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The open disease processes

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Abstract

Knowledge in medicine, as it is a factual science dedicated to the care of human pain, acquires special characteristics different from the other sciences. In this aspect, current medical systems develop conceptual structures that aim to homogenize the observed universe and in which units adopt a mean value. This construction establishes an order where these units lose their specific characteristics in order to achieve a representation of the whole.

This observation should be borne in mind by the physician in the acquisition of knowledge, since it lies not only in its attainment, but in its application in a single and unique consciousness as that of each patient.

The physician and the patient are part of a physical, psycho-social context subject in their relationship to a phenomenological process in their consciousness. Only thinking in cognitive failure in medical practice is not knowing the implexion (interrelation ship) of disciplinary knowledge with the factors adjoining this thinking and the patient itself.

The intuitive and inductive processes, that is to say unconscious and conscious, are not different but complementary forms of the same thinking. If we consider them in the concept of entropy that governs all processes in the universe, including our brain, the first injects renewed energy into the system, while the second determines a continuous expenditure of that energy.

Things are not clear in medical teaching because the paradigmatic patterns represent a positivist vision, far removed from the reality of the patient. This implies that it is necessary to incorporate transdisciplinary thinking that includes the "human factor" in its central axis.

Keywords: Medical education; Training; Clinical act; Knowledge

1. Introduction

Knowledge in medicine, as it is a factual science dedicated to the care of human pain, acquires special characteristics different from the other sciences. In this aspect, current medical systems develop conceptual structures that aim to homogenize the observed universe and in which units adopt a mean value. This construction establishes an order where these units lose their specific characteristics in order to achieve a representation of the whole (1). This concept postulated by current positivism becomes a dangerous act for medical activity, as the singularity of each personal

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consciousness cannot be avoided (2). Here, individual legislation should be enforced to safeguard the propriety of reaction and degree of freedom of each consciousness.

This observation should be borne in mind by the physician in the acquisition of knowledge, since it lies not only in its attainment, but in its application in a single and unique consciousness as that of each patient. Medicine uses models that convey a meaning, allowing medical action. Theories are used, which if somewhat successful, perpetuate throughout time. The sick person, with the present positivism concept, is for medicine a body subjected to the laws of classical physics described three centuries ago. However, for the rest of science, quantum mechanics has revitalized the Greeks in its *multiple nature of reality*. Disease is an open process, with numerous components and feedback events, (2-4) and the same happens with medical thinking, which is subjected to continuous reorganization. However, current medical practice is carried out in a fragmented, materialistic way, extremely disciplined to statistical data.

In medicine we use a collection of information established as a paradigm in the face of a patient's disease, which must be understood as an open system in any of its psycho-organic-social aspects. To each physician, the physical uniqueness and the conscious activity of each patient permanently convey him external sensations and internal perceptions which implies in his thinking an open process to an essential evolution for its efficacy. This situation makes him apply not only the paradigmatic knowledge acquired (inductive, logical, contextual, abstract, analytical), but also his own intuitive knowledge (reflective experience converted into heuristic and perception) to provide the established paradigm with sufficient flow of capacities to improve its instruction. Empirical and circumstantial capacity is also acquired knowledge that feeds with renovated flow of information the paradigms instituted by the cultural state of the moment. Both forms of knowledge should be considered complementary (5).

Medical education is tried to be led to the abstract homogeneity of scientific knowledge, but in fact in this discipline the risks are greater. The consequences of legislating on the human body-mind carries a share of responsibility in which neither of the two sources of knowledge, intuitive and inductive, can be discarded (6). We must understand that intuitive thinking is a process within the conscious system with sufficient freedom to deliver new assumptions of reality and become a complement of an established cultural system. Question arises if this leads to a new knowledge of reality to improve the established concepts. The intuitive is an appraisal of nature and is not better or worse nor is it subjected to an ethical formulation. It is a device of automatism and is not voluntary. Intuition is an unconscious phenomenon and cannot be questioned but understood.

First, we should have a sense of the reality we observe and its interrelationships. Then, experiments should follow leading to determine the regularity established both in its explanation as in its prediction. Medical science must be integrated with all the disciplines finding a relationship with all the established knowledge but without excluding intuitive understandings, sometimes undervalued as completely false, which should be verified by the falsifiability criterion (7-9). It is a process associated with survival. It is of great clinical relevance but can also generate detrimental biases.

Adjacent to the positivist world, that materialized a science with laws derived from a line of thought that builds abstracts and names them through language, are intuitive observations which should not be disregarded because they lie outside the consideration of the paradigmatic scientific model. These discrepancies or thinking events have fulfilled countless benefits to science through observations, and constitute a disregarded group of beliefs, but which science incorporates many times without knowing their mechanisms. These beliefs, though outside the positivist laws of current science, have a deep foundation of validity that cannot be ignored with the mechanistic suit with which medical knowledge is donned.

The law of causality is the element that guides science, but the approach to a disease implies abandoning the absolutism of plural and abstract aspects to enter the non-linear state offered by the singular emotionality of the patient (10). Intuitive vision is also knowledge, not in the form of a culturally established paradigm, but as a personal intelligibility to a problem. Science in general has refused the philosophical-natural theories. However, in the instance of disease, no science can answer about the sense of existence and physical and spiritual pain, and in medicine, the ultimate perception that constitutes existence becomes dramatic, and shows us that the strict rationality of its causal paradigms established in isolation becomes an inscrutable and unendurable burden (11,12).

2. The paths of error in medicine

Error in the clinical act can be produced by deficit of knowledge or non-reflexive thinking, even though it is based on analytical, rational knowledge, converted into paradigm. Error is also reached by not employing the necessary time for consultation, the lack of returning time and again to the patient to broaden the possibilities of observation, interrogation

and clinical examination, not considering the analysis of the psychic and social situation and not monitoring the disease variability throughout time, which leads to clarify the diagnosis.

Disease has three lost times in its diagnosis to reach treatment. The first corresponds to the concealment of the disease in which changes in the patient's stability are still not manifest, because it remains silent. With evident signs and symptoms, the second time concerns the patient, who attenuates and hides the disease manifestations, delaying its diagnosis and treatment. The position of the patient towards the physician, when narrating the disease that haunts him, denotes his truth, which the physician must investigate to compare it with his reality of the clinical act. This conduct of the patient stems from the fear of losing his life ("not-being") and from an interpretation he makes with his dialectics and understanding of what is taking place. If the physician does not make a clear appreciation of this aspect the consequence is time lost in the resolution of the disease. The third lost time is the gnoseological process of the physician until he verifies the identity of the disease and finds a solution.

Perhaps we can only reduce error with reality, through the continuous elaboration of open thinking. The physician and the patient are part of a physical, psycho-social context subject in their relationship to a phenomenological process in their consciousness. Only thinking in cognitive failure in medical practice is not knowing the implexion (interrelationship) of disciplinary knowledge with the factors adjoining this thinking and the patient itself.

Intuition, spontaneous, sometimes unsuspected, provides energy to the thinking process, while analytical knowledge consumes energy. The paradigmatic system of thought, if it were close and not self-organized in continuity with intuitive thinking or new concepts and ideas, would evolve towards a higher entropy with the risk of placing itself near equilibrium in the systems. That is, almost a state of paralysis (11).

The situation between inductive thinking catalogued as satisfactory and rational and intuitive thinking, considered as the one that can be understood or learnt in a fast and evident way without need for a full epistemological reasoning has been stigmatized. The paradigmatic does not take into account the self-organized states of which the whole cosmos participates in order to remain updated (13,14). To this transformation belongs intuitive thinking.

Between inductive and intuitive thinking there is no question of difference in the speed of the response, but rather an originality or a different reflexive development in its course. In the first we use maps or patterns previously established from knowledge, in the second there are proposals with solutions unforeseen in the established paradigms. Nor is the intuitive a *limited rationality*, but a possible proposal to face the problem, which can change the prevailing paradigm or achieve a new alternative in the concept. Intuitive thinking not only stems from medical experience, but also from a new way of assessing the problem and using a new map or pattern of knowledge through his sensory perceptions.

Intuition should be understood as the highly personal ability to move directly from stimulus to response (such as from problem to solution or observation to understanding) without the intervention of established cultural reasoning or inference. This situation derives from the fact that all scientific generalization is intuitive, because while the scientist can see a phenomenon only by observing it, as happened to Newton with the apple, it is the creative imagination that can relate that apple to a universal law. In the words of Willis Harman (1918-1997): *Science is not a description of reality but a metaphorical arrangement of experience... It is rather a question of determining which image is most useful to know how to orient ourselves in human affairs*" (15).

Both ways of reacting (inductive and intuitive) to a problem can lead to error. In essence, it is the knowledge that we use when faced with a problem that determines the decision used, regardless of whether it is intuitive or inductive, as well as a failure in its use. All concepts, both analytical (established) and intuitive (opportune), are products of thinking that seek an answer both with a map of stable knowledge as well as in answers that lead to bifurcations and determine a new order.

Intuitive thinking represents for knowledge a flow of energy that avoids reaching the equilibrium state of the analyzed system and that can lead to bifurcations in the epistemological process with the possibility of emerging as a new order. In disease, this concept prevents it from being considered a "photo of the moment". In order to interpret it, it requires a constant re-interrogation in its evolution (16).

In the face of disease, a culture of knowledge is not enough, but also, given that medicine is a factual science, allowing the perceptions of the protagonists to enter. Let us not be afraid to say that this posture includes intuition. Science is also faith. Knowledge is not enough faced with the magnitude of the morbid in humans. In simple problems mechanical solutions seem logical. In the biological and social evolution of man, the disease adds exclusive variables of each patient that forces to compare the culture of the physician with that of the patient, with the risk that, if the variables of the latter

are not included, we would be ignoring a component of the disease, which will remain hidden from the eyes of the physician. Hence, his intuition will improve through experience and not only with inductive knowledge, a situation that includes the singular observation before the patient and not only consulting established patterns.

3. What can we do to reduce error?

In medical sciences we need to incorporate to the quantitative tools of probability the responses of the disease by the patient's consciousness. Therefore, the study of the physical structure of corporeity must be associated with the exploration of the patient's consciousness during the medical act. This concept moves medicine away from Cartesian mechanics to incorporate it into the randomness of quantum mechanics.

- There is a possibility of multiplicity in the causes of morbid processes. At this point, the concept of systems far from equilibrium (belonging to the theory of dissipative structures) must be incorporated, as well as their nonlinearity (13,14).
- Never act solely on the organicity of the disease ("iceberg effect"). Man is a psycho-organic-social being.
- Re-interrogate the patient's manifestations to collect dissimilarities and their course. With this procedure, the diagnosis is refined with repeated observations. This is what we have called "reinterrogation of the sign" (16).
- Understand the sensitivity to the original conditions of the morbid process (chaos theory).
- Incorporate the analysis of the patient's existential fear that underlies consciousness and that threatens healing and enhances the morbid.
- Acknowledge that language is the best product to interact with the patient. This becomes fundamentally important because it allows coordinating actions, but it needs to be adequate, that is, common to the physician and his patient.
- It is considered that the concepts of health and disease are opposite phases and that the body is in one of those states. In fact, there is a coexistence between the stable and unstable processes of the organism in a permanent fluctuation that maintains a permanent vigilance and rearrangement of the system.
- Currently, medical training is far from being transdisciplinary, thus limiting the holistic understanding of man.
- It is necessary to reach empathy between the physician and the patient where a spontaneous interconnectivity is produced beyond the proximity or common elements between these people (phenomenology of the clinical act) (17,18).
- The training that educates to sit for exams and not to treat patients is known. The major axis of gravity must be the reflective practice from the first year of medical education. The rest, in pedagogical terms, is abstract.

4. Conclusion

The intuitive and inductive processes, that is to say unconscious and conscious, are not different but complementary forms of the same thinking. If we consider them in the concept of entropy that governs all processes in the universe, including our brain, the first injects renewed energy into the system, while the second determines a continuous expenditure of that energy. The systems of the universe, including the production of knowledge, whether individual or plural, are interconnected. This is the principle of convergence that allows the creation of successive systems of increasing complexity but which imply a simplification in their function. The same thing happens at a singular level in the person's consciousness, where there is complementarity of established knowledge with intuition of character not yet established from the epistemological point of view.

Intuition occurs in two forms: a) a sum of learning and previous experiences plus an incident in the person's own knowledge to understand the reality that assists him. This incident produces a comprehension of the solution by a path different from the classical model or an attitude towards the problem different from what has been observed up to that moment; b) an individual and different knowledge in finding the interpretation of the analyzed problem. Intuition is not only the result of what is experienced (reductionism) but also of tacit knowledge, the awareness of the world generated in the earliest perceptions (intrauterine), the load of inherited knowledge and the genomic wealth.

It is not about denying inductive analysis in medical teaching or its knowledge patterns, but rather achieving new capacities through reflecting on the intuitive with a transdisciplinary epistemology, in a factual science such as the medical art. Possibly in medicine the deficit of knowledge to solve the problems is not currently as serious as the deficit of the "human factor" to approach the patient. In light of this, we should ask ourselves, what did medical science do with the "human factor"? Its meaning includes the analysis of the emotional factors that impress the senses, those that are the cause or contributors to the understanding of the processes that lead to the disease as well as to its flow of healing in man.

Things are not clear in medical teaching because the paradigmatic patterns represent a positivist vision, far removed from the reality of the patient. This implies that it is necessary to incorporate transdisciplinary thinking that includes the "human factor" in its central axis.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest.

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