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Beyond Cartesian and Newtonian Paradigms in Psychology: Human Experience in the Transactional Approach

Psikolojide Kartezyen ve Newtoncu Paradigmaların Ötesinde: Transaksiyonel Yaklaşımda İnsan Deneyimi

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ABSTRACT

Cartesian dualism and the Newtonian view present significant dilemmas for psychological science as it strives to comprehend human experience. These perspectives tend to conceptualize human experience in static and simplistic terms, fragmenting it into isolated components and seeking universal principles through objectivity. However, this reductionist approach neglects the inherent complexity, holistic nature, dynamism, and subjectivity of human experience, ultimately yielding a fragmented and inadequate model of humanity. In response to this restrictive paradigm, the transactional approach emerges as a more comprehensive framework, advocating for the examination of human experience as a dynamic whole, situated within its unique context and characterized by its subjectivity and complexity. This review critically analyzes the fundamental dilemmas posed by Cartesian dualism and the Newtonian view within the realm of psychology and elucidates the transactional approach through its theoretical underpinnings and practical applications. Furthermore, a semi-structured guide is provided to facilitate the integration of this approach into psychological research.
Keywords: Cartesian dualism, Newtonian view, human experience, transactional approach, psychology

ÖZ

Kartezyen düalizm ve Newtoncu görüş, psikoloji biliminin insan deneyimini anlamada karşılaştığı önemli açmazları beraberinde getirmektedir. Bu perspektifler, insan deneyimini parçalara ayırarak, durağan ve basit ilişkilerle ele almakta ve nesnelliğe dayalı evrensel ilkelere ulaşma çabası göstermektedir. Ancak bu yaklaşım, deneyimin karmaşıklığını, bütünselliğini, dinamikliğini ve öznelliğini göz ardı ederek, parçalanmış bir insan modeli ortaya çıkarmaktadır. Bu kısıtlayıcı anlayışın üstesinden gelmek üzere sunulan transaksiyonel dünya görüşü, psikoloji çalışmalarında insan deneyimini kendi bağlamında, öznelliğinde ve karmaşıklığı içinde dinamik bir bütün olarak ele almayı önermektedir. Bu derlemede, Kartezyen düalizm ve Newtoncu görüşün psikoloji alanındaki temel açmazları ele alınmakta; transaksiyonel yaklaşım hem teorik çerçevesi hem de uygulama örnekleri aracılığıyla açıklanmaktadır. Ayrıca bu yaklaşımın araştırmalarda nasıl uygulanabileceğine dair yarı yapılandırılmış bir kılavuz sunulmaktadır.
Anahtar sözcükler: Kartezyen düalizm, Newtoncu görüş, insan deneyimi, transaksiyonel yaklaşım, psikoloji

Introduction

The current mainstream understanding of psychology and scientific practices is mainly based on the epistemic foundations of Cartesian dualism and the Newtonian view (Gulbenkian Commission 2012, Brown and Key 2020). Cartesian dualism is a thought system developed by the philosopher and mathematician René Descartes (1596-1650). In its broadest definition, Cartesian dualism is the view that human beings have two separate levels of existence: a body (Lat. res extensa: the extended thing) that is bound by physical rules and a mind (Lat. res cogitans: a thinking thing) that is independent of physical rules (Descartes 1641/1984). This view assumes a distinction between mental and physical processes (Baker and Morris 1996). The impact of Cartesian dualism on psychology is that it provides a legitimate basis for the idea that it is necessary to 'analyze' human experience in order to understand it, and that in order to analyze it, it is necessary and valid to examine human experience by dividing it into parts, just as in the case of body-mind, subject-object, or psychological phenomena (e.g., self-efficacy, self-esteem, self-awareness), which are distinguished from each other by various characteristics. Throughout the article, the term 'experience' is used to refer to the totality of

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measurable and non-measurable qualities such as human(s) emotions, affect, cognitive processes and behaviors (Jay 2012).

The Newtonian view was shaped by the work of physicist and philosopher Isaac Newton (1643-1727) in which he explained the laws of universal gravitation and motion (Newton 1687/1999). This view represents a mechanistic understanding that the universe operates according to certain and unchanging physical laws. The universe is regular, predictable and deterministic in its structure like a machine. Almost every event develops in a precise cause-and-effect relationship. The outcomes of an event can be predicted with certainty based on previous conditions and the laws of physics (DiSalle 2002). This mechanistic model of the universe depicts a universal system that operates in the same way everywhere and under all circumstances. Therefore, it is assumed that universal laws underlie every phenomenon in the universe. The impact of this worldview on psychology is that it provides an epistemic basis for the idea of objectively discovering 'universal' psychological principles in the parts of human experience that human experience is reduced to, using scientific methods, and making predictable inferences about human experience (Schultz and Schultz 2011, Gulbenkian Commission 2012).

Under ideal circumstances, Cartesian dualism and the Newtonian view seem to provide a generally problem-free, legitimate and desirable framework for conducting science. This is due to the fact that these approaches position psychology as compatible and comparable with the natural sciences by providing a perspective based on objectivity, measurability and universal laws (Schultz and Schultz 2011). This epistemic framework enables the systematic study of social, psychological and developmental phenomena with scientific methods, while at the same time strengthening the scientific status of psychology. Despite the many benefits of the two pillars for psychology (e.g., intervention programs in applied psychology, increased scientific knowledge of human behavior), they have significant dilemmas in real life situations. The dilemmas posed by Cartesian dualism and the Newtonian view for the science of psychology have certain limiting effects on the endeavor to understand human experience. Human experience is dealt with by reducing it to parts, assuming its stability, evaluating it with simplified relations, striving to reach universal principles and believing that objectivity is possible. As a result of this approach, holism, dynamism, complexity, locality, subjectivity, and meaning of experience are transformed into qualities that are, at least in the best expectation, analyzed in the context of the 'limitations' of a study, new research topics that need to be addressed in future studies, or confounding variables that need to be controlled. In the real-life situation, a model of the human being, decontextualized from its dynamic context and 'determined' by a number of psychological factors, emerges. This article first outlines the major challenges that Cartesian dualism and the Newtonian view pose for psychological science, then explains the transactional worldview as a solution to these dilemmas and presents a semi-structured guide on how this worldview can be used in psychological studies.

Fragmentation of Human Experience: The Loss of Holistic Perspective

The mind-body dualism that underpins Cartesian philosophy suggests that human experience can be divided into two separate and independent components: mental processes and physical processes. In Descartes' view, mind and body are distinct entities; mental events are independent of physical events (Descartes 1641/1984). This idea paved the way for the idea that mental and physical processes need to be separated to understand human experience in psychology. However, this approach is criticized for not reflecting the holism of human experience. Gestalt psychology argues that perceptual experience ought to be treated as a whole (Koffka 1935). In contrast to the analytical method of the Cartesian approach that focuses on parts, Gestalt psychology emphasizes that we can only understand the nature and functioning of perception by evaluating it from a holistic perspective. Gestalt psychology's understanding of 'holistic perception' reveals how Cartesian reductionism ignores the complexity of human perception. Similarly, Kurt Lewin's (1936) concept of life space shows that human experience cannot be described purely by mental processes, and that an immediate combination of the qualities of the individual and the characteristic of the social environment plays a major role in understanding the experience. This points to the importance of multiple interactions that the Cartesian approach ignores.

In psychology, the mind-body distinction has led to a reductionist approach to the study of human experience in a fragmentary way. For example, experimental psychology uses the mind-body distinction to make causal and detailed analyses of cognitive and emotional processes. However, this approach can, in many situations, exclude the complex life context of the individual. Nevertheless, experimental psychology does not always have to reach this conclusion. For example, Gibson's Theory of Perception (Gibson 1979) argues that perception is not interpreted in the organism's mind but occurs in direct and reciprocal interaction with the environment.

Perception is an active information process that occurs through dynamic interrelationships between the organism and the environment. Psychological processes and contexts are not independent components; they are holistic aspects. Similarly, Roger Barker's (1968) concept of behavior settings offers an alternative to Cartesian reductionism by suggesting that human experience is shaped not only by internal and psychological processes but also by interactions with its physical and social environment.

The Newtonian view treats the universe as a mechanical and predictable system. As in Cartesian philosophy, as in the Newtonian understanding, complex systems can be understood by dividing them into smaller components. This idea was reflected in psychology and strengthened the idea that human behavior and mental processes should be studied as separate components. However, this approach may ignore the understanding that human experience is 'more than the sum of its parts'. For example, Urie Bronfenbrenner's (1979) Ecological Systems Theory shows how the social, cultural and temporal contexts in which the individual is embedded shape the individual's behavior and development. The Newtonian view has the danger of ignoring such multilayered interactions and loss of holism in experience. With the impact of both epistemic understandings, psychological science has long analyzed human experience by dividing it into small components. However, human experience consists of complex and mutual interactions of biological, psychological, social, cultural, spatial and temporal elements (Werner et al. 1985, Altman and Rogoff 1987).

The Stabilization of Human Experience: Loss of Dynamism

In Newtonian physics, time is considered as a universal constant (DiSalle 2002). This means an absolute time that flows at the same speed for all beings (Orlikowski and Yates 2002). In this perspective, time is an external dimension of physical events and change occurs as a result of interactions between events. Put differently, events do not have an intrinsic or internal time dynamics on their own; change takes place under the influence of external factors. Mainstream psychological approaches generally treat time and change with this Newtonian understanding as a background (Slife 1995, Levine 2003). Time emerges and is shaped by the interaction of psychological processes, personal characteristics or environmental factors. Change is defined as a result of these interactions. For example, a change in a person's anxiety levels is considered as an external change resulting from the interaction of the individual with his/her environment, and time is merely a tool for measuring these interactions (e.g., T1, T2, T3 intervals) (McLaughlin and Hatzenbuehler 2009). In this perspective, temporal processes are framed in a discontinuous way, in other words, in certain intervals or discrete parts, based on personal or environmental characteristics. Thus, change is not seen as a continuous process, but rather as a series of fragmented events occurring in separate time periods. However, time is inherent to the phenomenon and is one of its aspects (Werner et al. 1985, Altman and Rogoff 1987).

Cartesian dualism enables human experience to be analyzed by dividing it into parts. However, at the same time, it transforms these fragments into static or immediate images and leads to an almost cessation of the dynamism of experience. More precisely, it is understood that mainstream psychological research treats the dynamic processes of the individual in any subject as a state or section frozen in time. Change is defined only as the difference between states/sections at two or more different times (e.g., the passage of time from T1 to T2). For example, cognitive functions such as problem-solving processes or learning are measured in absolute and non-experiential units of time, suggesting that time is conceived only as a location, coordinate or place. In this perspective, time is a measurement externally attributed to the phenomenon and change is understood through such measurements rather than the internal dynamics of the individual (Wong and Ho 2017, Evans et al. 2018).

However, in human experience, time is an internal aspect of events rather than an external unit of measurement, and it is an enduring and continuous dynamic process of experience (Altman and Rogoff 1987, Werner et al. 2002). In other words, the continuing development of an event is a part of its meaning. For this reason, human experiences should not be considered only as static or immediate images. For example, the learning process should be seen as an ongoing transformation process, not as stages frozen in certain time frames determined by psychological researchers. This approach is based on the understanding of a dynamic process in which individuals and their environment constantly interact with each other. However, Cartesian dualism and the Newtonian view led to a view of time and change as external criteria and the result of interactions. This view of time and change pushes the dynamism of human experiences to the background and leads to a static understanding of experiences. Understanding human experience as a process of continuous change, not only through static moments, may allow a more realistic and in-depth understanding of these experiences (Werner et al. 1985, Werner and Haggard 1985).

Evaluating Human Experience with Simplified Relationships: The Neglect of Complexity

While human behavior appears to be simple and straightforward, in reality it is highly complex (Glassman and Hadad 2018). Complexity implies that there can be many causes and consequences to experience, and that such causes and consequences can mutually transform each other in changing contexts. This points to the interdependence and multi-source nature of causes and effects. Therefore, we can refer at this point to aspects, shapes or forms that emerge through mutual interactions that cannot be reduced to the mechanical causes and their consequences that shape human experience. These forms continuously transform into different forms through changing patterns. This view points out that human experience is shaped into a holistic unity formed by the mutual interactions of psychological, social, spatial and temporal qualities (Altman and Rogoff 1987, Werner et al. 2002). Individuals are in constant interaction with their environment and these interactions are multidirectional and dynamic. For example, the stress level of an individual in any situation cannot be explained only by environmental factors or internal mental processes. This process is a dynamic process that develops in constant interaction with the individual's environment. With this approach, the transformations of human experiences in time can be understood more deeply by analyzing mutual interactions and contextual factors.

The reflection of Cartesian dualism and the Newtonian view in psychology can be traced in classical behaviorism and cognitive models that attempt to explain human experience through simplified cause-effect relationships. Classical behaviorist approaches in psychology are one of the most distinct reflections of these two perspectives. For example, in Skinner's operant conditioning approach, behavior is a direct result of environmental stimuli and reinforcers. Learning processes are modelled as a series of static or 'controlled dynamic' stages. Moreover, these processes are restricted to observable and therefore measurable characteristics (Skinner 1953). Reducing the complex learning experience to only stimuli and responses leads to the neglect of factors such as social interactions, norms and context, intrinsic motivations, complex cognitive and emotional processes, and cultural characteristics by placing them in a secondary position. Indeed, the learning experience is shaped not only by the effects of reward and punishment, but also by basic psychological needs such as autonomy, competence and relationship formation. In addition to personal experiences, reactions to the behaviors of others (e.g., through observation or identification) are also important factors shaping the learning process (Bandura 1969, Ryan and Deci 2000). At this point, it can be argued that cognitive models adopt a similar reductionist approach, particularly current efforts to integrate neuroscience have strengthened this tendency. Cognitive psychology's efforts to reduce complex mental processes and cognitions to neurological processes cause human thought to be treated as a universal and decontextualized mechanism. This approach can be interpreted as an effort to reduce mental processes to a more mechanical and static order while focusing on the biological foundations of the human mind. In this context, although the spread of neuroscience today aims to examine the biological infrastructure of the mind in more depth, it also leads to an understanding of the mind as detached from social and cultural contexts. Thus, there is a risk of ignoring the multidimensional and dynamic nature of human experience. The Newtonian view, with its emphasis on mechanical causality and linear relationships, has also shaped psychological measurement and theory. The application of this paradigm to psychological measurement has led to the reduction of the complexity of psychological phenomena to simple and measurable metrics (Cantley, 2014). Cartesian thought and the Newtonian view, which provide the epistemic basis for classical learning approaches, cause a significant loss in understanding the complexity of experience by dividing the dynamic and continuous structure of human experience into static parts and reducing it to simplified cause-effect (stimulus-response) relationships. However, human experience is shaped by the complex interactions of not only observable environmental factors but also intrinsic motivations, past experiences, social and physical contexts (Stokols and Shumaker 1981, Stokols and Altman 1987, Bechtel 2010, Heft 2020).

Searching for Universality and Objectivity in Human Experience: Loss of Locality, Subjectivity and Meaning

The Newtonian view led to the misconception that human behavior can be explained by universal rules of behavior (Gulbenkian Commission 2012). In psychology, this view feeds the belief that human behavior can be defined by determinable and predictable behavioral principles. However, human behavior is highly sensitive to changing contexts. Therefore, the Newtonian search for fixed laws ignores the complexity of these contexts and leads to treating humans as a decontextualized, abstract entity. An example of this approach in psychology is the widespread use of nomothetic methods. Nomothetic methods are a set of methods that aim to reach

generalizable and universal results on large sample groups and to produce theories to explain them (Hermans 1998, Robinson 2011). Studies conducted with quantitative data collection and statistical analyses based on nomothetic methods aim to produce generalizable results by decontextualizing individuals' experiences from their unique and local contexts. Moreover, in this approach, researchers assume that they are independent and objective from the phenomenon they analyze (Carminati 2018). This search for universality, on which nomothetic methods are based, causes research conducted with data collected from WEIRD (Western, Educated, Industrialized, Rich, Democratic) communities and groups whose formation is from this culture even if they are not Western (Henrich et al. 2010) to ignore the experiences of non-Western societies (Gergen et al. 1996, Arnett 2008). This monocentric approach shows that the attempt to establish universal laws pushes the diversity and complexity of human experiences into the background.

The Cartesian method of analysis proposes to divide a complex system into its parts as a way of understanding it. This approach is adapted to psychology and offers a kind of mechanistic atomization model for understanding human experience. With this method, psychological phenomena are abstracted from their contexts and transformed into independent units that can be analyzed by universal principles. By excluding subjectivity, this approach ignores the personal experiences, emotional worlds and meaning making of individuals. For example, in classical experimental psychological research, individuals are studied under sterilized conditions in a laboratory setting and the subjectivity of the participants is eliminated as much as possible. Such a pursuit of objectivity, while aiming to obtain universal results about individuals' psychological processes, excludes their personal and cultural contexts of meaning and subjectivity. This prevents psychological research from fully grasping the depth of human meaning. It can be argued that, under the influence of both epistemic foundations, the subjectivity and meaning of experience in psychology have been reduced to statistically significant phenomena that can only be measured by operational definitions. For example, while Attachment Theory mainly focuses on the nuclear family and caregiver-child relationships, representing the Western middle-class perspective, different social structures (e.g., extended family system) question the universal validity of this theory (Keller 2018). Therefore, adopting flexible and holistic approaches that consider the impact of context in psychological research may provide a more accurate and inclusive way of understanding human nature.

As stated in the introduction, Cartesian dualism is based on the idea that it is necessary and valid to analyze human experience in order to understand it, and to analyze it, it is necessary and valid to divide it into parts. According to the Newtonian view, behaviors are seen as mechanical components based on certain principles and processes. Thus, human beings are decontextualized from their complex contexts and become independent and sterile 'psychological phenomena'. The social, temporal and spatial relations of human beings are transformed into a kind of control variable and a contextless human vision emerges. While the decontextualized human imaginary, together with scientific objectivity, provides the claim of knowledge production about the universal principles of behavior, individual, social and cultural diversities, meanings and subjectivities are forced into a secondary feature. Since universal knowledge production either intentionally or unintentionally reduces the influence of the local, it takes a position in opposition to the local, and this position is constructed through nomothetic methods.

In nomothetic methods, experiments, surveys and various measurement tools are used to collect data. In this approach, the objectivity and impartiality of scientific knowledge is of crucial importance. The subjectivity of researchers and participants is minimized or completely eliminated. Nomothetic methods adopt a systematic approach as they aim to reach universal and general results. This approach focuses on identifying cause-effect relationships between variables. Therefore, it is assumed that scientific studies can be replicated when the causes and effects are known well enough and measured accurately. The reproducibility crisis (the failure to reach the same results in studies), which stands out as a current problem in psychology, is generally addressed by reducing it to reasons such as sample characteristics, incorrect statistical analyses, only publishing significant results, and publication bias (Wiggins and Christopherson 2019). Based on this framework, measures such as transparency in research processes, data sharing, pre-registration, and open publication policies for all findings are expected to solve the crisis. Without disregarding the importance of these measures, it should be noted that the crisis is not only methodological but also based on the human models used in psychology and the limitations of these models (Arkonaç 2004, 2009).

The overemphasis on quantitative methods to strengthen the idea of objectivity narrows the subjectivity and meaning of experience in psychology. Meaning and subjectivity have been reduced to an extremely limited explanatory framework with valid and reliable instruments, focusing only on statistically significant relations. Thus, meaning and subjectivity are restricted to the limits of measurability. In fact, the world of meaning and

subjectivity of human beings is one of the important issues that distinguish human beings from all other beings. Especially qualitative and humanistic approaches frequently emphasize the importance of understanding the subjective experiences of individuals (Glassman and Hadad 2018, Peker-Dural and Karasu 2023). The tendency of Cartesian and Newtonian understanding to ignore subjective experiences prevents psychological science from fully and holistically understanding human experience.

The Tendency to Mechanistic Analysis of Human Experience: Loss of Capacity to Find Solutions to Holistic Problems

The science of psychology, with two basic approaches inherited from Descartes' dualist philosophy and the Newtonian mechanistic worldview, has de-contextualized the experiences of individuals from their dynamic context by reducing them to independent parts and treating them in a deterministic chain of causality. This has led to ignoring holistic problems (social, ecological, socio-political problems) or, at best, to a controlled relationship with holistic problems from the 'outside'. For example, in the social context, this has resulted in psychologicalization of complex problems such as violence by addressing them only at the individual level, leading to the neglect of social factors such as poverty, deficiency of education and discrimination. Essentially, this perspective tends to ignore the social, ethical and political contexts of human experience. This has been constructed with notions of scientific objectivity and of political neutrality. However, in the social sciences, especially in psychology, it is highlighted that these two notions are actually an ideal or a myth. It is argued that psychology has the responsibility to contribute to the solution of holistic problems and is therefore a 'party' (Göregenli 2003, 2007). In this context, in order to be effective in solving holistic problems, it is crucial not only to produce knowledge but also to seek answers to ethical and methodological questions such as how, for whom and for what purpose this knowledge is produced (Gezici Yalçın and Coşkan 2021). From a critical perspective, it is possible to produce knowledge that recognizes the complexity of human experience and the network of social relations. Considering that the researcher is not only a subject who collects knowledge but also a social actor, such a perspective leads researchers to question their ethical, political and social responsibilities in the knowledge production process.

Summarizing the Dilemmas

Evaluating the dilemmas presented in detail as a whole, the division of the mind and the body/external world leads to a hierarchy in which mental processes are considered as a sphere of existence independent of the body/external world. Thus, the mind is placed in a position that reinforces its authority to shape the external world within the frame of its own perceptions and expectations. This situation strengthens the mind's desire to direct and control the external world and brings along the processes of objectification and measurement. This hierarchical relationship between the mind and the external world leads to a tendency to explain human experiences by reducing them to typologies and stages of development on a mechanical basis, rather than as an organic being. In this framework, the intellectual dynamics of current psychological science, as a reflection of the mind's effort to transform the external world, tend to simplify the complexity of human nature and develop universal theories in this process. The mind not only perceives the external world but also redesigns it according to its own perspective and transforms the results of this design into comprehensive and generalizable theories about the psychological states of individuals. For example, the division between subject and object in psychology is reinforced by experimental designs. The scientist derives his/her authority to 'play games' on the participant through his/her experimental manipulations from this division. This authority obtained in the name of doing science paves the way for the objectification of the participant in the experimental environment. This 'legitimate' distinction made to ensure objectivity provides the researcher with a means of control over the participant. However, scientific legitimacy becomes problematic at this point because the objectification of human beings in experimental design ignores their complex integrity in real life conditions. In this context, the body-mind division of Cartesian thought has become one of the important steps in psychology's attempt to resemble the natural sciences.

Human experience varies spatially, temporally, socially and psychologically according to different contexts. These variations are not a component or factor of experience, but its form. Human experience is a holistic unity formed by the convergence of these diversities (Altman and Rogoff 1987). Therefore, it seems problematic to reduce human beings to psychological characteristics and measurable social relations. Thus, the dynamic human experience turns into static phenomena. The dynamic perspective on the holistic experience is replaced by frozen images of moments. In another word, holistic and dynamic human experience is reduced to psychological qualities and limited cause-effect relationships. After focusing on the part, this process is

embodied in the measurable description of this part and accountable instruments. However, human experience emerges in mutual interaction with changing contexts. Therefore, the endeavor to reach universal knowledge results in ignoring the holistic perspective by reducing human experiences to a very limited area. The dominant traditional paradigm in psychology, with its assumptions based on Cartesian dualism and the Newtonian view, treats the human being as a context-free, mechanical and universal object; this approach does not sufficiently emphasize the social and individual diversity of human beings. Criticism of this paradigm necessitates placing human experience in its holistic context in psychology.

Transactional Approach

The taxonomic origins of worldviews in psychology, including the transactional approach, are discussed in detail in the works of Dewey and Bentley (1949) and Pepper (1942, 1967). In this context, one of the leading theorists of the approach, on the transactional perspective is Irwin Altman (Altman 1990). Before moving on to the transactional approach, it would be useful to define the meaning of the word 'transaction' in the context of this article. As an early example, Ittelson (1973) defines the concept as follows:

> '*In any concrete situation, one does not encounter man and his environment as separate but interacting; instead one finds a total situation which can be analyzed in a variety of ways. ... Rather than defining the situation in terms of its components, the components, including man himself, can be defined only in terms of the situation in which they are encountered. ... Man is nev er encountered independent of the situation through which he acts, nor is the environment ever encountered independent of the encountering individual. It is meaningless to speak of either as existing apart from the situation in which it is encountered. The word "transaction" has been used to label such a situation." (Ittelson 1973).*

The concept of transaction, which Ittelson evaluated in the context of environmental psychology, refers to a perspective in which the individual and his/her environment are not conceived as independent entities, but as components of an integrated situation. According to this approach, human beings and their environment can only be defined in the context of the situation they experience. Human experience can neither be understood by isolating the individual from the environment nor the environment from the individual. In this context, the concept of transaction refers not to the relationship between the individual and the environment, but to the holistic situation encountered and the structure in which the components within this situation are interdependent and mutually shaped. The transactional approach, therefore, proposes to consider the individual and the environment as a whole without separating them from each other. For example, it is not possible to reduce the music on an album to the performance of the artist alone. The meaning of the work is shaped by the artist's pursuit, the musical instruments played, the perceptions of the audience and the environment in which the performance is performed. The musical expressions of the artist emerge under the influence of his/her mood, beliefs and the surrounding cultural and spatial atmosphere. In this context, music is an integrated experience that cannot be separated from the artist and his/her environment. Transactions are like these integrated and mutual experiences (Ittelson 1973, Altman and Rogoff 1987).

Understanding human experience requires considering it together with other people, psychological processes and time-space context. This approach is based on environmental psychology, which analyses the interactions of individuals with their environment in the context of reciprocal relationships (Göregenli 2021). The transactional approach provides a powerful framework for understanding the complexity of these interactions. This approach suggests that psychological processes and environmental factors are not static and unchanging structures; they are dynamic and continuously changing patterns (Altman and Rogoff 1987). Another way of putting it is that there is constant interaction between people and their environment, in both physical and social contexts. The transactional approach provides a descriptive/formal way of dealing with changing patterns. The formal explanation referred to is based on formal causation, one of Aristotle's four types of causes. Aristotle's other types of causes are efficient cause, final cause and material cause. The efficient cause refers to the actor who initiates an action, performs it, or brings it about. For example, the motivating influence of a teacher or a group of friends who encourage a student to study is an efficient cause. Final cause explains the purpose of something or why something is done. For example, an individual's recycling behavior may stem not only from the obligation to comply with environmental norms, but also from the aim of ensuring a sustainable life for future generations. Material cause refers to the material from which something is made. For example, the work performance of an employee may be affected by the physical conditions of the place where he/she lives (a comfortable desk, a quiet room).

Formal cause emphasizes that the fact that a phenomenon or process has a certain form, or pattern is not due to physical or psychological characteristics, but to the organizational requirements of that form (Werner 1987). The main emphasis is on the structural and formal order of an object or event. This approach suggests that formal structure has a priority in understanding cause-effect relationships. The example of Bates (1979) given by Altman and Rogoff (1987) on formal explanation clarifies this concept.

> *"The spherical form of a bubble is not 'caused' by the material qualities of air, water, and soap, by the antecedent influence of someone blowing the bubble, or by the intentions of the bubble blower. In essence, the 'cause' of the bubble's spherical form is a formal one; that is, 'roundness is the only possible solution to achieving maximal volume with minimal surface'"(cited in Altman and Rogoff 1987).*

The formal cause arises from the organizing necessity of a process or structure. In other words, the fact that a process or structure is organized in a certain way means that it is related to the basic rules and regulations necessary to ensure its functioning and organization. This example from the natural sciences can be adapted to the social sciences, in particular psychology, through the transactional approach. The transactional approach is to explain human actions and relationships by focusing on holistic and interactive processes, rather than on the intentions or singular characteristics of individual actors. This approach suggests that the meaning of an event or relationship derives from the internal structure of the whole, beyond individual elements (Altman and Rogoff 1987). For example, the fact that people feel a strong sense of belonging stems not only from individual psychological needs or the material benefits that the group provides to its members, but also from the structural features of the group, i.e. its organizational necessities. The collective meaning of a group's identity provides a 'form' that allows individuals to maintain their identity by integrating different identifications. By converging around common symbols, rituals or norms that define each other, group members construct a collective identity that is independent of their individual characteristics. Similar to the spherical form of the air bubble, a group, through its formal structure, encompasses different individuals and preserves their identities while at the same time maintaining its existence as a whole. Therefore, the main reason for a social group to survive and provide its members with a sense of belonging is the formal possibilities offered by the group structure rather than the psychological characteristics of individuals. In other words, the group identity that creates a sense of belonging is the least conflictual and most inclusive solution through which individuals can define themselves and preserve their differences. To give another example, the interaction between students and the teacher in a classroom environment cannot be explained only by the characteristics or intentions of individuals. This interaction is shaped by the rules, roles and expectations of the classroom. The way the classroom functions depends on how the social system is structured as a whole, rather than on the contributions of individuals. Student-teacher relationships acquire meaning based on the organization and norms of the educational system rather than the individual actions of individuals. The formal cause here is concerned with how the classroom should be most effectively structured as a learning environment. The formal cause explores the meaning of events and relationships beyond individual elements to the structural organization of the whole. Thus, the actions of individuals are not understood as independent of the social, physical and temporal context in which they occur, but as aspects of these contexts. The transactional approach sees the conceptual equivalent of formal cause as a system in which individuals and the environment are inseparably related (Werner and Altman 2000). Similar to the spherical shape of an air bubble, interactions in a social system depend on the functioning and organizational necessities of the system rather than the individual intentions of individuals.

The ways of using formal cause provide a flexible framework for how different aspects of phenomena can be analyzed in research (Werner et al. 2002). Formal cause can be used in the following ways, including but not limited to the following three basic uses:

1. Analyzing patterns among aspects: Researchers can analyze the change (continuity vs. stability) of relationships between phenomena in time. In psychology, this method is common in developmental psychological research. For example, examining how a child's aggressive behavior over the school years is not reduced to individual characteristics or environmental factors alone, but how these two factors interact in time represents a transactional approach to understanding how behavior changes and remains stable.

2. Making sense of coherence and actions: Coherence refers to the way in which transactional aspects are intertwined in a congruent way and form an inseparable whole. By placing individuals' behavior in broader contexts, one can examine how people perform 'meaningful' patterns of action in specific situations. For example, in social psychology, studying how groups organize in times of crisis is a useful example of this use.

3. Combining formal and efficient causes as a research strategy: This use emphasizes not only the interrelation of phenomena, but also the factors underlying these relationships. This approach is suitable for research that aims to understand different layers of causality. For example, analyzing the factors that transform the social interactions of apartment dwellers into the environmental psychology context, while examining which dynamics change or remain constant in the spaces within estates, within apartments and between houses, requires combining two different types of causality. The combination of these three approaches can be used to understand both the meaning of experience and causal relationships, especially in multidimensional research fields such as psychology (Werner et al. 2002).

Formal explanations make it possible to analyze subjectivity. This is because these explanations focus not only on single cause-effect relationships, but also on multiple patterns and how these patterns are organized within a particular context. While the classical understanding of causality usually offers a deterministic perspective in which causes lead directly to effects, formal explanations enable a more detailed analysis by addressing the dynamic nature of relationships and temporal and contextual conditions. This analysis focuses on making sense according to the subjective experiences of individuals and the contextual patterns of situations and events. For example, the decision-making process of a neighborhood resident regarding a project in the neighborhood is not only related to the behavior of the local authority, but also to a large variety of variables such as the individual's personal problems at the time, the social relations around him/her, the physical structure of the neighborhood, and how the individual perceives the situation. Rather than accepting a single factor as determining in this process, formal explanations allow us to understand how the patterns in which the individual is involved affect each other and how the subjective experience of the individual is shaped in this context. Hence, formal explanations go beyond simple deterministic approaches to human behavior and enable a comprehensive analysis of personal perspectives and the multi-layered relationships that the individual establishes with his/her environment (Werner et al. 2002). Moreover, formal explanations provide a means to evaluate the individual experiences of the subject. This is because it focuses on how a phenomenon is perceived not only by external factors, but also from the individual's unique perspective. With this approach, subjectivity and meaning attribution processes in social sciences can be analyzed in more depth within the framework of the individual's unique patterns and their interaction with the wider social structure rather than a static or superficial analysis. The concept of subjectivity implies that an individual's experiences are not only moment specific but also a temporally shaped process. Individuals' experiences are intertwined with past, present and future. For example, a traumatized individual's feelings about the present moment may be influenced by his/her past experiences and expectations for the future. A negative experience in the past may cause a person to experience anxiety when faced with a similar situation in the future. The transactional approach tries to analyze how these temporal aspects are interconnected (Werner et al. 1985, Werner and Haggard 1985).

The transactional approach argues that temporal qualities (e.g. speed, duration, rhythm) are an integral part of phenomena (Altman et al. 1987). These temporal qualities are not independent entities that occur externally to phenomena. Rather, they are considered as a quality inherent to phenomena, a natural aspect of events and processes (Hesse et al. 1988). This approach treats temporal qualities as inherent properties of phenomena in order to analyze how events and processes relate to time and interact with each other. In this way, events are analyzed in their own context, in their natural flow, and a more holistic perspective is approached. Temporal attributes have been used in various transactional approach-based studies to examine various aspects of social relations and spatial characteristics (Werner et al. 1985, Werner and Haggard 1985, Karasu and Cesur 2023). The common aspect of these studies is the acknowledgement of the assumption that temporal qualities are intrinsic to the phenomenon under study.

Temporal qualities enable human experience to be analyzed as a multidimensional field that includes the past, present and future. For example, Werner et al. (1985) argued that the temporal characteristics of houses are interconnected with psychological, social, cultural and physical aspects. Accordingly, the temporal framework encompasses the linear and cyclical dimensions of space and its basic characteristics such as temporal salience, scale, pace and rhythm. For instance, while linear time refers to the change in the uses and meanings of houses from past to present and future, the cyclical time of houses includes daily life, work, seasonal, agricultural developments and religious rituals. These temporal qualities play an important role in shaping the meanings of the house and the relationships established with the house.

Temporal qualities may also be traced through the issue of privacy in the scope of organizing social relations. Privacy is closely related to the processes that define boundaries such as openness and closeness that

individuals exhibit in social interactions, and these boundaries function according to openness-closedness and stability-change dialectics (Altman et al. 1981, Werner and Altman 1998). As suggested by the transactional approach, these aspects of privacy enable individuals to regulate their boundaries in a way that is not only static, but also flexible and variable according to time and situation. The operation of these dialectics is related to the desire for the experiences people seek in social interaction to be both change and stable (Altman 1975, Altman et al. 1981, Margulis 2011). Individuals may sometimes seek close relationships and contact, while at other times they may prefer to isolate themselves from the outside world and remain alone. Similarly, in some cases they seek stability and continuity, while in other cases they seek change and novelties.

An important point in this process is that dialectics do not aim to reach an ideal or final state of social interaction (Altman et al. 1981). In this respect, individuals' regulation of their level of privacy requires a constant search for equilibrium or harmony. Transitions are performed between openness and closeness according to the social conditions that change over time, the internal states of the individual and the needs of the other person. From a transactional perspective, individuals' continuous regulation of their privacy and distance is a required strategy to adapt to the changing dynamics of social interactions. An effective example of this approach is that in their daily lives, individuals exhibit a more open attitude in the work environment and a more closed attitude in private life. In this way, a harmonious balance is achieved according to social expectations and the situation (Altman et al. 1981, Werner and Altman 1998).

The transactional approach argues that analyzing 'events' is the most appropriate way for people's experiences (Altman and Rogoff 1987, Hesse et al. 1988). In this event-oriented approach, it becomes easier to consider the individual's psychological processes, social relations, physical environments and temporal qualities as an integral whole (Werner et al. 2002). For example, the social relationships that children develop while playing are shaped not only by interpersonal interaction but also by the physical environment (e.g., the structure of the playground) and temporal qualities (e.g., the pace of events in the playground).

In the transactional approach, every event or phenomenon is analyzed through four inseparable aspects.

1. Other people are the people in our social environment (e.g., family, friends, colleagues) and social contexts (e.g., school, work environment, neighborhood).
2. Psychological processes are an individual's thoughts, feelings, motivations, cognitions and behaviors.
3. The physical environment is the places where people live or interact (e.g., home, city, nature).
4. Temporal qualities are the temporal framework (e.g., past, present, future) and rhythmic elements (e.g., tempo, duration, change) in which events occur (Altman and Rogoff 1987, Werner et al. 2002).

Concretizing the four inseparable aspects of the transactional approach with an example, for example, it is not adequate to focus only on individual skills in order to address a child's school success. Making sense of achievement requires the interaction of four aspects such as teacher-student relationships (social context), student motivation (psychological process), classroom environment (physical space) and the rhythm of the educational process (temporal aspects). Each of these aspects is interdependent on the other in making sense of the process; therefore, within the transactional approach, no aspect can be addressed and analyzed in a vacuum (Altman 1993). Success can only be explained in the holistic structure formed by the combination of these aspects.

Altman and Rogoff (1997) emphasize that these four dimensions are intrinsically linked to each other by using the term 'aspect' instead of 'part' or 'component'. The basic idea here is to look at how the whole works in order to understand a phenomenon. Understanding an aspect requires analyzing its relationship with other aspects. For example, using the metaphor of an orchestra, it is insufficient to analyze only a single instrument or conductor. The meaning of the symphony depends on how all the instruments, the conductor's direction and the audience's experience during the performance interact together. The orchestra is a whole and each aspect adds meaning to the function of the other.

As discussed before, formal cause is an approach to understanding the structural and relational organization of a phenomenon. This concept suggests that phenomena should be described not only in cause-effect relationships but also within the framework of holistic patterns (Altman 1993). In the transactional approach, patterns may change in the context of time, sociability and conditions. Therefore, researchers should be sensitive to such changes (Werner et al. 2002). For example, neighborhood relations in a neighborhood cannot be explained only by whether individuals comply with social norms or not. They depend on interactions between neighbors that mutually change over time, the physical conditions in the neighborhood and the socio-

economic environment. In such cases, formal reason provides a useful tool for describing neighborhood relations.

Psychological processes help us to understand how individuals interact with others and their environment (Werner et al. 2002, Werner 2003). For example, the relationships that a member of a group builds with the leader of the group and other members influence his/her in-group performance and the development of his/her attachment. These processes should be analyzed not only as a static link between the individual and his/her environment, but also as a dynamic structure that changes over time. Time, space and social conditions are critical in understanding how psychological processes change. While a member of the group may feel calm and relaxed at home, he/she may feel tense and anxious in a crowded group meeting. This shows how contexts shape psychological processes.

Examples of Transactional Approach Studies

There are many psychology-based approaches and research that have directly used the transactional approach or benefited from the transactional perspective (Lewin 1936, Harré and Secord 1972, Barker et al. 1978, Werner 2003). However, within the article, a limited number of these will be briefly outlined. The first of these studies, the 'Christmas Street' study conducted by Oxley et al. (1986), aimed to compare social relations, street attachment and the physical environment in a residential neighborhood during the Christmas period and summer months in the United States. In the study, quantitative and qualitative methods were used in combination and multiple data collection techniques were employed. For example, comprehensive questionnaires were applied to street residents to assess neighborhood relations and levels of participation in Christmas activities. The researchers analyzed environmental differences by photographing the front gardens (physical environment) of the participants' homes. Semi-structured interviews were conducted with residents who actively participated and did not participate in Christmas activities to gather detailed information. In this respect, the research has a multifaceted design enriched with participant observation and different analysis techniques.

The results of the study showed differences between the summer and Christmas periods in terms of social relations and use of the physical environment. It was found that social interactions between neighbors increased during Christmas preparations, whereas during the summer period, these interactions decreased to a great extent. People who interacted in a limited way in the summer engaged in more fluid and intense social interactions during the Christmas period. It was observed that the individuals who decorated the most at Christmas had strong social ties with their neighbors and had a more positive approach to the Christmas Street custom. In the summer, activities in the front gardens were found to serve more individualistic purposes (e.g., spending personal time).

The Christmas Street study presents key findings on how social relationships, psychological attachment and environmental behaviors change in time. The researchers found that there was a congruence between the use of the physical environment, social relationships and psychological processes during the Christmas period, but that this congruence weakened during the summer months. This study contributes to the field of environmental psychology and social psychology by showing that there are patterns between interaction with the environment and social relations in different time periods.

In another study based on the transactional approach, perceptions of barriers to walking to school were examined with fifth-grade students and their parents (Napier et al. 2011). Participants were recruited from three different communities: a walkable new urbanist community (a community where the school is centrally located and designed to be walking-friendly). b) a mixed community (an area with walking-friendly features but where walking to school is somewhat difficult). c) a less walkable community standard suburban community (a typical suburban area with a high density of dead-end streets that discourage walking and where pedestrian access is restricted).

The study measured children's and parents' perceived barriers to walking to school. The differences between parents' and children's perceptions of barriers, comparisons between communities, and the effects of these factors on the body mass index were analyzed. Parents and children broadly agreed on the factors that create barriers to walking. However, parents living in less walkable communities perceived barriers much more negatively than children. It was found that the perception of barriers to walking increased as one moved from a walkable community to a less walkable community. Children in walkable communities were found to walk more than children in other communities and had lower body mass indexes.

This study suggests that walking to school is not only an individual choice, but that this behavior is intertwined with psychological, social, environmental and political contexts. It is emphasized that the design of walkable spaces has a significant role in children's physical activity levels and contributes to a lower body mass index. The research shows that beyond individual preference, environmental conditions and community designs are determinant on children's mobility and health.

The final example is the study conducted by us, which analyses people's temporal experiences through the processes of appropriation of time and space (Karasu 2021). Appropriation is 'the act or process of taking something as one's own or making something one's own" (Graumann 1976, p. 113); this concept refers to the processes by which humans make external and uncontrollable things familiar and attribute meaning to them. This process involves a series of cognitive, emotional and behavioral efforts that people use to make the world around them more understandable and acceptable. In the study, two interviews were conducted with the participants using semi-structured questionnaires guided by the transactional approach. The data were analyzed using the template analysis, which covers four basic aspects of the transactional process (i.e., psychological processes, temporal qualities, social environment and physical environment).

Passage of time is a concept that is characterized by the intensity of conscious processing of information that individuals perform in a certain period of time (Flaherty 2018). If this intensity is high, it is perceived that time passes slowly; if it is low, it is perceived that time passes quickly; and if it is at an average intensity, it is perceived that time flows at a normal pace. However, the subjectivity of the processes of appropriation and the passage of time lead to a more complex structure of these dynamics. In this context, the processes of appropriation undertake a multidirectional function at different perceived passages of time. Another way of putting it is that, depending on the relationship between the self and the situation, appropriation processes can affect the intensity of experience per standard temporal unit (the intensity of conscious information processing). According to the direction of change, the way of time perception is also shaped. If appropriation processes increase the intensity of experience by directing cognitive resources towards time, time is perceived as passing slowly. On the contrary, if appropriation processes decrease this intensity, time is perceived as passing faster. If appropriation processes keep the intensity of experience at ordinary levels, time is perceived as passing normally. These results emphasize the dynamic and multidirectional nature of appropriation processes that increase the diversity of experiences. They also provide important insights into how appropriation works through complex relationships between four aspects of transactional integrity (i.e. psychological processes, temporal qualities, social environment and physical environment).

Although the appropriation of time and space are essentially seen as psychological processes, it shows that these two types of appropriation are actually performed in an intertwined unity of the four aspects of the transactional approach. In this context, appropriation is characterized by a combination of the individual's psychological characteristics, social interactions, spatial conditions and temporal aspects. The emphasis on holism reveals that understanding human behavior is limited to focusing on psychological factors. A holistic approach to a social phenomenon emphasizes that human behavior does not occur decontextualized, independent of temporal and spatial qualities, or even in some cases the real or imagined presence of other people.

Solutions to the Dilemmas

After the theoretical background and the examples with the transactional approach, it is explained as follows how this approach can propose solutions to the dilemmas listed in the previous section of the article.

Highlighting Holistic Approach

The transactional approach can present a solution to the problem of loss of holism resulting from the reduction of human experience to parts. According to this approach, the individual and the environment are not treated as independent parts, but as parts of an intertwined whole defined by mutual interactions. The transactional approach rejects the dichotomies such as mind-body proposed by Cartesian philosophy, arguing that human experience gains meaning through the interaction between other people, psychological characteristics, spatial environment and temporal characteristics. This holistic view allows us to analyze the totality of the four aspects together, rather than viewing experiences only as separate parts.

Highlighting Dynamicity

As an alternative to the Newtonian perception of time, which tends to stabilize human experience, the

transactional approach treats time and change as an integral part of experience. In the Newtonian perspective, since time is universal and unchanging, the relationships between human beings and their environment can be reduced to a static framework. However, the transactional approach emphasizes that the individual and his/her environment are shaped by dynamic and mutual interactions. This approach suggests that the individual and the environment should not be conceived as independent of each other, but as parts of a pattern that evolves over time. The transactional approach rejects the perception of a static experience and recognizes that the interactions between the individual and his/her environment can change in time and addresses the human experience from a perspective sensitive to this change.

Highlighting Complexity

The transactional approach can also present a strong solution to the dilemma of loss of complexity, which reflects the complex nature of human experiences and arises when experiences are reduced to simple relationships. According to the transactional view, the individual and his/her environment are not independent entities; they are continually interacting with components, each shaping the other. With this approach, the relationship between the individual and his/her environment is seen as interdependence and a multi-layered interaction rather than a one-way causality. Hence, the transactional model shows how the complexity and multidimensional nature of experiences are not merely the intentions of individuals or the characteristics of the environment, but rather how each component profoundly affects the other by rescuing the complexity and multidimensional nature of experiences from simplified relationships. In this context, the transactional approach recontextualizes human experience by analyzing the psychological processes of individuals within the temporal context of the social and physical environment.

Highlighting Subjectivity, Locality and Meaning

The criticism that the focus on universality and objectivity leads to the loss of the complexity of locality, subjectivity and meaning can be analyzed with the integrated perspective presented by the transactional approach. Transactional view analyses the individual without isolating him/her from his/her environment and his/her own meaning-making processes. This approach can offer a solution to the risk of neglecting the complexity of locality, subjectivity and meaning by addressing the subjective experiences and local contexts of each individual. In other words, the transactional approach suggests that individuals' subjective experiences in environmental contexts are intertwined with objectively considered environmental conditions and social norms. Unlike descriptive and inferential analyses, which often ignore subjectivity, this approach makes sense of individual experiences in a local and cultural context. In addition, the transactional perspective recognizes that the researcher is not merely an external observer when examining human experience but is considered as a part of the human experience that is addressed in the research process. According to this perspective, the researcher's individual characteristics (e.g., her/his past, cultural background, values) affect the process of making sense of the experience. Therefore, there is a mutual transaction, in other words, a dynamic interaction between the researcher and the analyzed experience, which makes the role of the researcher more subjective. In this way, it enables the researcher to be seen not only as an observer of the experience, but also as a part of shaping this experience. Instead of objectivist approaches that neglect the different social and cultural conditions of individuals in the name of universality, the transactional approach presents an analysis in which each individual is evaluated in an integrated structure with his/her environmental conditions. In addition to all these, the transactional approach can provide a richer and more contextualized explanation by addressing the individual's identity, emotional states and cultural references. In situations where objective analyses are insufficient and meaning is shaped in the continuous and complex interactions between the individual and society, the transactional approach emphasizes the importance of individual experiences.

Highlighting Solutions to Holistic Problems

The weakening of the capacity to generate solutions to problems is deepened by the impact of reductionist approaches that ignore the complex and dynamic structure of modern societies. In this context, the transactional worldview can contribute to the solution of problems by presenting a holistic perspective that emphasizes the interdependent and dynamic relationships between the individual and the environment. Instead of limiting the capacity of individuals to solve problems only to individual characteristics and social conditions, the transactional approach focuses on the holistic structure arising from the interaction of the four aspects of this approach. This integrated perspective can provide a deeper and contextual analysis of the problem, allowing for more inclusive solution proposals. The transactional approach can also bring together

different community members in the solution-generation process, thereby strengthening the capacity of individuals to own and participate in the solution proposals.

The fundamental perspective of the transactional approach is based on three main assumptions: a) People and their environmental contexts are regarded as a coherent and inseparable whole. This means that the elements cannot be defined in a separate way. On the contrary, they gain meaning as long as they interact with each other. b) Temporal qualities are an inseparable part of human-environment interactions. In other words, they do not have an independent entity beyond the topic under study. c) The transactional approach adopts formal causes, which envisages the study of events and phenomena in a dynamic way, focusing on both recurrent and unique experiences. Unlike the classical understanding of causality, this approach emphasizes the interactive relationships of different observers, participants and contexts instead of explaining an event with a single cause-effect relationship (Werner et al. 1985, Altman 1992). The role of temporal qualities in interactions necessitates the consideration of social and spatial contexts when analyzing experiences of time. This approach provides an applicable framework for psychological research to understand the interactions between time and space. For example, individuals' sense of attachment to the neighborhoods they live in is related not only to spatial factors but also to social relations constructed over time.

Transactional Research Guide: A Semi structured Guide for Researchers

As a versatile tool, the transactional approach can be used flexibly for various research purposes and scopes (Altman and Rogoff 1987, Werner et al. 2002). This flexibility allows researchers to select different applications in accordance with specific contexts, research questions and participant groups. This feature of the transactional approach suggests that there is neither a standard nor a best practice model, but rather that the researchers should determine an approach that suits their purpose. As Werner et al. (2002) stated, the versatility of this approach enables the development of different methods and practices. In this context, the transactional approach can provide researchers with flexibility in analyzing different phenomena, freeing them from being bound to a specific method and enabling the development of practices that serve the specific purpose of the research. This allows researchers to conduct more in-depth and holistic analyses and to adapt the transactional approach to the needs of the research. The following outlines an eight-step guideline that we have developed based on our own experience and drawing on the literature presented by Altman and Rogoff (1987) and Werner et al (2002).

Step 1: Develop a Research Question

Research usually begins with a specific question or set of inquiries. Whatever your field of interest, your initial questions determine the direction of your research. The research question can be about different topics such as people's behavior, spatial interactions, social relations or psychological processes. It does not matter whether the research question initially appears to be transactional or not. However, then in accordance with the transactional approach, it is critical to determine at the beginning which dimensions your research problem involves and whether this problem has a social, temporal, spatial context. In formulating your research question, you may be guided by your personal interests, real-life observations, research background, gaps in the literature or complex results. In this way, you can examine the questions that interest you in depth with a comprehensive transactional analysis.

Step 2: Address Your Research Topic in a Holistic Structure

Consider the phenomenon you want to analyze in the transactional framework in four main dimensions: other people, psychological processes, the physical environment and temporal qualities. At this stage, identify the holistic structure of your research question and consider how each dimension interacts with the others. This is the process of holistic thinking. If your study focuses on space or social relations, consider how these aspects together form a coherent whole. This structuring process provides a comprehensive and systematic framework for your research. In this way, you can evaluate the dynamics between the dimensions you want to analyze from a holistic perspective.

Step 3: Determine the Scope of Research and Adopt an Exploratory Approach

In the early stages of the research process, develop as comprehensive a framework as possible and be open to a variety of perspectives. The transactional approach encourages you to explore different aspects of phenomena. In this process, new information may emerge as you collect and analyze your data. These

discoveries may provide valuable opportunities to expand or reshape the scope of your research questions. However, identify specific aspects that you need to focus on in the later stages of the research. This can both provide theoretical depth and increase the applicability of the project. In this context, it may be useful to use techniques that provide the researcher with flexibility and diversity in the research process. In this respect, it is important to ensure methodological eclecticism in the transactional approach.

Step 4: Describe Interrelations between Aspects

Try to understand how the aspects that make up the transactional approach are connected and mutually defined. Although it may be difficult to cover all four aspects in one study, it may be useful to start building relationships through the salient aspect. In some cases, integrity between the aspects may not be achieved. This may indicate some flaws in the application of the method in the phenomenon under study, or it may indicate the complex nature of the phenomenon. The researcher should try to analyze the multifaceted structure in more depth without tending to eliminate inconsistencies.

Step 5: Constantly Review the Data Collection Process

Keep the data collection process flexible and re-assessable. At this stage, be open to new topics that arise during data collection, even if the initial framework or questions are guiding. Particularly with archival material and semi-structured interviews, there may be an increased likelihood of finding unexpected information and exploring the complex views of participants. This is possible by repeating the interviews when necessary or by involving new participants in the process. In this respect, it may be useful to add open-ended questions to the data collection process so that the participants can make different interpretations and present various perspectives. In this way, data can be enriched, and information diversity can be ensured. Incorporating triangulation strategies used in qualitative methods into the research design can yield highly useful results. In particular, bringing together different perspectives by diversifying data sources, researcher perspectives and methods allows for a richer and more in-depth interpretation of the results (Çoksan and Üzümçeker 2023). This strategy has the potential both to ensure internal consistency and to provide more comprehensive answers to the research questions. For example, supporting the interview data with observation findings and archival research analyses enables the research to be addressed in a multidimensional framework. Therefore, the effective use of triangulation strategies can offer both theoretical and practical contributions by encouraging methodological diversity in qualitative research.

Step 6: Gather Information with Multiple Perspectives

During the data collection phase, work with different perspectives and a variety of participants to build a holistic picture of the phenomenon. This step enables understanding and interpreting a phenomenon from different perspectives. It is therefore important to recognize the contributions of various cultural or social groups. In the interviews, try to get at the authentic experiences of the participants. A successful transactional approach study should focus on exploring in depth the 'meanings' that participants attach to events. This means not only examining observed behavior but also understanding how participants perceive events within their individual and cultural contexts. Therefore, uncovering these layers of meaning will increase the depth and validity of the research.

While reaching out to the participants, not only traditional interview methods, but also environments/contexts where individuals can feel really comfortable should be preferred. Whether it is field study or laboratory study, the research environment is highly important. This refers to the environmental and social conditions that may affect the psychological experiences of the individual. These contexts are not only limited to the physical environment, but also include features such as relationships, tasks, the nature of tasks, and the sequence of events in the social environment. Context also includes how the participant perceives, makes sense of and interprets the environment in which he/she finds himself/herself. For example, while a research participant may feel more comfortable in a familiar environment such as home, he/she may feel unfamiliar in a new laboratory environment. This sense of familiarity or unfamiliarity can contribute to the functioning of psychological processes by directly shaping that person's experiences. Context should not be assumed to have universal validity. Each situation may have its own meaning and impact. Therefore, in making sense of psychological processes, it is essential to remember that contexts are different from each other. Interpreting data with all these factors in mind is the basis of a transactional perspective and provides a deeper understanding of psychological processes.

Step 7: Apply Formal Cause to the Phenomenon

In the process of developing a transactional project, the key step that researchers should focus on is to critically evaluate the cause-effect relationships of events or the relationships between phenomena. In this process, it is critical to go beyond efficient cause, which focuses on cause-effect relationships, to explore patterns of relationships between formal cause and phenomena. In this respect, examine the change or stability of patterns between aspects in time and try to understand the conditions under which these patterns emerge. Furthermore, treat events as aspects of a whole by observing how meaningful integrities and interrelations between patterns are formed. This approach provides a way for researchers to understand how relationships form a meaningful structure rather than the surface effects of events. In analyzing events, examining the sequence of events and how this sequence combines to form a meaningful whole gives a more holistic view of the project.

Depending on the research question, you can combine formal cause and efficient cause. This approach provides a more comprehensive understanding of the interrelations between the various aspects of the phenomenon. Thus, by analyzing different time periods, it can be possible to identify how the interactions between the social context, the physical environment and the psychological processes form a structure. This kind of operation is a very effective method for analyzing the interdependence relations between phenomena from a transactional perspective.

Step 8: Balance the Depth and Breadth of the Research

At this stage, carefully evaluate which aspects of the transactional approach to focus on and how much detail to give to each aspect when determining the scope of the study. The most comprehensive studies according to a transactional approach should deal with all aspects in a balanced way, but in more focused projects it may be preferable to emphasize some aspects more and to put others in a secondary role. For example, a study might analyze temporal aspects in depth, but not psychological aspects, another aspect that the transactional approach emphasizes. This narrowing strategy allows the analysis to deepen by focusing only on specific social relations or events. The important point is that in each study the researcher makes intentional choices about how participants, processes, spaces and time aspects are handled and that these choices are in line with the purpose of the study.

Conclusion

Although Cartesian dualism and the Newtonian view provide a firm epistemic basis for the science of psychology, these approaches are insufficient to fully reflect the complexity and holism of contemporary human beings. This situation points to a static understanding that does not sufficiently address the interactions of the basic components of psychology. However, the transactional approach has the potential to overcome these limitations by holistically addressing four key aspects to examine individuals' interactions with other people, psychological processes, the physical environment and time. By analyzing these dynamic patterns, the transactional approach not only presents a theoretical perspective, but also allows for the development of practical solutions in a variety of contexts. This approach contributes significantly to the development of a broader understanding in psychology by offering a more flexible, holistic and interactional approach to the restrictive effects of Cartesian dualism and the Newtonian view. In this respect it provides a basis for a deeper understanding of human experience.

The transactional approach is not the only model that presents an alternative to mainstream understanding in psychology. Critical approaches such as social constructionism and critical discourse analysis also propose different models for comprehending human behavior (Burr 2003, Wodak and Meyer, 2009). These approaches offer critiques of psychology's reductionist and universal knowledge claims, its disregard for contextual and historical specificity, and its weak engagement with real-world problems (Danziger 1994, Gergen 2012, Teo 2012). The common grounds that the transactional approach shares with these critical perspectives, as well as the main points where it differs from them, are important for understanding the epistemological diversity of the discipline. Future research can bring innovative perspectives to both theoretical and applied areas of psychology by examining in detail the intersections, differentiations and potential contributions of the transactional approach with approaches such as social constructionism and critical discourse analysis.

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