

Culturo-Behavioral Functional Analysis: Guidelines for including cultural phenomena in the behavior analytic clinical setting

Análise Funcional Culturo-Comportamental: Diretrizes para incluir fenômenos culturais na clínica analítico comportamental

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Abstract: Functional assessment is a tool used by behavior analysts to formulate cases and therapeutic interventions, and is based on the functional analysis method, which consists of identifying contingent relationships between environmental variables and individual's responses. One criticism of a clinical psychology is emphasizing the client's life history to the detriment of cultural contexts. Culturo-Behavior Science (CBS) is a new specialization/concentration in Behavior Analysis providing a framework to investigate cultural phenomena and important social issues. The purpose of this study was to analyze, theoretically and philosophically, notions underlying functional analysis and to propose guidelines for including cultural and systemic phenomena in clinical functional assessments. Conceptual-theoretical research was conducted using the Conceptual Interpretation of Text Procedure (Procedimento de Interpretação Cconceitual de Texto; PICT). Results suggest that the selection by consequences model is consistent with including CBS elements in clinical functional analyses and may also have promising contributions to verbal behavior. Then, applications of CBS concepts (product and interlocked behavioral contingencies) are analyzed. Next, guidelines to culturo-behavioral functional analysis are described. Finally, limitations to current analyses and proposed guidelines are discussed along with possibilities for further dialogue and potential models incorporating systemic and cultural phenomena in the functional analyses conducted by behavioral-analytic therapists.

Keywords: Behavior Analysis, cultural behavior analytic therapy, cultural behavioral science, functional analysis, functional assessment, systems.

Resumo: Avaliação funcional é uma ferramenta utilizada por analistas do comportamento para formular casos e intervenções terapêuticas, baseada no método da análise funcional, que consiste em identificar relações contingentes entre variáveis ambientais e respostas do indivíduo. Existem críticas a uma Psicologia Clínica que enfatiza a história de vida dos clientes, em detrimento do contexto cultural. Ciência Culturo-Comportamental (CBS) é uma nova especialização/concentração utilizada para investigar o fenômeno cultural e importantes questões sociais. O objetivo desse estudo foi analisar teórica e filosoficamente noções que embasam a análise funcional, propondo diretrizes para incluir fenômenos culturais e sistêmicos nas avaliações funcionais. Foi realizada uma pesquisa teórico-conceitual, utilizando o procedimento de interpretação conceitual de texto (PICT). Observou-se que não apenas o modelo de seleção por consequências é coerente com incluir elementos da CBS nas análises funcionais, mas o conceito talvez tenha contribuições promissoras para o comportamento verbal. Posteriormente, aplicações de conceitos da CBS (produto e contingências comportamentais entrelaçadas) foram analisadas e diretrizes para uma análise funcional culturo-comportamental foram descritas. Finalmente, limitações da análise atual e diretrizes propostas foram discutidas, junto com possibilidades de diálogo futuro e potenciais modelos incorporando o fenômeno sistêmico e cultural na condução de análises funcionais por terapeutas analítico-comportamentais.

Palavras-chave: Análise do Comportamento, terapia analítico culturo-comportamental, ciência culturo-comportamental, análise funcional, avaliação funcional, sistemas.

Introduction

Functional assessment is a tool used by behavior analysts to formulate clinical cases and therapeutic interventions. It involves an interpretation of the operating dynamics of the client and is based on an investigation of the relations between behaviors and the environment at all times of the therapeutic process including: initial investigation of the complaint and construction and evaluation of interventions (Ferreira et al., 2021; Leonardi, 2012).

The functional assessment is based on the functional analysis method defined by Toscano et al. (2019) as: “...a identificação das relações de dependência (ou contingentes) entre as respostas de um indivíduo, o contexto em que ocorrem (condições antecedentes), seus efeitos no mundo (eventos consequentes) e as operações motivadoras em vigor” (p. 87). (...the identification of the dependent [or contingent] relationships among an individual’s responses, the context in which they occur [antecedent conditions], their effects in the world [consequent events], and the motivational operations in place [Free translation]).

What differentiates a clinical functional analysis from an experimental functional analysis is the degree of control that can be obtained over the relevant variables; in the clinical context, the degree of control is lower. When used in clinical settings, the functional analysis relies more on interpretation than experimentation; however, the functional analysis is still valuable as a resource to improve therapeutic actions and results (Ferreira et al., 2021; Malavazzi & Micheletto, 2021; Schaitter, 1978).

This understanding of functional analysis in behavior analytic clinical practice has been presented in texts that define the method and justify its use in contexts in which the control of variables is often reduced, such as outpatient care of verbally complex adults

There are terminological inconsistencies in the literature, and the terms functional analysis, functional assessment, and contingency analysis have all been used similarly (Andery & Sérgio, 2001; Haynes & O’Brien, 1990; Neno, 2003; Toscano et al., 2019a; Virués-Ortega & Haynes, 2005), but taking different positions regarding the goals, methods, components, and overall composition of functional

analysis. Neno (2003) states that this difficulty in delimiting the concept of functional analysis is more evident in the literature on clinical application. In the current study we will use the terms functional assessment and functional analysis as defined above and with the elements as depicted in Tables 01 and 02.

In the descriptions of the stages of a functional assessment in behavior-analytic clinical practice, some authors (Andery, 2010; Ferreira et al., 2021; Leonardi et al. 2012; Toscano et al., 2019a; Toscano et al., 2019b) have highlighted the importance of detailed and molecular descriptions (which focus on specific and momentary effects of environmental variables on certain classes of responses) of reinforcement contingencies combined with the developmental history of the target behavior, the client’s life history not directly related to the complaint, and the function of person behavior’s from a molar perspective (which focuses on the broader effects on behavior, even in temporal terms). This set of information is important for the case formulation and intervention proposal to be clearly described, effective, and contextualized, taking into account the specifics of each client.

When including the aspects of a life history not directly related to the complaint, Leonardi et al. (2012) state: “...trata-se da coleta de dados (mesmo que breve) acerca da história de vida do cliente, o que inclui seu desenvolvimento infantil, adolescência, relações familiares, relações sociais e culturais, estudo, trabalho, *hobbies*, etc. A identificação dos recursos existentes na vida do cliente pode ser útil para o planejamento da intervenção” (p. 107) (...it is the collection of data [even if brief] about the client’s life history, which includes their childhood development, adolescence, family relationships, social and cultural relationships, study, work, hobbies, etc. The identification of existing resources in the client’s life can be useful for intervention planning [Free translation]). However, the specifics of these “social and cultural relationships” are not specified or systematically investigated.

Nevertheless, there are some criticisms of actions in clinical psychology that emphasize the life history of clients, often to the detriment of the cultural context in which these clients are inserted. This criticism mainly involves situations in which

clinical practice minimizes cultural differences, contributes to the invalidation of the suffering of non-hegemonic groups and does not contribute to questioning inequitable power relations. Therefore, some initiatives that have sought to broaden the understanding of functional assessment in the field of clinical behavior analysis are beginning to emerge to, for example, reduce cultural disparities between therapists and clients coming from different cultural contexts; or reduce the power disparities that occur, both in the client's day-to-day life and in the therapeutic relationship (Ferreira et al., 2021; Mizael, et al., 2021; Wiltsey et al., 2019). These initiatives to create a more culturally contextualized clinic have focused on behavioral changes from ontogenic analyses. In terms of the phenomena focused on, these works differ from the studies of culturo-behavior science (CBS).

CBS is a new specialization in behavior science that uses principles and techniques from behavior analysis (e.g., Skinner, 1953) and other areas of knowledge such as behavioral systems analysis (e.g., Brethower, 2008), cultural analysis (e.g., Glenn et al., 2016) and cultural systems analysis (Mattaini, 2020). This approach has been used to investigate cultural phenomenon and mitigate important social issues through explorations of the relationship between human behavior and the structures (understood as network of contingencies) that make up the social and cultural environment in which we live (e.g., Borba, 2019; Cihon & Mattaini, 2020; Glenn, 2004; Vichi et al., 2009). Often issues like structural violence, structural racism and structural patriarchy, and other important social issues that are affected by policies and structural systems require a dialogue between and among various disciplines (e.g., psychology, anthropology, biology, education, systems science) for their understanding and transformation (Cihon et al., 2021; Cihon & Mattaini, 2019; 2020a; 2020b). When observing the curriculum described for the verified course sequence and certificate program in CBS (see Cihon et al., 2021), no references to clinical behavior analysis are made. However, it is possible that elements of the analyses and interventions performed by culturo-behavior scientists can be applied to the field of clinical behavior analysis.

In Brazil, the clinical area has expressive rel-

evance among the areas of work of Psychology professionals. According to a survey conducted by the Federal Council of Psychology (CFP), about one third of professionals indicated private practice as the area in which they practice their main Psychology activity¹.

Although clinical intervention usually focuses on individual behavior, people seeking therapy are embedded in social contexts and systems, thus analyses that lead to an understanding of both the behavioral and cultural levels are important for an adequate understanding of their concerns and/or suffering. In addition, the development of methodologies for cultural-behavioral case formulations can help the therapist-client dyad consider the individual, cultural, and systemic effects of therapeutic interventions during the therapy process.

The goal of this study was to analyze the theoretical and philosophical notions that underline functional analysis and propose guidelines for the inclusion of cultural and systemic phenomena in Functional Assessments performed by Behavior Analytic Clinical Practitioners.

Method

The current study takes a theoretical-conceptual research approach. The procedures comprise three phases: (1) selection of texts; (2) Conceptual Text Interpretation Procedure (“Procedimento de Interpretação Conceitual de Texto” in Portuguese - PICT) and (3) systematization of results.

The first step was the selection of fundamental and auxiliary texts. The fundamental texts used were the articles “O uso da análise funcional na literatura brasileira de terapia comportamental: uma revisão teórico-conceitual” (Toscano et al., 2019); and “Research and Training in Culturo-Behavior Science” (Cihon et al., 2021). The first text was selected because it is a current theoretical-conceptual review of the Brazilian literature on the subject and the second text was selected because it provides a definition of CBS and an introduction to the verified course sequence and certificate programs

1 A new census was recently conducted by the CFP, but the results are still being analyzed (Lhullier, 2013).

in CBS recently adopted by the Association for Behavior Analysis International (ABAI).

The selected auxiliary texts were radical behaviorist philosophy papers that define and discuss the concepts of operant behavior, verbal behavior, and their relationship with the determinants of behavior. Texts that were used as references in the fundamental texts and/or were written by the authors of those fundamental texts, about their same subject matter, were also used as auxiliary texts. These discussions are important to characterize the concepts and procedures that should be used in the formulation of a clinical case in behavior analysis. In addition, we also included papers that discuss the formulation of the clinical case, the concept of functional analysis, and those that define the common concepts applied to investigate cultural phenomena in behavior analysis. These texts were derived based on the authors' previous knowledge of the topics.

The aforementioned texts were selected because they provide a current and comprehensive overview of the concepts investigated, which also allowed an opportunity to identify their essential characteristics and the possibilities of theoretical dialogue between them.

Described by Laurenti and Lopes (2016), the PICT is a procedure used to craft interpretations in conceptual research. This procedure can be applied to analyze a concept or a conceptual network of psychological texts, not including the historical dimension of conceptual analyses. The PICT occurs in four stages (1) identification of the main concepts that the text addresses; (2) identification of traditional theses, criticisms, and alternative theses of the text; (3) construction of schemas and, (4) interpretative synthesis.

In the first stage the main concepts of the primary texts are listed, based on the text itself. The research problem addressed is the criterion by which a concept is classified as major or minor. These concepts should be listed and defined literally to reduce the chances of misinterpretation. The first stage is divided into four steps: (1) highlighting and enumerating concepts and doctrines in the text that are classified as important, different research problems may result in different demarcations; (2) searching the text for definitions of each concept and doctrine, it is possible that definitions

will be taken up again in the course of the text and elements may be added; (3) transcribing the definitions in the form of quotations, for this it is important to number the paragraphs of the text; and (4) making a list of concepts and doctrines whose definitions were not found. If the definition of a concept that is fundamental to the research problem is not found in the text, this indicates that the text it is not appropriate for the analysis and other texts by the same author will have to be used. In the case of doctrines that are not defined, it is necessary to look for reference works (in this case the source where the definition was found should be noted, which is important to analyze whether the author is using the standard definition).

The second stage consists of articulating the theses of the text in terms of traditional theses (statements made by other authors and those that are criticized by the author); criticisms (problems of these traditional theses that are mentioned in the text), and alternative theses (proposals in response to their criticisms). This stage establishes the author's position in relation to the investigated concepts and avoids grosser interpretative errors. This stage is also divided into four steps: (1) writing the traditional theses and identifying how each concept and doctrine listed above participates in these theses; (2) writing the critiques of these traditional theses; (3) writing the proposed alternative theses; and (4) grouping and articulating these theses into thematic categories, giving a title, and illustrating this categorization clearly.

The third stage is schematic elaboration. Here it is important to develop outlines in the form of figures or diagrams that represent the relationships found in the analysis, as well as any gaps and problems in the texts. The outline should be able to replace the original text, being sufficient to guide speaking and writing about the text.

At the end of the analysis, it is also important to make a general scheme of each text to highlight its conceptual structure. This analysis was only performed on the fundamental texts.

The fourth stage consists in elaborating an interpretative synthesis of each text. In the present work, interpretative syntheses were elaborated in a final text, which aimed to address the research problem and provide suggestions of hypotheses

and research questions for the academic and professional communities.

The results of this PICT addressed aspects of the concept of functional analysis and some of the behavior analytic principles that are fundamental to understanding the application of functional analysis in the clinical setting. Also, the definition of CBS is discussed. Finally, some guidelines for the inclusion of cultural and systemic phenomena in Functional Assessments performed by Behavior Analytic Clinical Practitioners are presented. We conclude by summarizing the conceptual and methodological approach of the text, discussing the limitations of the proposal, and the possibilities of future research.

Results And Discussion

Functional Analysis in Clinical Practice

Behavior analysts seek to answer the question: Why do organisms behave? To achieve this goal, it is necessary to investigate how individuals relate to the environment, which is usually called functional analysis. In this investigation, behavior analysts need to describe regular relationships between environmental events and behaviors in a way that allows them to explain the behavior, predict its occurrence, and transform dimensions of this behavior and its relationship with the environment (Skinner, 1953; Toscano et al., 2019a; Ulian, 2007). The concept of functional analysis is the main tool of behavior analysis and is anchored in the definition of operant behavior itself, which elaborates an understanding of behavior that is different from the cause-and-effect relationship, widely used by common sense and in other scientific fields.

Skinner was indeed innovative in using the notion of contingency to create the concept of operant behavior. In this perspective, a contingency, of at least three terms (antecedent, response, and consequence) is used to investigate why organisms behave as they do. Thus, one's response is described as a dependent variable, while the environmental aspects (antecedents and independent consequences) are the independent variables that can influence aspects of the response. Therefore, when the behavior analyst claims to be doing a functional analysis, it means that they propose to try to understand the

behavior, not as a result of only one determinant, but as multidetermined and probabilistic.

The differences between the way functional analysis is used in the field of experimental behavior analysis and its use in clinical behavior-analysis have raised relevant discussions for the examination of the specificities of each area.

In an experimental functional analysis, there is a great effort to control the independent variables, because the criterion in this context is to build scientific evidence that can support a plausible discourse on behavior. In the clinical context, the priority is to collaborate with the promotion of health and well-being of people seeking therapy. Therefore, in behavior-analytic therapy, it is common to apply an interpretative functional analysis, the objective of which is to produce a coherent narrative, from the construction of a genuine interaction of intimacy and trust with the client. In this process it is important that therapists observe their own behavior and that of the client, considering the contribution of the relevant theories (Ferreira et al., 2021; Malavazzi & Micheletto, 2021; Schaitter, 1978).

Some authors have investigated the use of interpretations in behavior analysis, emphasizing its importance for the theoretical, methodological, and applied development of the science. Even in the experimental domain, it is possible to verify the use of interpretations to, for example, guide experimental manipulations (Ferreira et al., 2021; Malavazzi & Micheletto, 2021; Schaitter, 1978).

Skinner also used interpretation in a large part of his work. Actually, the Skinnerian concept of operant behavior (behavior that acts on the environment and is changed by the consequences of its actions), first published in 1938, matures over the course of Skinner's career. Initially, operant behavior was built based on experimental empirical research with non-human organisms. Over time, Skinner's writing focused more on human doing, and the meaning of this doing, given by operant behavior is transformed, expanding its object of study. One of the main aspects of this transformation is that Skinner begins to make interpretative analyses of human behavior in society (Andery et al, 2022; Micheletto, 2001; Skinner, 1938, 1945, 1953, 1957, 1969, 1981)

In his book *Science and Human Behavior*, Skinner (1953) writes: “Social behavior may be defined as the behavior of two or more people with respect to one another or in concert with respect to a common environment” (p. 297). Therefore, someone behaves socially when another person is part of the environment (antecedent or consequence) to their behavior. This definition of social behavior is the basis for several other concepts that have been used to investigate systemic and cultural phenomena in behavior analysis. When people work together in a restaurant to cook a meal or when they compete at a football game, they are behaving socially. Different analysis of social behavior is present throughout Skinner’s (1953, 1980) writings.

An important turning point in Skinner’s career occurs when he, in 1957, writes the book *Verbal Behavior*. Skinner (1957) understands verbal behavior as a kind of operant behavior. This idea is clearly put when he begins his book devoted to the theme with the phrase “Men [*sic*] act upon the world, and change it, and are changed in turn by the consequences of their action” (Skinner, 1957, p. 1). With verbal behavior it is also the consequences that select the behaviors, changing the probability that some classes of responses will occur again.

The verbal operant can be defined through a functional analysis of the contingencies to which the organism is exposed within its verbal community - the control of stimuli on the behavior can be found there, as well as the consequences that establish and maintain the behavior.

It happens that the study of verbal behavior further refines the proposal to study private events as belonging to its object of study, which removes Skinner from methodological postures that defend direct observation. The criterion, then, is no longer the agreement, but the possibility that the scientist has to act successfully on the material. Such understanding of doing, here, does not refer only to the criterion linked to the researcher, which allows them to observe, but refers to the very relationship of behavior with the world and with other people.

In Skinner’s later writings, it can be seen that the role of each person’s social interactions becomes increasingly important in the way that each person’s behavior changes the world. When analyzing the behavior of people, the author often

uses the concept of the operant to describe indirect forms of action in the way people interact with their environment, actions that operate through the effect on others. Therefore, in Skinnerian texts, we frequently see behaviors being analyzed as a function of the contingencies present in their social environments, at the human level, and especially in the verbal environment.

In the description of a step-by-step process to perform a functional analysis, Toscano and colleagues (2019) state that the first step is to describe the target response in an accurate and detailed way. So, if a client complains that he has had difficulties communicating, it is important to talk about what this difficulty in communication looks like (topography), how often it occurs (frequency), for how long it occurs (latency), the intensity (magnitude), and its context (background, consequences and motivating operations). The second step is to describe the consequences (immediate and/or delayed) and then identify the effect of each consequence; the third step is to describe the previous situation (discriminative stimulus and motivating operation).

There are also arguments emphasizing that molecular descriptions should be accompanied by other evaluations, similarly important in the construction of clinical cases, such as the analysis of historical variables (history of development of behavior and life history of the client not related to the complaint) and molar analysis of the functioning of the person (Andery, 2010; Leonardi et al., 2012).

In summary, the functional analysis focuses on the current moment, the history of development of the behavior in question, and the general life history of clients. In the context of the investigation of historical variables and molar analysis, some authors mention cultural factors and have discussed the importance of the cultural kind of selection to comprehending the subjectivity, thru an observation of how social contingencies that characterize cultures operate (Leonardi, Borges & Cassas, 2012; Sampaio & Andery; 2012; Andery, 2010; Tourinho, 2009). However, in the case studies in the literature and in the theoretical texts on functional analysis, cultural phenomena have not been discussed systematically, leaving the construction of a methodology for the inclusion of such cultural phenom-

ena in clinical cases incipient (Ferreira et al., 2021; Leonardi et al., 2012). There are, however, proposals that were created to deal with contexts in which there is invalidation of cultural factors, and there are discussions of cultural differences between therapists and clients which have been adapted to the case formulation in behavior analysis. Cultural differences can hinder the success of the therapeutic process in many situations, such as when the professional has difficulties understanding the suffering of the client, uses methods that have been developed in a different cultural context and that have not been adequately adapted to the client's cultural context, or failures to perceive and question power disparities arising from cultural factors (Ferreira et al., 2021; Mizael et al., 2021; Pinheiro & Oshiro, 2019; Wiltsey et al., 2019).

The phenomenon focused on in these proposals is the reduction of cultural disparities or power inequities that occur when engaging with people from different cultures; however, the level of analysis is focused on the operant. The phenomenon focused on in these studies is different from the phenomenon focused on by scholars of Culturo-Behavior Science (CBS; described below). An analysis of potential dialogues between studies on cultural disparities and power inequities at the operant level and in CBS is beyond the scope of this text, but presents itself as an interesting area for future research (Ferreira et al., 2021; Mizael et al., 2021; Pinheiro & Oshiro, 2019; Wiltsey et al., 2019).

Culturo-Behavior Science

The concepts, principles, and models derived from CBS have attracted researchers from different parts of the world, bringing together their different backgrounds and specializations in a coordinated fashion to advance CBS and its applications. CBS unites those interested in analyzing how we can find conceptual, theoretical, and practical approaches to address critical world challenges, like those contemporary clinical therapists' face in their everyday practice.

As a result of the coordinated effort of a group of researchers, Culturo-Behavior Science (CBS) has recently been formalized as an area of specialization within behavior science and ABAI has recently adopted a verified course sequence leading to a certificate in CBS. The conceptual and applied basis of

CBS is founded on behavior analysis (e.g., Skinner 1953); behavioral systems analysis (e.g., Brethower, 2008), cultural analysis (e.g., Glenn et al., 2016) and cultural systems analysis (Mattaini, 2020). In addition, CBS is influenced by a variety of scientific disciplines such as psychology, anthropology, biology, education, and systems science, adopting an interdisciplinary, or even transdisciplinary perspective (Cihon et al., 2021; Cihon & Mattaini, 2020b).

The work of culturo-behavior scientists is based on selectionist and/or ecological principles; therefore, the cultural phenomenon and its transformations through time are the focus of cultural and systemic research and intervention strategies. In other words, CBS highlights the possibilities of a dialogue between behavior analysis and other disciplines to research how human behavior interacts within a system of contingencies (often structural contingencies) that make up its social and cultural environments (Cihon et al., 2021; Cihon & Mattaini, 2019; 2020a; 2020b).

Some applications of CBS concepts target important social matters such as communication, emotional well-being, power differentials, climate change, social justice, etc., in an effort to develop new ways to effectively transform how people interact to each other to improve societal health and prosperity.

Applications of CBS to clinical therapy, and systematically measuring and evaluating the effects of a functional analysis that include cultural phenomena, are desperately needed to develop innovative approaches to changing human behavior and our cultures.

The concepts brought in by CBS might, therefore, be useful to tackle the difficulties of finding ways to systematically provide therapists with conceptual tools to create functional evaluations and measurement systems for marking case formulations and interventions that include sociocultural phenomena (Cihon & Mattaini, 2019; Glenn et al., 2016; Mattaini & Cihon, 2019).

The general CBS principles we are considering here comprise a selectionist and/or ecological approach to analyze how cultural and systemic phenomena can interact with human behavior in a therapeutic process. Integrating the body of research on evidence-based behavioral interventions at the individual level with an intervention founded

in CBS is one way to expand the work conducted thus far, taking it to a whole other level of complexity. Nonetheless, doing so requires the design of an intervention that encompasses both individual and cultural levels of analysis and the creation of a measurement system, based on the understanding that the effect of therapeutic/psychoeducative interventions may have important unpredicted antecedent factors and consequences that go beyond the individual level and affect the system as a whole.

Culturo-Behavioral Functional Analysis: Systemic and Cultural Phenomena in Behavior Analytic Clinical Practice

Selection by consequences: Considering the three levels when performing functional analyses

In the 1980s and 1990s, Skinner was greatly influenced by the methodology used in biology and proposes a determination in three kinds of selection, the environment of the species, the environment that operates in the life of the person and the cultural environment. It is important to note that the proposal to consider these three kinds of selection in the determination of behavior impacts the concept of the operant itself, after all the environment with which people relate with each other includes aspects that go much beyond their life history, encompassing the history of humanity and even the history of life on planet Earth (Skinner, 1981, 1986, 1989, 1990)

When Skinner (1981) proposed the three kinds of selection, was this change in the concept of operant adequately understood or incorporated into daily practices in the behavior analytic clinical field, especially as related to performing functional analyses?

One might argue that when we make an analysis of a life history, we are already considering these three kinds of selection and that they are actually inseparable in any functional analysis, therefore defending that there does not need to be a change in the way we do functional analysis as it leads to unnecessary and redundant terminology.

However, it is worth mentioning that (1) behavioral science has developed studies to transform not

only individual behavior, but also to understand cultural phenomena and transform systems and cultures; (2) by extending its approach to include cultural phenomena and the transformation of systems and cultures, an expansion of the object of study that will be investigated occurs; (3) work with systems and cultures is based on specific concepts, practices and technologies, with ample scientific evidence, which have not been applied to the field of clinical practice and (4) jointly focusing on individual behavior, systems, and culture may be important to develop strategies for action in the field of clinical behavior analysis.

Therefore, it is important to investigate whether the theoretical and methodological assumptions, which have been described with the term functional analysis of behavior, have different elements of conceptual and methodological apparatus that would be used in an analysis addressing behavioral and cultural phenomena, that is, a culturo-behavioral functional analysis.

If it is considered interesting to develop a culturo-behavioral functional analysis, it may be valid to foster the construction of a field of study to investigate how cultural phenomena and the transformation of systems and cultures can be incorporated into clinical case formulations and therapeutic intervention proposals, by incorporating elements of CBS to behavior analytic therapy. A potentially fruitful dialogue could be done with CBS professionals and clinical professionals specialized on the different approaches to behavior analysis therapy such as: Terapia por contingências de Reforçamento (Therapy by contingencies of Reinforcement) Acceptance and Commitment Therapy; Functional Analytic Psychotherapy, Dialectical Behaviour Therapy (DBT) and others.

When observing the curriculum described for the training program in CBS, no reference of application of these concepts to the field of behavior analytic therapy was identified. Perhaps there is a gap to be explored by training researchers and therapists in CBS and also by training CBS professionals on specific concepts and techniques used in behavior analytic therapy. Therefore, a dialog between CBS professionals and behavior analytic therapists and researchers might be useful for theoretical and applied purposes.

When a behavior analyst works in the clinical field, one of the primary goals is to help the client learn to conduct their own functional analysis. This means that therapist and client must build strategies to increase the chances of clients observing their own behavior, understanding why their behaviors occur, and how they can improve their relationship with the world around them. But what concepts should we use when functionally evaluating the behavior of people in the context of behavior-analytic therapy? Additionally, what is the relationship of this functional analysis with concepts that refer to systemic and cultural phenomena?

We can imagine a situation in which Paula, a white, heterosexual, cisgender woman, says she feels overwhelmed with housework and childcare. She believes that this is why she takes her anger out on her husband, Mateus, a cisgender white heterosexual man. In addition, Paula says she needs to be more organized, to work harder in her professional life, and to stop complaining so much, to stop being so annoying. When asked by her therapist Érica, a black, heterosexual, cisgender woman, about an example in which she had taken her anger out on Mateus, Paula describes a situation in which she had just put the couple's son to bed, as she did every day, when Mateus asked her if she was upset. Paula replied that she didn't like the fact that Mateus worked until so late and didn't collaborate with the house chores and the care with the couple's son. At this point Mateus said that this was nonsense and that he was working. He also said that Paula needed to nag less and focus on her professional life.

Paula reports feeling ashamed for the "picking on" attitude with her husband, after all he was working, and also for being reminded of how she needed to refocus on her professional life, looking for work, given she hadn't been able to return to the job market since the couple's son was born. She also reports feeling very sad when thinking about her professional life at that moment, because she felt insecure when looking for a job because she had been systematically passed over after the interview phase for the position of architect. She says that Mateus tried to console her by saying that he was happy that they had talked about the subject and invited Paula to relax by watching a movie, as the couple's son was already asleep.

Paula also reports that these fights with Mateus have been constant and intense, creating an environment of unpleasant interactions between the couple, which sometimes occur in front of their son as well. She says that their son has been more nervous lately and that when she talked to her parents about the situation, they encouraged her to try to be more understanding with Mateus. In addition, she says that she has heard comments from other people in Mateus' extended family about how important it is for a woman to keep the house tidy.

When asked by the therapist about her professional life, Paula reports that she is an architect and has a good resume (e.g., she has a university degree and complementary courses related to the position she has applied for). She also reports having passed the resume analysis and the specific knowledge tests, but has been repeatedly passed over in the final phase of the interviews and submission of documents.

In a situation like this, the therapist should formulate a functional analysis as a set of strategies to investigate complaints presented, build a way to understand what is happening and look for alternatives. We can observe, however, that not all the determinants of Paula's behavior in the previous example are suitable to experimental analysis. When a person arrives at a therapist's office there are already many historical variables of their life's history and the history of culture that predate that moment and even predate the lifetime of clients and therapists.

Therapists often address historical aspects in their functional analysis when they ask questions about the clients' life history, their childhood, their relationship with their main caregivers, their school life, their work, and history of interpersonal relationships, for example, but can differences in the context be explained by resorting only to these factors? And if it's important to focus not just on the client's life history, what concepts should we use to do this analysis?

In the case of Paula and Mateus it is possible to observe that Paula's clinical case can be formulated using the ontogenetic level, using analyses that focus on the responses of each spouse, the consequences of these responses, the stimulus control involved, the history of development of the behaviors focused on, the life history of each spouse, the pat-

tern of relationships of the couple, the functioning of each in terms of repertoire and behavioral reserve. It is also possible to observe the social context in which one is inserted and the social contingencies involved in this context.

Would analyses based on the approach described above be sufficient to include cultural and systemic phenomena in the way that such phenomena have been used in the field of culturo-behavior science? We argue here that they do not, and in the next section we will discuss this issue and present some elements that could contribute to a culturo-behavioral approach to the functional analysis of Paula's clinical case.

Proposal of Guidelines for a Culturo-Behavioral Functional Analysis

This section presents some guidelines to perform a culturo-behavioral functional analysis. The guidelines proposed here aim to draw the attention of the scientific community to the specificities of a dialogue between the field of behavior analytic therapy and the CBS approach in the construction of functional analysis as a method, not exhausting the number of guidelines that can be important on the subject.

The four guidelines are to focus on (1) behavioral, systemic, and cultural phenomena; (2) the history of the development of the behavior and the history of the development of the culture and the system directly related to the behavior; (3) the client's life history and the history of the culture and system in general; and (4) the functioning of the client in terms of behavioral reserve and behavioral repertoire and the functioning of the cultural environments and systems in which the client is inserted, especially aspects that could support the client's advancements.

A CBS approach to the behavior analytic clinical therapy means to incorporate cultural phenomenon and its transformations through time encompassing cultural and systemic intervention strategies. Would such an approach be useful to understand what is going on in Paula's situation described above? Is Paula's behavior interacting within a system of contingencies (often structural contingencies) that make up her social and cultural environment? Would discussing this system of

contingencies (often structural contingencies) that make up Paula's nuclear family, extended family, and work be useful for Paula to be better able to describe her situation adequately and think about appropriate strategies in terms of intervention goals?

The field of CBS is composed of some different approaches to cultural phenomena. The purpose of the present paper is not to exhaust the possibilities of those interventions or even to present one CBS approach in depth. The goal here is to argue about the usefulness of working on a dialogue between CBS and the behavior analytic clinical field. Next, we present one of the most basic concepts in CBS and apply this concept to Paula's case.

Applying the Concept of Product or Aggregate Product when performing functional analyses

Many behavior scientists working in organizational settings often integrate the concepts from CBS. Organizations can be defined as "...behavioral systems formed by individuals' interactions (IBCs) toward a common goal" (Houmanfar et al., 2009, p. 258). Clients who seek therapy are undoubtedly participants in organizations as they study, work, and live in families and society. Is it possible that some elements of behavioral systems analysis (BSA), which have been carried out by behavior analysts in experimental and applied ways when working with organizations, can be effectively applied to therapeutic work in the clinic?

One of the main concepts in BSA is the concept of "product" or "aggregate product" (AP). We can imagine, for example, the following situation: Carlos is a man who receives a warm hug and a "Thank you very much for supporting me in this new job!" from his husband Mauricio, who just came home from work and saw a pile of washed dishes. If Maurice's hugs and thanks reinforce Carlos' dishwashing behavior, these would be the sustaining consequences, while the washed dishes would be the product of Carlos' behavior.

It turns out that often the product is not the result of the behavior of only one person, but is the result of organizational processes and even the functioning of the organization as a whole. This means that when a company produces computers, it is the result or product of many workers engaging

in various behaviors that, when coordinated, contribute to the production of these computers (products). Such products can also be services, as when a company provides cleaning services for households; the workers' behaviors result in the product: clean households.

A detailed explanation as to how to perform an analysis of organizational practices is beyond the scope of this work (however, see Diener et al., 2009; Houmanfar et al., 2021; and Malott, 2003). Nevertheless, the importance here is to question whether it is possible to use the concept of a product to better understand Paula and Mateus's child care and Carlos and Maurice's housekeeping. Moreover, would the concept of an organization (as defined above) also offer insights that can be useful to understand how a marriage works?

Let us go back to the example of Paula and Mateus, in which Paula feels overwhelmed with the care of the house and the couple's child. Is it possible to classify a tidy house and a child exhibiting healthy behaviors as the product not only of the behavior of one spouse, but as the result of the couple's interactions?

The concept of product is linked to other concepts present in the CBS literature and especially in the metacontingency literature (cf. Glenn, 2004; Glenn et al., 2016) that could be used to perform analyses of this kind. In a presentation on what CBS is for the Brazilian audience, Aureliano and Pessoa (2017) point out that an in-depth study of the concept of products in the literature on metacontingencies, which details differentiations that other approaches include in the term product only. It is also beyond the scope of this article to offer a greater detail about such specificities, but it is important to question the possibility of applying the concepts used in the literature on metacontingencies to investigate how cultural phenomena can be included in the functional analyzes performed in the field of clinical behavior analysis.

Questions that could be pertinent in the construction of a behavioral functional analysis of Paulas' case in the field of the behavior analytic therapy would be: "Have you noticed in what situations you feel overwhelmed?"; "What happen right after you complain about being overwhelmed?"; "What your parents use to say when you com-

plained about situations you didn't agree with?"; "How do you deal with limits with co-workers?"; "How do people in your work market deal with woman with young kids" and "What are the long-term effects on your relationships with people, when you agree with their conditions so often?"

In a culturo-behavioral functional analysis, the questions would also focus on culture and the system as objects. Therefore, questions such as the following would also be asked during the therapeutic process: "Have you ever noticed in what situations you and your spouse have more difficulties managing the care of your child?"; "How do people react when you and your spouse have some difficulty negotiating the care for your child?"; "What are the long-term effects for you as a couple and as a family when you cannot negotiate these conflicts well?"; "In your families of origin, how is the division of domestic labor usually organized and how has this division changed over time?"; "How did the division of domestic labor between men and women in Brazil typically look a hundred years ago, and has this division changed to the present time?"; "What are the consequences of these changes in the division of domestic labor for women today?"; "Paula, what groups could you be validated for talking about the situation you are experiencing with Mateus?"; "What impact does the behavior pattern that you and Mateus have developed on your son's behavior and how can you objectively evaluate this impact?"; "When a person in your extended family observes your son's angry behavior, how do they react and what is the effect of this reaction on the couple's relationship pattern?"; "How do you think the state has valued women's work in the domestic sphere and what is the effect of these policies on the way you negotiate the division of labor in your home?"; "How can you contribute to changing the way your family and/or company talks about division of household chores and valuing work in the private sphere, improving the situation for you and other people in your surroundings?" In a culturo-behavioral proposal this second set of questions presented would not replace the first; both could be performed concurrently in an investigation of behavior, systems, and culture if the therapist thought it pertinent. Such questions would not need to be asked as discrete questions, but could be jointly

analyzed in the course of the conversation between therapist and client. The intention of this kind of analysis would be to create opportunities for Paula to understand how her behavior relates to cultural and systemic phenomena. In this sense, it is important to increase the chances for Paula to observe how the cultural and systemic context impacts her behavior and also how her behavior can contribute to changes in this cultural and systemic context. Therefore, it would be necessary to train therapists and researchers versed in the literature of CBS and the literature used by behavior analytic clinical practitioners to formulate clinical cases based on culturo-behavioral functional analysis.

Culturo-behavioral functional analysis and intervention in clinical practice may open opportunities for therapists to relate levels of ontogenetic and cultural analysis, considering short and long-term effects, for clients and other people or groups that are somehow significant to the therapeutic process. That would happen because the operant behavior of the clients could also be analyzed as part of cultural analyses, as when Paula's operant behavior and Mateus's operant behavior are analyzed not only from operant concepts, but also using the concept of product.

It is possible that the clarity and precision of the behavior analytic language, combined with the emphasis on the therapeutic relationship is an opportunity to think about yourself and about your behavioral and cultural environments, as well as about the systems in which each person is inserted and could build repertoires of self-knowledge and transformation at the ontogenetic and cultural levels in clients seeking therapists with a culturo-behavioral approach.

But how can behavioral concepts like stimulus, response, consequence, and establishing operations relate to elementary concepts in CBS like the concept of product? Different approaches in CBS propose different ways of thinking about these relationships. BSA, for example, works with the concept of performance on three levels of analysis (behavioral, process and organization level), while the literature on Metacontingencies proposes the concept of interlocked behavioral contingencies (IBCs) that would be selected through a functional relationship between IBCs and aggregated products

in a Metacontingency. In all these proposals, verbal behavior figures as an important aspect for thinking about the relationship between behavioral, systemic and cultural phenomena. In the next session, we will examine some aspects of the Skinnerian definition of verbal behavior and how it can provide us with elements to build a cultural-behavioral approach to verbal behavior.

A culturo-behavioral science approach to the definition of verbal behavior

It is important to start summarizing the Skinnerian option to define verbal behavior as operant behavior, which is specified among other operant behaviors, because its consequences are mediated by a listener - this listener being someone who had his consequential behavior modeled by a verbal community (Skinner, 1957).

This definition of verbal behavior has undergone several criticisms over time, among other reasons, because the verbal behavior of the speaker is explained using its effect on another person (the listener who needs to have been trained by a verbal community).

In his book *Verbal Behavior*, Skinner (1957) devotes only one chapter to the verbal community and mentions in this chapter that a functional analysis of the verbal community would not be part of the book. However, it is worth questioning whether, when dealing with specific clients, who are part of specific verbal communities, would it not be interesting to reflect together on the cultural and systemic aspects of these verbal communities, and in which conditions certain responses are reinforced. It can also be interesting to think about how the behavior of the client impacts the verbal community.

The Skinnerian definition of verbal behavior points to investigating the effect of the behavior of listeners - that resulted from the training experienced in their verbal communities - in the behavior of speakers. It is possible that a CBS perspective could contribute to discussions about this Skinnerian option to include a listener trained by a verbal community in the very definition of the concept of verbal behavior. A CBS approach to verbal behavior would highlight elements already present in the Skinnerian proposal, which localize the determination of verbal behavior in the three kinds of

selection and not on internal constructs. Therefore, investigating verbal behavior, from a CBS approach, can contribute to integrate the field of CBS with studies on private events, feelings, thoughts, values and other aspects related to verbal behavior.

In the chapter “Psicoterapia e Análise do Comportamento” (Psychotherapy and Behavior Analysis [Free translation]) Silveira (2019) presents a perspective consistent with the culturo-behavioral analysis of therapists’ and clients’ verbal behavior in the therapeutic setting, because it is anchored in skills training so that the person learns to functionally analyze their behavior, understanding this behavior as part of a system and a cultural context, that also needs to be observed.

Silveira (2019) proposes four layers of deepening seeing. In the first layer people interact with things (non-verbal) and it can occur when someone picks up a glass of water, for example. In the second layer people interact for pragmatical results, or to satiate a need with others outside of the pain-love-compassion trinomial² (requires verbal community) and can occur when someone interacts using intraverbals or mands outside of the pain-love-compassion trinomial, like when a person asks what time is it. In the third layer of seeing the repertoire of seeing oneself acting is installed (requires special community) and is installed when someone asks another person how he or she feels at that moment. Finally, in the fourth layer of seeing, people are trained to seeing themselves alive (requires special verbal community that reinforces seeing oneself alive) and a repertoire is trained in which the person learns to see his or her locus installed and maintained by interactions with others in the trinomial pain-love-compassion. It occurs when we ask someone, what meaning the work the

person performs daily has for them and the people in their community, for example.

Silveira (2019) states that therapists should be a special verbal community that teaches clients to do functional analysis, that is, to see oneself alive. In the definition of seeing oneself alive a person would be able to see themselves as part of a system that includes not only their history, but the history of the culture and even the history of the universe.

Special environments that install and maintain seeing oneself alive would therefore need to evoke behaviors that lead people to analyze how their individual behaviors are affected by and affect systemic and cultural phenomena in which they are embedded. Therefore, for therapists to be effective in installing seeing oneself alive repertoires in their clients, it is important that therapists use behavioral, systemic, and cultural concepts in their functional analyses.

Applying the concepts of Interlocked Behavioral Contingencies and Metacontingencies when performing functional analyses

Interlocked behavioral contingencies (IBCs), can be defined as contingencies in which one person is an environment for the behavior of the other. (Glenn, 2016) Returning to the example of Paula and Mateus, we may have a situation where Mateus frequently behaves in a coercive manner and Paula frequently submits to such coercions. If this pattern of couple interaction occurs on a recurring basis, it is possible to describe this pattern as a pattern of abusive relationship. We can also analyze the relationship between the couple’s IBC (which we define as an abusive relationship) has, as an aggregate product, a negative impact on their child’s mental health. In case Paula and Mateus’s extended family overshadow Paula’s complaints about a better division of domestic work, it is possible to describe this extended family as having a role of selecting a culturant that we can call a traditional nuclear family, which strengthens a situation in which Paula is overburdened, as she has less access to resources such as time and fewer opportunities to dedicate to personal activities.

The concept of metacontingency was described by Glenn et al. (2016) as a contiguous relationship between (1) IBCs that have an aggregate output and (2) selecting environmen-

2 The pain-love-compassion trinomial claims that the knowledge we have about our pain, the inclination for the good of others (love), and to spare people from pain (compassion), can be combined into a condition that unifies the members of a culture, making these people feel part of humanity. The interdependent learning of pain and care would be consistent with a Skinnerian interpretation of the connection between people. However, the Silveira (2019) states that the implications of this understanding of humanity according to the three levels of selection is still underutilized by behavior analysts in the clinical area.

tal events or conditions. Applying this concept to the example we are describing, we will have a contingent relationship in which the culturant traditional nuclear family (composed of Mateus and Paula's abusive relationship pattern, which has as an aggregate product a more tense and irritable child) and the selector environment traditional extended family (Paula and Mateus's extended family). In this contingent relationship, the traditional extended family acts by selecting the traditional nuclear family, as Paula and Mateus's relatives act with the couple as if they should maintain an inequity in the division of labor in the private sphere. These attitudes of Paula and Mateus' extended family may play an important role in maintaining this pattern of the couple's relationship and also in diminishing the health of the child, even inadvertently. It is even possible that the people who make up the traditional extended family describe their actions as being based on values of protection and care of women and children, for example, but the effects on the nuclear family of Paula, Mateus and their son may be contrary to these descriptions.

Final Considerations

This study sought to investigate the theoretical and philosophical notions that underlie functional analysis and, from this investigation, to propose some guidelines for including cultural and systemic phenomena in the functional assessments done by behavior analytic clinical practitioners. The guiding question here was "What factors should be considered when we seek to include systemic and cultural phenomena in functional assessments in the field of behavior analytic clinical practice?"

According to the discussion presented in the last session of this article, the Skinnerian selection by consequences model supports the proposal to include elements from CBS in the functional analyses performed by behavior analysts in the clinical field. Therefore, it would be interesting if researchers from both areas (CBS and behavior analytic therapy) could develop research methodologies and applications to investigate effective possibilities of dialog.

It is possible to observe that some concepts such as the concept of product and other concepts that have been used to perform systemic and cultural analyses might bring light to aspects of the clinical cases that have not been emphasized in case formulations and therapeutic interventions. It is also important to highlight possible implications of the study of culturo-behavioral functional analyses in clinical case formulations and therapeutic interventions for the field of verbal behavior.

Regardless of the proposed systemic and cultural approach, it is important that therapists make choices about which concepts they prefer to use by constructing coherent methodologies that utilize operational definitions of systemic and cultural phenomena, proposing theoretically consistent ways of linking ontogenetic and cultural selection types in their functional analyses.

Next, it is also important to extend the measurement systems in the case studies to incorporate measurements of the systemic and cultural aspects relevant to the clinical cases studied. And finally, data-based decisions must be made, considering the analyses of the data in a cultural-behavioral way. This study investigated some initial concepts and did not intend to exhaust the possibilities of applying CBS to the field of clinical behavior analysis. Thus, there are still many possibilities of investigation and detailing about this dialogue and the construction of models that incorporate cultural and systemic phenomena in the functional analyses carried out by behavior analytical clinical practitioners.

Table 1. Guidelines for Conducting Behavioral Functional Analysis compared with Proposed Guidelines for a Culturo-Behavioral Functional Analysis

	Culturo-Behavioral Functional Analysis	Behavioral Functional Analysis
1	Behavioral, Systemic and Cultural Phenomena	Behavioral Phenomena
2	The history of the development of the behavior and the history of the development of the culture and the system directly related to the behavior	The history of development of the behavior
3	The client's life history and the history of the culture and system in general	The client's life history
4	The functioning of the client in terms of behavioral reserve and behavioral repertoire and the functioning of the cultural environments and systems in which the client is inserted	The functioning of the client in terms of behavioral reserve and behavioral repertoire

Table 2. Core Defining Characteristics and/or Changes that a Clinician would need to make to conduct a Culturo-Behavioral Functional Analysis (CBFA)

Core Defining Characteristics and/or Changes that a Clinician would need to make to conduct a CBFA	
1	Identify behavioral, systemic and cultural elements (i. e. products, organizations, IBCs, systemic actors) in the clinical case formulation and consider those when creating interventions.
2	Make operational definitions of behaviors and of systemic and cultural elements directly related to the behaviors.
3	Discuss with the client about their life history and how it relates with the history of the important systems and important cultures in their life and how it relates to the problem.
4	Discuss with the client about their functioning in terms of behavioral reserve and behavioral repertoire and how those relate to the functioning of the cultural environments and systems in which the client is inserted. What are the systems and cultural environments where this behavioral reserve that maintain this behavioral reserve and behavioral repertoire and the impact of those on the client and other people with whom the client cares about.
5	Design and consider measurement systems for behavioral, systemic and cultural phenomena.
6	Collect data for behavioral, systemic and cultural phenomena.
7	Change behavior and patterns of client-therapist interactions, based on the results of data collection of behavioral, systemic and cultural phenomena.

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