Article (Monographic)

The Contextual-Molar Perspective in the Analysis of Addictive Behaviors

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ABSTRACT

The approach of behavioral economics (BE) provides an alternative to the disease model that has guided public policies, research, and clinical practice in recent decades. BE defines addictive behaviors as a disorder of choice and proposes an analysis of these behaviors from a molar perspective, as it emphasizes behavior patterns and contextual variables that go beyond the discriminative stimuli present at the time of consumption. It includes prior factors defined within the space-time continuum, such as learning history and more general variables, such as the social context or community factors. The principles of BE inspire intervention models in the fields of prevention and treatment of addictive behaviors, based on changing life environments. Environmental prevention seeks to limit the availability of unhealthy or risky behaviors (or promote the availability of healthy behaviors) by changing the physical, economic, or legal contexts that influence behavior. In the clinical field, the molar approach of BE emphasizes several mechanisms of change that underlie effective first-choice psychological treatments for addictive behaviors, both with and without substances.

La Perspectiva Contextual-Molar en el Análisis de las Conductas Adictivas

RESUMEN

El enfoque de la Economía Conductual (EC) se presenta como una alternativa al modelo de enfermedad que ha guiado las políticas públicas, la investigación y la práctica clínica en las últimas décadas. La EC define las conductas adictivas como un trastorno de elección y propone un análisis de éstas desde una perspectiva molar, ya que pone el énfasis en patrones de comportamiento y en variables contextuales que van más allá de los estímulos discriminativos presentes en el momento del consumo, e incluyen factores previos dentro del continuo espacio-tiempo, como la historia de aprendizaje y variables más generales, como el contexto social o los factores comunitarios. Los principios de la EC inspiran modelos de intervenciones en los ámbitos de la prevención y el tratamiento de las conductas adictivas, basados en cambiar los entornos de la vida. Así, la prevención ambiental trata de limitar la disponibilidad de oportunidades de comportamientos poco saludables o de riesgo (o promover la disponibilidad de conductas saludables), a través del cambio de los contextos físicos, económicos o legales que influyen en el comportamiento. En el ámbito clínico, el enfoque-molar de la EC pone el énfasis en varios mecanismos de cambio que están en la base de tratamientos psicológicos efectivos de primera elección, de las conductas adictivas con y sin sustancia.

The Biopsychosocial Model: A Cover for the Medical Model?

The key challenge of any theory of addiction is to explain why a person continues with a pattern of excessive drug use behavior, when it produces a variety of sometimes very negative consequences, of which, moreover, the individual is aware. Or, in other words, under what conditions does drug use or any other addictive behavior become a priority behavior, being the least favorable alternative in a context where many other reinforcing activities are present? To explain this perplexing phenomenon, several more or less general theories or models have been developed over the decades, from different perspectives or levels of analysis. In particular, since the 1970s, a multifactorial model has prevailed, supposedly integrating the three basic dimensions that concur in the individual: biological, social and psychological; the so-called biopsychosocial model. Initially proposed by Engel for the study of psychopathological disorders, it was intended to refute the prevailing biological reductionism, so that attention and research would not be blind to the psychological and social aspects, which are essential in the explanation of human behavior (Engel, 1977).

The biopsychosocial model is today an essential reference model, to which almost all professionals, clinicians, and researchers working in the field of addictive behaviors adhere, at least in a nominal way. The basic idea it promotes is that the likelihood of a person using a drug or becoming addicted is not only related to the biological properties of the substance and its effect on the brain, but also to basic psychological processes of learning and socialization, as well as to the social and cultural context in which the individual develops. Recognition of the dynamic, multifactorial and heterogeneous nature of substance use disorders (SUDs) is also applicable to other addictive behaviors and to a wide variety of mental disorders (e.g., Alzheimer's disease, schizophrenia, or depression) and chronic diseases, such as diabetes or cardiovascular disease (Windle, 2010).

In theory, the biopsychosocial model overcomes the limitations of the medical model, according to which drug use and other addictive behaviors are somehow out of individual volitional control, since addiction is a chronic brain disease, which should be evaluated and treated at the same level as these diseases. This approach suggests medical (pharmacological) treatment as the treatment of choice, while psychological therapy is adjunctive (Courtwright, 2010; Leshner, 1997; McLellan, Lewis, O'Brien & Kleber, 2000). However, frequently the appeal to the biopsychosocial model has actually involved a transfiguration of the medical model, sometimes camouflaged under denominations such as "neurobiological model" or others (e.g.,Ferrer-Pérez, Montagud-Romero & Blanco-Gandía, 2024), according to which, this presumed multifactorial causality of the biopsychosocial model ends up causing an internal breakdown (neurobiological dysfunction) in brain structures and circuits. This supposed biopsychosocial model has been acclaimed by psychiatrists and psychologists as if it were not biomedical, seduced by the coupling of psychological and social aspects. It serves in reality as a "talismanic" expression at the service of the *bio-* (a model in reality bio-bio-bio with psycho-social overtones) (Pérez-Álvarez, 2013; Pérez-Álvarez & Fernández-Hermida, 2008), which places biological factors at the basis of mental disorders. Suffice it to show the dogmatism of Nora Volkow, director of the National Institute

on Drug Abuse (NIDA) since 2003, whose institutional page reads: "Dr. Volkow's work has been instrumental in demonstrating that drug addiction is a brain disorder". In her video presentation, she acknowledges the biopsychosocial model, alluding to the different factors—including environmental ones—that affect the possibility of a person becoming addicted. But then she reiterates that addiction is a genetic brain disease that cannot be cured, so treatments, which only treat the symptoms, must be taken indefinitely, like drugs for hypertension. In a recent interview in the journal *Brain Medicine*, asked about her greatest professional achievement, the NIDA director states: "To have provided evidence that addiction is a brain disease" (*sic*) (Genomic Press, 2024). The idea that addictive behaviors and other mental disorders are biologically based brain diseases is pervasive in the US national health care system and in many other countries, and trends in drug promotion, funding priorities, public education campaigns, the language used, and psychotherapy research methodology have progressively adopted the biomedical model in recent decades, neglecting attention to contextual and individual mechanisms of change (Deacon, 2013). Unfortunately, it does not appear that this trend will change in the coming years.

The Behavioral (Contextual) Model as an Alternative to the Medical Model

The contextual approach emphasizes the fact that addictive behaviors are not chronic diseases of the brain, but habits that are reaffirmed and strengthened each time they are performed, in a sort of self-perpetuating process (Secades-Villa, 2022). Brain changes are not the cause of addictions but rather, in fact, their consequence (Lewis, 2017). Addictive behaviors are explained by the same type of functional, interactive relationship between the person and the context that governs any behavior (Secades-Villa, García-Rodríguez, Fernández-Hermida & Carballo, 2007). The context is very complex insofar as it presents several horizons, spatial and temporal, and the contextual risk factors do not occur in isolation, but tend to cluster and accumulate. In particular, the social environment is a complex and multifaceted modulator of the etiology and recovery from addictive disorders, and can act as a protective factor or as a risk factor, depending on the nature of the social context and the drug-taking behavior of the social network. Research has shown that risk contexts, traditionally operationalized as a count of the number of contextual risk factors present at a given time, increases the likelihood that individuals will experience problem drug use and other problem behaviors (Cambron et al., 2020; Sloboda, Glantz & Tarter, 2012). While drug-free social contexts may reduce the likelihood of drug use initiation, the existence of drug-using peers may facilitate initiation and escalation. For example, studies on alcohol use show that the vast majority (around 90%) of people, youth and adults, drink primarily in social groups and not alone (Creswell, 2021). Similarly, the social context can facilitate recovery or function as a barrier that increases the chances of a return to regular drinking (Strickland & Acuff, 2023).

The contextual model aligns with a dimensional conception of psychological problems, including addictive behaviors, and therefore rejects the predominant dichotomous view of mental disorders, which is bent on seeking specific boundaries between them. This dimensional perspective is based on the evidence that

many of the psychological disorders listed as distinct in psychiatric diagnostic manuals share symptoms, clinical course, risk factors, temperamental antecedents and, therefore, response to treatment.

This contextual approach does not disregard individual differences, and it takes into account the decision-making processes that increase the risk of using drugs and developing SUD or other addictive behaviors. However, it understands that these decision-making processes, far from having an immutable nature, depend on the interrelationship with the environmental/social context.

In addition to recognizing the importance of the therapeutic relationship as essential for the proper functioning of psychotherapy (Wampold & Imel, 2021), the contextual perspective adopted here, understands that common factors, such as the therapeutic alliance, are critical but insufficient on their own to maximize treatment outcomes (Hofmann & Hayes, 2018). Psychological techniques, specific factors, are critical in the treatment of addictive behaviors, not because they correct an internal biological or psychological deficit, but because they facilitate engagement in health-promoting actions or reduce unhealthy patterns.

Naturally, the analysis of the problem is holistic and idiographic (each case is unique), and the objective is not exclusively the elimination of the symptom, but the integral change of the person seeking a healthy lifestyle, in line with vital values that are valuable for the person (see the chapter on psychological treatments in this monograph; Secades-Villa, Krotter & Weidberg, 2025).

Behavioral Economics: The Person-in-Context

Behavioral economics (BE) is a hybrid discipline that integrates principles from economics and psychology to explain human behavior. It is based on the idea that humans do not always make rational decisions, as certain psychological factors (e.g., emotional states, attentional biases, memories, or values) can alter decision-making processes and, therefore, decision outcomes, and offers an operant perspective on how organisms choose and consume reinforcers (González-Roz & Secades-Villa, 2022; González-Roz, Secades-Villa, Martínez-Loredo & Fernández-Hermida, 2020).

In psychology, the work of Richard Herrstein and Howard Rachlin provided a molar analysis of Skinner's operant methods and laid the foundation for the emergence of BE (Vuchinich et al., 2023). The matching law (Herrnstein, 1961) related rates of behavior to rates of consequences over time: $B1/B1+B2 = R1/R1+R2$; that is, the relative frequency of behavior assigned to a response alternative is equal to the relative frequency of reinforcement obtained from that alternative. It was termed "molar" because of its focus on the relationship between behavioral rates and environmental event rates (especially, reinforcement) over time, rather than at a precise point in time (Tucker, Buscemi, Murphy, Reed & Vuchinich, 2023). This view changed the traditional approach of Skinnerian behavioral theory in the field of addictive behaviors, which focused exclusively on the temporal contiguity between stimulus and response and between response and reinforcer.

Building on Aristotelian theory, Rachlin articulated in detail the distinction between efficient causes and final causes associated with any behavioral act[1]. Like Herrstein, Rachlin emphasized a molar level of analysis that related rates of behavior to rates of

consequences over time (final—remote—causality), going beyond the efficient (immediate) cause of behaviors (Rachlin, 1992, 1995). Rachlin in no way denies the importance of efficient causal variables of addictive behavior (e.g., negative affective states, craving, or environmental triggers), but rather emphasizes the idea that complex behavioral patterns (such as drug use) are best characterized by an analysis of temporal relationships, which are much broader than the temporal contiguity operating in efficient causes (Vuchinich et al., 2023). For Rachlin (1992), efficient cause in psychology refers to how a particular act is emitted, whereas final cause is designed to answer the question of why a particular act is emitted. The etiology, maintenance, or relapse of addictive behavior are behavioral processes that extend over time and occur in broader environmental contexts that are also dynamic (Witkiewitz & Tucker, 2024). Tucker et al. (2023, pp. 5-6) illustrate with an example the distinction between efficient and final causation:

"Imagine you are interviewing a client diagnosed with a substance use disorder, and he is describing his most recent episode of use. In order to identify the efficient causes of the episode, you want to know about the immediate environmental situation and what the client was thinking and feeling prior to and during the episode. In fact, from an efficient cause perspective, literally everything you need to know to account for the episode is present when it occurs, even if you do not know exactly how and where inside to look. Although you cannot directly observe all those efficient causes during the clinical interview, you assume that they are there and active, having been instantiated in the client's internal psychological mechanisms by his history. In contrast, if you are interested in identifying the final causes of the episode, you want to know how this episode fits into his overall pattern of substance use over time and how that pattern fits into the more general behavior patterns of his life, including love, parenting, work, religion, friendships, finances, etc. In fact, from a final cause perspective, virtually nothing you need to know to account for the episode is present when it occurs (even though efficient causal factors are present and active), because those forces are spread out in time beyond the episode. You cannot directly observe all the components of those final causes during the interview, but you assume that they are there and active and were developed over extended periods of time by his interactions with the world".

From an efficient cause perspective, what you need to know to explain, for example, a relapse episode, is literally all present when that behavior occurs, even if you don't know exactly how or where to look. Although you may not be able to directly observe all of these efficient causes during the clinical interview, it is assumed that they are present and active, and have materialized in the way the person thinks, feels, and behaves in such situations.

In contrast, the final cause perspective of BE is given by the search for general behavioral patterns that are considered to reflect molar behavioral-environmental relationships, including variables such as restrictions on drug access or the availability of alternative reinforcers in the context of choice. Identifying the final causes of the relapse episode involves knowing how that episode fits into their overall pattern of substance use over time, and how that pattern is

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[1] For a deeper understanding of the application of Aristotelian theory to psychology, it is essential to read the text "The four causes of psychological disorders" by Marino Pérez (Ed. Universitas).

articulated in the broader patterns of behavior in their life, including affective relationships, parenting, work, religious beliefs, friendships, or financial situation. In fact, from a final cause perspective, virtually none of what you need to know to explain the episode is present when it occurs, as these final causes, which are active, have developed over extended periods of time in the person's interactions with the world (Tucker et al., 2023).

Addictive Behavior as a Disorder of Choice

As mentioned above, for many years the dominant view of the variables that explained addictive behaviors focused on identifying the efficient causes of drug use, such as immediate environmental triggers or individual psychological states or traits (such as craving, personality, or expectations about the effect of substances) that preceded consumption. The work of Vuchinick and Tucker developed the principles of BE to propose a molar explanation of drug use, especially alcohol use. The focus was no longer only on the psychological state in which the person found themselves at the time of consumption, but also on the contexts of choice that change over time and are complex, due to the high or low availability of other alternative or complementary reinforcers to drug use

BE explains substance use and addiction from a molar rather than molecular perspective, as it emphasizes prolonged patterns of behavior and proportional reinforcement of addictive behavior versus competing activities over time (learning history), rather than isolated behaviors.

The BE approach seeks to understand the psychological principles that influence decisions (cost-benefit), identifying associations between various biases in human decision making and the risk of developing SUD or other addictive behaviors. The basic message of BE is that we humans often make errors in judgment and need a nudge to make decisions that are in our own self-interest. Thus, addictive behaviors are defined as a disorder of choice (Bickel, Koffarnus, Moody & Wilson, 2014) characterized by two fundamental processes: overvaluation of smaller immediate rewards relative to uncertain, time-delayed, yet larger rewards (delay discounting -DD-) and excessive valuation of the reinforcer, the addictive substance, relative to other available alternative reinforcers (demand).

Life is full of choices (temptations) between options that are only rewarding in the short term and options that are only rewarding in the future (do I eat this chocolate cake or do I abstain to stay healthier in the future?). Analyzed in isolation, the outcomes of these decisions may be trivial, but when combined in a pattern of behavior that extends over time, they can strongly influence health and psychological well-being (Rung & Madden, 2018). DD is a measure of impulsivity that reflects the tendency to devalue rewards based on the delay in receiving them, which is associated with reduced access to net reinforcement over time and contributes to maladaptive health decision-making across multiple health domains. Behavior is controlled by events close in time and space rather than by those more distal and abstract. This tendency is also present in other types of problems and, for this reason, DD has been proposed as a transdiagnostic process, not only for addictive behaviors with and without substance, but also for many other mental disorders, such as attention deficit hyperactivity disorder (ADHD), anxiety, depression, posttraumatic stress disorder, eating disorders, bipolar disorder, or various personality disorders, among

others (Acuff et al., 2022; Amlung et al., 2019; Bickel et al., 2019; Brown, Sofis, Zimmer & Kaplan, 2024; Cheng, Ko, Sun & Yeh, 2021; Weinsztok, Brassard, Balodis, Martin & Amlung, 2021). DD thus alludes to a problem of willpower in the form of a biased preference toward the present, in which extra value is placed on more immediate rewards over those more delayed in time, with a consequent deviation from the rational choice paradigm that maximizes the sum of current and future rewards (Ainslie, 2020). In other words, willpower is the psychological function that resists temptations (impulses, bad habits, addictions), the practice of which is limited by its cost (effort), as well as by the person's ability in executive functioning.

Demand is a concept that refers to the reinforcing (subjective) value of a behavior and, in this case, to the excessive valuation of the reinforcer (drugs, gambling, etc.) despite the high price (money, time, resources used, negative physical effects) and the opportunity cost (alternative reinforcers lost as a consequence of drug use: employment, family, health, etc.). Moreover, as the addiction progresses, drugs increase in subjective value (overvaluation), while alternative reinforcers decrease in value (undervaluation). Thus, demand (search for and consumption of the addictive object) also varies according to price and opportunity cost, making the manipulation of these two variables fundamental to the development of strategies to reduce addictive behavior. Based on these concepts, addictive behavior is understood as a pathology of reinforcement, characterized by an overvaluation of a particular (addictive) object, which offers a brief but intense reinforcement, while there is a reduction in the availability of other reinforcing alternatives, as well as a decrease in sensitivity to the reinforcing effects of the same (Bickel et al., 2020).

A related concept is loss aversion, which refers to the tendency of individuals to be more sensitive to the value of a potential loss compared to an equivalent potential gain (Lejarraga & Hertwig, 2022). A growing body of research suggests that individuals who exhibit a weaker influence of potential losses on choices (low loss aversion) have a higher risk of developing substance use problems (Lejarraga & Hertwig, 2022).

Recent research within the BE model provides a coherent framework for incorporating environmental determinants, further integrating the role of alternative reinforcers into a model termed "contextualized reinforcement pathology," which proposes a molar perspective, analyzing discrete drug use events as emergent properties of a broader pattern of behavior that extends over time and involves few restrictions on substance use and limited availability in the context of choice alternative reinforcers (Acuff, MacKillop & Murphy, 2023; Tucker et al., 2023). A key assumption of contextualized reinforcement pathology is that the reinforcing value of a drug is not a natural, objective quality, but is critically determined by the characteristics of the choice environment, such that the observed stability of DD and demand is primarily due to the stability of the low availability of choice context alternatives. The value of the reinforcer (drug) is influenced by variables in different temporal and spatial frames, requiring explanations of distal (molar) causation, so drug use problems lie in the interaction between the person and the context (Acuff et al., 2023). The model of reinforcement pathology defining addictive behavior as a disorder of choice is thus contextual in nature in the sense that the final motivational forces are driven by the environmental context rather

than by internal choice mechanisms (Acuff, Strickland, Smith & Field, 2024).

Conclusions: Implications for Intervention

The molar behaviorism approach and BE have provided valuable insights to understand the individual and contextual determinants of addictive behaviors and to guide interventions to change these types of habits. This perspective demonstrates the critical role of certain motivational processes and contextual variables, such as the availability of substances and alternatives to substance use over time. In particular, the contextual model of BE articulates four mechanisms that increase the likelihood of drug use and, by extension, of any addictive behavior (Acuff et al., 2024): (1) high reward or "benefit" associated with drugs; (2) low restrictions or "cost" of drugs; (3) low access to / engagement with alternative drug-free rewards; and (4) high restrictions to alternative drug-free activities.

Contextual variables go beyond the discriminative stimuli present at the time of consumption, and include prior factors defined within the space-time continuum, such as learning history and more general variables, such as social context or community factors. The value of a substance or addictive object (demand) is not a fixed property, but is continuously influenced by these contextual factors that change over time.

For ethical and practical reasons, most of the studies conducted within the BE approach do not measure individual variables or contextual events over long periods of time, but are based on brief analog (simulated) tasks that ask about hypothetical choices to estimate the demand or value of the reinforcer. These measures, which are mentioned in the article by González-Roz, Iza-Fernández & Alemán-Moussa (2025) in this monograph, attempt to represent the history of reinforcement and reinforcer efficacy that are related to the likelihood and severity of addictive behaviors, according to a final cause perspective.

The molar approach of BE promotes several mechanisms of change that are shapeable by some existing treatments, such as, for example, reducing the value of the substance and/or the rewards gained from substance use, increasing restrictions to the substance (cost), increasing the value of and/or access to alternative reinforcers, or reducing restrictions to alternative reinforcers. These evidence-based interventions are reviewed in the psychological treatments article of this monograph and include strategies such as contingency management, community reinforcement approach, behavioral activation, episodic future thinking, or motivational interventions, among others (Secades-Villa, Krotter & Weidberg, 2025).

The role of contextual variables is also widely documented to explain the onset of substance use or other addictive behaviors (Guise, Horyniak, Melo, McNeil & Werb, 2017; Kuntsche & Müller, 2012). Socially impoverished environments and continued exposure to risk factors limit the possibility of many healthy behaviors and increase health risk behaviors (Cambron et al., 2020). Some environmental contingencies can be modified through public policies and thus create conditions that optimize the capabilities needed for decision making, as well as to maximize the availability of alternative options to drug use and addictive behaviors in general (Acuff et al., 2024). An essential goal of public health policy is to identify such risk factors and develop prevention programs to reduce the onset and transition of drug use in youth and adolescents. Many studies support the usefulness of BE and "choice architecture" to guide programs to prevent addictive behaviors (Thaler & Sunstein, 2021; Tucker, 2018). An example includes certain US programs to promote healthy eating, based on incentive/price manipulation policies, and offering healthy choice options as a default option. Several studies have shown that these approaches increase purchases of healthy products and reduce purchases of less healthy products (e.g., soft drinks and potato chips) (Anzman-Frasca et al., 2018; Bleasdale, Kruger, Gampp, Kurtz & Anzman-Frasca, 2020; Ehrenberg, Leone, Sharpe, Reardon & Anzman-Frasca, 2019). The approach of environmental (or structural) prevention based on the BE model is described in the last article of this monograph (García-Pérez, González-Roz & Burkhart, 2025).

Conflict of Interest

There is no conflict of interest.

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