


## Multidisciplinary relationships between holism and design

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### ABSTRACT

In epistemology, part of philosophy dedicated to the multiple ways in which we approach the great questions of knowledge, there are types of knowledge, such as design, that cannot be explained only by their claims to true knowledge – as is the case with the so-called "hard" sciences – but by way of acquisition, the degree of order they establish in the world. the direction they provide to the lives of human beings and the progress they bring to humanity.

This knowledge does not "accredit" the rationality of its conceptual structures (rationality that for many is synonymous with authority and hierarchy), despite being true, it is the knowledge coming from daily experiences or perception as is the case of design whose orders escape the common possibilities of verification and, as Bertrand Russell stated,

[...] All knowledge of what is in the world, if it does not refer directly to facts known by means of perception or memory, is to be inferred from premises, at least one of which is known to us by means of perception or memory. (Russell, 1976: 136)

In spite of these difficulties, it is valid to recognize as a starting point and methodological resource, the accumulation of phenomena that throughout history have been called "design" and the objects that emanate from it, called "the designed". This makes it feasible to find criteria to determine the object of study called "design" and once this is achieved, to establish the epistemological characteristics of the discipline being studied, this determines the so-called Design Theory. From this, it will be possible to create hierarchies and epistemological warps that are intradisciplinary – coming from the very essence of design practice and its particular methodology – multidisciplinary – linked to theories common to disciplines from common foundations, such as the visual arts, communication or architecture, among others – and interdisciplinary – emanating from the diversity of relationships between the disciplinary universe and design methodology. From whence originate, for example, the pedagogy of design, the psychology of design, etc.

**Keywords:** Holism, Methodology, Epistemology, Design.

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## INTRODUCTION

### DESIGN KNOWLEDGE

The importance of design comes both from its search efforts and from its critical nature, from the capacity that unfolds to judge or discern from the analysis of circumstances and contexts and the synthesis in what is designed. Design is above all *critical knowledge* that, moreover, by its conditions of materialization, is imprinted on consciousness. Design gives an account of itself, it explains itself and therefore it is ordered, systematized knowledge that allows us to move from knowledge to knowledge to explain its objects.

Design is order and as such it also finds in it its source of authority in the face of incoherent, dispersed knowledge incapable of giving an account of itself, which does not explain or explain itself.

On the basis of systematic knowledge, analysis and synthesis, as well as man's productive capacity, the world has evolved in a remarkable way. This has been shown in the ability to think to solve different human problems and generate objects to meet people's needs, thanks to science, philosophy, technology and design. We emphasize the epistemological level, which favors the construction of the theoretical object, but at the same time orients towards the selection of a methodology and consequently towards the set of research techniques that are related to the way of knowing an object of study. (Rabe, 2014, p. 32)

The designed, by relating knowledge, is a mediator between them and its objects give unity and meaning, direct and orient, show a fragment of the world as a universe of knowledge where the diverse and dispersed referred to intentional forms finds its unity. Design thus becomes a discipline ordered by the knowledge that it itself implies and integrates, leaving aside the formless and diffuse knowledge produced by the simple perception that distinguishes the common receiver from the designer, whose purpose is never abandoned to chance and unpredictability.

The epistemology of design defines it as a systematized order that constantly generates knowledge, which fulfills the requirements of unity, rationality and temporality of knowledge in which the principle of rationality is specified, which merges the categories of being and thinking whose understanding, like its reality, is intersubjective.

The concordance between knowledge and facticity is possible in design because reality in what is designed is rational, it starts from the realm of perception but is processed through conceptual series that range from intentionality to media coding, it differs from the knowledge of the common receiver in that it rests on (ideological) coincidence, lacking permanence and true universality. Its condition is transitory because it can and in fact is constantly replaced, which is why visual, objectual or any other designed character messages have a constant becoming, "it limits itself to knowing that fact of becoming, adopts the concept of time as the main category and proceeds from there to explain how things are..." (Nicol, 1974: 482)

Knowledge in design is the assertion of the constancy of its fundamental categories.



## TO UNDERSTAND THE EPISTEMOLOGICAL CONSTRUCTION OF DESIGN

In the history of the theory of knowledge, the *Novum Organon* of Francis Bacon (1561-1626), who is considered the founder of inductivist empiricism, and the discourse of method by René Descartes (1596-1650), who is considered to have introduced modern deductivist rationalism, are recognized as fundamental paradigms.

[Descartes concluded that] "in our search for a direct route to truth we must not concern ourselves with any object which cannot attain to a certainty equal to the certainty of the proofs of Arithmetic or Geometry" [...] we might venture to say that these words could be synthesized in the philosophy of Descartes. Of course, *Cogito, ergo sum* is the first principle of his philosophy, but blind faith in mathematical evidence and irrefutability was his common thread. (Fernández et. al., 2006, p. 404)

Bacon's inductive method continues the tradition of Aristotelian classification by discovering distinctive characteristics from it, comparing objects that had them with those that did not. Descartes, based on the analytical method applied to geometry, postulates a simple model used today in a recurrent way by students described in four steps: identify the objects of study with clear and distinct ideas, divide them into simple elements, proceed from the simple to the complex and confirm the meticulous follow-up.

Francis Bacon was not a man of science and many of his fundamental proposals for scientific activity were never put into practice. However, much of what modern science is today, as well as what we usually identify with it, originates in its ideas. Bacon presented himself, and in fact was, as the mentor of a project, a herald who announced with the optimism of his time that new and better times were approaching for all humanity, in which there would be a different form of appropriation of nature by man. (Manzo, 2004, p. 277)

The confrontation of both methods translates into a complex history of the theory of knowledge starring Locke, Berkeley, Hume, Leibniz, Spinoza and Kant whose doctrine of apriorism in the application of induction presents a problem (Popper, 1973: 30) in the consideration, reproduction, affirmation and conceptual generalization that structures knowledge in this way:

- Major Premise: Laws and Theories
- Minor Premise: Conditions Involving
- Conclusion: explanations and predictions

The above syllogism exemplifies how the conclusion is no longer a fact and cannot be proved by any fact

Karl Popper, like Feyerabend and Kuhn, holds that both observations and their statements are not neutral or pure, but depend on theories of varying degrees of generality and complexity, that these always precede empirical statements, necessarily formulated in conceptual language and consequently as fallible or precise as the latter. (Popper, 1973: 40)



From Popper's perspective, knowledge is understood as a set of assumptions made from problems, not from perceptions, nor from observations, nor from compilations of data or facts. that every empirical statement necessarily depends on a theory and is therefore fallible.

The thesis that theories do not depend solely on empirical factors and can only be refuted by other theories finds its most complete formulation in Thomas Kuhn's concept of paradigm (inherited from Aristotelian philosophy), which basically means a conceptual model whose mastery means the solution to an enigma, understood as a special category of "problems that can serve to test ingenuity or the ability to solve them." (Kuhn, 1971: 70)

## HOLISTIC DESIGN

These conceptions, heirs of Kantian formalism, reduce the problem of knowledge to the problem of method, make it dependent on the method, and erect the scientific method as the exclusive receptacle of understanding and rationality, as if the human being, divided, thought and knew by means of different principles and rules depending on whether or not his object of study or his epistemological attitude was scientific. It is worth mentioning here that scholars such as Archimedes, Galileo, Newton, Einstein or Watson have developed their theories in ways other than those approved by official science.

At some point, the logical positivism of the "Vienna Circle" with English empiricism tends to formalize and unify the language of this proposal in order to avoid the gibberish and pseudo-problems arising from its careless use. In this group, which includes Neurath, Schlick, Carnap, Hempel and Ayer, Bertrand Russell should be highlighted, for whom the main thing is the study of structure. Russell's method is, in its own description:

[...] Starting from something vague, but enigmatic, from something that seems undoubted, but that I cannot express precisely. I follow a process that is like seeing first with the eyes and then examining it with a microscope [...] fixing the attention there are divisions and distinctions where none was visible at the beginning [...] there are many who condemn analysis, but it has seemed evident to me that analysis brings new knowledge without destroying any of the previously existing knowledge. This is true not only in relation to the structure of objects, but also in relation to concepts. (Russell, 1976: 137-138)

In contrast to Popper's theory is the thought of Imre Lakatos, who understands scientific knowledge as structured totalities where concepts acquire meaning through definitions and through relationships between them. Lakatos argues for the existence of theoretical nuclei made up of universal statements.

Regarding this problem, it is essential to continue investigating and debating the implications of the epistemological paradigm of the relationship between the whole and the parts with respect to social-historical existence, which has led virtually everyone to admit that in a totality, the whole has absolute determining primacy over the whole and each of the parts. that therefore there is a logic that governs behavior. The possible variations in the movement



of each part are secondary, without effect on the whole, and recognized as particularities of a general rule or logic of the whole to which they belong. (González, 2007, p. 340)

Each core is based on application conditions, relationship rules, etc. They guide the interpretation of the basic statements. Logical structuralism is a rationalist philosophical conception that attends "to the way in which elements within a domain of unspecified objects are related and how they relate to each other." (Ferrater Mora, 1994: 1125). What is designed, in short, appeals to this epistemological stance given that in design:

[...] Comprehensive processes, as well as the way of knowing, occur syntagmatically, that is, through integrative developments in which the knowledge that precedes is contained by the knowledge that proceeds from novel understandings. Events and situations that express reality are perceived and attended to according to the various ways in which they occur, in order to generate a comprehensive dynamic that establishes relationships and fosters the discovery of the integral meaning of things. Hence, holistics is also a call to develop integrative, participative notions in general about any aspect where the human being is present. (González, 2007, p. 340)

## CONCLUSIONS

Logical structuralism gave rise to multiple ramifications of thought, among which are anthropological structuralism, represented by Levi-Strauss and his text *Free Topics* (1955), considered by some to be the origin of the concept; linguistic structuralism in which the main currents include Saussure, Peirce, Chomsky, Morris and Jakobson, among others; psychological structuralism that leads the *Gestalt* movement with Wertheimer, Kofka and Köhler; historical structuralism, represented by Dilthey, who laid the foundations of historicism, or analytic structuralism, identified by the theory of general systems, originating a movement that pursued "the unification of science and analysis" (Young, 1972, p. 35), whose introduction and perspectives were expounded by the biologist Ludwig von Bertalanffy.

The concept of structure does not coincide in the different disciplines in which it has been expressed, although it is true that it proposes a vision of the whole. It is possible to resort to alternative methodological supports such as holism in a qualitative approach.

[...] It is characterized by emphasizing the description and understanding of the unique and particular, rather than generalizable things. In this way, it is possible to proceed to the comprehension and critical reflexive knowledge of the reality studied, from the meanings and intentional purposes of the committed individuals. Its main purpose is to obtain an approach to the subjective world of people and to reach the knowledge of reality from the perspective of the research subjects and their own context in an experiential way, in accordance with their expectations and needs [...] It is important to mention that qualitative research is based on a principle of flexibility [...] (Carhuacho, 2019, pp. 15-16)

In conclusion, let's go back to the beginning. Human beings, says Rubert de Ventós, "have a rare tendency to believe that things are clear and conclusive when they are explained to us in terms



that we do not fully understand" (Rubert, 2004: 11), and, in the demands of globalization, to attend to multiculturalisms, pluralisms and eclecticisms.

Design research is always mixed, it promotes an in-depth diagnosis (it analyzes, explains and synthesizes the phenomenon under study and the resulting need), it supports alternative solutions that lead to a feasible and viable solution to be carried out to obtain significant changes, improvements, strengthenings and innovations in the face of what the design problem has expressed.

[...] So, a problem can be studied from different approaches, so the holistic view in research [of design and design] is very important, since it interprets, analyzes and understands the information, collected through different instruments and techniques. However, this diagnosis is based on a proposal, based on an innovative type of study called projective [it is a] logical sequence in mixed research [...] (Carhuancho, 2019, p. 17)

Holism is thus a methodological alternative for design. Designers will need to consider both the origin and character of the problem in order to consider the holistic view as a working option. The truth is that the holistic vision does not cancel out, but rather adds to other possibilities. It must be accepted that, at present, we work under the terms of complex thinking and the transversality of knowledge.



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