
Human Ecology: proposed requirements for academic research

Ecologia Humana: proposta de requisitos para pesquisas acadêmicas

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RESUMO

Esta pesquisa tem por objetivo propor requisitos que venham a caracterizar as pesquisas em Ecologia Humana (EH) no Brasil. Como proposta metodológica, utilizou-se revisão bibliográfica sobre o tema, utilizando-se as contribuições de autores nacionais e internacionais, o que permitiu a análise das informações através da construção de elos de articulação. Para tanto foram estabelecidos como requisitos a serem analisados os pilares propostos por Bomfim: Interface/intercambio natureza-ser humano, ou seja, cultura-meio ambiente; interdisciplinaridade; concepção sistêmica do real; emancipação humana. Destaca-se na pesquisa a discussão sobre pilares analisados e que podem constituir uma referência para as pesquisas desenvolvidas. Deste modo, o presente artigo contribui para a discussão sobre a temática da epistemologia da Ecologia Humana no Brasil.

Palavras-chave: Ciência. Teoria do conhecimento. Epistemologia. Conhecimento científico. Ecologia Humana

ABSTRACT

This research aims to propose requirements that will characterize research in Human Ecology (HE) in Brazil. As a methodological proposal, a bibliographic review on the subject was used, using the contributions of national and international authors, which allowed the analysis of information through the construction of articulation links. To this end, the pillars proposed by Bomfim were established as requirements to be analyzed: Interface/interchange nature-human being, that is, culture-environment; interdisciplinarity; systemic conception of the real; human emancipation. The discussion about the analyzed pillars stands out in the research and which may constitute a reference for the research carried out. Thus, this article contributes to the discussion on the theme of the epistemology of Human Ecology in Brazil.

Keywords: Science; Theory of knowledge; Epistemology; Scientific knowledge; Human Ecology

INTRODUCTION

The problems faced by modern human societies are diverse and full of challenges, the primacy of which lies in the forces that move society and instigate its future and that of the planet as a whole (HARARI, 2018); in this context, it is necessary to develop and/or mine methodologies that can handle sufficiently dense analyses, with the potential to cover the broad spectrum of issues that give rise to human-nature relations.

Human and natural phenomena by themselves prove to be complex; and currently within an interconnected world crowded with information, largely irrelevant and/or wrong (noise), the identification and selection of what is effectively relevant (signal) proves to be of paramount importance for society and especially for researchers who aim at scientificity in the careful examination of phenomena, since the wrong choice of sources can lead to serious consequences and mass confusion (HARARI, 2018; SILVER, 2013).

In this scenario, Human Ecology emerges as one of the possibilities for understanding the complex web of socio-environmental relationships. This field of knowledge emerges in the modern academic panorama¹ of the Chicago School, which originated at the end of the 19th century, with Robert Park, Ernest Burgess, Roderick Mackenzie standing out as the main drivers, in addition to supplementary contributions from Georg Simmel, Louis Wirth, Max Weber and Chombart de Lauwe and having as scope the realization of empirical urban studies carried out from different perspectives (ecological and environmental, ethnic and racial relations, social conflicts, etc.) that theorized the spatial structuring of cities (EUFRÁSIO, 1999; MENDES JUNIOR, 2017).

In this phase, a close approximation of research in Human Ecology with the fields of study of sociology and biology is observed (EUFRÁSIO, 1999), with extensive use of concepts, techniques and methodologies specific to these fields of knowledge. It should be noted that most researchers and academics defend that six main areas of study form

¹ Even before what we call the contemporary period, especially in a European environment, some past conceptions can be considered, precursors of human ecology, such as those enunciated by Azevedo; Barros, (2017). These authors, when referring to the contributions of Malthus for the year 1798, reveal that this remarkable scholar of human nature, sought “in mathematical language”, explanations, to understand the ecological dynamics of human settlements as a cyclical theory of man-nature relations.

the basis of Human Ecology, "Sociology, anthropology, architecture, biology, history, psychology, geography and ethnoscience"² (ALVIM; CASTELHANOS, 2017).

Several works dealing with the emergence of Human Ecology (BOMFIM, 2017, 2021; CARVALHO, 2007; COULON, 1995; EUFRÁSIO, 1999; MENDES JUNIOR, 2017) reinforce his initial interest in social relations in an urban environment; this condition only shows a change in the approach adopted when the Postgraduate Program in Human Ecology and Socio-environmental Management at the University of the States of Bahia-UNEB emerges in Northeast Brazil.

Within this aspect, research in Human Ecology carried out in the Northeast of the country focuses on the relationship between man and the environment, focusing on the reality experienced by traditional and rural peoples and communities; highlighting studies with a tendency towards rural sociology (BOMFIM, 2021) in contrast to studies focused on urban sociology developed so far (COULON, 1995).

Complementing this discussion and in the midst of the understanding that the themes related to research and the knowledge produced in Human Ecology are fragmented and complex issues (MORIN, 2015) lies the need to establish a careful discussion from which parameters capable of substantiating are extracted. a research in Human Ecology to then consider it from the epistemic scope of the alluded science. In this sense, let's see what Carvalho (2007, p. 133) exposes.

Ainda que a metodologia e as técnicas de observação e análise em Ecologia humana sejam igualmente as empregues por outras disciplinas, a sua singularidade e vocação interdisciplinar/transdisciplinar, emprestam-lhe a particularidade da ênfase na abordagem holística, que partilha com a Ecologia Geral, relativamente às problemáticas objecto de estudo sob novos e diferentes paradigmas. Ora, a abordagem holística supõe a utilização da metodologia sistémica, que na expressão de Rosnay (1995: 12) é simbolizada no “macroscópio” (macro =grande e skopein =observar), esse instrumento imaginário que, cita-se, “filtra os pormenores, amplia o que os liga, põe em evidência o que os aproxima”, qual olhar conceptual que nos possibilita perceber, reconhecer e descrever as formas globais. Isso porque, como resulta do exposto, a Ecologia Humana lida com o “infinitamente” complexo, no que tal significa de variedade, complementaridade, concorrência, incerteza, antinomia.

² Despite this basic inclination of a science of Human Ecology and its authors, advocating a certain disciplinary nucleation, we emphasize that many other fields of knowledge can and should be integrated into the epistemological effort to build this science.

In this reality, researchers in Brazil do little about their scientific status, concepts; hypotheses and propositions; research methods and techniques particular to Human Ecology (ESTEVAM; SOUZA; BOMFIM, 2019).

Estevam; Souza e Bomfim (2019) when discussing the scientific status of Human Ecology, with emphasis on research carried out in Brazil, in their formulations several questions that, under the understanding of the authors, need to be better investigated.

In this way, the present research consists of deepening the discussion proposed by the authors when they indicate that in the view defended by the researcher Luciano Sérgio Ventin Bomfim in his scientific findings in the articles: In Brazil, is human ecology a scientific paradigm or an emerging science? published in 2016 and The roots of human ecology in Brazil, published in 2017, when they state that

According to Bomfim (2016, 2017), there is not one single ecology but several human ecologies, and it is necessary to perform epistemological studies with the purpose of establishing whether HE in Brazil presents itself as a science or approaches more of an emergent scientific paradigm to be assumed by every researcher who is concerned with the dynamics of human relations. Bomfim defends the existence of several human ecologies, which have a common origin, linked in four pillars: “a) Interface / interchange Nature–Human Being, that is, Culture–Environment, b) interdisciplinarity, c) systemic conception of the real and d) Human Emancipation” (BOMFIM, 2016, 2017). In this way, all research to fit a line of human ecology and contribute to human development must meet these minimal requirements (ESTEVAM; SOUZA; BOMFIM, 2019, p.25815-25816).

Agreeing with point of view Estevam; Souza; Bomfim (2019) when they expose the existence of several Human Ecologies, of common origin, but independent development, this article seeks to contribute to the discussions on the epistemology of Human Ecology, highlighting the research carried out in Northeast Brazil.

Thus, through the analysis of the texts selected during the bibliographical research, efforts will be made to analyze the postulates mentioned above; bringing elements so that other researchers in their personal analyzes can come to corroborate or reject the 4 (four) pillars proposed by Bomfim (Interface/interchange nature-human being, that is, culture-environment; interdisciplinarity; systemic conception of the real;

human emancipation) for a research to contain the “epistemic identity” of Human Ecology.

PROPOSED PILLARS

INTERFACE/EXCHANGE NATURE-HUMAN BEING, THAT IS, CULTURE-ENVIRONMENT

When examining Darwin's work "Origin of Species" first published in England in 1859, (versão brasileira de 2014) this eminent naturalist brought intriguing contributions to science, by bringing to light the understanding that several species evolve from one common ancestor, that is, of relatively simple organisms. In addition to this understanding, it is noted that its main postulate is found in the debate in which the referred author reflects on the importance of the relationship between living beings and the environment in which they are inserted and the way in which natural selection acts within this process, producing, over time, modifications in the species from common descendants.

Campbell (1988) when scrutinizing to comment on the works of Darwin, predecessor of Wallace and Malthus, brings us information about the existing diversity in animal species and in the human species and how human beings have taken advantage of natural selection since the beginning to improve the quality of life of living beings in their relations with a context of limited resources.

In natural terms, the evolution of living beings is slow and depends on the complex interaction between the natural environment and existing organisms; however, the capacity of the environment is limited. It should be noted that (CAMPBELL, 1988) dwelling on the arguments of Malthus, (1766 – 1834) reveals that if the current level of human exploitation is maintained, it will become extinct, taking with it all those who depend on it to survive. The fact is that, contextually, such an assertion is quite debatable, since human beings have been characterized by their capacity for technical-scientific amplification in the management of stocks of natural resources, albeit in a chaotic and socially unequal way.

Corroborating this thought, it is evident that since the emergence of the human species on earth, its existence has been marked by the dispute of limited natural resources

(food and space) with other existing beings. Initially, human interventions, as well as those of other species, did not effectively compromise the ecosystems, however it remains evident that over time the relationship between the human race and the ecosystems was being altered, mainly due to its intellectual development, capacity that allowed him to create tools that allowed him to use more and more natural resources (CAVALCANTE; ALVES, 2020).

A striking point in the discussions in Human Ecology lies in the understanding of the existing relationship between human beings and the environment; of the existing exchange between nature and human beings; a relationship that, in Silva (2014) conception, is constituted in the course of the presence of the human race on earth in a story of domination; in which, due to the advent of new tools, the quality of life of part of the population has been improved and, in contrast, natural resources indispensable to the survival of all living beings have been largely destroyed.

In this context, the development of culture, social organizations and technologies contributed to the emergence of several adaptations observed in the human race during its evolution; in contrast, these modifications contributed to changes in the human-natural environment and it is these modifications, in theory, that should be studied objectively and deeply in their entirety by researchers in Human Ecology (OLIVIER, 1981).

Therefore, it is necessary to differentiate and highlight the vision adopted by researchers in Human Ecology influenced by research carried out in Northeast Brazil, especially in the rural area of this Brazilian region, focusing on the relationships developed by peoples and traditional communities with the environment (BOMFIM, 2017, 2021; ESTEVAM; SOUZA; BOMFIM, 2019) and studies of North American influence that are imminently urban and focused on social control (COULON, 1995; EUFRÁSIO, 1999).

In the scenario whose centrality focuses on the aforementioned region of the Brazilian Northeast, "Human Ecology takes the place of the Interface between culture and environment" (BOMFIM, 2017, p. 132) highlighting the importance of a discussion focused on the development of an interface/ nature-environment interchange; that establishes responsible and sustainable ways to use available natural resources, seeking to balance anthropocentric and biocentric visions.

INTERDISCIPLINARITY

Due to the influence of positivism in the current world, we observe that the fragmentation of science into disciplines is a fact, and this fragmentation extends to the conception of its object of study and of the subjects that come to relate to it (JAPIASSU, 1976).

Thus, the requirement or not of disciplinarity in studies in Human Ecology is an important issue for researchers; especially for those who develop research in Northeast Brazil, since the lack of definition on this point makes research in Human Ecology vulnerable in terms of its scientific status (BOMFIM, 2016).

The eminent author, when properly discussing metadisciplinarity, differentiates between multi, pluri, inter and transdisciplinarity, from the discussion we highlight that:

interdisciplinaridade para afirmar-se enquanto tal, precisa pressupor e realizar um diálogo orgânico entre as diversas disciplinas implicadas, sem o qual cada uma delas fica isolada em suas particularidades. Sem uma interação discursiva e efetiva entre os teóricos envolvidos, as disciplinas jazem em si mesmas, visto que seus interlocutores não realizam o que é crucial para o enriquecimento delas. Sem esse diálogo, os seus teóricos continuam a reproduzi-la do mesmo jeito disciplinarizante como a aprenderam, não enxergando e não aprendendo fora de si para, retornando a si, alimentarem-se dessa diferença (BOMFIM, 2021, p. 380-381).

in the same vein Japiassu, (1976, p. 32) indicates that interdisciplinarity is the “concertation or convergence of various disciplines with a view to solving a problem whose theoretical approach is somehow linked to that of action or decision”.

Costa e Loureiro (2019, p. 33) also clarify that we can understand:

a interdisciplinaridade como um processo dialético que leva em conta as contradições constituintes dos complexos fenômenos sociais e naturais, sendo possível afirmar que não se pode almejá-la enquanto se desconsidera a categoria da totalidade social, cujos aspectos são interdependentes e ganham significado no contexto do qual fazem parte.

It should be noted that the analysis of the works of authors who deal with Human Ecology in Brazil demonstrates the impossibility of developing studies with a disciplinary character, since their object of study is placed at the tangential point where culture and nature /environment touch each other and the adoption of interdisciplinarity as a method

seeks to place Human Ecology as a mediator of conflicts between other fields of knowledge (BOMFIM, 2017, 2021, 2016; ESTEVAM; SOUZA; BOMFIM, 2019).

In contrast, we highlight; that the selection of disciplines to be adopted in a study in Human Ecology will depend on the complexity of the problem under analysis; which demands for its better understanding a multifaceted observation; which would result in new knowledge, a specific and complex knowledge, however, unable to be demonstrated by a discipline alone (BOMFIM, 2021; JAPIASSU, 1976; MORIN, 2015).

SYSTEMIC CONCEPTION OF THE REAL

We defend that studies in Human Ecology should be guided in the opposite direction to the contextual perception of scientific research, notably based on the uniqueness of knowledge; notoriously of Cartesian influence and along with the uneven and contradictory development of capitalism, which seeks to divide the object of study into its smallest portions, where each one must be analyzed in a disconnected and individualized way (BOMFIM, 2016; COSTA; LOUREIRO, 2019; GOMES et al., [s.d.]).

In this way, the adoption of a systemic interpretation, whose origin, as we understand it today, dates back to the middle of the 20th century, places us in the interactions between natural and social phenomena, which seek to win disciplinary disputes and approach reality. Thus, we are of the understanding that such an epistemic conception proves to be appropriate to studies initially in Ecology and contextually in Human Ecology, which tend to move their object of study to a borderline condition between natural and social facts, seeking to understand them in its various interpretations as an open system that self-regulates (GOMES et al., 2014).

At this point, the adoption of a systemic thinking that is oriented to study the phenomena as a whole and not compartmentalized. strengthening the holistic understanding, for example, of a territory as an interconnected environment where a community recognizes itself and builds a cultural and historical heritage; unique and complex, when the whole arises from the relationship between the parts and which must be respected, rescued and/or defended (MORIN, 2015; PÊGO; OLIVEIRA, 2014).

In the same lamiré entering the systemic conception of the real brought by Costa e Loureiro (2019) it can be said that the part and the whole must dialogue dialectically, in a dynamic movement, sometimes contrary, but tending to complementarity, to establish

a diverse unit from them; thought that aligns, together with the perspective of Marxist historical materialism.

This theoretical aspect shows the need to analyze the phenomena observed in studies in Human Ecology that aim to establish new theoretical perspectives that may interrelate natural and social systems from an interdisciplinary perspective.

Thus, corroborating the vision of Environmental Education defended by Costa e Loureiro (2019); we can say that social praxis, understood in its complex interactions, is the starting and ending point of studies in Human Ecology, which we must, through the knowledge and related interpretation of the diverse knowledge in different cultural contexts, seek the contours that focus on the improvement and redefinition of man as a social subject that relates to all other elements, be it animal, vegetable or mineral-chemical with nature.

HUMAN EMANCIPATION

According to Bauman (2001); critical theory understood that the emancipation of the human being consisted of the individual freeing himself from the social standards established by society and that seek to standardize it and, thus, this liberation could provide the end of human suffering.

In this way, the concept of human emancipation assumes broad outlines in all fields of knowledge; be it art, sociology, anthropology, Human Ecology or any other area that can be slowed down by the scientific scrutiny. This reality requires, in order to carry out efficient studies in Human Ecology, a trained researcher whose ethical and epistemic foundations are based on a deep respect for humankind (BOMFIM, 2016).

In this respect, Machado (1984) explains that the researcher in Human Ecology must meet several prerequisites, among which we highlight: being a notable specialist in his particular area, being aware of the need to understand the complexity of the problems under study and loving mankind through the recognition of the social role of scientific studies and the need for scientific discoveries to be useful for the development of human beings.

This perspective culminates in the understanding that studies in Human Ecology highlight human emancipation as an objective to be sought in the development of scientific research as a whole, and some authors still argue that Human Ecology is placed

in the condition of scientific policy that in academia, it defends the dependence of the sciences on providing human emancipation (BOMFIM, 2016; MACHADO, 1984).

This way; in the modern scenario, we can infer the vestibular role that can be attributed to research in Human Ecology with regard to the development of studies that may contribute to the emancipation of human beings, especially with regard to the recognition of the importance of cultural and cultural individualities to the development of a socially and ecologically sustainable man-nature relationship.

FINAL CONSIDERATIONS

The purpose of this study is not to exhaust the topic in question, but to contribute to the debate on topics related to the epistemology of Human Ecology; theme little discussed in the Brazilian academic environment.

Therefore, we seek to discuss 4 (four) pillars; Interface/interchange nature-human being, that is, culture-environment; interdisciplinarity; systemic conception of the real; human emancipation; bringing conceptual contributions, aiming to contribute to research in Human Ecology. Such pillars were extracted from the analysis of the works by Bomfim (2017, 2016) and Estevam; Souza e Bomfim (2019).

Understanding the scientific dynamism, it is necessary to register that the evolution of the thought initially defended in Bomfim (2016, 2017) which initially defended that research in Human Ecology needed to assume an interdisciplinary character. In his most recent work *História e Epistemologia da Ecologia Humana* (BOMFIM, 2021) he understands himself in an effort at gnosiological reconstruction by assuming Human Ecology as an a-disciplinary scientific construct.

However, we understand that such proposition does not compromise the present study; since this, part of the proposal that in order to establish a scientific knowledge one must go through (minimally) the stages of observation; the description, the conceptualization and finally the definition of an object of study.

In this way, the evolution of the author's thinking contributes to the objective of provoking new discussions in the scientific field on the epistemology of Human Ecology and, consequently, to the maturation of the current concepts.

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