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## **Epistemology – the Theory of Knowledge or Knowing? Appreciating Gregory Bateson’s Contribution to the Cartography of Human Cognition**

### **Abstract**

This article aims at a confrontation of two approaches to epistemology in order to answer the question posed in its title whether the theory of knowledge should focus on static or dynamic aspects of human cognition. In the first part, the author presents a metascientific understanding of epistemology defined in his own works as an ordered set of investigative perspectives, which practicing researchers have at their disposal when they are interested to attain a specific state of knowledge, or to support their beliefs about the nature of investigative domains with regard to the existence forms and accessibility of investigated objects. And, in the second, the subject matter of a more detailed presentation constitutes a psychophysiological approach to epistemology pertaining to the human organism preoccupied with sensorial and mental activities as a cognizing subject who aims at achieving a certain kind of information about reality. Common for both approaches to epistemology is the attainment of experiential knowledge. However, when the metascientific epistemology refers to a dispositional-perspectivistic state of knowledge acquired in cognition, the attention of the psychophysiological epistemology is paid to cognitive-constructivists activities of human organisms as subject acquiring their knowledge through personal experiences.

**Keywords:** constructivism; epistemology; knowledge; philosophy; reality.

### **Introducing the Distinction between Metascientific and Psycho-Physiological Epistemology**

The point of departure for the sake of a comprehensive elaboration of the topic of this article constitutes a metascientific understanding of epistemology specified as a set of investigative perspectives by Zdzislaw Wasik (2003, pp. 13-42; 2014, pp. 27-46; 2016, pp. 56-75). It employs the distinctions taken from the dictionaries of philosophy by Didier Julia (1991) and semiotics by Algirdas Julien Greimas and Joseph Courtés (1979 [1982]), while relating to the proposals of Paul Lucian Garvin formulated in his publications (1978a, 1978b, and 1980).

Having in mind, as the point of arrival, the relationship between epistemology and reality in the philosophy of Gregory Bateson (1951a, 1951b, 1987 /1972/, and 1979). going back to the background of Alfred Korzybski’s (1994 /1933/) view of the source of knowledge, we will confront (1) a metascientific epistemology, assumed in terms of investigative perspec-

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tives, which a cognizing subject has at his/her disposal for achieving a certain state of knowledge or confirming a certain conviction about relevant properties of an investigated object with regard to its existence modes and accessibility in cognition, with (2) a psychophysiological epistemology oriented towards sensorial and intellectual activities of a cognizing subject, who strives to achieve a certain state of knowledge about reality. What is common to both types is the knowledge either as an acquired state or a practice of its acquisition; however, in the case of the metascientific epistemology the interest is focused on assumed knowledge of both how the things exist (ontology) and how they can be approached in cognition (gnoseology), and, in the case of the psychophysiological epistemology, attention is paid to a corporeal-mental capacity of cognizing organisms acquiring their knowledge through experience.

In this context, it seems essential to remind the classical cradles of epistemology equated with a theory of cognition relegating the knowledge about the being to metaphysics. As such, it is rooted in two beliefs from the end of the nineteenth century, namely metaphysical epistemology and “scientificist” or scientific epistemology.

Metaphysical epistemology, in the appreciations of James Frederick Ferrier (1854), was a subject-oriented theory knowledge about the cognized objects based on the criterion of absolute truth. Scientific epistemology, considered as antimetaphysical by St. George Jackson Mivart (1898), was associated with systematizing endeavors to achieve exhaustive knowledge about reality through sensorial observations and intellectual inquiries. This knowledge was said to objectivize itself, according to Karl Popper’s conception of evolutionary epistemology (1972), as a separate world of ideas made independent from cognizing subjects in social communication.

### **Ontological and Gnoseological Frames of Reference in Metascientific Epistemology**

Placed on the level of the sciences of science, epistemology is a theoretical discipline inquiring about what is the cognition itself, what are the contents of a cognizing mind and what are the ways and limitations of cognizing powers of man (cf. Wasik, 2014, p. 27). It is thus seen a branch of philosophy studying the nature and grounds of knowledge with regard to scopes and functional validity of investigative approaches used in particular scientific disciplines for determining their subject matter.

The domain of epistemology embraces not only corresponding reflections upon investigative methods and procedures but also theoretical axioms and hypotheses of a given type of science. Consequently, (1) epistemology is seen as the highest level in the disciplinary matrix of metascience, i.e., succeeding (2) the object of study, (3) the description of its subject matter, and (4) the methodology determining its descriptive concepts. Its aim is a profound critique and verification of the methodological plane by testing its coherence and evaluating its adequacy in its relation to the descriptive plane (cf. Wasik, 2016, p. 56).

An *epistemological* analysis of a given discipline consists in the examination of its *ontological* and *gnoseological* foundations to answer how far the commitment of scientists to their attendant views on their object of study corresponds to its approachability. Hence, the study of epistemological positions of scientists is based on the conviction that the choice of a given investigative approach stipulates their outlook upon conceptual and operational tools leading to the formulation of investigative postulates. On a metascientific level, the choice of an

epistemological orientation means the choice of an appropriate investigative perspective determined by both the accepted tasks of investigation and the nature of the investigated object (cf. Wasik, 2014, p. 27).

The search for investigative perspectives, taking part in the specification of the subject matter of particular disciplines can start from the he panorama of ontological beliefs, doctrines, and directions of scientific conduct. They are collected and defined in philosophical dictionaries or books on the epistemology of sciences under the names that refer to their notional contents, disciplinary provenance, authors and/or followers, etc.

A provisional list of investigative perspectives, arranged alphabetically (cf. Wasik, 2016, p. 58), may include (among at least collected 190 entries): absolutism, anthropocentrism, Aristotelianism, associationism, atomism, behaviorism, biologism, causalism, cognitivism, collectivism, comparativism, constructivism, creativism, Darwinism, deductivism, descriptivism, determinism, diffusionism, dynamism, emergentism, empiricism, essentialism, evolutionism, existentialism, extrospectivism, finalism, functionalism, Hegelianism, idealism, immanentism, inductivism, instrumentalism, integrationism, interactionism, introspectivism, intuitionism, materialism, monism, naturalism, nativism, normativism, objectivism, organicism, personalism, phenomenism, Platonism, pluralism, positivism, pragmatism, psychologism, rationalism, realism, relativism, skepticism, sensualism, solipsism, spiritualism, Stoicism, structuralism, subjectivism, symbolism, teleologism, transcendentalism, utilitarianism, verificationism, vitalism, and the like.

While making a commitment to an epistemological position, a researcher may notice that the names of certain perspectives express sometimes evaluative connotations that are positively or negatively marked. Although this division may embrace not all of enumerated perspectives, and the borderlines between them are not clear-cut, one can distinguish two kinds of approaches towards the nature of the investigated object. One the one hand, investigative perspectives are specified as cognitive attitudes, i.e., intro- or projections, which are based on hypothetical speculations and categorical beliefs, and, on the other, as cognitive standpoints, i.e., ascertainties which refer to experiential knowledge (cf. Wasik, 2016, p. 60).

Cognitive attitudes rely on investigative directives of scientists who impute certain expected properties to their object (or to sets of objects in their domain) of study because of its (their) resemblance to the subject matter of preferred conceptions or dominating theories, which are in fashion at a given period. Alongside cognitive attitudes, one may place also some dogmatic statements regarding a particular approach as the only admissible and legitimately mode of scientific conduct. Cognitive standpoints represent opinions and postulates of scholars who verify their hypotheses and convictions by means of empirical observations and proved conclusions regarding the approachability and the fundamental nature of the object under their consideration.

To appreciate the system of investigative perspectives characterizing particular branches of science, it would be necessary to elaborate a typological matrix subsuming all actual and potential standpoints, doctrines, beliefs, or directives of study, and the like. In this system, the axis of time is unimportant. The only thing that might count would be a positive marker showing the occurrence of a given investigative perspective which has found its reflections in a given concept or a certain theory of the investigative object (cf. Wasik, 2016, pp. 62–64).

## Searching for the Roots of Psychophysiological Epistemology

The current search for the genesis of epistemology as a practice of acquiring the knowledge, or a way of arriving at a state of knowing about an object of cognition, bearing in mind the imperfection and unreliability of perceptive powers of the human organism as an investigating subject, departs from the works of Gregory Bateson. In the first instance, it considers a selection prepared in the cooperation with Jürgen Ruesch, an American psychiatrist, labelled as *Communication. The Social Matrix of Psychiatry*. (Ruesch & Bateson, 1951). In the second instance, the search refers to the collection of Bateson's later works, published under the title *Steps to an Ecology of Mind* (Bateson, 1987), and subsequently to his monograph *Mind and Nature* (Bateson, 1979). In this respect, we have conducted a preceptor-oriented study on the basis of *Science and Sanity* published in the year 1933 by Alfred Korzybski, to the ideas of whom Gregory Bateson referred with regard to the epistemology of man as a holistic organism functioning in a determined environment.

In Korzybski's works, the investigative object of epistemology constitutes a conscious organism integrated with its surrounding world through particular senses steered by means of nerve tissues from a central core in the brain. This organism functions as a result of adaptation to external physical factors and internal psychical impulses following certain patterns of behavior while forming itself through metabolism regulated by biochemical constituents. For the applied epistemology relevant are Korzybski's views on man as a cognizing organism engaged in the acquisition of knowledge. A human being in comparison to an animal is characterized there by a conscious participation in the processes of abstracting, stocks of past experiences, imaginational binding of the past with the future, generational transmission of knowledge accumulated in language and culture, as well as multiordinal ascriptions of signification to hierarchically and contextually situated signifiers of reality (*inter alia* through terms, schemes, diagrams, models, or geographical maps, etc.).

According to Korzybski the basic content of knowledge is to be seen in the "structure of relationships". As he maintains, the organism of a human being who copes with observed reality through perception detects only the form of objects which appears as relevant for him/herself from selected points of view with regard to multidimensional properties, without being able to reach the essence of things in themselves (not cognized yet as existence objects) so far as they do not appear on his senses (apprehended as mental phenomena).

Among relational properties of human mind, the primary place occupy, in Korzybski's estimation (1994, p. 440): metalinguistics reflexivity, relocating the consciousness of abstraction from the first order of effects "such as curiosity, attention, analysis, reasoning, choice, consideration, knowing, evaluation", to the second order of effects where "curiosity of curiosity, attention of attention, analysis of analysis, reasoning about reasoning, [...] choice of choice [...] consideration of consideration [...] knowing of knowing involves abstracting and structure, becomes 'consciousness', at least in its limited aspect, taken as consciousness of abstracting; evaluation of evaluation becomes a theory of sanity."

In the sphere of contemplation about the role of abstraction and self-reflexiveness, Korzybski has placed his famous *dictum* "The map is not the territory". In his depiction:

Two important characteristics of maps should be noticed. A map is not the territory it represents, but, if correct, it has a similar structure to the territory, which accounts for its usefulness. If the map could be ideally correct, it would include, in a reduced scale, the map of the map; the map of the map, of the map; and so on, endlessly [...]. If we reflect upon our languages, we find that at best they must be

considered only as maps. A word is not the object it represents; and languages exhibit also this peculiar self-reflexiveness, that we can analyze languages by linguistic means (Korzybski, 1933, p. 58).

This idea about the mapping of reality had been borrowed from Josiah Royce's *The World and the Individual* (1900 /1889/), who stated that:

Absolute exactness of the representation of one object by another, with respect to contour, this, indeed, involves, [...] the problem of identity in diversity; but it involves that problem only in a general way. [...] For the map, in order to be complete, according to the rule given, will have to contain, as a part of itself, a representation of its own contour (Royce, 1900, p. 504).

With reference to Korzybski's reasoning, one can arrive at a conclusion that the knowledge as a cumulative enterprise occurs where the partial epistemologies of individual scientists meet together in the collective wisdom of society constituting simultaneous communities or successive generations of scholars. Such epistemologies, being solipsistic and psychophysiological in nature, are defective, imperfect, and therefore incredible. Hence, the knowledge resulting from the fallibility or unreliability of perception must consider, firstly, the instability, polysemy, multiordinal situation of nonverbal and verbal means of communication, to which humans react, and which humans use in thinking activities, and secondly also, volatility and fragility as well as illusiveness of sensorial experiences, resulting from imperfection, distortion, or deficiency of cognizing organs.

A careful reader of *Science and Sanity* can notice that Korzybski's ideas pertaining to the epistemology of organisms forming mental-sensorial consciousness in certain environments have been influenced by two philosophers Ernst Mach and Jacques Loeb. The principal role in the formation of Korzybski's conception of "fallacious epistemology" of human mind played two empiriocritical contributions to the analysis of sensory impressions of Ernst Mach, under one title *Beiträge zur Analyse der Empfindungen* (1886), and the treatise of Richard Avenarius on the critics of pure experience, *Kritik der reinen Erfahrung* (1888, 1890).

While reading Mach (1914 /1897/ [1906 /1886/]), one could notice that the idea about the abstraction-oriented ability of humans which occurs in their perception, depending upon free will, developed by Korzybski, was undoubtedly borrowed from him. According to Mach, man (under normal conditionings) is endowed with a gift to a self-governed and conscious determination of his own viewpoint (1897, p. 6).

As Mach noticed: "Man possesses in its highest form the power of consciously and arbitrarily determining his point of view. He can at time disregard the most salient features of an object, and immediately thereafter give attention to its smallest details [...], he can rise at will to the most general abstractions or bury himself in the minutest particulars. The animal possesses this capacity in a far less degree. It does not assume a point of view, but is usually forced to it" (1914, pp. 6-7). However, "No point of view has absolute, permanent validity. Each has importance only for some given end" (Mach, 1914, p. 37).

In the climate of opinion when Mach developed his ideas, there were two comparative works on the physiology of the brain and psychology published by Jacques Loeb in under one common title, namely *Einleitung in die vergleichende Gehirnphysiologie und vergleichende Psychologie* (1898) translated two years later as *Comparative Physiology of the Brain and Comparative Psychology* (1900).

Being familiarized with Loeb's title, *Comparative Physiology of the Brain and Comparative Psychology*, dedicated *nota bene* to Ernest Mach who established as the first scholar, in

the opinion of Loeb, the principles of “antimetaphysical epistemology”, one can encounter also the notion of “scientific epistemology” postulated by St. George Jackson Mivart in *The Groundwork of Science. A Study of Epistemology* from the year 1898. Worth quoting is the statement of Loeb formulated in his “Preface” to *Comparative Physiology of the Brain and Comparative Psychology*: “Professor Ernst Mach, of Vienna, to whom this book is dedicated, was the first to establish the general principles of an antimetaphysical science” (Loeb, 1900, pp. V-VI).

For documenting the historical layers in Bateson’s statements about epistemology – as a way of acquiring information, exposing the unreliability of cognitive powers of human mind in terms of epistemological errors and the solipsistic character of the epistemology of human organism forming itself together with the ecological surrounding, that is, the mind of a cognizing individual as an epistemological subject attracting attention of researchers being interested in the source of knowledge – it will be sufficient to enumerate and discuss the issues found in the works of the investigated author.

(1) Epistemology is a set of theories about the nature of reality, in which humans live, and the theories on the subjective knowledge about the existence modes of this reality (Bateson, 1951a, p. 227). Such theories consisting in propositional judgements, expressed in a determined language, play a certain role in the life when their validity is the function of an individual’s belief in them (cf. Bateson, 1951a, p. 212).

Bateson has constricted the scope of epistemology adding that it is entangled in ontological searches by the fact that it bases on the knowledge about reality attained or communicated.

Traditionally, “epistemology” means the theory of knowledge – the study of the nature of knowing – and the branch of philosophy which has grown up around the word is intertwined with ontology, the study of the nature of being. [...] the very meaning of the word “epistemology” was changed from the conventional. It was argued that the study of knowing or, as we call it, the study of “information,” is inseparable from the study of communication, codification, purpose, and values (Bateson, 1951b, p. 228).

In the interpersonal communication, there is always a difference between the epistemologies of its participants who can depart from diverse viewpoints, as Bateson states: “The same, we believe, is true of epistemologies: that if A wishes to study the epistemology of B, he can do so only if his own epistemology differs from that of B to such an extent that he is driven to some awareness of his own and of B’s premises” (1951b, p. 229). Defining epistemology as a theory or scientific hypothesis, Bateson maintains that:

An epistemology [...] is like a scientific theory or hypothesis. Like any other theory it can be a focus of controversy in which the winning side is likely to associate certain feelings of superiority with the winning. But an epistemology is also like a scientific theory in that it is never right. It is at best [...] only a working hypothesis, subject to future correction and change. The scientist may do the best he can, but he can never [...] achieve a theory which is not subject to disproof. Always the undiscovered facts and the ongoing changes in the climate of scientific thought will have the last word – the scientist never (Bateson, 1951b, p. 229).

There are discrepancies in the view of the world, enumerated Bateson’s earlier studies (1951b): (1) as a category of observables in opposition to mental phantasies, (2) as a social construct according to which the interpretation of reality is determined by dissimilar view-

points in different cultures, (3) as a set of personal knowledge about reality acquired through observation and formulated through mental propositions, (4) as a kind of living through and coping with the world of phenomena on the basis of pleasure and gratification, (5) as a pre-given factual world based on communication in opposition to the artificially created magical world based on rituals (Bateson, 1951b, pp. 239–242).

(2) The subject matter of epistemology is an inquiry into the ways of how human organisms arrive at knowledge, and the limitations of their senses in cognitive and communicational relationships with their environments. Being unified within a network of ecological conditionings, their (sometimes unconscious) convictions about the existence modes of their world is determined by the way of how they see it and how they function within it; and their perception of it, or their functioning within it, usually condition their convictions about its nature.

Thus, epistemology takes into account those physiological and psychical conditionings of individuals, which can also depart from commonly accepted norms. As such epistemology, along with ontology, belongs to two kinds of problems, which philosophers, according to Bateson (1987/1972/[1971], p. 319), detach from each other while posing two kinds of questions. The first kind of questions pertains to how the things are, what the given cognizing person is, and what kind of actuality this world constitutes. The second includes queries about nature and provenance of knowledge, i.e., how it happens that people know anything, and more exactly, how they know what kind of world their reality is, as well as, what kind of beings the people are to know, or perhaps not to know, anything about a given object of interest. In conformity with Bateson's understanding, the natural history of human organisms shows that ontology and epistemology cannot be separated from each other.

Although there is “no convenient word to cover the combination of these two concepts”, namely epistemology and gnoseology, the “approximations [here] are ‘cognitive structure’ or ‘character structure’ [...] implicit in the relationship between man and environment” (Bateson, 1987, p. 320). For the need of a synthetic term enabling to “cover both aspects of the net of premises which govern adaptation (or maladaptation) to the human and physical environment, Bateson alludes to the words of George Alexander Kelly (1955), the initiator of personal (rather subjective) constructivism, while defining them as “the rules by which an individual ‘construes’ his experience” (Bateson, 1987, p. 320).

In the glossary of human-centered epistemology, specified by Bateson in *Mind and Nature* (1979, p. 5), to elementary issues belongs the question “how we can know anything?” (1979, p. 4). Hence, he assumes that epistemology is “a branch of science combined with a branch of philosophy. As science, epistemology is the study of how particular organisms or aggregates of organisms know, think, and decide. As philosophy, epistemology is the study of the necessary limits and other characteristics of the processes of knowing, thinking, and deciding” (Bateson, 1979, p. 228.).

Relevant is the relationship between knowledge and the accession of knowledge, discussed in Bateson's earlier article on “Style, Grace, and Information in Primitive Art” (1987/1972/[1971 {1973}/1967/], pp. 137–161). In his view, “The word ‘know’ is not merely ambiguous in covering both *connaître* (to know through the senses, to recognize or perceive) and *savoir* (to know in the mind), but varies – actively shifts – in meaning for basic systemic reasons. That which we know through the senses can become knowledge in the mind” (Bateson, 1987, p. 143). At the same time, he stresses the role of habit and adaptation: “the unconsciousness associated with habit is an economy both of thought and of consciousness; and the same is true of the inaccessibility of the processes of perception. The conscious organism

does not require (for pragmatic purposes) to know how it perceives —only to know what it perceives” (Bateson, 1987, p. 146).

(3) Any epistemology resulting from cognition is a personal thing. There is no objective epistemology, as far as the knowledge acquired in the personal cognition is always subjective. It is only through the mediation of interpersonal communication that this knowledge can have an intersubjective character.

For Bateson “all experience is subjective” (1979, p. 31), therefore “epistemology is always and inevitably personal” (1979, pp. 87–88). Following these paths of Bateson’s thought, human epistemology is formed on collective solipsistic constructivism approaching the surrounding world of everyday life through individual cognition and communication. In keeping with the world constructed individually and socially, Bateson suggests an entirely new epistemology to be deduced from cybernetics and systems’ theory taking into account a new understanding of mind, self, interpersonal relations and power (1987, p. 315). This “idea of cybernetic epistemology” has been finally placed within the framework of panmentalism (or panpsychism), widely known at Bateson’s times:

The individual mind is immanent but not only in the body. It is immanent also in pathways and messages outside the body; and there is a larger Mind of which the individual mind is only a sub-system. This larger Mind is comparable to God and is perhaps what some people mean by “God,” but it is still immanent in the total interconnected social system and planetary ecology (Bateson, 1987, p. 468).

A similar conviction, although more generalized, Bateson expressed later in his riper monograph *Mind and Nature*, in which he stressed that “epistemology is always and inevitably personal” (Bateson, 1979, p. 87), adding further: “What is my answer to the question of the nature of knowing? I surrender to the belief that my I knowing is a small part of a wider integrated knowing that knits the entire biosphere or creation (Bateson, 1979, p. 88). What is particularly exposed in the philosophy of Bateson is the statement that “all experience is subjective” (Bateson, 1979, p. 31).

Alluding to his earlier formulated thesis: “what you know and which may be collapsed or totally changed in a few years-presupposes that science is a way of perceiving and making what we may call ‘sense’ of our percepts” (Bateson, 1979, p. 28), he concludes in his subsequent words that: “Knowledge at any given moment will be a function of the thresholds of our available means of perception” (Bateson, 1979, p. 29). In still another statement, he adds: “It is significant that all perception – all conscious perception – has image characteristics.”, because in effect: “It has a beginning and an end and a location and stands out against a background”. As far as the external experiences is concerned, in which the basic constituents of the image are formed, it “is always mediated by particular sense organs and neural pathways”, therefore, “objects are my creation, and my experience of them is subjective, not objective” (Bateson, 1979, p. 31). Since the perception of images by senses are mediated by mental pre-suppositions:

The processes of perception are inaccessible; only the products are conscious and, of course, it is the products that are necessary. The two general facts—first, that I am unconscious of the process of making the images which I consciously see and, second, that in these unconscious processes, I use a whole range of presuppositions which become built into the finished image— are, for me, the beginning of empirical epistemology (Bateson, 1979, p. 32).

An interesting remark about the lack of perception in the processes contributing to the amassment of knowledge among collectivities of individuals is visible in the statement claiming that: “Epistemology, at the natural history level, is mostly unconscious and correspondingly difficult to change” (Bateson, 1979, p. 35).

(4) A base for a solipsistic-collective epistemology of human beings constitutes the assumption pertaining to the social nature of language, in which the meaning bearers belonging to a given language are detached from referential meanings forming the domain of extralinguistic reality, governed by the principles that “the map is not the territory and the name is not the thing named” (Bateson, 1979, p. 28) and that “the name is not the thing named but is of different logical type, higher than that of the thing named” (Bateson, 1979, p. 229)

An explicit allusion to Korzybski’s heritage is evident, firstly, in the hierarchical grasping of contrasting abstract levels, on which verbal communication occurs, of metalinguistic and meta-communicational kind (Bateson, 1987 /1972/ [1955]), and secondly, in the detachment, of what is treated as a thing in itself, existing independently of human cognition, what is acknowledged as a cognized thing playing a representational function:

The territory is *Ding an sich* and you can’t do anything with it. Always the process of representation will filter it out so that the mental world is only maps of maps of maps, ad infinitum. (Bateson, 1987, p. 461) and linguistic utterances „the name is not the thing named, and the name of the name is not the name, and so on (Bateson, 1987, p. 481).

Discussing the case of map and territory on the basis of verbal communication, Bateson (1979) underlines that the “principle”, which has been made “made famous by Alfred Korzybski”, has indeed “many levels”. As he maintains: “in a more abstract way, Korzybski’s statement asserts that in all thought or perception or communication about perception, there is a transformation, coding, between the report and the thing reported, the *Ding an sich*.” In his view „the relation between the report and that mysterious thing ported tends to have the nature of a classification, an assignment of the thing to a class. Naming is always classifying, and mapping is essentially the same as naming” (Bateson, 1979, p. 30).

Korzybski’s attempt, according to Bateson, “to persuade people to discipline their manner of thinking” in terms of “distinction between the name and the thing named or the map and the territory” could not have any chance if one does not consider “the natural history of mental processes”, which come into being in dependence of the fact which of brain hemispheres dominate (1979, p. 30). As he observes:

The symbolic and affective hemisphere, normally on the right-hand side, is probably unable to distinguish name from thing named. It is certainly not concerned with this sort of distinction. It therefore happens that certain nonrational types of behavior are necessarily present in human life. [...] Each hemisphere does, in fact, operate somewhat differently from the other, and we cannot get away from the tangles that that difference proposes (Bateson, 1979, pp. 30-31).

Interesting is Bateson’s illustration: “For example, with the dominant hemisphere, we can regard such a thing as a flag as a sort of name of the country or organization that it represents. But the right hemisphere does not draw this distinction and regards the flag as sacramentally identical with what it represents” (1979, p. 31). As he assumes, when, for neutrally minded, the flag, called ‘Old Glory’, is only the representation of the United States, for other who think in an emotionally loaded manner, the flag can have a symbolic value pertaining to certain cultural values:

If somebody steps on it, the response may be rage. And this rage will not be diminished by an explanation of map-territory relations. (After all, the man who tramples the flag is equally identifying it with that for which it stands.) There will always and necessarily be a large number of situations in which the response is not guided by the logical distinction between the name and the thing named (Bateson, 1979, p. 31).

(5) Epistemology pays attention to cognitive faculties of human minds to receive information in form of perceivable differences and consequently to the systematization of the world through comparisons of new objects following the principle of similarity patterns. According to Bateson “perception operates only upon difference”, and consequently “all perception of difference is limited by threshold” (1979, p.29). Exposing the idea of empirical or experimental epistemology, where the knowledge about reality is based upon dissimilar perceptions, Bateson stresses that: “Differences that are too slight or too slowly presented are not perceivable.”, and what the individual persons may perceive, however, is “a function of the thresholds of” their “available means of perception” (1979, p. 29)

The notion of “difference” in relation to “idea”, is best reflected in the of *Mind and Nature: „Idea*. In the epistemology offered in this book, the smallest unit of mental process is a difference or distinction or news of a difference. What is called an *idea* in popular speech seems to be a complex aggregate of such units” (Bateson, 1979, p. 228).

Remarkable is Bateson’s reference to the tendency of recalling the world of ideal objects by comparing them to concrete objects of the real world. While referring to Platonism (cf., e.g., Merlan, 1953), he says: “Plato’s most famous discovery concerned the ‘reality’ of ideas” (Bateson, 1979, p. 4). As an example, he provides “a dinner plate” which “is ‘real’”, nonetheless “its circularity is ‘only an idea’”. Following Bateson’s way of reasoning in allusion to Plato, the reader might come to a conclusion that, “first, that the plate is not truly circular and, second, that the world can be perceived to contain a very large number of objects which simulate, approximate, or strive after ‘circularity’”. He/she could then state “that ‘circularity’ is ideal (the adjective derived from idea) and that such ideal components of the universe are the real explanatory basis for its forms and structure” (Bateson, 1979, p. 4, footnote).

Exposing the “manner of search” as a „*method of double or multiple comparison*”, Bateson invites “the reader to achieve insight by comparing the instances one with another (1979, p. 87).” As he explains in a teacher-like way, “comparing of comparisons was built up to prepare author and reader for thought about problems of Natural Mind.” Summarizing the understanding of epistemology related to comparison, Bateson states authoritatively: “It is the Platonic thesis of the book that epistemology is an indivisible, integrated metascience whose subject matter is the world of evolution, thought, adaptation, embryology, and genetics—the science of mind in the widest sense of the word” (1979, p. 87). In the footnote to this statement Bateson adds: “The reader will perhaps notice that consciousness is missing from this list [...] whereby we [...] are sometimes conscious of the products of our perception and thought but unconscious of the greater part of the processes.” Reassuring Bateson states that: “The comparing of these phenomena (comparing thought with evolution and epigenesis with both) is the manner of search of the science called ‘epistemology’” (1979, p. 87).

(6) In the appreciation of truthfulness of the psychophysiological epistemology, knowledge achieved by a human organism is based on illusive principle of the infallibility of its senses. Accordingly, there is a stable need to recall the criteria of scientific research in repeatable strivings of humans to cognize the symptoms of truth in the reality of everyday life. To foot

the knowledge on scientific criteria is faced with the inaccuracy of researcher's perceptions in individual cognition.

Henceforward, Bateson emphasizes the significance of scientific searches for truth in a systematic and repeatable research, providing the following reason: "The argument of this book [...] presupposes that science is a way of perceiving and making what we may call 'sense' of our percepts." As he argues, "what we, as scientists, can perceive is always limited by threshold" (Bateson, 1979, p. 29). Like this, Bateson assumes a certain interdependence between acquired knowledge and those tools by means of which this knowledge is acquired, where: "Knowledge at any given moment will be a function of the thresholds of our available means of perception" (1979, p. 29), what leads in consequence to the character of science as a method of gathering data through collective observation. In his assessment "As a method of perception-and that is all science can claim to be – science like all other methods of perception, is limited in its ability to the outward and visible signs of whatever may be truth."

Being aware of the changeability of criteria determining what is scientific or unscientific and what has been investigated and what remains for further investigations, Bateson formulates in the end his confidence that "science like all other methods of perception, is limited in its ability to collect the outward and visible signs of whatever may be truth." Therefore, as he concludes: "Science probes; it does not prove" (Bateson, 1979, p. 30).

## Considering Epistemology a Cartography of Human Knowledge and Cognition

Having in mind the assessment of epistemology related either to knowledge or knowing, we have postulated to distinguish its two understandings: (1) in a "dispositional-perspectivistic sense", as a set of investigative attitudes and/or investigative standpoints pertaining to the ways of how the investigated reality exists and what are the possibilities of its cognition, and (2) in a "cognitive-constructivists sense", as certain approximations to reality through the acquisition of knowledge about its objects available through sensorial perception and mental reception.

To sum up, it is assumed that in both the metascientific epistemology and the psychophysiological epistemology may be appreciated as a semiotic cartography of human knowledge and cognition, while alluding to the famous title of Francisco Javier Varela García, "Whence Perceptual Meaning? A Cartography of Current Ideas" (1981).

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