

In search of the hyphen: thirty-five years of Environmental Psychology in Rio Grande do Norte

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Abstract

We present a historical and theoretical-methodological panorama of the studies by *Grupo de Estudos Pessoa-Ambiente* (People-Environment Research Group, GEPA) and their inclusion in the context of environmental psychology. The authors expressed the theoretical-methodological diversity of the area, presented here in terms of the psychological aspects of the relationships between people, climate change and renewable energy sources, underscoring the invisibility and instantaneity of energy; the psychology-sustainability interface, which investigates the psychosocial dimensions of pro-ecological and pro-environmental behaviors; rurality, denoting the scarcity of instrumental and theoretical perspectives that bring psychology and the sociocultural specificities observed closer together; cities, in which studies reveal the tension between the capitalist production of space and the right to the city; and daily settings, which focus on housing, schools and open areas, proposing concepts such as a socioenvironmental image and psychological accessibility. We conclude by showing the connection between group activity and the stresses, developments and challenges faced by the field at the global level.

Keywords: environmental psychology; sustainability, urban environments; rural environments.

Resumo

Em busca do hífen: trinta e cinco anos de Psicologia Ambiental no Rio Grande do Norte. Apresentamos um panorama histórico e teórico-metodológico dos estudos do Grupo de Estudos Pessoa-Ambiente (GEPA) e sua inserção no contexto da psicologia ambiental. O grupo tem expressado a diversidade teórico-metodológica da área, apresentada aqui sob os eixos: aspectos psicológicos nas relações entre pessoas, mudança climática e fontes renováveis de energia, destacando-se a invisibilidade da energia e a instantaneidade; interface psicologia-sustentabilidade, que investiga dimensões psicossociais dos comportamentos pró-ecológicos e a pró-ambientalidade; ruralidades, denotando-se a escassez de instrumentais e perspectivas teóricas que promovam aproximação entre psicologia e especificidades socioculturais observadas; cidades, cujos estudos evidenciam a tensão entre a produção capitalista do espaço e direito à cidade; e ambientes cotidianos, que focaliza habitações, escolas e áreas livres, e propõe conceitos como imagem socioambiental e acessibilidade psicológica. Finaliza-se mostrando conexão entre a atividade do grupo e as tensões, desenvolvimentos e desafios do campo em nível global.

Palavras-chave: psicologia ambiental; sustentabilidade; ambientes urbanos; ambientes rurais.

Resumen

En busca del guión: treinta y cinco años de Psicología Ambiental en Rio Grande do Norte. Presentamos un panorama histórico y teórico-metodológico de los estudios del Grupo de Estudos Pessoa-Ambiente (GEPA) y su inserción en el contexto de la psicología ambiental. El grupo ha expresado la diversidad teórico-metodológica del área, presentada aquí bajo los siguientes ejes: aspectos psicológicos en las relaciones entre personas, cambio climático y fuentes renovables de energía, destacándose la invisibilidad de la energía y la instantaneidad; la interfaz psicología-sostenibilidad, cuyos estudios investigan dimensiones psicossociales del comportamiento pro-ecológico y la pro-ambientalidad; ruralidades, observando la escasez de los instrumentales y perspectivas teóricas que promuevan acercamiento entre psicología y especificidades socioculturales de esos ambientes; ciudades, que han sido estudiadas evidenciando la tensión entre la producción capitalista del espacio y derecho a la ciudad; y los ambientes cotidianos, enfocando viviendas, escuelas y áreas libres, proponiendo conceptos como imagen socio-ambiental y accesibilidad psicológica. Analizamos las conexiones entre nuestras actividades y las tensiones, desarrollos y desafíos del campo a nivel global.

Palavras-clave: psicología ambiental; sostenibilidad; ambientes urbanos; ambiente rural.

We human beings are intrinsically linked to our planet, our environment par excellence, outside of which we would not survive for long (at least with the technology available today). We are born, grow up and die in this environment, from which we derive much of who we are. We move around the environment, seek shelter in it, extract our energy, food and clothing. Thus, we can be described and understood by how we relate to it, a topic that awakens the interest of several areas of knowledge. In Psychology, the subarea aimed at the people-environment relationship is called Environmental Psychology, which studies the psychological aspects of bidirectional relationships between people and the sociophysical environment, in its space-time dimensions.

Ever since its inception in Europe and the United States, Environmental Psychology has proved to be an inductive field, based on ties between basic and applied research, significantly influenced by ecological thinking that started to characterize sectors of human and social sciences in the second half of the 20th century (Pol, 2007). Investigations in the area, which initially focused on the built environment (hospitals, schools and housing), gradually included urban life and

natural settings (parks, reserves and the like) and, more recently, issues related to socioenvironmental sustainability, pro-ecological commitment and historical, cultural and political aspects of human experiences in an urban or rural setting (Bonnes & Bonaiuto, 2002; Pol, 2007). In this respect, Gifford (2014) identifies three priorities for contemporary Environmental Psychology: increasing interest in the environment at all levels, from local to global; promoting the role of environmental education in changing people's attitudes and behavior in relation to the environment; and urging professionals linked to environmental planning to consider social planning. According to the author, among the key questions to address are the change in global climate conditions, scarcity of natural resources (water, energy, food, etc.), decline in animal and plant biodiversity, problems of large urban centers (population density, trash, traffic, unhealthy conditions) and environmental pollution (atmospheric, water, soil, visual, noise).

Moore (1987) illustrated the relationship between four analytical axes (Figure 1): people (individuals or groups); physical environments; phenomena generated by the interaction between both; and time.

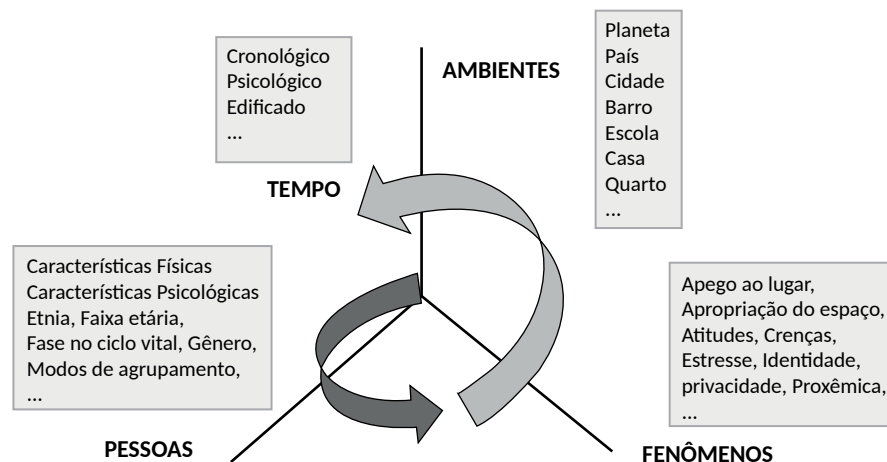


Figure 1. Analytical Axes of Environmental Psychology (source: Moore, 1987; reworked by the authors).

People are the individuals present in an area, with their unique traits (age, sex, ethnicity, schooling, mobility conditions, and personality) and behavior (effective, individual or group action). The **environment** represents the set of sociophysical elements present, from the geographic location and bioclimatic traits to form and materials. The **phenomena** characterize the relationship

between people and the environment, corresponding to the psychosocial processes involved. **Time** represents the sociohistorical condition that acts on the three previous axes, expanding their variability and involving several scales: chronological (the occasion and duration of events), social (rhythm, sequence, constancy, familiarity) and psychological (drives people's actions).

In Brazil, interest in the area emerged in the 1970s, with the translation of books. In 2000, the growth of academic studies and consolidation of graduate courses led to the creation of the Environmental Psychology Working Group (WG) in the National Association of Research and Graduate Programs in Psychology (ANPEPP). Initially, the WG aimed at disseminating the field of research, investing in propagating good practices and concepts essential to its understanding (Günther, Pinheiro, & Guzzo, 2004). Other collections (such as Cavalcante & Elali, 2011; 2018; Pinheiro & Günther, 2008) and special editions followed in national journals, consisting of articles written by Brazilian and foreign researchers, all available free of charge on the internet: a dossier in *Estudos de Psicologia* (UFRN/Natal; Pinheiro, 1997); a special edition in the same journal (Pinheiro, 2003) and another in *Psico* (PUCRS/Porto Alegre; Campos, & Bomfim, 2014).

In addition to these collections, a number of individual articles written by members of the WG have been published in national and international journals.

In Rio Grande do Norte, in the Graduate Psychology Program, Environmental Psychology was represented by *Grupo de Estudos Pessoa-Ambiente* (People-Environment Research Group, GEPA), whose professors researched, lectured and advised in undergraduate and graduate courses (Master's and Doctorate). Since the mid 1980s (the first course was taught by J. Q. Pinheiro, in 1983), GEPA has focused on teaching and researching in the area of human-environmental relations, in its psychological, social and ecological dimensions. In general terms, its aim is to develop the area theoretically and methodologically, as a discipline in Psychology (Environmental Psychology), or inter/multi/transdisciplinary field of studies and interventions.

Authors in the area of people-environment relationships (represented in the expression P-E) typically value one side over the other. In other words, for architects, for example, the environment assumes the first plane (figure) and people are in the background as secondary elements that are casually present in that space (P ß E), whereas psychologists concentrate on people (P à e). However, it is important to underscore that the hyphen (-) itself, the link between the parts, should be the element to investigate, since, through its presence and action indicates that both sides are part of a whole that continuously divides and becomes whole again (Pinheiro & Elali, 2010). Thus, to emphasize our interest in the hyphen, we have aimed at creating a common language and encouraging

pursuit of the people-environment binomial (P - E) as the object of shared study, in order to focus on the P-E relation itself (Elali & Pinheiro, 2003), as twice underscored in the name of the group: *Grupo de Estudos Pessoa-Ambiente* (People-Environment Research Group, GEPA).

An important resource to cope with the difficulties of conceptual and disciplinary integration in the area of people-environment relationships is the multimethod strategy, a methodological response that, despite the inherent operational dilemmas, enables scientific consistency and professional fulfilment (Brewer & Hunter, 2006; Günther, Elali, & Pinheiro, 2008). In addition to incorporating different languages, it also facilitates the interplay between scientists, appliers of this knowledge and users of the environment or community involved. In general, socially relevant objects of study are also complex enough to justify combining two or more data collection and analysis methods. This practice enriches the investigation, especially when it counterbalances complementary aspects of the phenomenon, for example, integrating information on people with information on environments and space, as well as time (Günther, Elali, & Pinheiro, 2011).

Next, we present lines of research we are currently focusing on: renewable sources of energy and climate change; sustainability, pro-ecological commitment and environmental care; urban/city environment, ruralities; and people in daily settings.

Renewable sources of energy and Climate Change

These two topics are discussed together because they are parts of the same dilemma faced by our civilization at the start of a new century. The relationship between them is well illustrated by the image on the cover of the third issue of the *First National Assessment Report on Climate Change* (Bustamante & Rovere, 2014), aimed at mitigating climate change. The cover shows a series of photovoltaic solar panels, demonstrating that renewable sources of energy (RSEs) are an important low carbon footprint resource, and one of the primary means of preventing climate change (CC). At the same time, since they are dependent on climate conditions, RSEs are potentially subject to the impacts of the very phenomenon they intend to prevent (Rosa, 2008).

As a result of the various studies and investigations that our research group have conducted on these topics, two clear psychological constructs have emerged: the invisibility (Oliveira, 2017) and instantaneity of energy, so characteristic of our contemporary life.

Although intensely present in our daily life, energy goes largely unnoticed in the constant use that we make

of technology, being socially perceived as a commodity, with no relation that explicitly connects it to its types of generation (Stern & Aronson, 1984). Illustrating this idea, in a study that applied word associations, we could not use “energia eólica” (“wind energy” in Portuguese) as stimulus, since we found that it was only a label; as such, we selected “energia do vento” (energy from the wind), to more clearly indicate to respondents the type of energy we were discussing.

On one hand, this lack of awareness makes it difficult to assess the degree of dependence of our civilization on fossil fuel energy, the main culprit responsible for greenhouse gases; on the other, it hampers our evaluating the scenario of possible renewable sources of energy, as an alternative to promote ecologically more equitable and sustainable lifestyles. Added to this are the economic and political interests associated with fossil fuels, which make it very difficult to solve climate change (CC).

Instantaneity, in turn, freezes time, transforming it “into a succession of ever-present moments” (Nicolaci-da-Costa, 2011, p. 605). In addition to contributing to the invisibility of energy, it is an important obstacle to perceiving CC and engaging people in its mitigation. In another recent study, in addition to confirming the occurrence of spatial optimism bias, we also found optimism bias for the time scale of the present moment (Pinheiro, Cavalcanti, & Barros, 2018), demonstrating a rigid time perspective in an absolute, individualist and hurried present (Pinheiro, 2012).

There is comfort in the growing, albeit very gradual, presence of the social sciences, including Psychology, in the energy transition scenario (e.g., Lenoir-Improta, Devine-Wright, Pinheiro, & Schweizer-Ries, 2017; Socioenergie, s/d; Sovacool, 2014), including articles and study groups in Portuguese, in some cases in joint research in this multidisciplinary interface (e.g., Delicado, 2015; Rovere, Rosa, Dowbor, & Sachs, 2012). Analogically, Psychology has also conducted studies on CC and accumulated a brief history of contributions to the area (e.g., Clayton et al., 2015; Koger, Leslie, & Hayes, 2011).

Sustainability, Pro-Ecological Commitment and Environmental Care

With the popularization of debates on environmental problems and the harmful impacts of human activities on the environment in the late 1970s, environmental psychology focused on understanding psychosocial aspects and explaining human behavior as part of what can be considered a “human-environmental crisis” (Pinheiro, 1997). In response to the demands of

the area, pro-environment knowledge and production and pro-ecological behavior have increased in recent years (Moser, 2018).

From the 1990s, with ample dissemination of the notion of sustainability in Western countries, a number of studies focused on the psychosocial dimensions of sustainable lifestyles (SLs), defined as a series of effective, conscious and planned measures, resulting in the preservation of human and nonhuman species, considering current and future generations (Corral-Verdugo & Pinheiro, 2004). Thus, the relationships between pro-environment and future time perspective, appreciation of diversity, worldviews, frugal, altruistic and equitable behaviors, emotions, happiness, well-being and quality of life (Corral-Verdugo, 2010) have been explored.

In order to increase knowledge of SLs, we have developed the notion of pro-ecological commitment (PEC), which encompasses the human-environment relationship, marked by taking responsibility for and interest in environmental issues and engaging in effective environmental care measures (Gurgel & Pinheiro, 2011; Pinheiro & Diniz, 2013). The PEC proposal represents a summary of the indicators used by different scales in internalized systems (ex. attitudes, values and pro-ecological beliefs), as well as the interest in establishing language accessible to different fields of knowledge and environmental education. Another relevant aspect is its diversity, given that PEC is linked to daily choices (ex. consumption, leisure activities), mental and physical health, awareness campaigns and pro-social relations, as well as acknowledging the barriers and habits that hamper environmental care (Diniz & Pinheiro, 2017).

In the course of developing the notion of PEC, we adopted the term environmental care. In this respect, we asked people directly about their environmental care, and to describe the effective actions that express this care (ex. trash disposal, water and electricity conservation, etc.), thereby decreasing the social desirability bias (Diniz & Pinheiro, 2014; Pinheiro & Diniz, 2013).

The results of the studies conducted by our research group are in line with the findings of national and international literature and the Psychology of Sustainability (Pol, 2007). However, we underscore the innovative potential of these studies in terms of epistemological guidance, with the adoption of critical perspectives, as well as inductive, qualitative and mixed methodologies that enable analyses of implementation processes and in-depth assessment of the phenomena investigated.

Ruralities

Despite maintaining certain rural characteristics since its origin, 84.4% of Brazil's population lives in urban areas (Instituto Brasileiro de Geografia e Estatística [IBGE], 2011), following the worldwide trend in which cities are "the natural habitat of a large part of the human species in our time" (Fernández-Ramírez, 2010, p. 242). While urban areas are highly valued as a synonym of quality of life and technological development, rural regions are seen as backward and bucolic and should follow the development model of cities. In fact, one should not consider a single rural concept, opposite to and disconnected from its urban counterpart. By "ruralities" we mean multiple forms of insertion and existence of people in the countryside, traditional communities, those near water bodies (riverside dwellers, fishermen), in forests and other territories (Brandenburg, 2010).

In hegemonic fashion, Psychology has focused on aspects of human experience in cities, neglecting the rural context. During its development, Environmental Psychology has considered the environment, whether natural or built, as a relevant element in the phenomena under study. However, it ignores ruralities as environments (Mendéz, 2015; Moser, 2018), and when it recognizes them at all, they are considered merely agricultural. However, ruralities cannot be viewed only as a scenario where life goes on, but as places of sociabilities where there is a close relationship and juxtaposition between residences, workplaces, neighborhoods/community ties or even the sacred connection with the land.

Instruments and theoretical perspectives that can promote a closer relationship between psychology and rurality studies and their sociocultural specificities remain scarce (Centro de Referência Técnica em Psicologia e Políticas Públicas [CREPOP], 2013). Nevertheless, there is research on the topic in Brazil and Latin America (Calegare & Higuchi, 2016; Landini, 2015). GEPA has also investigated ruralities, initially without significant awareness of convergence, through studies on emotional ties to places in fishing communities in the state of Rio Grande do Norte and elsewhere (César, 2013; Farias, 2017; Lima, 2012) or those on rural recovery in the urban context, such as in permaculture practices (Diniz & Araújo, 2018). Given the awareness of ruralities, a line of research has been implemented to conduct the first studies on the emotional connection between organic food producers and their land in rural contexts (Pinheiro, 2019)

and the socioenvironmental aspects of drought in the life of family farmers in the semiarid region of Northeastern Brazil (Gurgel, 2016).

Despite the fact that such investigations are recent, rurality studies provide elements regarding the psychosocial and affective aspects inherent to people-environment relationships, as well as the rural-urban interface, not as opposition or hierarchy, but as interdependent zones in the context of (non) sustainability of the behaviors of contemporary life. Thus, it seems to signal a "new" space for Environmental Psychology interventions and studies.

Urban/Cities

With the series of lectures entitled "The Metropolis and Mental Life", Georg Simmel (2005) symbolized the intellectual tradition that emerged at the end of the 19th century: reflecting on the subjective effects of life in large modern cities. Since then, different authors have compared a "negative" concept of cities (a tradition that Simmel would be a part of) with a "positive" one (Fernández-Ramírez, 2010). The first group includes studies on the consequences of high population density, pollution, stress, inequality, stimulus overload, fear and violence, among others. An optimistic attitude, in turn, centers on opportunities and diverse activities in cities, social stimulation and meeting with others, as well as the scientific, technological and cultural development potential of cities (Páramo, 2017).

In addition to these topics, the urban transformations in recent decades have promoted the emergence of new categorizations that seek to understand contemporary urban dynamics, which indicate the path of cities in the capitalism that exported industrial activities and absorbed specialized service companies, particularly in the financial and informatics sectors. This led to the development of spectacularized urbanization, aimed at selling cities on a global level, in addition to the present proliferation of non-places (Augé, 1994). The global impacts of this dynamic on the geography of peripheral capitalist cities were studied in depth by Milton Santos (2006). These new cities are also interpreted in terms of conflicts and disputes by the occupation and significance of public places (Di Masso, Dixon, & Pol, 2011).

Most studies in our group that adopted the urban setting as a space to investigate, did so on a smaller scale, such as those described further on.

Studies were conducted on the impact of megaevents, more specifically, the 2014 World Cup, held in Brazil, on the relationship between people and cities, based on the dynamics of urban space transformation (Farias, Gurgel, & Diniz, 2015; Farias, Gurgel, Diniz, & Elali, 2017), interpreting cities and their functionality in reproducing the type of capitalist production and megaevents as transformation catalyzers that foster this form of sociability.

The counterpoint to this dynamic is the *right to the city* (Lefebvre, 2001), which became the object of group studies, especially in interventions aimed at reappropriating public spaces and urban social movements (Farias & Diniz, 2018). These groups and movements promote this dynamic and enable another type of urban life, such as the National Movement for Homeless People (Farias & Diniz, 2019). In this respect, group studies occupy a historic perspective, neither negative, nor positive, which views the city as a complex product of human activity, boosted by alienating trends, but also a source of stress and resistance that opens new historical possibilities for other experiences. This introduces a historical-social framework into human-urban reflections, resulting in ontoepistemological and theoretical challenges that require new discussions both within and outside psychology.

People in their Daily Environments

In everyday environments, the geographic scale of investigations and the concepts used in their framework change slightly from those conducted to date, with a focus on issues and places related to the origin of Environmental Psychology. From this perspective, studies focus on people's experiences with the built environment and the search for physically and psychically healthy spaces (individually or collectively).

Corroborating the notion of "thinking globally, acting locally" (World Commission on Environment and Development [WCED], 1987), we understand that people will only become involved with large scale events through knowledge of their daily experiences, and the peculiarities and demands of the environment in which they live. In other words, environmental awareness occurs from a micro to macro scale: from understanding and commitment to the rooms and buildings in which we live day to day (architecture), to understanding and commitment to the city, country, continent or planet (broader environment). This idea is grounded in multiple sources, which, over time, has reaffirmed maxims such as "paint your village and you will paint

the whole world" (Tolstoy) or "what is most personal is most universal" (Rogers).

In this respect, we have focused on habitational environments, schools and open areas (squares and parks), applying concepts such as perception and environmental cognition, space appropriation, place attachment, wayfinding, accessibility and environmental docility, used to clarify concrete situations (as support for interventions or the process of understanding the question under discussion).

Among these studies is the investigation "socio-environmental image of neighborhoods" (Cesar, 2013; Elali, 2007; Góes, 2011), which reinforces the role of the social dimension in forming a mental image of the environment (Lynch, 1960/2012). Thus, the analytical categories of this author (path, landmark, edge, node, and district), in addition to the physical characteristics of the place, are understood as the fruits of social construction and important elements of the environmental memory of a population, contributing to the legibility of the space.

In addition, we investigated the school as an institution, in terms of the behavior of the educational group (Elali, 2003; Fernandes, 2006) and its relationships with the community/neighborhood (Oliveira, Costa, & Elali, 2018), which we call intra and extra-mural relationships (Elali, 2011) and that broaden the debate on the concept of school environment.

In regard to open urban areas, investigations conducted by Vilaça (2008), Liberalino (2011) and Silva (2014) demonstrate the role of parks, squares and sidewalks in the dynamics of daily life and in restoring the physical and psychic equilibrium of city dwellers.

We also underscore studies on environmental accessibility, understood as facilitating the coming and going of everyone, particularly those with mobility problems. In this field, we highlight the concept of psychological accessibility (Elali, Araújo, & Pinheiro, 2010) and the study of the environmental docility conditions of the elderly (Viegas, Silva, & Elali, 2014#RIA37) and those with disabilities.

Final considerations

Up to this point, we have reviewed the most relevant lines of research of GEPA.

We have attempted to demonstrate and provide answers to new challenges without forgetting the origins of our discipline. This is not merely a historicist vocation,

but also helps us to understand the meaning of our work and proposals, and even our disciplinary identity.

Why do we use the term “environmental”, if we are referring mainly to the interplay between people, habitats and cities? Would “ecological” sensitivity, focused on deteriorating ecosystems (contamination, loss of biodiversity, etc.) rather than emphasizing the conditioning elements of behavior, be a “late conversion”? Mey and Günther (2015) underscore the early contributions of the German ecologists-biologists Ernst Haeckel and Jakob von Uexküll to understanding this apparent contradiction. The key is in the difference that Uexküll makes between the meanings of *Umwelt*, whose translations refer to both the “environment” and the “ecosystem”, which helps understand and justify the “legitimacy” of the “names” or denominations that Environmental Psychology has adopted over time. In addition, it explains and legitimizes how to deal with future challenges, considering the two main areas of stress and development in Environmental Psychology in recent years, namely, sustainability and sustainable development on one hand, and the city as a symbol of urban life, on the other, in addition to rural habitats, frequently forgotten, as we have seen.

In the “origins” of Environmental Psychology, in the 1960s, its main object in North America and Europe was the built environment. This led to the name Architectural Psychology (Canter, 1970), later changed to “Environmental Psychology”. To this we must add the so-called Ecological Psychology of Barker and Wright (1948), considered the “precursor” of Environmental Psychology. And once again the apparent contradiction emerges: does Baker study behavior in built environments, because he calls it “ecological”? We have already presented the conceptual matrices between Uexküll’s *Umwelt* and the difficult and inaccurate translations to other languages. This is what leads Barker to speak of “behavior setting” and not the ecosystem or generically of “environment”, consciously or not, but with the subtle influence of Kurt Lewin and the German *Umweltpsychologie* (Environmental Psychology) that preceded it. Understanding the logical and evolutionary processes of these concepts is easier if we consider Pol’s proposal (2006) of four stages of Environmental Psychology: (1) First Birth, or remote origins; (2) American Transition; (3) Architecture Psychology; (4) Environmental Psychology for Sustainability.

These “contradictions” are understood and diluted with the acknowledgement of previous contributions, such as that by Haeckel (20th century), who established the framework of modern ecology and “ecosystem” concepts; and by Uexküll (early 20th century), who developed the different *Umwelt* matrices, understood as the individual world (for a specific species) in contrast to the environment as the physical generic world (Linask, Magnus, & Kull, 2015). It incorporates a dimension of meaning for self (and for species), making what will later be called “ecosystems” specific and unique and providing us with the keys to find and explain the apparent contradictions mentioned. In 1911, under the influence of Wundt’s *Wölkersychologie*, Willy Hellpach (1924) spoke of *Geopsyche*, or the influence of climatic and geographic factors in relation to individuals and their surroundings, later adopting *Umweltpsychologie*, influenced by Uexküll.

If we consider that the built environment is the natural “ecosystem” of the “current” human being, it enables us to understand the legitimacy of speaking about Environmental Psychology when we refer generically to personal relationships (society) and their sociophysical environment. The symbolic dimension of this space, which must inevitably be incorporated, is related to the individual and social construction capacity of “meaning”, that is, individual and/or shared meanings (by individuals from a same culture). Thus, the built environment, including the sociophysical space, assumes the role of “ecosystem”. As such, Environmental Psychology, known as Architectural Psychology, takes on its entire meaning when it starts to develop as an “Ecological Psychology”, which aims to create or “restore” the best conditions for human development.

Less “transformable” elements also act on these denominations, such as natural geography and the climate, as indicated by Hellpach. It is precisely the (in principle) non-conscious transformation of these aspects (physical environment, resources and climate) that presents us with the challenge of approaching and contributing to facing climate change (both mitigating and adapting). Adaptation is also related to transforming and reconstructing the environment, but now with criteria of nature, restoring the “conditions or virtues” of natural ecosystems, in a two-fold initiative that is inevitably technological and behavioral (changes in ways of doing, habits, attitudes and behaviors).

Recent years have seen the emergence of two sensitivities. On one hand, interest in the health dimension as the effect of quality (or loss of quality) of the surroundings, but sometimes neglecting the activities of people, and on the other, the need for nature-based solutions (NBS), reintroducing more or less forcibly natural elements of the habitat (primarily urban) that compensate for the environmental degradation caused by life habits and production modes.

This creates new challenges for environmental psychology. Whether on the health or NBS axis, we once again find proposals and actions aimed at attempting to change people's behavior. These frequently ignore the very nature of human beings as extremely complex and diverse social beings. In addition, if *umwelt* is specific for each species while simultaneously depending on the characteristics of each ecosystem, every place becomes unique and different. It precludes the universalization of locally adequate, but dysfunctional and even counterproductive solutions, in other contexts. Environmental psychology must not lose its roots and local uniqueness, although the processes that underpin the construction of knowledge and solutions are universal as species processes, which is the responsibility of local research groups.

Balancing ecosystems and the global environment with "natural" criteria to face "climate change" or "global warming" has become one of the current challenges we are attempting to overcome in environmental psychology, making it important to disseminate the indispensable specificity of the discipline. This not only contributes to improving the individual and social behavior of people, but helps establish which means, materials and resources are adequate for a habitat that produces greater well-being (such as Architectural Psychology), with the added awareness that not everything is worthwhile. We cannot aspire to quality of life at any price, that is, we must assess the potential impacts of each decision and each action (which leads us to Environmental Management) as the means, materials and structures that "reestablish" or contribute to reestablishing the environmental balance needed (carbon absorption, and restoration of oxygen, water and biodiversity etc.); and how these measures allow or facilitate (never determine) ecologically responsible behaviors.

However, in addition to doing this, we must also explain that it is not simply a matter of the supposed (and arguable) impact of scientific articles on

the academic world, but a real effect on people and society, which includes and goes beyond what is considered "transfer". In a world dominated by so-called new intelligent technologies (TIC, Smart Cities, etc.), communication processes became more relevant than ever. This is a new (or renewed) challenge for environmental psychology. As Festinger showed us many years ago, information alone is not enough to change our behavior. We are resistant to change and we generally adapt our thinking (or attitudes) to our behaviors, in order to reduce cognitive dissonance. Human beings are more rationalizers than rational. They search for rational arguments that sustain their position and filter, ignore or deny those that contradict it. But the smart world we are building conforms to algorithms that, as sophisticated as they are, always follow a sequence of simple linear causality (which we human beings call "rationality"). However, human behavior will always be unpredictable, emotional, influenced by the presence of others and NOT rationally changeable.

Environmental Psychology will continue to contribute positively, since, as mentioned at the start, we are intrinsically linked to our planet, our environment par excellence, outside of which we would not survive for long (at least with the technology available today).

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