Grupo de Trabajo: Research workshop: "Sciences and Psychoanalysis"[1]

Autor: Mariela Weskamp – Escuela Freudiana de Buenos Aires

Dispositivo: Mesas de Grupos de Trabajo de Convergencia

To research about the contributions of the biological sciences have made to psychoanalysis was very appealing and provoking to me. In the text that follows it will be possible to see the tracks of the questions which led me to this research group, in addition to some provisory hypotheses.

In psychoanalysis, we know that the body, as organism is not taken care by Biology, instead it is the event that develops in the encounter of soma and the language; encounter in which the language is instilled in soma constructing a body. Language and soma will be tied in such a way that they will produce an indissoluble creation, which will be more than a bond, than a tie, than a crossing. It is a truly instillation that produces a new composition, undivided one from the other. We produce beings that are spoken and, if everything works as planned, they speak.

The body in psychoanalysis therefore, is not the *Cartesian dualism,* divided between the immaterial mind and the material body .

Lacan strongly questioned this partition soul-body, body-mind, body- psychic reality, in its last theories. The drive-*trieb*- is no longer a tie, hinge, between the psychic and the somatic, but the echo in the body of an act of speech. The unconscious shows how the subject has been impregnated by the language.

The ability to move forward beyond that dualism, which is actually embedded in us, would allow us to end with the traditional confrontation between psychoanalysis and the medical sciences. In this way, we could take inputs from research that comes from the side of the biological sciences which can be used in our field to confirm or to give foundation to thesis of the psychoanalysis.

This it is the attempt of Ansermet and Magistretti[2], which -in a book of very simple reading-, maintains the theory of the neuronal plasticity.

---

[1] Integrantes: Silvia Amigo, Héctor Yankelevich, Daniel Paola, Graciela Berraute, Silvia Szuman, Demetrio Demirdyian, Alicia Hartmann, Mariela Weskamp.

[22] "To each his brain." Neuronal plasticity and unconscious

They bring forward the idea that the building of the nervous system is neither innate nor genetic but that the experience leaves a track and the plasticity of the neuronal network allows the experience to be registered.

As the synapse undergo a permanent remodeling based on the experiences that are lived, these mechanisms of plasticity operate throughout all the life, are continuous.

Since the track is dynamic and is put under transformations, the mechanisms of its inscription give plasticity to the neuronal network as well.[3]

This plasticity is part of the emergence of the individuality of the subject, releasing him from the genetic determinism. It is possible to say, that this is the mechanism by which each subject is singular and each brain is unique.

The plasticity phenomenon ends with the opposition between neurosciences and psychoanalysis, as far as it implies that there is no opposition between the biological and the psychic.

Beyond the innate element, what is acquired by means of the experience leaves a track that modifies the previous undergoing. The experience modifies the connections between the neurons and the changes are of a structural and functional nature. The plasticity, in contrast with the genetic determinism, brings forward the diversity and the singularity. It can be assured, that the level of expression of a given gene can be determined by the particularities of the experience. This ends with the opposition between the organic or psychic etiology of the mental disorders and introduces a psychic causality that is able to model the organic.

Michael Meaney shows that changes in the environment produce modifications in the expression of the genes and that this occurrence will be transmitted to the following generation.

He tested in different experiences that, the way in which the mother takes care of the whelp, regulate the development of the reaction to stress. This change in the behavior correlates with a change in the hypothalamic-pituitary adrenal axis, responsible for the inhibition or production of glucocorticoid receptors. These individual differences of the maternal care are later transmitted to their descendants,

[3]Based on experience a conscious and an unconscious reality are built and the authors will try to explore the mechanisms that allow the internal reality unconscious to establish.

having provided a mechanism for the behavioral transmission of individual differences of the reactivity of tension through generations.[4]

That is to say, that stress of the rat mother produces a change of behavior in the young creature, the parenting modifies the answer and, in addition this change of behavior produces a somatic variation that is possible to register and this is transmitted to the following generation.

The genome does not vary, but it changes its expression. This is because the structure of the DNA is not modified, but the methylation (that is in the chromatin) is. As the acetylation compact it, the methylation produces a laxer DNA that allows the entrance of enzymes responsible for the transmission. The enzymes responsible for the transmission respond to the environmental modification and in the following generation it does not longer depends on the learning, but the expression of the genome has changed.

Then, the changes in the atmosphere produce synaptic changes that modify the gene expression, although the DNA is the same one, the responsible enzymes for the transmission, respond to the environmental modification. [5]

I believe that to psychoanalysts this data of research is very useful since it studies the epigenetic mechanisms of the relation between mothers and the whelp of other mammals, because the Epigenetic[6] demonstrates that the characteristics that describes a living being, which comes given in the genome, is going to react in diverse ways according to the earliest experiences.

The Epigenetic raises a new paradigm that is not Darwinian. It refutes the theory that maintains that everything depends on the genetic load and demonstrates that what counts is not only the DNA and its configuration, but what it surrounds the subject, because it will be based on the environment that these genes will be expressed or not, moreover it will have variations in its way to express itself. The genetic code, which is written, is modifiable by the experiences of life, which redefine the genetic

[4]Different types of care for mothers have changed the axis hypothalamic-pituitary-adrenal (HPA) in rats by altering receptors in the brain. There is a common effect linking parental care and the regulation of this receptor.

[5]"Variations in Maternal Care in Infancy regulate the Development of Stress Reactivity". Michael Meaney , Diorio, Caldji. Mc Gill University, Montreal Canada. 2000

[6]Epigenetic is the branch of molecular biology that studies the changes in the DNA sequence but modulate gene expression. ("Above the genes)

expression. The perceptions re-write the genetic information producing a different reading.

Do these results say anything similar to what psychoanalysis maintains perhaps?

That the human body is built from the intervention of the Other, that there is no body initially, although the biological organism is working fine.

These results then corroborate the wonderful Freudian invention of the effect of the significant in the soma. They allow us to substantiate the idea that the body is constructed by the way in which the word has been instilled to it.

Since these reactions happen with the lab rats how could not think that the anguish of a mother can produce effects in her baby? , How can we doubt that, early interventions with the parents can produce changes in their children?

We could put forward that, when we maintaining that the significant produces effects in the body, we are not guaranteeing any magical theory, but the word, in the human being, is, exactly, what the environment produces effect in the expression of the genome. Because everything what it is transmitted as an act of speech generates an effect, that not only is observable, reasonable to be listened, but that it has a somatic correlation.

The neuronal synapse that organizes the operation of the nervous system, are armed and dependant on the interchange with the Other. When there is nobody who is able to anticipate a subject, as it describes Spitz in the cases of emotional deprivation, or when there is mistreat, this event produces corporal effects. What an infant receives at level of the significant one produces a neuronal impact that is registered in the nervous system.

The mistreat produces a biological impact, which can be verified as a common effect between the paternal care and the regulation of the glucocorticoid receptor, responsible for the response that produces a quick resolution (stress).[7]

Taking this view into account, why not take these foundlings to base the impact of the significant?

The epigenetic proposes that the signals of the environment are the primary regulators of the activity of the genes[8], and demonstrates that there is nothing purely

[7]Abuse in childhood was associated with an increase of pituitary adrenocorticotropic hormone responsible for regulating stress. Michael Meaney. They found that different types of care for mothers have changed the axis hypothalamic-pituitary-adrenal (HPA) in rats by altering receptors in the brain.

genetic but the environment influences in the expression of a gene, that everything is a dialogue between genetic and the environmental setting.

Why is it so interesting this premise to us? Because, if it is demonstrated that the mistreat produces a biological change, we can maintain that, beyond the medication be effective, the cause of the malaise, the etiology of it, is not necessarily biological. As it is proclaimed, for example, for the ADHD...

Biological sciences demonstrate now what Freud had already intuited brilliantly. They indicate that the significant makes a mark that not only can be listened to but that can be read in the biological sense, it can be registered.

They corroborate what Freud had said, the question is how it is manipulated and what for? These discoveries are being used by laboratories, and the one that makes profits is the chemical industry that uses the premises of the epigenetic to guarantee the drug consumption[9].

Because what we read in the speech of the media is: since the environment shapes the DNA load, the man could almost get to be whatever he sets out to.

The proposal of change to the malaise in the culture appears bounded, generally, to the medication.

In order to conclude: the question about the importance of the significant in the neuronal construction, and therefore of the operation of the nervous system is absolutely pertinent to our field.

In my view, it seems that, the psychoanalysis could approach the relation between the neuron and the significant , from the paradigm of the epigenetic, actually placing the word like a epigenetic tool being able to impact in that field given from the genome. We should give value to these demonstrations of this branch of Molecular Biology to base the value of the word placing an impact on soma and modulating the expression of genetics.

[8] “La inteligencia de las células”. Bruce H Lipton
[9] Chemical effect does not imply that the cause is chemical