosis, addictions and other ones. We haven’t been able, within the limited framework of this paper, to go into the details of all these processes and have chosen to restrict ourselves to showing a research route based on the above approach with the help of schizophrenia.

## **6. Some theoretical and practical implications**

We will now briefly present what interest bears our point of view in order to demarcate psychiatry from neurology, as well as regarding therapeutics research to come.

- We believe to have sufficiently pointed out the way this type of change of the functioning, or even of the cerebral structure, are different between neurological cases and some psychopathological ones, that Stahl and other authors, as we have seen, put on the same neuropsychiatric level. In the case of certain psychiatric disorders, we deal with the brain's psychosomatic involvement via a semiotic reduction that affects electively some cerebral circuits which have a special incidence on operations relevant to the semiotic thirdness. That is not the case with neurological disorders.

- As for the therapeutic procedures, the interest of the above might be that even if, in our opinion, we can legitimately assume that psychotropic drugs have an effect preferably on the automatism of the stimuli whereas cognitive-behaviourist therapies have an effect preferably on the signal associations, we may not expect a recovery at that level, at least a lasting one that would include the creative capacities of the subject. For, inasmuch as psychosomatic afflictions (in the general sense of the word) have to do with the suggestive value of the solidified signifiers, biological and cognitive-behaviourist therapies maintain the semiotic reduction via the suggestion they may entail, thus allowing the subject to feel irresponsible for his own situation. In that sense, these therapies are counter-suggestive and might be useful only in situations that are resistant, occasionally or lastingly, to the setting up of *thirdnesswise* systems, and furthermore, a means to wait in order to create the suitable conditions for the installation of such systems. According to the Freudian dictum, one must sometimes blend the pure gold of the psychoanalytic therapy with the copper of suggestion. It is the psychoanalytic therapy that can first and foremost mobilize, via the "padding" of the signifiers it generates (a highly *thirdnesswise* operation), the creative powers of the subject.

- The assessment of various model compatibilities between neurosciences and psychoanalysis, such as those we saw in the case of schizophrenia, is not without consequence for research. We believe that in the case of schizophrenia the conceptualization we suggest may help biological psychiatrists with their work on how what they call schizophrenia's positive, negative and cognitive symptoms articulate with each other. And, more generally, might this conceptualization help psychoanalysts appraise the utility of medicinal treatments and the right moment for suggesting an alternate therapeutic course?

## **7. Conclusion**

By way of conclusion, we do not find it surprising that when the signifying chain is disrupted the body of the talking being begins to be overwhelmed by that other logic of its

animal organism, the logic of signs, which can lead to psychosomatic diseases. For the thirdness of symbolic structures remain constituent of the talking being, and the secondness and firstness of the ethological signal systems, when they tend to function independently from the symbolic thirdness, are harmful to the human organism following very precise psychosomatic modalities. By over-eagerly ambitioning to heal these psychosomatic disorders without taking into account the signifying logic, we deprive the subject of his very own resources, with regard to his creative potentialities, as well as to his self-healing - the latter being attained by way of the talking cure and/or by way of the real of the body.

## NOTES

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<sup>1</sup> See for example Price, Adams & Coyle (2000) et Yodofsky & Hales (2002).

<sup>2</sup> Lacan J. Propos sur la causalité psychique. In: *Écrits*, (1966: 151–93).

<sup>3</sup> Lacan J. D'une question préliminaire à tout traitement possible de la psychose. In: *Écrits*, (1966: 531–83).

<sup>4</sup> Lacan J. Fonction et champs de la parole et du langage. In: *Écrits*. (1966: 237–22).

<sup>5</sup> Other authors (Balat, 2000 ; Delion, 2000 ; Roulot, 1992) have also used Pierce's Phaneroscopy categories in the field of psychopathology.

<sup>6</sup> François Ansermet et Pierre Magistretti (2010) have written about this operation, in connection to neuroplasticity. Karen Ruth-Lyons (2000) and other authors have expressed similar opinions.

<sup>7</sup> Marcel Czermak (1998) uses the neologism *un-padding* with regard to mania, the adjective *de-affected* for the manic subject and "resemblance of affects" for the affects when there is no more padding button from the signifying chain in mania.

<sup>8</sup> Denomination preceding that of "psychosomatic disorders". Charles Melman (2002), with his "new psychic economy" concept, encourages and prolongs this interpretation on actuality.

<sup>9</sup> For Lacan the access to the symbolic has to do with this access to this ambiguity of the desire of the Other, firstly of the maternal Other. Thus, this maternal Other through her reference to the father as the law of her desire and, generally speaking, her reference to the law (for instance the prohibition of incest), gives the child access to the "Name-of-the-father" (paternal metaphor) and the symbolic in general. For psychotics, the Name-of-the-Father didn't operate on the desire of the mother (there is a foreclosure) and to this regard the symbolic is deficient). Psychotics have great difficulties when they are compelled to articulate an "I" that goes beyond simple mirror recognition, for example, as soon as they need to situate themselves in their own genealogy as a unique effect rather than the redundancy of another. The encounter with a person or situation that actualizes for them this question can have precisely this effect on the psychotic.

<sup>10</sup> See Christian Hoffman (2009) on the distinction between real, symbolic and imaginary substitutes and Frédéric Pellion's (2009) paper concerning the distinction between substitute and compensation.

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