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MACHINE AND REALITY: CYBERNETICS, AUTOPOIESIS AND PRODUCTION OF SUBJECTIVITY IN FÉLIX GUATTARI

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ABSTRACT. This article aims to address the concept of machine and its consequent appropriation in the discussions on subjectivity. It is a theoretical study at the interface among Psychology, Philosophy, Physics and Biology. In this sense, it starts showing that in the modernity, the analogy to the machine was extended to the understanding of the universe as a precise and geometrically predictable functioning clock. And if, until the eighteenth century, life, body and cosmos were signified by the emerging science as a mechanical machine (of calculable motion in its predictability), in the nineteenth century they also came to be understood as a thermal machine, with its developments in the thermodynamics physics and cybernetics. In the late twentieth century, the concept of autopoietic machine gained relevance in the studies of life and cognition, based on the works of the biologists Francisco Varela and Humberto Maturana, which is appropriated by Félix Guattari for the development of his concept of the production of subjectivity and its problematizations around the subjectivation processes. Thus, the concept of machine has gone beyond the limitations of a mechanical and thermodynamics reading of reality, to an existential, procedural and inventive approach of the subjectivity.

Keywords: Subjectivity; machine; reality.

MÁQUINA E REALIDADE: CIBERNÉTICA, AUTOPOIESE E PRODUÇÃO DE SUBJETIVIDADE EM FÉLIX GUATTARI

RESUMO. O presente artigo tem como objetivo abordar o conceito de máquina e a consequente apropriação do mesmo nas discussões sobre a subjetividade. É um estudo teórico na interface entre psicologia, filosofia, física e biologia. Nesse sentido, ele se inicia apresentando que, na modernidade, a analogia à máquina foi estendida à compreensão do universo como sendo um relógio preciso e geometricamente previsível em seu funcionar. E se, até o século XVIII, a vida, o corpo e o cosmos foram significados, pela ciência emergente, como uma máquina mecânica (de movimento calculável em sua previsibilidade), no século XIX estes passaram igualmente a serem compreendidos como uma máquina térmica, com seus desdobramentos na física da termodinâmica e na cibernética. No final do século XX, a partir dos trabalhos dos biólogos Francisco Varela e Humberto Maturana, o conceito de máquina autopoiética

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ganhou relevância nos estudos sobre a vida e sobre a cognição, sendo este apropriado por Félix Guattari no desenvolvimento de seu conceito de produção de subjetividade e suas problematizações em torno dos processos de subjetivação. Assim, o conceito de máquina saiu das limitações de uma leitura mecânica e termodinâmica da realidade, para uma abordagem existencial, processual e inventiva da subjetividade.

Palavras-chave: Subjetividade; máquina; realidade.

MÁQUINA Y REALIDAD: CIBERNÉTICA, AUTOPOIESIS Y PRODUCCIÓN DE SUBJETIVIDAD EN FÉLIX GUATTARI

RESUMEN. El presente artículo tiene como objetivo abordar el concepto de máquina y la consiguiente apropiación del mismo en las discusiones sobre la subjetividad. Es un estudio teórico en la interfaz entre Psicología, Filosofía, Física y Biología. En ese sentido, se inicia presentando que, en la modernidad, la analogía a la máquina se extendió a la comprensión del universo como un reloj preciso y geométricamente previsible en su funcionamiento. Y si, hasta el siglo XVIII, la vida, el cuerpo y el cosmos fueron significados, por la ciencia emergente, como una máquina mecánica (de movimiento calculable en su previsibilidad), en el siglo XIX estos pasaron igualmente a ser comprendidos como una máquina térmica, con sus desdoblamientos en la física de la termodinámica y en la cibernética. A finales del siglo XX, a partir de losestudios de los biólogos Francisco Varela y Humberto Maturana, el concepto de máquina autopoiética ganó relevancia en los estudios sobre la vida y sobre la cognición, siendo éste apropiado por Félix Guattari en el desarrollo de su concepto de producción de subjetividad y sus problemasen torno a los procesos de subjetivación. Así, el concepto de máquina salió de las limitaciones de una lectura mecánica y termodinámica de la realidad, hacia un enfoque existencial, procesal e inventivo de la subjetividad.

Palabras clave: Subjetividad; máquina; realidad.

Introduction

> "The values are immanent to the machines"
> (Guattari, 1992, p. 68)

It seems to have gradually built in human history a kind of enchantment by machines. Over the past four centuries, this charm provided conceptions that understood both organic bodies and the universe as organized into gears in order to translate, in their functioning work, universal standards of constancy, stability and harmony. In the seventeenth century, for example, René Descartes assumed that organic beings could be addressed as automata with more complex mechanical engenderings than any other machine that could be designed by humans. This fact:

> [...] Nor will this appear at all strange to those who are acquainted with the variety of movements performed by the different automata, or moving machines fabricated by human industry, and that with help of but few pieces compared with the great multitude of bones, muscles, nerves, arteries, veins, and other parts that are found in the body of each animal. Such persons will look upon this body as a

> machine made by the hands of God, which is incomparably better arranged, and adequate to movements more admirable than is any machine of human invention (Descartes, 2004, p. 81).

At that time, God was the reference to the cosmic order, and bringing this order and systematization marker to measure the certainties of nature, Mathematics was taken by Galileo (2004) as the language of God. In this context, the nascent science of the seventeenth and eighteenth centuries came articulated to a growing 'mechanization' and mathematization of nature, supported by figures such as Descartes, Galileo and especially Isaac Newton. The latter held, in the late seventeenth century, the great project of postulating mathematically, in his studies of optics, mechanics and universal gravitation, general laws of nature that did without human idiosyncrasies. The universe, from then on, was understood - although Newton never have done such an analogy - as a big clock; a machine with perfect harmonics gears to move toward a predetermined destination by the 'cosmic geometer' who was God (Gleiser, 1997).

However, by the turn of nineteenth century, the image of the clock as the main analogy of the universe functioning lost its hegemony. This is because, in the mid-1800s, the Industrial Revolution brought with it the grandeur of the thermal machines which transmuted heat while moving. The social transformation that gradually such machines produced very soon also transformed the ways of thinking about life and the universe, and, according to Balandier (1997, p. 53):

> The clock - imitation of an automaton nature whose order is unchanged for its compliance with the laws of motion -, the nineteenth century replaces by the steam engine, which is the evocative of a world where the transformation of the moving heat is carried out with an irreversible waste, where it reveals the work of a power at the same time creator and destroyer. From mechanics, the nature becomes thermodynamics.

This change in the reference model – from the clock to the steam engine - becomes significant in the construction of both other ways of questioning the ordination and the flow of the universe and other ways of thinking about the individual and the society. And in the century twentieth that experiencing new technological advances (such as airplanes, cars, electricity, weapons of mass destruction) the new discoveries of quantum physics, the breaking of old certainties, intensified the questioning of models of reality that defended linear chains and causal relationships especially in Europe and the United States post the World War II. New ways of thinking supported the understanding of different phenomena as articulated to no more partial processes but resulting from the interaction among different elements. It was in this context of revolutions that, for example, came the theoretical conceptions arising from cybernetics.

Thermodynamics nature

Etymologically, cybernetics is a word derived from the Greek *Kubernetes* (*Κυβερνήτης*) and it means 'the pilot', 'the helmsman'. It is a concept that has as one of its main designers the mathematician Norbert Wiener. From the 1940s, he set out to understand the systemic 'way of functioning' of the living from the computable dynamics of machines. Wiener considered that both entities - the human and the machine - shared the same functional essence: the ability to process information and to compute data. As he says:

> [...] when I give an order to a machine, the situation is not essentially different from the one that arises when I give an order to a person. [...] The process of receiving and using information is the process of our adjustment to the contingencies of the environment and our effective living in this environment (Wiener, 1968, p.16 and 18).

So, in the cybernetics area the living being and the machines do not possess functional differences, and that the higher the quality of information received (the more sensitive were the sensors filters of the living being and / or machine), the more would also be the quality of the system organizing, since the information would have little dispersion, low noise and so, more clearly computed. Therefore, the living being and the machine approach themselves functionally by the ability of both in having feedback[3], by correcting the noise and loss of messages, better translating the information coming from the environment and adapting themselves efficiently to the reality of the external world. However, we consider important to highlight that the proposal by Norbert Wiener was not merely to reduce the living expression to cybernetic machine but points out confluence points between these two processes. That is why, we believe it is necessary to reproduce here the following observation:

> When I compare the living organism such as to the machine, not for a moment I mean to say that the physical, chemical and spiritual processes, which are specific to life, such as commonly known, are the same as those of simulating machines of life. I simply want to say that 'both can locally exemplify anti-entropic processes', which can perhaps be exemplified in many other ways that, surely, we do not call neither biological nor mechanical (Wiener, 1968, p. 33, emphasis added).

In this remark, the mathematician presents the perspective that another point of union between machines and living beings lies in the fact that both respond to a physical variable called entropy. While variable of thermodynamics, the entropy refers to the amount of heat loss (energy) required to the heat balance: balance related to the cessation of heat exchanges. If the first law of thermodynamics states that energy / heat in the universe is conserved; the second law, the entropy, maintains the heat dispersion, 'in an isolated or closed system'[4], it will tend, over time, to reach their maximum level, that is, the thermal equilibrium. Thus, increasing the degree of dispersion, a thermodynamic system is also a condition where there is a greater number of micro-states accessible to the particles that compose it. Thus:

> The more energy exchanges occur, the greater the entropy, and this is possible from the time that this energy is distributed in a more dispersed manner, which leads to the interpretation of entropy as a natural tendency for a greater energy dispersion, or a wider range in energy distribution as the spontaneous transformation occurs. Entropy is understood, therefore, as a measure of the energy of the dispersion. [...] Moreover, the calculation of the entropy changes for some processes, such as the expansion of a gas in a vacuum and the transitions solid-liquid and liquid-vapor phases, helped to settle, between students and teachers, the understanding of entropy changes as the increased disorder (Cavalcanti, Ferreira, Abrantes, & Cavalcanti, 2018, p. 2).

[3]It refers to the ability to adjust to the future conduct based on past performance. An internet site like amazon.com, 'learns' with purchasing choices made by its users and goes on to make consumer suggestions from past choices thereof. This features a feedback dynamic.

[4] Understanding here a 'closed system' as one that is isolated from environmental interference; for example, the dynamics of reagents in a specific container.

But when one thinks on thermodynamics terms to explain the organic systems (including social) - which are open systems, not isolated and in constant interaction with the environment in which practice their existence - we are faced with a paradox. As the classic entropic design is based on the understanding of nature as a closed system, governed by a flow toward a maximum entropy or 'disorder', the emergence of life (as an organization) would be an impossibility. It would occur because the organized processes and the development of simpler to more complex organisms would be seen as a thermodynamic improbability, since the universe would tend to the disorganization, to an increase of probability of possible states (and, in turn, to a greater dispersion) and not to the organization, which means the decrease of the states probability.

> [...] preserved themselves in a more-or-less prompt exchange of components, amid the degeneration and regeneration, catabolism and anabolism. [...] Thus, the multicellular organism remains before the exchange of cells, the cell is preserved by the exchange of cellular structures, these in turn by the exchange of chemical compounds that constitute them, etc. (Bertalanffy, 1973, p. 216).

So, the living systems - designed in reference to the thermodynamic machines - are open systems that, for practicing constant exchanges with the surrounding environment, as well as for promoting continuous cell renewal, remain far from 'thermal equilibrium', since there is a decrease in entropy and an increase in organization. In this way,

> [...] the entropy would be the passage of a higher order situation to a more disordered situation, a 'tendency to chaos'. Such an interpretation lifted entropy to a status (not necessarily desired) of a tool capable even to explain phenomena of social sciences (Cavalcanti et al., 2018, p. 2, author's emphasis).

And from the ambition to lead the entropy to the explanatory dimension of social that, in this case of cybernetics, Norbert Wiener considered the information as a form of 'thermal energy', addressing the cybernetic machines, the living beings and the social dynamics as obeying the information exchange process with the environment. The higher the informational entropy (dispersion of information) the less would be the conditions of organizational coherence of a system and this would tend no longer to be able to organize in an environment. And, in the same way the machines computated the world surrounding them and reacted to it in a feedback movement, the social systems would be, to Wiener, also organized within that same commitment to properly process the information arising from the environment, to react to them in an organized manner and, thus, to reduce the dangers of increased noise and entropic dispersion.

Thus, seeking to preserve its coherence and its identity facing the informational exchanges, a social system would be governed by a dynamic homeostatic[5], reorganizing itself before the suffering interference, in the search for maintaining its functional constancy. Thus, the cybernetics by Wiener kept alive the dichotomy between external world / inner world, which supported the existence of an objective reality and independent of the observer which needed to be unravel and translated by the development of information resources increasingly elaborate.

While recognizing the value of Norbert Wiener´s work, Bertalanffy postulated that cybernetics - as well as the information theory from which it was used - is "[…] more an extension than the replacement of the mechanical conception and of the theory of machines" (Bertalanffy, 1973, p. 43). In this sense, the author questioned the validity of using the

[5] Tends to a balance in their interactions with the environment in which it operates.

machine concept to describe a living organization, announcing that, despite its successes, the organism model responding to the logic of informational machines contained its difficulties and limitations. These limitations became patents especially when they came to the fact that:

> The living organism remains itself in a continuous exchange of components. Metabolism is a basic characteristic of living systems. We have, so to speak, a composite fuel engine 'that continuously consumes itself but preserves itself for itself'. Machines of this nature do not exist in current technology. In other words, an organism structure of the type of machines may not be the last reason of the order of vital processes because the machine itself is maintained by an orderly flow of processes. 'Therefore, the primary order must lie in the process itself' (Bertalanffy, 1973, p. 193, emphasis added).

Whereas living beings experience very different processes from those of mechanical machines, Bertalanffy rejected the explanatory reduction of the dynamics of the living to those contained in a cybernetics machine, although both concepts of Wiener and Bertalanffy treat on the interaction and the complexity. The latter considered that the cybernetic approach preserved a cartesian mechanical model of the organism, which does not correspond to the self-organizing complexity presented by the living.

However, as if responding to Bertalanffy, another model for the understanding of the living being, which is not reduced only to mechanical processes, to the logic of cybernetics or to the dualistic conceptions of reality, began to be set in the 1960s. This model did not avoid of using the design of the living as a machine, but a machine that did not answer the mechanistic, informational or representational linearities of the reality. Such living machines were dynamized in processes defined as autopoietic.

Autopoietic machines

Bertalanffy did not see the machine an efficient model to represent the living being and, criticizing the abuse of the machine concept to explain the biological and social phenomena, he reported that, with the organelles discovery increasingly specific in the cells, the issue of 'machine' has been extended even to cell biology, and when addressing the:

> [...] mitochondria as cell 'energy plants', this means that similar structures to the machines at the molecular level determines the order of enzyme reactions. It is also a micromachine that converts or translates the genetic code of the DNA of the chromosomes in specific proteins, and, finally, in a complex organism (Bertalanffy, 1973, p. 192, author's emphasis).

Interestingly, despite criticism from Bertalanffy, it was from that appropriation of the cell as a micromachine that, in the 1960s, the biologists Humberto Maturana and Francisco Varela coined another interpretation model for understanding not only the cell, but also the very reality production: the autopoietic model.

They based in the assumption that life takes its first rhythms in the cell - an entity considered by many biologists as the minimum living unit - in which complex biochemical processes engender by which the living being self-generate itself. Thus, each cell unit would be a small machine to produce its own components; a system that is responsible for producing the conditions of organization of its own universe. In this sense, Maturana and Varela (1997) captured from the concept of machine not its aspect of mechanical serialization, but its aspect of production, of manufacturing and functioning. Thompson

(2007, p. 98, author's emphasis), explaining the views of Humberto Maturana and Francisco Varela, provides that:

> The cell is a thermodynamically open system, continually exchanging matter and energy with its environment. Some molecules are imported through the membrane and participate in processes inside the cell, whereas other molecules are excreted as waste. Throughout this exchange, the cell produces a host of substances that both remain within the cell (thanks to its membrane) and participate in those very same production processes. In other words, a cell produces its own components, which in turn produce it, in an ongoing circular process. The word 'autopoiesis' was coined to name this kind of continual self-production.

It is this dynamic of self-production that justifies the name 'autopoiesis' offered to this process, since 'self' comes to mean 'itself' and refers to the autonomy of self-organizing systems; and 'poiesis' - who shares the same Greek root with the word 'poetry' - means 'creation', 'construction', 'production'. So, autopoiesis means 'self-creation' or 'self-production'. Due to this feature of self-production machine that the cell is considered a living entity: a micro universeable both to self-production, to reproduce and to reinvent itself in this production. From this reading, it is understood that living systems are systems self-producers that generate and specify their own borders and, consequently, their own world 'references'.

In turn, in Maturana and Varela (1997) an autopoietic machine as the cell 'would not process information' of the environment equally, and such information would be resignified into the internal coherence of the cell; which arises from its own self-production process. Thus, in the relationship of self-creation with the environment, the cell can only experience changes that do not interfere with the coherence of its self-production and to the maintenance of its organization.

Characterized then, by a dynamic self-production, such cell machines have a sustained identity by the constancy of its autopoietic organization, even if the dynamics of their structures changes[6]. Thus, if the environment in which they operate may ultimately produce disturbances in the system, the ways they react to these disturbances do not unfold in a mere 'cause-effect' linearity and depend on the dynamics by which cells devise their autopoietic stability. To this feature of this cell functioning in relation to the environment, Varela (1997) called 'operational closure'. However, it is important to point out that such closure or autopoietic closure does not mean isolation, being the result of the machinations within the borders of a system which is open to interactions, but closed with respect to the ways it 'practices' the disturbances suffered in the context in which it is immersed. So, 'closed' and 'opened' are not here in opposition, and the term 'closed' refers to the self-organizing features and to the recursion of the complex systems. In this way, Kastrup announces that, in the autopoietic perspective:

> The notion of operational closure presents, then, a complexity. Under a first aspect, it realizes the operation of a stand-alone, coherent and distinct unit. In this sense, it generalizes the classical notion

[6] ORGANIZATION (Greek: organom = instrument): refers to the relations among the components that define a system as a unit. Therefore, to define a system as a unit it is necessary and sufficient to show its organization that determines its properties and specifies the inner domain fromwhich it can interact as a whole. When the unit loses its organization takes place a destructive change. STRUCTURE (Latin: struere =to build) effective components and specific operations that these elements should be to constitute this unit. It determines the inner space fromwhich the system exists and can be disturbed. In the state changes the structure can change without the organization changes itself.

> of stability of a system and that is where we found the cybernetics dimension of autopoietic systems. But under a second aspect, and where it is presented its difference, it is an emerging unit from a network of relationships, autopoietic itself. In this case, it is historic that cybernetics considers datum. The only invariant is the very autopoietic organization, that is, the network of relationships from which emerges the operational closure (Kastrup, 2008, p. 54-55).

Due to such closure, Varela proposes that the world that the cell 'observes' is a meaning world from own cellular self-production, that is, there is no completely external reality independent from the autopoietic history of the organism. From these considerations, the authors propose the following 'equation', expanding the questioning of cellular biochemistry to an ontological level at which: 'to live = to do = to know'. In other words, the living is defined in its practice, in its production / manufacturing, which opens a way of knowing.

In the light of this consideration, it does not make much sense to be debating who comes first: the environment or the organism. For Varela (1997), organism and environment emerge together in a co-determination motion, wherein the organism 'practices' the world that it inhabits; and this, in turn, provides conditions for organism existence. Therefore, in the same event that the act of doing creates a reality, a reality also creates an act of doing, having thus, an inventive recursion. In view of these considerations, Varela abstracts from the autopoietic dynamics an important conclusion:

> Every interaction of autopoietic identity happens not only in terms of its physical and chemical structure but also as an organized unit, that is, in reference to its self-produced identity. A reference point in the interactions appears in an explicitly way and, therefore, a new level of phenomena: the creation of meanings comes up. 'The autopoietic systems inaugurate in nature the interpretative phenomenon' (Varela, 1997, p. 47, emphasis added).

Going along this path with the perspective that the autopoietic systems, in their functioning, are not a reflection or a 're-presentation' of the outside world; what they do is to respond to the disturbances from the external environment from the invention of a world in which they practice their living. In this context, beyond a mere description on the living, Maturana and Varela (1997) built a new epistemological proposal for understanding not only the cell, but also the process of producing 'the' reality.

Autopoietic subjectivity

But, although at the beginning of their studies, Maturana and Varela (1997) considered the concept of autopoietic machine to be restricted to cell dynamics, it has been appropriated by other fields of knowledge. Regarding this expansion of perspectives, Varela (1993, p. 80-81) stated that:

> [...] What interested me was the issue of autonomy of any system, of autonomy in biological and not only in the minimum autopoietic system. This means that what we had expressed in terms of autopoiesis was also applied to the structure of the entirely living being, applied to the nervous system, to the immune system, applied, perhaps - and that I would not let them closed, but neither I interfere – to the larger systems, complex communication systems, etc. [...] The key idea is to say that autonomy comes from this notion that I call operational closure, that is, from the recursion of the entire system in its own organization.

Among those who used the concept autopoiesis to question the social dynamics and the relational systems, Félix Guattari was an author who has made the concept of 'autopoietic machine' a tool for understanding the everyday reality as self-production of existence modes. However, even before the popularization of the reflections of Humberto Maturana and Francisco Varela, Guattari had already been working on the issue of machine to discuss the subjectivity. Distanced from mechanistic conceptions, the concept of machine arises in his works from an article called 'Machine and Structure', in which, involved in psychoanalytic and marxists discourses, Guattari (1976) proposed a machine approaching not as a mere mooring of gears, but as connective and 'non-territorial' instance. In this sense, the motion that Félix Guattari tried to undertake in that work

> [...] consists in a strategy to oppose the machine to the danger of structuring and conversion of the revolutionary organization in the state apparatus. [The machine] is, even so, a not identity concept, used to invent new forms of concatenation of singularities (Raunig, 2008, p. 37, our translation)[7].

While connective dimension, the machine concept was worked by Guattari throughout his intellectual engagement with the philosopher Gilles Deleuze, and early in the first book that they made together, they already announced that "[…] there are so only machines everywhere, and without any metaphor : machines of machines, with their engagements, their connections [...], always flows and cuts" (Deleuze & Guattari, 2010, p. 11). But, for machine, they understood not an 'object', but the web of the relationship, as follows:

> What we call machinic is precisely this synthesis of heterogeneous as such. Since these heterogeneous are expression materials, we say that their own synthesis, their consistency or their capture, forms a 'statement', an 'utterance' properly machinic. The various relationships in which enter a color, a sound, a gesture, a movement, a position, in the same or different species, forming as many machinic utterances (Deleuze & Guattari, 1997, p. 143, author's emphasis).

Thus, to these authors, the machinic processes would not be confined to mechanical, informational and entropic artifices. Even to Guattari, the recovery of entropy concept in the social sciences disliked him, since, for him, the social dimension not tended to a maximum dispersion, but to multiply different, conflicting and inventive ways of organization (Guattari & Rolnik, 2005). In this way, the connections made between the subjectivity production processes and the autopoiesis, Guattari does not aimed to make a transposition of physicochemical universe of matter to the complexity of the social universe. He approached the autopoiesis by the procedural power that such a concept has, understanding that the meanings about the subjectivity dynamic which plotting different conceptions of reality could only be understood as self-referential processes in a connective network in order to engender ways of living and ways of thinking. According to Guattari (1992, p. 52):

> In fact, the autopoietic qualification is reserved by Varela to the biological area; from this the social systems, the technical machines are excluded [...]. It seems to me, however, that autopoiesis deserved to be rethought in terms of evolving and collective entities which maintain different types of alterity relations, rather than being implacably closed in themselves. As a result, institutions like technical machines that, apparently, derive from allopoiesis, which are considered under the machinic assemblage framework with human beings, become *ipso facto* autopoietic.

[7] "[...] consiste en una estrategia para oponer la máquina al peligro de estructuralización y a la conversión de la organización revolucionaria en aparato de Estado. [La máquina] Constituye, asimismo, un concepto no-identitario, que sirve para inventar nuevas formas de concatenación de las singularidades".

Therefore, in analogy to how Humberto Maturana and Francisco Varela got the cellular unit as a self-producer machining to be done simultaneously to its environment, Guattari thought the subjectivity productions like assemblage emergents produced in (and producers of) an autopoietic fold; which itself practices a manner to exist. However, it is important to note that 'subjectivity' in Guattari, does not refer to an individual and/or intimate dimension, but to sensitivities, meanings, organisms, musicality, languages, genres, aesthetic, values production - always collective - , among others. So, he assumes the subjectivity as continuously connective assemblage in the weave of different elements: autopoietic subjectivity, just it is produced in self-producers machinic processes of its very components of subjectivation.

This way of considering the production of subjectivity makes the concept of 'machinic assemblage' becomes itself an important operator. This is because "[…] the assemblage becomes the realization of the machine thanks to the connections that make it possible" (Dosse, 2010, p. 203), which makes this assemblage committed itself with the understanding that life processes are involved in meetings and intensification (of politicals, subjects, tastes, knowledge, temporalities, among others) that, not necessarily in anastomosis, may favor the production of the unprecedent: either in terms of the way the subjects practice their lives or as entire communities routinely perform their social experience.

Thinking, therefore, the autopoietic movement beyond the cell fold and giving new meaning as active process of a fold of subjectivity, Guattari proposed that human beings produce the realities - both individual and collective - that guide their walk. That is, vitalized in assemblages to produce different universes of meaning, individuals and communities are, in an autopoietic fold, also for them meant among the contagious that effect among technological, aesthetic, media, sound, historical, taste, linguistic, artistic, politicals elements... These, involved in multiple (dis) connections, manage plural worlds, produce contingent meanings to articulate processes and, hence, nurture practices and interventions. In this sense, the machinic agencies that produce realities impose not a truth, but an experimentation (Deleuze & Guattari, 1977), possible different, in an exercise that convenes to the invention.

Immersed in this connective and machinic approach of producing realities that Guattari (1992, p. 44) considered that:

> [...] we need to move away from a single reference to technological machines, to extend the concept of machine to position this machine adjacency to incorporate reference universes (musical machine, mathematical machine [...]).

Thus, a machinic dimension articulates itself into a heterogeneous composition of relations, such as, when in an epidemiological machine, the HIV virus assemblage itself to human cells, to the pharmaceutical industry, to sexuality, to the religiosity, to the entertainment industries, to the collective health policies, to the production of pleasure, to the drug trafficking industry, to the media, to the ways to die. In turn, different arrangements in the plot within all these production factors generate subjectivity folds of (and produced by) new ways of existing and acting in society, in sex, in the pleasures, in marital relations, in religions, in ways to sanitize himself, among other compositions. Therefore, the design proposed by Guattari, social machines never work alone but by collective assemblages posing in movement both different ways of producing life, and also disorganizing intensification of what is already established. They foster ways of living, thinking and

dreaming that may justify, reinforce and naturalize social institution (class divisions, gender differences, monetary and power exchange systems) as well also they potentialize non-territorial flows to inaugurate other sensibilities as problematic as creatives in the collectives intensifications.

However, when Guattari refers to 'collective'[8], he isnot only considering in terms of spatially situated groups, but in terms of networks of self-regulating processes which assemblage participants intensities of and in various folds of subjectivity. Folds that analogically, correspond to an operational autopoietic closure (Varela, 1997) and comprise different unique systems of reality production; different possible ways of producing meaning. Therefore, each fold of subjectivity, to be composed as a single manufacturing in the same social scene , differently to be a way of 'being in the world', would understand 'being with a world'; which leads us to the view that if we inhabit a 'uni-verse', this is just one among others 'verses' of worlds that exist in such broad , legitimate and complex ways as are the realities engendered in the machinic assemblage activated in different subjectivity folds.

Agencies, machined, manufactured... the realities, in Guattari, emerge as action, as practice, as (auto)poiesis, as subjective processes in unusual invention of successive abortions and / or opening to a new, strange - yet legitimate - worlds.

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[8] In Guattari, the concept of collective "[…] is not limited to social totaled and that its functioning can not be grasped through the dynamics of interpersonal or groupal relationships, since they take place among beings already individuated. The notion of assemblage is the one that seems most appropriate to define its operation. To assemblage is to be in the middle, on the meeting line of two worlds "(Escóssia & Kastrup, 2005, p. 303).

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