Lewin's Psychological Ecology, Gibson's Ecological Psychology, and Barker's Eco-Behavioural Science: A Holistic Approach to Human-Environment Interactions[1]

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Abstract

Human behaviour is a crucial factor underlying most of the major crises of our world. These issues range from new technologies and socio-political unrest to diseases, social and economic inequality, and ecological problems. Due to being profoundly rooted in experience and culture, behaviours are fundamentally influenced by the environment. Man is affected by his surroundings as an inseparable part of the environment with his physical and socio-cultural aspects. Moreover, humans are dynamic creatures capable of changing their environment. In addition to having a mutual individual interaction with the environment, as social beings, our actions are shaped by the dynamics of behaviour settings. By illuminating the influence of ecological perspectives on human behaviour, this study aims to elaborate on Kurt Lewin's ecological psychology, Roger Barker's eco-behavioural science, and James Gibson's affordances. The reciprocal interaction between man and environment is highlighted, and a holistic approach to human interaction with the environment at both individual and collective levels is achieved.

Keywords: Psychological Ecology, Life Space, Ecological Psychology, Affordances, Eco-behavioural Science, Behaviour Settings.

Lewin'in Psikolojik Ekolojisi, Gibson'ın Ekolojik Psikolojisi ve Barker'ın Eko-Davranış Bilimi: İnsan-Çevre Etkileşimlerine Bütüncül Yaklaşım

Öz

İnsan davranışı, dünyamızdaki büyük krizlerin çoğunun altında yatan çok önemli bir faktördür. Bu konular yeni teknolojiler ve sosyopolitik huzursuzluktan hastalıklara, sosyal ve ekonomik eşitsizliğe ve ekolojik sorunlara kadar uzanmaktadır. Deneyim ve kültüre derinden kök salması nedeniyle, davranış temel olarak çevreden etkilenir. Fiziksel ve sosyo-kültürel yönleriyle çevrenin ayrılmaz bir parçası olan insan, çevresinin tesiri altındadır. Ayrıca insan, içinde bulunduğu ortamı değiştirme yeteneğine sahip dinamik bir varlıktır. Sosyal varlıklar olarak çevre ile karşılıklı bireysel etkileşime sahip olmanın yanı sıra, eylemlerimiz sosyal ortamlarımızın dinamikleri tarafından şekillendirilir. Bu çalışma, ekolojik bakış açılarının insan davranışı üzerindeki etkisi, Kurt Lewin›in ekolojik psikolojisini, Roger Barker›ın çevreci-davranış bilimini ve James Gibson›ın olanaklılık teorisini detaylandırmayı amaçlamaktadır. İnsan ve çevre arasındaki karşılıklı etkileşim vurgulanır ve hem bireysel hem de kolektif düzeyde insanın çevre ile etkileşimine bütüncül bir yaklaşım elde edilir.

Anahtar Kelimeler: Psikolojik Ekoloji, Yaşam Alanı, Ekolojik Psikoloji, Uygunluklar, Çevreci-davranış Bilimi, Davranış Alanları.

Introduction

Psychological movements used to pay very little attention to extra-individual processes. Therefore, until the appearance of ecological approaches in psychology, the individual-environment relation was of higher significance. The psychological methods used to be reductive, that is, if such a high-order relationship existed, was considered beyond the boundaries of psychology. As well as describing the environment as an entity, psychology requires defining it by using human experiences to discover the reciprocal relationships of the human-environment. First, Lewin, the founder of psychological ecology, introduced "Psychological Ecology" to change the focus from the individual and his mental processes to individual-environment relationships. He asserted that the environment only indirectly impacts people's behaviour. For him, people's subjective world and perception of the external world were of greater significance. An ecological study of a human being also requires a description of his habitat, relationship to that habitat, social organization, and relationship to other humans and species by focusing on natural selection. Gibson's ecological psychology and Barker's eco-behavioural science are required to understand individual-environment relations better. Gibson's ecological psychology also took the perceiver-environment relation as its unit of analysis. For Gibson, the differences among individuals in perception were significantly related to their connection to environmental features. Following Gibson's ecological notions, Barker also believed in individuals' active perceptions and actions. However, later in his studies, he took more interest in the extra-individual factors in the environment and their influence on lower-level psychological processes. The objective properties of the environment were the centre of Barker's focus. Rather than individual behaviour, he concentrated on studying the environmental impacts. He believed in the more significant influence of social settings on behaviour rather than factors involved in an individual's personality, subjective features, and personal differences.

1. Psychological Ecology

Kurt Lewin coined the term "Psychological Ecology"[4] for the first time in 1943. He aimed to change the focus from the individual agent and its mental mechanisms to emphasize the agent-environment interactions. In dealing with the environment, his fundamental goal was psychological by pointing to a person's perception of the external environment regarding individual goals, obstacles, and boundaries. By "Psychological Ecology", Lewin pointed out the relationship between psychological and non-psychological aspects. For him, the environment around the individual is meaningful, and the objects can draw humans towards or away from them. What matters is the individual experience. Therefore, he defined behaviour as an outcome of factors in the environment experienced at a specific time and highlighted the significance of individual experiences. As a result, in dealing with a problem, non-psychological factors should be scrutinized initially to discover how they determine the conditions of life for an individual or a group as a prerequisite for commencing the research on the psychological aspect of an issue.[5]

According to Lewin, in contrast to life space, the ecological environment has a crucial but indirect effect on behaviour. In his opinion, these non-psychological factors are of physical and socio-cultural nature. These

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[4] Kurt Lewin, G.W. Lewin and D. Cartwright, "Psychological Ecology" in *The People Place, and Space Reader*, edited by Jen Jack Gieseking (New York: Routledge, 2014), 17.

[5] E. P. Charles and R. Sommer, "Ecology in the Biological Sciences" in *Encyclopedia of Human Behavior*, ed. V. S. Ramachandran (London: Academic Press, 2012), 3.

environmental factors lie behind personal experience, but they can put a psychological limit, though they are not directly experienced. They put limits on the life space, which affects psychological processes, but they are not psychological in origin and characteristics. Due to their effect on psychological processes, the study of factors which are not merely psychological is essential. So, psychological ecology's role is to explore non-psychological factors that cause various group and individual reactions. As Heft puts it:

Lewin asserted in his later writings that an initial analysis of the behaviour field should begin with determining relevant boundary conditions. This type of analysis Lewin called "psychological ecology." Psychological ecology, then, is an attempt to reveal "what part of the physical or social world will determine during a given period the boundary zone of the life space."[6]

One of Lewin's psychological ecology studies was on non-psychological factors affecting food preferences during World War II to propose food rationing and substitution strategies. Consequently, he found that food preferences were influenced by many other factors like the economy and availability of specific food in some regions rather than just individual tendencies. Thus, the study of psychological ecology is necessary for the specification of what is and what is not possible in the life spaces of individuals. As he states, "Suppose we are to accomplish the task of deriving the behaviour of the person (in more general terms: the psychological events) from the life space. In that case, we must characterize it as the "totality of possible events."[7]

Lewin had the ambition to use his theoretical findings to change the world into a better place. "Field Theory" is his metatheory providing a base for his other theories. He formulated the present behaviour (B) as a function (F) of the interaction between a person (P) or group and the Environment (E) at a specific time. B =f (P, E). According to this theory, the conditions and forces forming a life space account for the particular behaviour of an individual or group. At first, he applied "Field Theory" to determine environmental conditions and forces driving or impeding child development. Later, he focused on social and organizational changes by applying this approach to study and resolve social problems such as intercommunity conflicts, racism, and religious discrimination.

To use Lewin's definition, human behaviour is balanced or "frozen" due to the tension between the casual and restraining forces and conditions. As Burnes quotes Lewin, "the determination of the person's position within life space is the first prerequisite for understanding behaviour."[8] An imbalance in forces responsible for auto-regulation is necessary to bring about change in individual or group behaviour. This process is what Lewin calls unfreezing. Changes in life space occur when specific events are no longer feasible, and some other events which were impossible previously are probable now. This change results in a new balance in the life space. What is crucial in this stage is to prevent regression:

A change towards a higher level of group performance is frequently short-lived; after a "shot in the arm", group life soon returns to its previous level. This indicates that it does not suffice to define the objective of a

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6 Harry Heft, *Ecological Psychology in Context: James Gibson, Roger Barker, and the Legacy of William James's Radical Empiricism* (New York: Psychology Press, 2001), 249.

7 Kurt Lewin, *Principles of Topological Psychology* (London: Read Books Ltd, 2013), 14.

8 Bernard Burnes, "The Origins of Lewin's Three-Step Model of Change," *The Journal of Applied Behavioral Science* 56, no: 1 (2020): 24.

planned change in group performance as the reaching of a different level. Permanency of the new level, or permanency for a desired period, should be included in the objective.[9]

Lewin theorized "Group Dynamics" for understanding the influence of changing forces on the behaviour of groups. He highlighted the significant role a group plays in establishing its members' behaviour patterns. Individuals in a group may have different characteristics and attitudes, but their goals and well-being are interdependent. Group dynamics are essential in bringing about social change and resolving social conflicts. Lewin emphasized that it is necessary to maintain stability after establishing a desired social or environmental change. As Kippenberger states, "Lewin also found out that democratic decision-making played an important role in creating a freezing effect once group change had taken place".[10]

According to Lewin, when it comes to individuals, psychology considers the total of possible and not possible ways of behaviour in the life space. Thus, it is deduced that considering the environmental and social changes in a group, the personality of individuals, the structural pattern of the group, ideology, cultural values, and economic and political factors are the driving and restricting forces in a group's life space.

For Lewin, the environment is physical, social, and psychological. He believes we should represent an individual's physical, social and psychological environments. By social environment, he means a person's social standing, such as her job and relationship with others. By "psychological environment", he points to her hopes and fears, ideology, and religion. He states that it is not always feasible to differentiate the psychological existences of a given person. He proposes that the physical and social environment would be considered a psychological environment only if the individual is conscious of them. Democratic participation is one of the essential principles of his approach. Every individual in the group ought to contribute equally to decision-making and planning to make the change more effective and sustainable due to participants' more robust sense of commitment.

2. Ecological Psychology

Ecological psychology is generally attributed to James Jerome Gibson and Eleanor Jack Gibson's work on perception, James J. Gibson's theory of affordances, and Roger Barker's approach to eco-behavioural science. This study will mainly discuss Gibson's affordances and Roger Barker's behaviour settings.

In *The Ecological Approach to Visual Perception*, James J. Gibson presents his ideas about direct perception and affordances of the environment. He asserts that meaning and the value of things do not originate in the human mind. However, they already exist in the environment and can be perceived directly:

> The affordances of the environment are what it offers the animal, and what it provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, but the noun affordance is not. I have made it up, I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment."[11]

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[9] Burnes, "The Origins of Lewin's Three-Step Model of Change," 6.

[10] Tony Kippenberger, "Planned Change: Kurt Lewin's Legacy," *The Antidote* 3, no: 4 (1998): 12.

[11] James J. Gibson, "The Theory of Affordances," *Hilldale, USA* 1, no: 2 (1977): 67.

Gibson declares here that "affordance" is the source of action the environment provides every living-being according to their abilities to recognize and utilize it, which in turn leads to a specific behaviour. Put another way, "affordances" are the characteristics of our surroundings that afford meaning to living things. Therefore, "affordance" is both a physical and psychological entity. In other words, affordance is the function of the possible use of an object, event, or place that an individual distinguishes. According to constructional and practical properties, some individuals recognize specific affordances but others do not. Some properties of objects like shape, mass, and weight may be persistent, called objective qualities. Still, some other qualities are not constant and change on different occasions and according to individuals' perceptual development. These properties, such as heat, smell, and taste, can be named subjective or dispositional properties of the objects. According to Gibson, "affordance" is not an objective or subjective reality. It is a relationship between the environment and the agent. Patrizio Lo Presti presents the precise definition of the word affordance by Heft here:

> In general, affordances are expressed in attaching the adjective forming suffix -able to a verb. Thus, medium-sized stones are throw-able -afford throwing- and some trees are climb-able- afford climbing. Affordances are possibilities for action offered animals in an environment relative to physical capacities. They are relations. Stones do not afford throwing for ants but do so for most human beings, and trees do not afford climbing for elephants, but do so for suitably developed monkeys.[12]

Presti quotes Turvey endorsing what Heft stated by proposing the notion of specificity and affectivity. By specificity, Turvey means that "the perceptual system detects information specific to environmental properties relevant for the organism."[13] Moreover, the perception of specific natural characteristics of the objects is dependent on the agents' capabilities and interaction with them. These behavioural capacities or capabilities are called effectivities by him.

"The perceiving of an affordance is a process of perceiving a value-rich ecological object. Any substance, surface, or layout has some affordance for benefit or injury to someone. Physics may be value-free, but ecology is not."[14] As clearly stated in these words and mentioned earlier, Gibson believed that meaning and value are present in the environment, though they might be latent for some creatures. He also noted that agents perceive the affordances directly and actively monitor the environment to select among the available efficient actions in a given situation.

Roy Dings, in his article "Meaningful Affordances," states that agents are capable of understanding what is afforded. Consequently, he argues that agents deal meaningfully with affordances and proposes that they have "Diachronic Characteristics". That is, humans relate to their past experiences and have plans for the future. Two other factors are being self-judgmental and social. In addition to these characteristics, other factors such as physical build-up, skills, abilities, and established social and cultural identity are necessary to understand the relations with affordances. Concerning the meaning of diachronic, our actions are linked to what we did in the past and our perspectives for the future. Affordances make sense in the light of a connection with our memories of the past and our goals for the future. Below are Dings' clarifying words and examples;

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[12] Patrizio Lo Presti, "Persons and Affordances," *Ecological Psychology* 32, no: 1 (2020): 25-40.

[13] Lorena Lobo, Manuel Heras-Escribano and David Travieso, "The History and Philosophy of Ecological Psychology," *Frontiers in Psychology* 9, no: 2228 (2018): 1-15.

[14] Erik Rietveld and Julian Kiverstein, "A Rich Landscape of Affordances," *Ecological Psychology* 26, no: 4 (2014): 39.

While various paths afford taking and various people afford to talk to, oftentimes what we need is the path home or a particular individual to talk to, and so we need to be able to differentiate between relevant and irrelevant affordances.[15]

As the word diachronic implies, the memory of our past interaction with the affordances plays a vital role in recognizing the relevancy and selection of a given affordance. Dings also provides an example of a glass of water on the desk that is meaningful to us for quenching our thirst when needed. Accordingly, it is figured here that we also make objects significant to ourselves by relating them to our future concerns and needs.

He also states that the relevancy and importance of affordances are important in interacting with them. They change our approach in dealing with the agencies, which are the capacities and capabilities of individuals to function autonomously and make their personal choices. In our encounter with affordances, we are concerned with those related to our requirements, interests, and preferences in particular circumstances. As skilled people, we can easily perceive what action suits a specific situation. Years of experience and practice determine the value and meaning of what is afforded. Rietveld and Kiverstein write:

She develops an increasingly nuanced critical eye with respect to the adequacy of her own actions and the consequences of those actions, learning to see what is adequate and what is not. Moreover, the exercise of this critical faculty is something the agent does unreflectively. Experts develop a 'nose' that enables them to immediately sniff out which possibilities for action are better or worse in a specific situation.[16]

Developing a sense of perception is crucial for survival and improving living conditions. Perceptual development is achieved through learning experiences by discovering new affordances or acquiring new skills to use those affordances. The process of getting familiar with new affordances by the learner is what Gibson has called an "attention education". Attention education takes place through learning about the relevant affordances and what possibilities of action a selected aspect of the environment offers.

Gibson opposed the long-practised idea of behaviour caused inactively through stimuli. He postulates that creatures can select among action possibilities that the environment provides them. Hence, they are autonomous in making their path in the world. As Rob Withagen refers to Gibson, "they are not mere puppets pushed by the environment like machines; rather, animals have agency."[17] These physical and social interactions can change the environment and, as a result, provide opportunities for a variety of actions. He puts it this way:

This is not a new environment -an artificial environment distinct from the natural environment- but the same old environment modified by man. It is a mistake to separate the natural from the artificial as if there were two environments; artifacts have to be manufactured from natural substances. … There is only one world, however, diverse, and all animals live in it, although we humans have altered it to suit ourselves.[18]

It is widely believed that natural selection is a central part of the environmental system and individual creatures. Creatures are forced to select, and this leads to a set of activities that are essential for adaptation to the natural world and survival. Creatures continuously identify the features that are appropriate and important for their function. Edward S. Reed claims that the existence of a relationship between affordances and nat-

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[15] Roy Dings, "Meaningful Affordances," *Synthese* 199, no: 1 (2021): 1855-1875.

[16] Rietveld and Kiverstein "A Rich Landscape of Affordances," 27.

[17] Rob Withagen, Harjo J. De Poel, Duarte Araújo and Gert-Jan Pepping, "Affordances Can Invite Behavior: Reconsidering the Relationship Between Affordances and Agency," *New Ideas in Psychology* 30, no: 2 (2012): 250.

[18] Gibson, "The Theory of Affordances," 67-82.

ural selection is the most significant point in ecological psychology. He remarks, "the fundamental hypothesis of ecological psychology is that affordances and only the relative availability and non-availability of affordances create selection pressure on animals. Hence behaviour is regulated with respect to the affordances of the environment for a given animal."[19] Simply put, resources of nature which are called affordances in ecological psychology and their variety of existence, create selection pressure by enhancing the ability of some species to recognize those resources, and that respectively results in natural selection, and this, in turn, causes evolution in the species and is primarily responsible for fundamental changes in the environment and exploitation of the material world.

The human way of life is different from other species. In addition, humankind does not even share all human abilities due to the abundance of socio-cultural performances and conventions. Skilled activities provide an opportunity of engaging in the broader scope of affordances. It is proposed by Rietveld and Kiverstein that:

> Much if not all of what we are accustomed to calling cultural variation consists of variations of skills. By skills, I do not mean techniques of the body, but the capabilities of action and perception of the whole organic being (indissolubly mind and body) situated in a richly structured environment.[20]

The human ecological niche is formed by plenty of socio-cultural practices humans attend to. Human beings are selective in engagement with affordances according to their higher-level cognitive abilities and skills, as some affordances are more meaningful to them according to those skills and cognitive abilities. As it is quoted here:

> We propose thinking of "higher" cognitive capacities in terms of skillful activities in socio-cultural practices, and the material resources exploited in those practices. Skilled "higher" cognition can be understood in terms of selective engagement -in concrete situations- with the rich landscape of affordances.[21]

One of the most determining and differentiating skills of the human niche is the ability to use language. Another critical area of human life is art and aestheticism. Gibson notes, "at the highest level when vocalization becomes speech and human manufactured displays become images, pictures, and writing, the affordances of human behaviour are staggering."[22] Dings also identifies two different levels of affordances according to their meaningfulness:

> That is, some affordances are experienced as low-level, specifying the movements that are afforded, whereas other affordances are experienced as more high-level, specifying the relevant long-term goals relevant. These latter affordances can be colloquially described as meaningful in the sense that they provide possibilities-for-meaningful-or-high-level-identity-actions. Recall that, in AIT, higher-level identifications target the "why" of action.[23]

The example he uses for elucidating the topic is an empty soda can, whose first affordance is picking up, that is, how an activity is done. In addition, it can afford to do community service by picking up the trash from the street. The second intention as a cultural activity is high level and is connected to the person's diachronic preferences. So, it could be said here that a person's personality, ideology, self-consciousness, and even social status are crucial in dealing with the objects surrounding him. That is the reality of that person's identity, abilities, skills, goals, and purposes in life. Take the example of a person who possesses a car and can drive it but

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[19] Edward S. Reed, *Encountering the World: Toward an Ecological Psychology* (London: Oxford University Press, 1996), 18.

[20] Rietveld and Kiverstein, "A Rich Landscape of Affordances," 25.

[21] Rietveld and Kiverstein, "A Rich Landscape of Affordances," 4.

[22] Gibson, "The Theory of Affordances," 137.

[23] Dings, "Meaningful Affordances," 1855-1875.

prefers to avoid traffic by using public transportation. Then, public transport here is considered a high level and meaningful affordance related to the experience and concerns of the agent and the environmental factors involved. It can be inferred here that the sense of what one is doing is interrelated with what is afforded. For example, if the purpose of what one is doing includes having fun and relaxing after hours of hard work, the sense of what is afforded consists of fun activities on a laptop, not using it to work on a project.

Furthermore, due to the presence of normative codes and customs, a specific community possesses a regular pattern of behaviour. Humans exhibit many of the features common to socio-normative affordances. Human behaviour is influenced by what is appropriate and inappropriate according to skilled practices, morals, and norms of society. It does not just depend on how things are congruent to biological needs.

Normativity is the social phenomenon of identifying some behaviour or outcome of actions as right and permissible and others as wrong and undesirable. According to ecological psychology, norms can be described as a particular kind of affordance that enables actions to be directly understood as good and acceptable. This indicates that the human niche is inherently normative.

Perceiving the situation, customs, and practices of others in the environment indicates whether individual actions are appropriate. Therefore, the codes of behaviour of a material setting determine the adequacy of a particular action. So, it means that adopting the affordances of the environment is partially related to the sense of imitation and adaption to the customs and rules of a specific community. As Wittgenstein is quoted, "it is what human beings say that is true and false; and they agree in the language they use. That is not agreement in opinions but form of life."[24]

Members of a socio-cultural practice feel obliged to act based on the skills they have acquired as other participants. Successfully dealing with the affordances is not only acting in ways that fit in with a socio-cultural practice or communal custom but also with the specific details of the particular situation.

Agents' participation with affordances changes according to the details and variations in a given material situation.[25] The example presented here is examining the colour of a tie under natural light in a store, as experience has taught us that colour can be seen differently under different lighting.

Considering that all these meaningful affordances are widely available, it is assumed that only our ignorance, lack of skill and interest, and specific intention restrict taking advantage of these potentially valuable resources for our practices. Thus, goals, education of attention, and skilful training are essential in detecting unique affordances. As a result, the best solution could be to increase our exposure to other cultures to gain knowledge about their skills and the value-rich affordances they perceive.

3. Barker's Eco-behavioural Science

Barker's theory deals with the environment and the resulting behavioural outcomes. He sensed the need for an objective and psychologically meaningful description of the environment to depict the behaviour phenomena in everyday social settings. This paved the way for him to come up with the idea of ecological psychol-

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24 Rietveld and Kiverstein, "A Rich Landscape of Affordances," 32.
25 Rietveld and Kiverstein, "A Rich Landscape of Affordances," 33.

ogy, later named eco-behavioural science conceptualizing how environmental contexts shape the individual, specifically a group's actions. He states, "I found not only that the non-psychological environment affects the life space at the boundary, but also that the distal environment has consequences."[26] Our surroundings determine our psychological performance by indirectly influencing our biological functioning. The example given here is about the toxic substances in our environment. For instance, a high amount of lead in the environment can result in mental and cognitive disorders affecting the human nervous system.

Individual-environment relations also operate as one constituent part of a collective that is functionally embedded within a higher-order system and is extra-individual. Later, Barker focused on collective behaviour patterns in given spaces. These behaviour patterns are fixed despite the individual differences. People behave according to the codes of behaviour in a given context. In any given organization, there are some interconnections and, at the same time, some limits. Constituent parts of the organization are restricted in what they do. Interrelations between the individuals and the influence of the other environmental levels of a system limit an individual's freedom. A system works coherently both because of the function the forming parts perform and what they are not permitted to do. Individuals can detect the underlying order in their environment and predict the possible outcome of their behaviour. As Heft quotes Patte, "Hierarchical controls arise from a degree of internal constraint that forces the elements into a collective, simplified behaviour that is independent of selected details of the dynamical behaviour of its elements."[27] In brief, hierarchical control simultaneously constrains and creates conditions for variability and innovation among constituents. Creativity and novelty rise out of constraints.

Barker and Herbert Wright's response to Lewin's statement of a need for psychological ecology led to research in Oskaloosa, Kansas, where populated only 700 people, to study their behaviour. They founded Midwest Psychological Field Station to research these people's behaviour and environment. It was an independent community. Children behaved differently when they went from one place to another, for example, classroom, playground, and street. However, their reactions and behaviour were alike in the same place. Behavioural tendencies of all children made it possible to guess how an individual child would behave in a particular environmental structure which Barker named a behaviour setting. This theory suggests that outside the boundaries of human experience, the environment is an orderly and regulated entity in itself. This regularity results in limited predictable individual behaviour. Heft writes, "children's behaviour over the course of their day did appear to be structured and indeed was even predictable instead of looking for proximate causes of actions such as immediate social inputs, characteristics of the 'more remote environment' was examined."[28]

Barker maintained that behaviour was influenced by the places people live rather than individual characteristics and social factors. He diverted his focus from studying individual behaviour to the environment. He asserted that the place of behaviour was more influential than the individual differences in anticipating behaviour. He called these social and physical environments behaviour settings.

According to Barker, behaviour settings are specific integrated and quasi-stable locations formed by the collective actions of their residents. Each individual's actions influence others' behaviour in these settings.

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[26] R. G. Barker, "Roger G. Barker," *A History of Psychology in Autobiography* 8, (1989): 2-35.

[27] Heft, *Ecological Psychology in Context: James Gibson, Roger Barker, and the Legacy of William James's Radical Empiricism*, 248.

[28] Heft, *Ecological Psychology in Context: James Gibson, Roger Barker, and the Legacy of William James's Radical Empiricism,* 252.

Heft points out that "behaviour settings occur naturally as a function of the collective actions of a group of individuals."²⁹

Interaction among people and objects creates a circumjacent setting that limits the behaviour of every individual. To illustrate the point, Barker gives an example of a specific baseball game. It has a particular location because some people have gathered at an exact time and conformed to pre-set rules. The equipment like balls and bats and specific structures like lines and boundaries and players and umpires are parts of the behaviour setting or milieu that is an individual's social and physical environment. The game is in the process through constrained actions, relations, and the balance between the components of the milieu, which limits the actions of components. Breaking rules will lead to expulsion since some components have the authority to exclude those who are a threat to the balance and decorum of the setting. It also processes extra-individual properties since there is no need to know who played the game to understand the result. Particular roles are essential to know the game's character, not specified individuals. The limitations that behaviour setting imposes on its occupants provide them with opportunities to compromise and be more creative. Each behaviour setting offers potential behavioural options over a specific course of time. Behaviour settings are considered eco-behavioural resources. Barker believes that behaviour-setting influences are generally regarded without considering a particular individual. Nevertheless, he attempts to picture the relationship between the individual and the environment settings by referring to Heider's analysis of "Thing and Medium".

Following Heider, Barker claimed that behaviour settings possess "thing-like" characteristics. "Setting" is the thing, and media are independent occupants. Still, when they come together, they constitute a whole that has the capability of conforming to the dynamic pattern of the thing that is the behaviour setting. These settings have eco-behavioural properties such as, interrelation, consistency, and coherence between their component parts. That is, there is a balance between many autonomous forces involved. Heft counts several factors that are crucial for the balance and perseverance of the behaviour setting:

> The kinds of "forces" that contribute to their stability and maintenance stem from various factors, including the following: socio-political processes in the community that maintain the need for specific settings (e.g., government offices) and social traditions that perpetuate some settings (e.g., fraternal lodges); factors intrinsic to the milieu of the setting (e.g., presence of a dedicated structure, such as a courthouse); and factors related to the occupants of the setting, as in the case of individuals with particular skills, talents, and interests (e.g., a community band).³⁰

People adapt to the existing behaviour pattern of their habitation. When individuals are considered as the media of behaviour settings, they take on their dynamic structure. For instance, dancing or singing during a lecture or smoking in the church is impossible. These behaviour patterns are not random. There is a general regularity and integrity. The sense of compliance and regularity in behaviour settings is due to the social nature of human beings.

Humans are fundamentally social beings, attuned from the outset of life to information from social sources and social processes. The character of the immediate setting will be reflected in individual actions in psychologically fundamental ways. Behaviour settings mutually affect behaviour at an extra-individual level, regulating the individuals' actions collectively to maintain their dynamic structure by restricting individual

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²⁹ Heft, *Ecological Psychology in Context: James Gibson, Roger Barker, and the Legacy of William James's Radical Empiricism*, 253.

³⁰ Heft, *Ecological Psychology in Context: James Gibson, Roger Barker, and the Legacy of William James's Radical Empiricism*, 248.

actions. This relation between settings and individual actions is possible because of functional mutuality and interdependence. Thus, people collectively conform to the regulations of the behaviour setting.

Conclusion

Although Lewin sought a means of predicting individual behaviour as it is mediated by that individual's experience of the environment at a particular time, and Gibson focused on the individual engagement with affordances of the environment, Barker proposed an extra-individual ecological structure. It is clear that psychological ecology, ecological psychology, and eco-behavioural science are altogether necessary to explain behaviour and the environment in which it occurs. Contrary to Lewin and Gibson, Barker and his colleagues predicted behaviour on masse because they could not predict individual behaviour according to their experience of the environment. Together, they offer a completer view of the domain of ecological psychology than each does alone.

Combining all three approaches by Lewin, Gibson, and Barker, it is postulated in this study that agents deal subjectively with objective encounters, relationships, and perceptions in their environment. To put it in other words, at the same time that people react to their external world consisting of objects and other people, they are involved with their inner world, including their thoughts and emotions. This subjective world of motivations, concerns and different tastes allows for variation in behavioural patterns together with the same collective behaviour.

Lewin's psychological ecology, Gibson's ecological psychology, and Barker's eco-behavioural science are compatible and conjointly reinforcing approaches. Various features in each are remarkably similar. These approaches represent the same psychological theory and follow a common perspective. Barker's eco-behavioural science adopts a different layer of analysis focusing on settings that serve as contexts for individuals' everyday collective actions rather than personal concerns. A well-developed ecological psychology requires an account of both eco-behavioural dynamics and environment-person relations. A focus solely on the processes of the environment at an eco-behavioural or environment-person level will result in incomplete ecological psychology. As individuals are among the components of behaviour settings, and because behaviour settings provide the context for individual actions, comprehensive ecological psychology describing processes working at both levels of analysis will require to bring together Barker's eco-behavioral science and Gibson's ecological psychology. Lewin's psychological ecology is also essential to further reinforce the subjective role.

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