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Neuroscience-Based Anthropological Psychiatry (NBAP): Ten Introductory Concepts

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Abstract

Medicine can be done at very different levels. So, physical, biochemical, biological, and social medicine are disciplines that count with a large theoretical background. This multilevel approach is applicable to psychiatry too. The 1990s of the twentieth century was “The Decade of the Brain.” It helped to conceive psychiatry as “biological psychiatry” in a mechanistic reductionist epistemology that has become the canonical paradigm for the speciality. But this perspective came across a problem. Psychiatric facts were defined in subjective terms, while the proposed models for this type of pathology were expressed attending to biological mechanisms without clear interlevel constructs for establishing associations between biology and subjective experiences or behavioral patterns. Although symptoms are subjective in a radical manner, associations do not appear in this way. Some kind of “incommensurability” appears between what we want to explain and the arguments we propose to. The price paid for the “hard objective” approximation of biological psychiatry is to replace subjective pathological experiences with mere objective indicators of them. In this chapter, we propose an alternative epistemological strategy by relying on “philosophically-oriented phenomenological psychopathology” (POPP) for the rigorous study of pathological subjectivity. A neuroscience-based anthropological psychiatry (NBAP) built on ten concepts is introduced.

Keywords: psychiatry, philosophical anthropology, phenomenology, philosophy of psychiatry, neurophenomenology, semantics

1. Introduction: the roots of the “philosophically-oriented phenomenological psychopathology”

In the last four decades, three paradigms deserve to be highlighted as models to be applied for the mental disorders.

The first one was diagnostic and statistical manual of mental disorders, third edition (DSM-III), emerging in the 1980s of the past century. It represented a nosological perspective which tried to be compatible with various other models (i.e. psychological, sociological) in addition to the medical one. Further actualizations of the DSM classification arrived at its last version, DSM-V, in 2013. The

International Classification of Diseases (ICD), at present in its 11th edition, corresponds, in essence, with DSM regarding to mental disorders.

The DSM was inspired in the Research Diagnostic Criteria of Robert Spitzer and other “neo-Kraepelinians,” who tried to operationalize some subjective pathological experiences they obtained from the classical psychiatric nosology. DSM had a logical positivistic inspiration with the intention of being neutral about the postulated mechanisms for mental disorders. It is believed that the philosopher of science Carl Hempel influenced in the conception of DSM [1], but his true influence is now being discussed [2]. However, DSM supposed a determined attempt to operationalize the clinical work of the tradition that transits from Kraepelin to Jaspers and Schneider [3]. Kurt Schneider, as the main referent of the Heidelberg school, received the French and German tradition of the classical psychiatry and transferred this knowledge to the United Kingdom after World War II. The role played by Wilhelm Mayer-Gross in this tradition exportation to the Anglo-Saxon area was definitive [4].

Jaspers’ General Psychopathology is undoubtedly the foundational text of theoretical psychiatry, namely psychopathology. But, although it is frequently argued that with this text phenomenology was introduced in psychopathology, the Husserlian method had less influence in Jaspers’ thinking when compared with the impact that the differentiation between explaining and understanding of Dilthey had. Therefore, the Jaspersian-Schneiderian psychopathology that inspired DSM should not be considered as radically phenomenological in Husserlian terms. Rather, the Jaspersian theory proposes a methodological pluralism [5, 6] that bets for a psychopathological analysis that simultaneously explains and understands the complexity of any mental symptom. That complexity is mentioned by Mayer-Goss when writing on the diagnosis of schizophrenia in 1938 [7]:

“In psychological medicine we cannot proceed, as in general medicine, by collecting signs and symptoms and fitting them into a sort of jig-saw puzzle. All the symptoms have to be related to the psychological background against which they appear.”

Neutrality was one of the main strengths of the DSM model. But it was turned into the focus of many critics in the last two decades, as DSM was vulnerable to manipulation by economic interests. Criticism against DSM has markedly increased over its successive editions [1]. The suspicion of fabricating spurious diseases which could be meaty objectives for the pharmaceutical market severely threatened the scientific value of DSM in the twenty-first century. Hence, nowadays, the idea that DSM is over has taken root.

As a response to the critics to DSM based on its epistemic vulnerabilities, a second paradigm has been trying to be implanted since 2008: The Research Domain Criteria project (RDoC). RDoC is an initiative of the National Institute of Mental Health (NIMH), first led by Thomas Insel, director of the NIMH. This initiative proposes to “develop, for research purposes, new ways of classifying mental disorders based on dimensions of observable behaviour and neurobiological measures” [8].

DSM classification is categorical and uses operationalization of subjective experiences. RDoC, on the other hand, differs from DSM in three main points: (1) RDoC proposes the use of dimensions instead of categories, (2) RDoC orients the core of the model toward domains or constructs with neurocognitive validity, abandoning the priority of interrater reliability that is a characteristic in DSM, and (3) RDoC intends to be a useful tool for research rather than a disease classificatory system. The change made from DSM-ICD model to the RDoC paradigm in the last decade has been characterized as an Aristotelian to Galilean turn. The DSM classification, which reifies mental disorders as natural categories of diseases (the Aristotelian perspective), has been substituted by the RDoC point of view, where biological and neurocognitive domains compound the matrix around which projecting new research programs (the Galilean perspective) [9].

Third, a phenomenological-based paradigm begins with the first years of the twenty-first century by the hand of Parnas and Zahavi [10] and other psychopathologists, which were hardly ascribed to the phenomenology of Edmund Husserl and who claim for an explicit philosophical foundation for psychopathology. They differentiate three uses of the term “phenomenology.” The first one is that of the contemporary Anglo-Saxon psychiatric use, referring “phenomenology” to the mere “description of signs and symptoms of mental disorders.” A second meaning would be the more restrictive use of the term in Jaspers, where phenomenology is “a study of inner experience.” Finally, the third use of the term, the one Parnas and Zahavi defend, is the “endeavor inspired by phenomenological philosophy.” Three are the most significant philosophers in this tradition, whose main texts were published over the middle years of the twentieth century: Edmund Husserl, Martin Heidegger, and Maurice Merleau-Ponty [11]. To disambiguate between the three uses of the term “phenomenology” in psychiatry, we will refer to this third meaning as “philosophically-oriented phenomenological psychopathology” (POPP), which constitutes, from our point view, the paradigm closer to an anthropological foundation of psychiatry.

Notice that POPP takes consciousness as the core function of the human brain functioning and that it is in consciousness where the psychopathological facts occur. POPP is, therefore, close to the “organo-dynamic theory” of mental illness of the French psychiatrist Henry Ey [12] as well as to Agustín Jimeno’s “integral psychopathology,” developed in Spain [13]. A kind of POPP has been extensively developed by Parnas et al. [11] around the psychopathology of schizophrenia, leading to the development of new instruments as EASE. Examination of anomalous self-experience (EASE) is a checklist for semi-structured, phenomenological exploration of subtle aspects of consciousness experience, described by Huber, Gross, Süllwold, Klosterkötter, and others [14] in the prodromal phase of schizophrenia. A second instrument, examination of anomalous world experience (EAWE) [15], has been recently developed by Sass and others with the same POPP orientation as EASE. In the case of EAWE, the exploration is not oriented to the inner space of the self, but to the outer world. Although EAWE was developed to be used in schizophrenic populations, it can be applied to other types of clinical groups too.

Organo-dynamic theory, integral psychopathology, EASE, and EAWE are four examples of the “Philosophically-Oriented Phenomenological Psychopathology” (POPP) we want to defend as a good model of psychopathology, which is coherent with anthropology. POPP will be the theoretical base of an anthropological psychiatry.

These are the four attributes that, in our perspective, characterize POPP: consciousness, phenomenology, semantics, and disintegration of semantics.

1. **Consciousness:** Consciousness is the dynamically structured global integrative function of the human being. Consciousness is the higher order homeostatic function of the human biology in an intersubjective social environment.
2. **Phenomenology:** The phenomenological method, first described by Husserl and later developed by Heidegger, Merleau-Ponty, and others, is a good philosophical method to the rigorous study of consciousness. The hermeneutical phenomenology of Heidegger [16] has interesting developments in psychotherapy [17]. Neurophenomenology, based in Merleau-Ponty’s work, is applicable to neuroscience-oriented research of consciousness [18].
3. **Semantics:** Consciousness is a system composed of elements characterized to be meaning carrying entities. Following Fuster [19], we will name “cognit”

every element of the consciousness which is the minimal unit of semantics and that corresponds to a neural network. Cognits have mental properties in terms of the “psicons” as proposed by Bunge [20, 21]. Cognits are the element, both of conscious thinking and of language. Therefore, sharing equivalent cognits is the base for common sense or semantics in language and for intersubjectivity.

4. Disintegration of semantics: It is the key concept in psychopathology. Either in the personal attribution of relevance and significance to every cognit in the frame of a meaningful consciousness state, in an intersubjective dialog, or in a significant behavior, the elements of the consciousness must be capable of being integrated under a hermeneutically global sense. In the opposite case, the semantics of that conscious state can be denoted as psychopathological, lacking semantics, or senseless.

2. Neuroscience-based anthropological psychiatry

2.1 From POPP to NBAP

Once we have argued why to use a concrete psychopathological model, the POPP, and which are the four main attributes that characterizes it, two considerations must be explained: (1) its relationship with the other mentioned psychopathological models and (2) its usefulness in anthropological psychiatry.

First, POPP is compatible with both DSM-ICD and RDoC models. POPP explores subtle aspects of consciousness experience, while DSM-ICD refers to unspecific verbal informs or to behavioral patterns. So POPP can be subsumed by DSM-ICD model, even though POPP aims to be a more exact and specific model while DSM-ICD sacrifices psychopathological fineness in favor of a massive epidemiological use. Although POPP and RDoC have different foundations (phenomenological the first and scientific positivist the second), its core constructs can be jointly studied under a correlational perspective. This is, precisely, the method that neurophenomenology proposes. The first-person perspective (or subjective phenomenological perspective) and the zero-person perspective (or objective scientific natural perspective) are both the dual approaching to any cognit. The neurophenomenological correlation makes the integration of both perspectives possible. This question will be further discussed at point 2.2.5. Note that in Anglo-Saxon literature, it is common to refer to the “zero-person perspective” as “third-person perspective.” We prefer the term “zero-person” to denote that it is referred to an impersonal or objective (belonging to an object not a person) perspective. Phenomenological perspective in third person is not more than a first-person perspective after changing the location in the subjective space of the speaking subject to the subjective space of a third person. I thank the phenomenologist Javier San Martín for this observation on zero-person and third-person perspectives.

Second, we must address the question of why is POPP preferable for anthropological psychiatry or, in other words, why is anthropological psychiatry preferable for taking advantage of the phenomenological psychopathological tradition. The answer is that phenomenology is the philosophical foundation of both traditions: the psychopathological and the anthropological. Drawing from common sources will be the better guarantee for the consistence of the model.

The Spanish psychopathologist Demetrio Barcia defines anthropological psychiatry as the psychiatry which conceives that mental disease is an event that occurs in a human being ([22], p. 12). Following a perspective of philosophy of science, we have defined in a previous paper [13] anthropological psychiatry as the

anthropological modeling of psychiatry. The first great incursion in this area was done by Ludwig Binswanger [23], and Otto Dörr has developed which is probably the most recent important systematic project of an explicit anthropological psychiatry [24]. Pelegrina [25, 26] makes a similar impressive recent work focusing not in psychiatry but in psychopathology. Once the former has been mentioned as paradigmatic examples, it is not our objective to systematically revise the many systems that can fall under the concept of anthropological psychiatry. We only want to point out that the majority, if not the totality of them, are before the conception of neurophenomenology as a bridge discipline between neuroscience and phenomenology. The model we propose, Neuroscience-Based Anthropological Psychiatry (NBAP), is an attempt to integrate recent neuroscience models in to the tradition of anthropological psychiatry.

The objective of this chapter, which will be developed in Section 2.2., is to present 10 concepts, introduced as 10 progressive steps, to characterize NBAP.

2.2 Ten introductory steps to NBAP

2.2.1 Phenomenology: the rigorous study of subjectivity

Modern science begins during the sixtieth and seventieth centuries by the leading hand of Galileo and Newton. The differentiation that Descartes did between *res cogitans* and *res extensa* facilitated the autonomy of empirical science from the philosophical speculation. The advance of the diverse scientific disciplines until the twentieth century gave rise to the idea that has been known as the spirit of Modernity. According to this, a unique objective reality exists. Its exact representation, preferably in mathematical terms, is the task of science. All the parcels of the unified science, from physics to psychology, must stick this presupposes if they want to be considered as scientific knowledge.

But, in the turn of nineteenth to twentieth centuries, a profound debate was sustained in the core of logic, psychology, and physics. The core of the problem was to delimitate what should be taken as the basic data of empiricism to construct any scientific argumentation. The discussion between Gottlob Frege and Edmund Husserl on the concept of number propitiated that the second began the way of phenomenology as the science of the essences. Phenomenology does not accept the idea that any mental concept is a representation of reality. Conversely, any mental content is the fact toward which the method of the phenomenological scientist must be oriented. “Back to the things themselves” was the slogan of Husserl and the phenomenological school in Germany in the first third of the twentieth century.

Phenomenology was the object of the critics of Rudolph Carnap and other philosophers of the science from the “Circle of Viena.” Phenomenology was taken as an example of metaphysical nonsense, leading to a profound orientation in psychology toward facts nondependent on subjectivity, mainly the expressed behavior. The behavior observed in animals and humans under experimental conditions substitutes the mental experience as the focus of interest of most of the psychologists. In this context, which spread the central decades of the past century, the paradox occurred that scientific psychology took a rout while psychopathology remained inspired in the phenomenological origins of Jaspers and posteriorly the Heidelberg school. The picture complicates due to transactions between phenomenology and psychoanalysis that we cannot analyze here.

Phenomenological descriptions have been diverse in authors and perspectives over a great part of the past century. But this research was not placed at a central place in the academic psychiatry which, with the DSM-III era, evolved to a dominant biological mechanistic paradigm. It was during the turn to the present century

when phenomenology was revisited and reevaluated in the neuroscientific landscape [19] as well as in the psychopathological research [27]. Nowadays, a privileged circumstance allows us to reread the classical phenomenological descriptions. The umbrella of neuroscientist models allows us to subsume under them, at least in part, the classic phenomenology. The rigor of the descriptions of mental states in first person can be correlated with fine neurophysiological and neuroimage technics under common theoretical models. Moreover, the research program based on the topic of the mind as a black box has converged, via cognitive behaviors, to a renewed interest in mental events.

2.2.2 Phenomenological anthropology: the conditions of possibility of the human being

The question about the human being was one of the main challenges the modern thinking proposed. Kant was the enlightened thinker who, under the inspiration of Rousseau, initiated an explicit anthropological thinking. But the rational knowing on the human essence and its empirical characterization showed the difficulties and disadvantages consequent to applying the mechanistic models of the modern science to anthropological questions. Since the twentieth century, the anthropological inquires divide, between others, into three main streams: physical anthropology, cultural anthropology or ethnography, and philosophical anthropology.

Philosophical anthropology is the discipline we will focus on. Max Scheler, a philosopher who was initially ascribed to the Husserlian school, proposed for the first time the discipline in the 1920s of the twentieth century. After him, the discipline has become a philosophy of anthropology [28] in a similar way as a philosophy of psychology or a philosophy of medicine exists. But it is important to highlight a difference; while philosophy of medicine and philosophy of psychology mainly come from the analytical, positivistic, or Anglo-Saxon tradition in philosophy, philosophy of anthropology relates to the continental or phenomenology hermeneutical tradition. Nonetheless, currently both traditions are quickly mixing and enriching each other.

So, in the dotation of NBAP we have, now, phenomenology as a method for the rigorous study of subjectivity and philosophical anthropology as a framework in which to locate the empirical research regarding the human being. In this context, three specific questions can be done: (1) does the human condition change when sick? (2) which are the specific anthropological attributes of being a mentally ill person? and (3) how does the philosophy of the human being resolve the mind-brain and the identity-body problems? Further, these three questions will be addressed.

2.2.3 Anthropological medicine: a sick man and a doctor in a narrative circle

Medicine as we know it was born in essence with Hippocrates and his school on the fifth century BC. Before that time, medical practice touched the magical thinking and did not clearly differentiate from religion. But with Hippocratic medicine, disease, therapeutics, and the sick person-physician relationship changed to be inspired in the two complementary concepts of isonomy and philanthropy. The first of these concepts indicates that every citizen in Athens was equal under the law. The second principle, that specifically takes the form of medical philía [29], complements the former by virtue of helping others to achieve and to enjoy the condition of citizenship and, specifically, helping them to recover their health by means of medical science and art. Moreover, the ancient Greek cities stipulated the manutention of a physician in each one of them to protect the health of its inhabitants.

Although it seems obvious that modern medicine differs in many aspects from the ancient Greek medicine, mainly due to scientific and technological advances, we want to highlight that the core of it persists over the years since the times of Hippocrates. This core of the medical fact is no other than the patient-physician relationship.

After the scientific development of medicine that took place with the development of the clinic method in the university hospitals of the nineteenth century, medicine became a technical-scientific discipline even more, eclipsing its nuclear interpersonal essence. But the work of Freud and its followers was a revulsive to the very modern perspective of the medicine that predominated during the positivist attitude of the second half of the nineteenth century. With Freud, the patient-physician relationship turns to the focus of medicine, now under the name of “transference.”

It is around this rescued reality of intersubjectivity in medicine where the anthropological medicine of Viktor von Weizsäcker should be considered [30, 31]. The work of Viktor von Weizsäcker is mainly located at Heidelberg in the 1930s–1950s of the past century. He was a doctor, specialist in internal medicine and in neurology as well as a philosopher whose original thinking was inspired by psychoanalyzes, phenomenology, and philosophical anthropology. von Weizsäcker stressed that the sick person has a biography the doctor must take in account to the rigorous understanding of the where, when, what, and why of any disease. This anthropological perspective is not opposite, but complementary, with the technical-scientific one. The integration of both perspectives led to a global comprehension of the sickness condition. The “pathic” dimension of the human being (the emotional nonconscious coming from the body) integrates with the “ontic” one (the rational conscious coming from the rational mind) in a circle of Gestalt or configuration (Gestaltkreis). This configurative circle unifies both the “solidarity of death” and the “reciprocity of life” in a way that radically includes disease and death with health and life, remarking the idea that sickness is consubstantial to the human being. In this scene, the role of the physician far to “fight against the death” is “pact with the death.” After von Weizsäcker, the patient-physician relationship has been profoundly theorized by Laín Entralgo [29].

The patient-physician relationship has become the axis or nuclear construct around which present medical theory is constructed. From a reification of diseases as mere natural regularities remaining at the center of a play where the doctor is the active agent while the patient passively remains as “the land where the battle takes place,” contemporary medicine has evolved to a “narrative dialog” [32]. Patient and physician now dialog and jointly assume risks and take decisions considering the data provided by evidence-based knowledge. We are in an ethical context of autonomy and responsibility [33], not yet in the paternalism that accompanied the mechanistic medicine of the “diseases as natural species.” Anthropological medicine will undoubtedly help in the construction of the dialogic intersubjective patient-physician relationship which present medicine claims for.

2.2.4 Anthropological psychiatry: medicine of the subjectivity

The phenomenological anthropological perspective in medicine has been intensively applied in psychiatry [34]. Ludwig Binswanger, a Swedish psychiatrist contemporary of von Weizsäcker, integrates in his “existential analysis” [23] some aspects of the psychoanalytical tradition for the analysis of the Dasein, the construct that subsumes the human being under the point of view of the Heideggerian hermeneutical phenomenology. Many psychiatrists followed the trail that Binswanger initiated in his application of philosophical anthropology to psychiatry.

Wolfgang Blankenburg applied the phenomenological analysis under a Husserlian perspective to the self-experience of schizophrenia. He proposed that the phenomenological key of this condition is the “loss of the natural evidence” in relation with the world [35]. Hubertus Tellenbach, applying the phenomenological method, described the “*Typus melancholicus*” that he characterizes by order attachment, strong moral conscience, intolerance to the ambiguity, and hypernomy-heteronomy. These phenotypical traits would predispose to endogenous depression.

Many other original proposes were done mainly in the German area, which located the very different ways the Heideggerian *Dasein* has to be in the world. These fine observations of the very different modes that the human existence has for expressing himself progressively erased the frontier between “normality” and mental illness. Outside the German area, in his classical book “*The divided self*” [36], the Scottish psychiatrist Ronald Laing finally proposed to solve that frontier doing comprehensible the madness using the method of the existential analysis. The barriers had been demolished, and the antipsychiatry arguments were knocking on the door whipped by Foucault.

From Binswanger to Foucault, medical anthropology embarked on a trip after which the classical image of the human being, and, also, his existential reformulation, arrived at a postmodern subject who will be progressively diluted in language and the social structure to definitively arrive to Lacan. This transgression is enough to illustrate the very diverse ways that the anthropological map can conduct the contemporary conception of the human being as a subject.

2.2.5 Neurophenomenology: the world-brain-mind system

The “naturalization of phenomenology” [37] became a new topic with the diffusion of the French philosopher Maurice Merleau-Ponty’s works in the second half of the twentieth century. His theory propitiated “the body turn” of phenomenology, placing the human body at the center of the perception of the world. But not only the body as the lived axis of the world but the body, and more exactly the brain in its relationship with consciousness and subjectivity, has been taking center stage in the philosophical anthropology of the new millennium.

This naturalization and turn to the brain have implicated the broad territory of philosophy of the mind. In the analytical tradition, this reorientation has resulted in the concept of “neurophilosophy,” led by the philosophers Patricia and Paul Churchland [38]. As a response, or a complement, the neuroscientist and phenomenologist Francisco Varela proposed in 1996 the concept of “neurophenomenology” [18, 39], by which he wanted to tackle the “hard problem” of consciousness. In his seminal work [18], Varela clarifies:

“the Working Hypothesis of Neurophenomenology: Phenomenological accounts of the structure of experience and their counterparts in cognitive science relate to each other through reciprocal constraints.”

Complementary to the construct of neurophenomenology, Varela proposed a second fundamental concept: “enaction.” It implies a deep reconceptualization of problems being classically addressed by the cognitive sciences, so that enaction can be taken as a serious alternative to the concept of representative cognition. Writes Varela [37], p. 272:

“My overall approach to cognition is based on situated, embodied agents. I have introduced the name enactive to designate this approach more precisely. It comprises two complementary aspects: (1) the ongoing coupling of the cognitive agent, a permanent coping that is fundamentally mediated by sensorimotor activities; and (2) the autonomous activities of the agent whose identity is based on emerging, endogenous configurations (or self-organizing patterns) of neuronal activity.

Enaction implies that sensorimotor coupling modulates, but does not determine, an ongoing endogenous activity that it configures into meaningful world items in an unceasing flow.”

As we can see, the idea of self-organization of the mind processes reappears in Varela in a similar way we saw when mentioning the Gestaltkreis in von Weizsäcker. Self-organization of mind processes appear as a key concept too in the model proposed by another seminal author we want to mention: Joaquín M. Fuster. In his book of 2003, *Cortex and Mind* [19], Fuster introduces two concepts which can be very helpful to a neuroscience-based anthropological psychiatry: the cognit and the perception-action cycle. This is how Fuster defines both ideas:

“To characterize the cognitive structure of a cortical network, I use the term cognit, a generic term for any representation of knowledge in the cerebral cortex. A cognit is an item of knowledge about the world, the self, or relations between them.” (p. 14).

“Earlier I alluded to long connections from posterior cortical areas to areas of the frontal lobe. These connections constitute the functional linkage between the two cortical hierarchies, one for perception in posterior cortex and the other for action in frontal cortex. The lowest stages of both hierarchies are the cortical processing areas at the interface between the cortex and the environment: sensory cortex at the input interface and motor cortex at the output interface. In the course of behaviour, the two hierarchies are engaged in a cybernetic cycle of dynamic interactions with the environment that I have termed the perception-action cycle”. (p. 74).

“The cognitive interactions of a primate with the surrounding world are governed by what I have named the perception-action cycle [40]. This interactive cycle is the extension to cortical processes of a basic principle of biology that characterizes the dynamic adaptation of an organism to its environment. It was first proposed by the biologist Uexküll [41], who deduced it from behavioral observations in a large number of animal species. Essentially, it can be stated as follows. An animal’s behavior consists of a succession of adaptative motor reactions to changes in its external and internal environments.” (pp. 107–108).

To summarize the approximation to NBAP we are doing from Sections 2.2.1 to 2.2.5, anthropology is the discipline that specifically studies the human being. It needs to achieve symbolic facts, which are presented as subjective mental states. The rigorous study of the mental states implies accounting for the system composed by the human animal, its historical and cultural narrative, and the intersubjective and physical medium where he or she lives. By “rigorous study,” we mean both the explication and the comprehension. “Elucidating” could be a term that includes both significances. Different traditions termed diversely this system: Gestaltkreis, perception-action system, hermeneutics. They are not synonymous terms, but they share an attribute definitory of the living things: self-organization or in the Maturana’s classical term “autopoiesis.” So the human being is an autopoietic system composed by symbolic elements (namely, semantic elements or cognits). This fragile system emerges in a concrete cultural and physical environment with which the person makes semantic and physical transactions to the moment of its disintegration due to death. Medical processes are those where a high risk of disintegration exists. Psychiatric processes, for its part, are those where the risk of disintegration mainly appears in the semantic aspects of the system.

The philosopher of science Mario Bunge proposes a scientific metaphysical [42] system based, among others, on the concept of “system.” Following the ontology of Bungean’s scientific metaphysics, we propose that a human being is the system characterized by the following: (1) Its “components” are cognits, which we define as neural networks self-poetically emerging; (2) the “environment” of any human system is the semiotic context where it develops; (3) cognits dynamically stabilize by virtue of biological “mechanisms” needed by the whole integrity of the body

to maintain its fragile integrity; and (4) the “structure” of a human system is in part common to all the human beings (see below “the personal matrix”) while it is in part idiosyncratic as well (personal character or self-identity). Note that (3) refers to neurobiology, (1) to semantics, (2) is related with linguistics, and (4) corresponds to philosophical anthropology. This ontology satisfies what García [43] proposes for any theoretical model designed to be applicable to complex systems, which must be compatible with different scientific disciplines. So defining a human being as a kind of system facilitates our objective with respect to NBAP, as the model is applicable to the anthropological processes targeted as “normal,” “physiological,” or “ethnographic” as well as to the other that tradition qualifies as “pathological.” In other work, we propose a similar systemic approach to the problem of putatively defining humanity in artificial systems [44]. In our view, basing neurophenomenology in Bunge’s scientific ontology implies a significant advantage over which modeling NBPA.

2.2.6 The personal matrix: mapping subjectivity

The great majority of people share a conjunct of attributes or dimensions that can be accepted as “universals” in the human being. Every person can be ascribed to a numeric or categorical value in the attributes of age, gender, language, or ethnic group. These four attributes would be ethnographic axes as a part of a personal matrix that could count with multiple other dimensions.

The ethnographic or “cultural universals” just mentioned are easy to apprehend in a first approximation to the problem. But the phenomenological work really begins when we try to extract the common subjective dimensions that “transcendentally” structures human systems in people from different cultures and epochs. This is what might be called “positive or empirical phenomenological research.” To illustrate this idea, following a canonical text [45], we can mention some classical dimensions, axes, or topics in phenomenology each one of those could be a dimension of the personal matrix: that is, bodily intentionality, self-consciousness and world-consciousness, epistemic commonality and truth, or time experience.

In other work [46], we defined a matrix composed by eight phenomenological dimensions (four related with time and four related with space) and four limits to the phenomenological experience. The time dimensions are as follows: morality, the ongoing task, desire, and hope. Every one of these dimensions can be explored when we try to “anthropologically elucidate” a person. Morality is the system of behavioral patterns that constitute us before any intentional act. The task ongoing is the one that makes me feel an intentional subject. Desire is a behavioral pattern at present activated but still not closed in a perception-action cycle. Hope is a behavioral pattern I recognize as desirable but presently inactive. The space dimensions are the body as entrails, the body as flesh, circumstance, and landscape. Body as entrails is the experience of the emotional response of the body (anger, joyfulness, and so on). Body as flesh refers to the experience of the body as the organism that accompanies my biographical live and where my subjectivity is embodied. Circumstance is the environment composed by the other people and by the artificial objects I interact with in my present intentional acts. The landscape is composed by the living beings and inorganic materials I can see or imagine but with which I am not at present interacting and which stay as a mere environment of my lived experience. The four limits of the phenomenological experience are death, absence, self, and mind.

A rich phenomenological elucidation is documented of any of these and much other similar phenomenological concepts. The positive work of the phenomenologist community from Husserl to date is the rigorous description of the fabric over

which the structure of the human being emerges, as well as the very different characteristic variants that it takes in every individual person. Additionally, a priority for the near future would be to establish correlations between the main phenomenological concepts and the intrinsic connectivity brain networks [47]. Attending to a neurophenomenological framework, a desirable research agenda in neurophenomenology would be to describe the personal phenomenological matrix in terms of visual (landscape), somatomotor (ongoing task), dorsal attention (circumstance), ventral attention (morality, desire, and hope), limbic (body as entrails), frontoparietal (body as flesh), default (self and mind).

2.2.7 Semantics: sharing personal fields

“The mind is intentional,” affirms a topic of the phenomenology coming from the pre-Husserlian days of Brentano. Every subjective experience has an object toward which the mind is projected. In a perception-action cycle, the motor system is projected to the world, executing an intentional plan. When two or more people share an objective, they form a system and share a global intentional motor plan. So, the association of this intentional motor plan to a motor verbal behavior is facilitated while a verbal sound appears in the common circumstance of the group.

The verbal sound becomes a new component of that shared circumstance, with a relevant characteristic: as well as the visual perspective changes profoundly from each of the persons implicated in the common task, the sound involves the perceptual field of every component of the group equally. So, this sound, that is closely associated to the vital fact in course, becomes commonly significant. The sound acquires meaning with the result that a verbal sign emerges.

The shared pragmatic field derives in a shared sign that, finally, constitutes a shared ontology by the linguistic nature of the human mind. Precisely, it is due to the common transcendental structure that we humans share that the shared pragmatic and semantic fields can become a common ontology. This common ontology is no other than the “common sense.”

Every culture and epoch has a common sense, whose components are group’s shared pragmatic fields. They constitute the ontology, the semantic base of their language, in other words: the reality for that human group.

2.2.8 Mental signs: aliens in the common sense

The medical rationality has constructed the conceptual object of “disease.” A disease is a component of the pragmatic field, at list in contemporary occidental human groups. The infective diseases conformed the classical paradigm of diseases, which Thomas Sydenham in seventeenth century contributes to fix as “natural species.” So, disease is a reified conceptual object that the physician tries to perceive and recognize looking for several physical, laboratory, radiological, or biological indices. In the classical clinical theory, a sign is a data obtained in the clinical exploration that means that a disease can be present.

Since psychiatry is a medical speciality, it shares the method that looks for signs of diseases. But, in this case, the signs come not from the visual, tactile, or sound perception. The psychiatrist detects signs by a method that, somehow, “perceives” the mental subjectivity of the patient through the enquiry for a sense in the motor and verbal behavior of the patient in a concrete context. The sharing of a common sense between a psychiatrist and a patient coming from the same language community, culture, and epoch, makes it possible to detect mental states which are “out from the shared field of the common sense.” When it is supposed that it is because a body disease exists, affecting the mechanism of the mind, the psychiatrist judges

that a psychiatric disease is present. When the psychiatrist, or the clinical psychologist, judges that the biological mechanism of the brain is normally functioning, even though the patient is out of the common sense, a psychiatric disorder without disease is present.

The concept of mental sign is necessary if we accept that psychiatry is medicine. Clerambault's mental automatism is a classic example of that perspective. So, the main diagnostic task of the clinical psychiatrist is to detect the presence, or not, of several mental signs that lead to a diagnosis. In terms of Jaspers, the mental signs can be explained but cannot be understood. Therefore, we can characterize any mental sign as "xenopatic," namely "an alien" in the common sense.

2.2.9 The clinical neurophenomenological method: revisiting psychiatry

Taking in account Sections 2.2.1 to 2.2.8, in other work [46], we have proposed the technical steps to follow in the applying of the termed "clinical neurophenomenological method". It consists in:

1. To adopt a phenomenological matrix model:
 - a. to adopt a system of temporal and space anthropological attributes;
 - b. to adopt a system of brain's associative neural networks;
 - c. to adopt a correlation's matrix between anthropological attributes and neural networks.
2. To define the personal field's matrix:
 - a. to determine the concrete temporal attributes of the matrix in that patient;
 - b. to determine the concrete special attributes of the matrix in that patient.
3. To reduce the symptom to a lived experience:
 - a. focalizing the symptom in zero-person;
 - b. reducing the symptom to lived experience by adopting in second-person perspective of the patient;
 - c. placing the lived experience in the correspondent cell at the personal matrix.
4. Understanding analyses of the lived experience:
 - a. to active, by means of introspection, the correspondent cell in the phenomenologist's personal field;
 - b. to empathically understand the lived experience in first-person;
 - c. contrasting with the patient the sense of the lived experience;
 - d. replacing in the matrix the lived experience, if necessary, attending to the new information after contrasting the information with the patient.

5. Psychopathological analyses:

- a. detecting positive mental signs;
- b. detecting negative mental signs;
- c. detecting secondary psychopathological organizers, which patients construct to stabilize his or her psychopathological system;
- d. to postulate the neural network which is implied in the positive and negative signs and, if the case, the subjacent brain connectivity pathology.

6. Therapeutic dialog:

- a. facilitating the mental sign's symbolization by means of a psychotherapeutic dialog;
- b. supporting the patient in the adaptative modulation of his or her psychopathological organizers;
- c. to propose new organizers in the personal field, which were based in the common sense.

2.2.10 Therapeutic dialog: back to the common sense

If mental signs are understandable, the task of psychotherapy is to cover these “alien to the self” experiences by a narrative which could be shared, at least, by two people: the patient and the psychotherapist. By the fact of being shared, the pathological experience begins to be covered by a “semantic covering.”

Note that, then, the psychiatrist's task is double and bidirectional, as already pointed Jaspers with his methodological pluralism [5]. He or she must, as a physician, attend to the biologically explainable, but do not understandable, of the mental experience. Also, they, as a psychotherapist, must help in covering the experience of the patient with a unitary and shared sense. With this anthropological perspective, Giovanni Stanghellini [17] has developed a rigorous psychotherapeutic method we based in: the phenomenological hermeneutic dialectic (PHD) method, to which the reader is referred.

In view of the above, we can define in easy terms neuroscience-based anthropological psychiatry (NBAP) as a medical-psychotherapeutic speciality.

3. Conclusions

Psychiatry is a medical-psychotherapeutic speciality. In this chapter, it has been proposed that the psychotherapeutic dialog is the technique we can use to progressively cover with successive layers of common sense the alien mental signs that presents in the lived experience of the patient. This technique is complementary to the medical intervention of diagnose and pharmacological and physical treatment of the body diseases which affects the normal brain functioning. To the study of brain functioning, in addition to laboratory, neuroimage, and neurophysiological technics, the clinical neurophenomenologist uses the specific method of exploring the enactive functioning of the patient's brain. In this task, to achieve a shared semantics in the patient-physician anthropological encounter is necessary.

Medicine is a complex art. It needs the collaboration of the biological and social sciences. But a rigorous philosophical foundation is also necessary for psychiatry.

Conflict of interest

The author declares no conflict of interest.

Notes/thanks/other declarations

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