

THE GENERAL SYSTEMS THEORY: AN ADEQUATE
FRAMEWORK FOR A PERSONALIST CONCEPT OF
HEALTH?

I. INTRODUCTION

The conviction that a reductionist view of the world and the exclusive application of the analytical method in science have not been able to give us either an adequate theoretical framework or good operational models for health and health care underlies most of the contemporary literature on the so-called 'health crisis 2000'.¹ A concern shared by many authors interested in this topic is the need to overcome the old reductionist models of health and to provide an approach that does justice to the human person *as a whole*.

In the last few decades, different approaches to the concept of human health have been proposed. A number of these 'new' definitions can be grouped under what I shall call here 'systems conceptions of health,' because they are grounded on the General Systems Theory. Such definitions intend precisely to do justice to the person as a whole, and to overcome the shortcomings of reductionist approaches to the human person in medicine. We find examples of this in the theories of authors such as Anderson (1984, 1988), Caplan (1981), Capra (1983), Dubos (1979), Engel (1960, 1977), Kaplun (1992), Lazlo (1972), Noack (1987, 1988, 1991), Purola (1972), Sobel (1979), and many others.

The task of this paper is to test whether General Systems Theory succeeds in providing a cogent theoretical framework for a truly personalist conception of health. By 'personalist' I understand a conception of human health that includes the category of 'person' in the basic characterization of what health is. Proceeding as if one could understand human health without reference to the personal character of the being whose health it is marks the fundamental difference between the various conceptions I have called reductionist above and any personalist conception, which is based on the fundamental idea that one cannot understand human health without reference to human personhood.

I shall argue that despite its valuable contributions and broad acceptance, a number of difficulties arise from the attempts to grasp the specifically personal dimensions of human health by applying the General

Systems Theory. Thus, some of the conceptions that appear to be non-reductionist turn out in the end to reduce the datum of health and the human person to a non-personal equilibrium of purely material factors. But already the irreducibility of life to matter proves the irreducibility of health to purely material functions. Moreover, there are also some difficulties with respect to the account of individuality and personhood given by the different systems conceptions of human health.

Therefore, I shall argue that understanding human health requires the introduction of new categories. Indeed, there are specifically human and personalist dimensions of health that need to be explicitly addressed in a conception of health that does full justice to the nature of the human person.

II. THE SYSTEMS CONCEPTION OF HUMAN HEALTH

Before entering into a discussion of the positive and negative aspects of the systems conception of human health, I find it necessary to present some basic principles of the General Systems Theory, especially those concerning more directly the understanding of the phenomenon of life and the nature of the human person, in which any definition of health has to be grounded.

A. The General Systems Theory

Conceived in the middle of this century, the General Systems Theory became popular during the seventies and continues to be widely accepted and applied in the various fields of science to this day (mainly in computer sciences, but also in social and political sciences as well as in theoretical biology and medicine). It can be considered as the present paradigm² in theory of science.

General Systems Theory understands itself as a “general science of wholeness” (Bertalanffy, 1968, p. 37). The principal aim of this theory is to attain, with a high level of abstraction, knowledge of the most general principles that explain the structural similarities (‘isomorphisms’) and the organization in different realms of being. Thus, it searches for an understanding of the unifying principle of reality.

The Austrian theoretical biologist Ludwig von Bertalanffy (1952, 1963, 1968, 1975) was one of the originators of this theory.³ He concludes that

“the unifying principle is that we find organization at all levels” (Bertalanffy, 1968, p. 49). Classical analytic method tends to dissect a given phenomenon in order to study the behavior of its different parts separately, afterward reconsidering the whole as the sum of the parts. Systems perspective instead proposes a synthetic approach to reality, focusing the attention on those phenomena that need to be understood as organized wholes. In other words, the General Systems Theory intends to attain an understanding “not only [of] parts and processes in isolation, but [of the] problems of order and organization unifying them, resulting from dynamic interaction of parts” (Bertalanffy, 1968, p. 31).

Within this conception, the world is seen as a series of hierarchically ordered systems continuously interacting with each other. A ‘system’ is defined as a “set of elements standing in interaction” or as an “organized whole” (Bertalanffy, 1968, p. 38). According to this perspective, there are different levels at which we find the phenomenon of ‘organized wholeness’, such as a cell, an organ, a living organism, a community, the society, the world or even the cosmos. Depending on which level seems to be more adequate for the study of the phenomenon we are focusing on, one defines this level as a system. The necessary and sufficient condition for defining a system at any level of being is to discover the ‘principle of organization’ unifying the different elements constituting it. Organization is thus conceived as the unifying principle, i.e., that which accounts for the unity of a system at any level.

Bertalanffy conceives of the principle of organization as the most general unifying principle of reality. But organization is in turn considered to be the result of the order of processes of interaction between the different parts or elements of a system. Thus, the unifying principle of reality is conceived in a dynamic way, i.e., in terms of dynamic relationships or processes of interaction. As a result, the concepts ‘dynamism’ and ‘process’ assume a central role within the systems perspective. Capra writes that “to think of reality in terms of systems means to think in terms of processes” (1983, p. 295).

According to this theory, the hierarchical order of systems (the levels of organization) cannot be arbitrarily changed; it is, so to speak, given. What actually changes is the perspective or point of view from which we look at reality, trying to come to an understanding of it. Nevertheless, the perspective we choose in each case is left up to us, according to the specific level of organization we are focusing on. This approach to reality is, therefore, called ‘perspectivistic’.

In this hierarchical order of systems, each level of organization shows specific properties that can neither be reduced to nor derived from the properties of lower levels, but which arise from this specific level of organization as a whole. In other words, the new properties of higher levels of organization do not arise from the parts as such, but from the relations or dynamic interactions between them. The assertion that the “whole is more than the sum of its parts” and the recognition that this whole compared with its components has new properties and modes of action are two fundamental postulates of the General Systems Theory.

B. The Systems Conception of Life

Bertalanffy's application of the systems approach to problems of theoretical biology gave rise to the so called ‘organismic conception of life’. To grasp the nature of life is perhaps one of the most difficult problems of the philosophy of nature. For the sake of brevity, I will roughly group the different historical attempts to account for the unique phenomenon of life into two main streams: the vitalistic and the mechanistic conceptions. Bertalanffy's theory was conceived as a ‘third way’ between these two classical alternatives.⁴

According to his organismic conception, living organisms are defined as self-organizing unities, characterized by their capacity to preserve a ‘steady state’ (‘Fließgleichgewicht’)⁵ through a constant exchange of matter, energy and information with their environment. For Bertalanffy (1968, p. 158) this is the “fundamental mystery of life.” In order to account for what he considered to be the essential mark of life, namely self-organization, this author found it necessary to introduce the notions of ‘open systems’ and ‘steady state’. Since these notions are basic presuppositions of the present systems definitions of human health, I shall unfold their meaning here.

Bertalanffy's notion of ‘open systems’ intends to point out the essential difference between living beings and physical systems, which are by definition closed systems and which, according to the second law of classical thermodynamics, tend spontaneously to a state of maximal disorder. The peculiar capacity of living beings to preserve or produce order from disorder (‘negentropy’), maintaining themselves as organized wholes rather than disintegrating, results, according to Bertalanffy, from the continuous exchange of matter, energy and information with the environment.

Thus, the defining feature of living systems according to this author is the fact that they are open, i.e., that they constantly incorporate new matter, energy and information, which allows them to preserve their order and organization in spite of the spontaneous tendency to disorder we encounter in nature. Thus, the above-mentioned key role that dynamic processes of interaction have for the General Systems Theory becomes even stronger in its particular application to living beings. "The basis of the open-system model is the dynamic interaction of its components" (Bertalanffy, 1968, p. 150).

On the other hand, according to Bertalanffy, precisely this 'openness' and the continuous processes of interaction account for a second essential mark of living beings, namely the capacity to preserve a 'steady state'. Bertalanffy's notion of 'Fließgleichgewicht' refers then to an essential feature of living systems, namely their unique ability to maintain a peculiar type of balance: a 'flowing balance'. This notion is based on the empirical demonstration that all the matter making up an organism is replaced within a specific period of time, which varies depending on the species and the particular organs and tissues.⁶ Nevertheless, despite this constant renewal of their constitutive elements, living organisms are able to preserve their specific structural and functional unity. Bertalanffy's notion of 'steady state' refers precisely to this fact.

Thus, in the organismic conception of life, both the structural and the functional unity of a living system are explained in terms of dynamic processes. What constitutes the apparently lasting (static) structure of living organisms is not really static but a result of very slow processes of permanent loss and gain of matter and energy. On the other hand, the functional unity results from the order of faster processes of interaction.

C. The Systems Conception of Human Health

The results of applying the General Systems Theory to defining human health can be shown through examples of what I have called 'systems conception' of human health.⁷ Some of the authors referred to above are very explicit in stating that the General Systems Theory is the theoretical framework for their definitions of health.⁸ Others do not mention their theoretical background, but as soon as one becomes familiar with the basic concepts of the systems perspective, it becomes easy to recognize the common features resulting from its application to defining human health.

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