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A note on functional analysis: liberalization and redefinition

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Abstract

The functional analysis is a major component of the initial interviews and assessment in clinical practice. The present note discusses some difficulties of the construct and examines both explicit definitions and implicit definitions in the current practice. Specifically, we stress the logical difficulties deriving from causal assumptions and the importance of focusing on observed empirical relations. We maintain that functional analyses, in clinical practice, are located inside the initial assessment and act in order to identify possible variables that maintain target behaviors. A wider definition of functional analysis is also proposed.

Introduction

The chief aim of the initial clinical interview is to examine the problem, identify and specify it, and place it within a more ample scenario composed of all the problems and characteristics of the patient, viewed as an individual, as a member of a family, and as a socio-relational unit. A functional analysis is generally said to play an important role in assessment, and part of the initial interviews is devoted to it.

In behavior therapy, a functional analysis aims at identifying functional relations. A functional relation simply implies a relationship between two variables so that the variation in a parameter of one variable is associated with the variation in a parameter of the other variable. For example, the interpersonal distance between A and his/her interlocutor, B, may vary in relation to the varying tone of voice of B; sleep latency may change in relation to the level of tension/relaxation provided by self-monitoring during the hours before sleep; the frequency or intensity of over-eating or self-induced vomiting in bulimic patients may vary in relation to some conflictuality markers with a significant figure like the mother; and evening drinking in relation to working stress in a surgeon or a truck-driver (quantified as "hours spent in the operating theatre" or "hours spent driving").

There is no specific method of conducting functional analyses, and in practice, there are several very different methods. One of the most common is the collection of observations over a more or less long baseline period. These are then gone over with the patient, discussed, and interpreted in the light of general psychology principles. Direct observation is the exception rather than the rule. The most frequent methods are self-monitoring, filling in hourly or daily forms, and keeping diaries. In any case, the results of several interviews and careful collection of data (recordings, observations, etc.) allow the identification of some functional relations of importance in understanding the case and defining the most appropriate treatment.

Surprisingly, even today, functional analyses have been shown to be reliable. In particular, it has not shown that psychotherapists who assess the same patients independently reach the same conclusions at the end of their respective functional analyses. Nor has it been shown that a correct functional analysis has any influence on the effectiveness of subsequent treatment.

There is a considerable lack of precision in the very definition of functional analysis, and the ways in which it is interpreted and implemented vary greatly. In fact, those who speak of functional analysis often mean using the following:

- Stimulus-response investigations (Wolpe 1977);
- A chronological model in which every behavior is immersed in a continuum of situations (stimuli) that occur before or after it;
- An analysis grid of antecedents and consequences, such as the so-called A-B-C (antecedents, behavior, consequences); and
- Multimodal grids, sometimes with acronyms such as Lazarus' s BASIC ID.

From the historical and epistemological viewpoints, the concept of functional analysis lies in the conflict (still unresolved to a great extent) between structuralistic and functionalistic approaches. According to the latter, we cannot be content with reconstructing and understanding a patient's behavioral, cognitive, and emotional structure and topography; we must also set everything inside a context (situational emphasis) and inside functional relations. What do we really mean by functional relations? First, a relationship of causality does not necessarily exist between two functionally connected variables; there may be functional reactions of a causal variety, while others may be more simply co-relational. In a functional relation, the independent variable may be related to the dependent variable in one of the following four conditions: necessary but not sufficient; sufficient but not necessary; necessary and sufficient; and neither necessary nor sufficient (co-relational).

The functional relations involved in behavioral and cognitive clinical work are also:

- Probabilistic and not deterministic;
- Non-exclusive (e.g., the fact that there is a demonstrated functional relation between depression and neurotransmitters does not preclude an equally demonstrated functional relation between depression and cognitive distortions);
- Transitory and changeable over time (e.g., a certain patient's response to pain may originally be a function of organic factors, and functional relations with socio-environmental factors may later intervene);
- Valid inside a certain domain of applicability, so that it may be necessary to specify the boundaries of that domain, avoiding incorrect extrapolations; and
- Different levels among themselves (e.g., the conjugal problems of a colored immigrant may be linked functionally, on the plane of socio-cultural macro variables, with difficulties in inter-ethnic communication, and, at the same time, with micro variables such as the frequency of insults hurled at him by his wife).

One of the reasons for the interest and spread of functional analysis when behavior therapy started becoming popular was certainly due precisely to the methodological and epistemological advantages of not having to adventure into some of the metaphysical difficulties of psychological causality or the behavioral causality of individual patients.

According to Haynes and O'Brien's (1990) definition, functional analysis is "the identification of important, controllable, causal functional relationships applicable to a specific set of target behaviors for an individual client" (p. 654).

It appears unjustifiable to limit it to causal relations alone. The functional reference is probably still an acceptable alternative to the metaphysical dangers inherent in exclusive attention to causal variables and the search for causal relations. But there is also a second and more substantial reason. As we have seen, "functional analysis" is more of a result than a method, which the therapist may reach by means of various procedures (traditionally used in clinical assessment) and by means of an analysis of data of varying complexity and reliability. A functional analysis is thus part of the more ample process of the initial assessment. For example, in the above definition, a functional analysis is attributed to assessment phases that precede something that is far from automatic, like the identification of "a specific set of target behaviors." The presence of a working alliance between patient and therapist is also presumed to be implicit. It would seem today, at the theory's current level of complexity and the practice of behavioral and cognitive psychotherapy, that there is no space for an autonomous theory of functional analysis; rather, the potentials (both theoretical and operative) connected with the concept of functional analysis should be absorbed into a general theory of clinical assessment.

At this point, it may be useful to introduce the following alternative definition:

In the practice of cognitive and behavioral psychotherapy, functional analysis is that part of the initial assessment which aims at identifying functional relations which are important for an understanding of the maintenance variables of the problem (or disturbance) and/or for better definition of the most appropriate treatment for a certain patient.

This proposed redefinition requires the following clarifications:

1. We do not need a theory per se of functional analysis; both temporally and conceptually, it is located inside the initial assessment. That is, it straddles the initial interviews and self-monitoring operations (or other recordings or observations) that take place while identifying of the disturbance.
2. What is added to identification of the problem is the attempt to identify "important" functional relations with other variables, not necessarily causal.

3. These functional variables may be collocated on several different levels, e.g., contextual, intra-family, and intraconjugal, and often relate to the patient. They may also be physiological, psycho-physiological, cognitive, emotional, behavioral, etc. They are indeed often hypothetical variables or logical constructs and in turn refer to other variables that may be accessed more directly (constructs such as self-efficacy, anxiety, and reinforcers).
4. Choosing the appropriate level of the relations to be explored derives from psychological and, in particular, psychopathological and psycho-therapeutic culture, i.e., something in continual evolution as our knowledge grows. Of particular importance here are psychopathological models that suggest hypotheses regarding "important" relations between disturbances (or their specific aspects) and significant factors in the pathogenesis or maintenance of the disturbance.
5. It should not escape our notice that the term "functional analysis" includes a conceptual and inferential "possible product," which the therapist reaches by the intelligent, non- automatic use of various assessment methods. In all real cases, we are dealing with hypotheses, but certain hypotheses may be more convincing than others (Cone 1997; Haynes 1998; Bisset & Hayes 1999).
6. The many assumptions that the patient and therapist must make remain unavoidably strong; for example, choosing the level and type of functional relations to be taken into definite consideration, and the degree to which some variables are to be considered "important" and others less so. The inferences and assumptions that the therapist and patient are obliged to make in a functional analysis are not very different from those involved in the general assessment model mentioned above, and the "objective" character of functional analysis, at least in the practice of behavior therapy, is more apparent and rhetorical than real.
7. The result of a functional analysis is a better understanding of the variables maintaining the disturbance. Hypotheses regarding actions aimed at interrupting self-maintenance feedback or modifying external maintenance factors may be formulated.

The functional analysis characterizes and qualifies the assessment of the case (and consequently the initial interviews) using a behavioral and cognitive approach. I believe that the functional analysis has had a glorious past, in the framework of behavior therapy, and that its good points should be preserved. The assumption that an individual's behavior has meaning inside and outside the relationships in which it is located is undoubtedly still true. Currently, there is an idiographic emphasis and subsequent trend toward individualized case formulation. I also believe that the functional analysis has no future unless it is collocated inside a wider theory of clinical assessment.

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