From Sensitive to Intelligible: new communicational ways in healthcare with the study of quantum theory

DO SENSÍVEL AO INTELIGÍVEL: NOVOS RUMOS COMUNICACIONAIS EM SAÚDE POR MEIO DO ESTUDO DA TEORIA QUÂNTICA

DE LO SENSIBLE A LO INTELIGIBLE: NUEVAS MANERAS DE COMUNICACIÓN EN SALUD A TRAVÉS DEL ESTUDIO DE LA TEORÍA CUÁNTICA

Ramon Moraes Penha¹, Maria Júlia Paes da Silva²

ABSTRACT
The purpose of this study is to present a theoretical reflection about the relation between the Human Being, health and disease concepts, and the perspectives stemming from the development of the Quantum Theory. It presents arguments for the comprehension that, from the moment where the spiritual dimension is recognized, there is the need for reformulation of concepts that guide the professional practice, since they make interpretation possible and direct the communicational response that, in the case of healthcare, results in the service provided to the patient. The study also understands that the necessity of furthering the communicational level exerted on people is imperative to provide care and to comprehend the spiritual dimension of the Human Being.

KEY WORDS
Spirituality.
Religion.
Communication.
Quantum Theory.

RESUMO
Este estudo se propõe a apresentar uma reflexão teórica sobre a relação entre os conceitos de Ser Humano, saúde e doença, e as perspectivas advindas com o desenvolvimento da Teoria Quântica. Apresenta argumentos para a compreensão de que a partir do momento em que há o reconhecimento da dimensão espiritual, existe a necessidade de reformulações dos conceitos que norteiam a prática profissional, uma vez que são estes que possibilitam a interpretação e direcionam a resposta comunicacional. Entende como imperativa a necessidade, para o atendimento ao doente, de se profundar o nível comunicacional que exercemos com as pessoas.

DESCLITORES
Espiritualidade.
Religião.
Comunicação.
Teoria Quantum.

RESUMEN
Este estudio se propone presentar una reflexión teórica sobre la relación entre los conceptos de Ser Humano, salud y enfermedad, y las perspectivas provenientes del desarrollo de la Teoría Cuántica. Presenta argumentos para la comprensión de que a partir del momento en que se reconoce la dimensión espiritual, existe la necesidad de realizar reformulaciones de los conceptos que orientan la práctica profesional, una vez que son estos los que posibilitan la interpretación y dirigen la respuesta de comunicación que, en el caso de la salud, resulta en la atención al enfermo. Entiende como imperativa la necesidad de atender y comprender la dimensión espiritual del Ser Humano y, de profundizar el nivel de comunicación que ejercemos con las personas.
But that which persuades so many that it is difficult to know God and to know what is the soul is the fact that they never place the spirit above sensitive things. Also, because they are so used to consider things just through imagination. This is a characteristic way of thinking about material things, where everything that is not imaginable seems intelligible to them.

René Descartes

INTRODUCTION

We can wonder about with what we have communicated in healthcare. We invite the curious to discuss the new communicational perspectives stemming from the quantum theory, which allowed us to delve into an ocean of possibilities, since the way in which we question the world has changed radically. In ancient philosophy, for example, questions were asked in order to know what things are. With the onset of the so-called sciences, the way of understanding the world starts with questions aimed at unveiling how things work, since both the investigations in Physics and its principles applied to the medical sciences aimed at entering the foraments of human life through whatever means were visible, palpable, disseckible and numerically delimited.

With the development of the Quantum Theory, the initial tone of the questions is radically changed to why not conceiving and researching phenomena with a transcendental perspective in relation to matter, since it is not explained by itself any longer, and the mechanistic model of comprehending the world is not sufficient. Figures and formulas that explain the communicational complexity of man do not exist. In this sense, why should we not further the communicational level exerted daily, using the principles proposed by the new Physics, or the Physics of the Soul?

COMMUNICATION AS A WAY OF UNDERSTANDING THE WORLD: THE SENSITIVE AND THE INTELLIGIBLE

In post-modern times, there are few certainties about life – the need for communication is one of them. Communication is the method we use to understand the world by processing codes that provide formulations of meanings, and we experience existence through them. Throughout history, Human Beings have developed several forms of communicating with things, with others and with themselves - initially, with the creation of symbols, and later, with the development of language and the complex organization of thinking. The description and interpretation of phenomena captured by the human senses are primarily a consequence of observation, which is an exercise that requires sharp perception. Observation is the conscious perception of the communicative signs and symbols that allow for the identification of a physical, psychic, emotional, and perhaps spiritual state, not only based on speech, but also in the minutiae of non-verbal communication, which occurs in every human relation. Communication is the essence of human relations, present even in the quietest silence. From these unsaid aspects, we can appreciate the essence of dialogue through facial expressions, gestures, body language and eye contact, among other things.

In recent years, with the development of studies focused on communication, it became the vehicle for the most beautiful humanization speeches in Healthcare. The emphasis on the non-technical touch, of observations that are not directed to seeking pathologies, and of a sincere and fraternal (or even loving) approach have all retrieved human values that had been left behind somewhere in the time and space of the history of man who, in turn, developed new ways of falling ill. It is necessary to create new ways of caring - and caring is essentially a communicational expression. Therefore, the words of order are not only to humanize, but also to spiritualize. An example of this is the inclusion of the non-material or spiritual dimension in the concept of Health proposed by the World Health Assembly.

We are still lacking in communication with this new spiritual aspect. Countless references are available regarding how (both verbally and non-verbally) Human Beings communicate. However, what is used to exert this communication has been generalized to the visible expression of the world. Extra-physical dimensions have only recently been accepted by the healthcare sciences, with the disintegration of the matter proposed by quantum mechanics. The paradigm of communication between consciences was proposed: communication with the soul, with spirituality providing the means through which the senses transcend the body and ascend to the spirit.

However, an alert for the necessity of transcending matter was postulated in Greek philosophy. Under the platonistic perspective, our idea about objects is overly limited. The philosopher proposed five ways of knowing things, where the first refers to the name, followed by the definition, then the image, followed by knowledge, and, finally, the fifth element: the object itself.

We will take an object named circle. Its name is this word that has just been written or spoken. Next comes its definition, consisting of nouns, adjectives and verbs: a circle is an object whose extremities, in all directions, are equidistant from its center. This object can be represented, as per the science of Geometry: it can be traced, built on some material and can be erased or destroyed, which, for Plato, does not happen with the real circle, because this is not mistaken with its name, its definition or its representation. The real circle is not made of sound […], traces, but it exists only in the intelligence or in the soul, as something immaterial - it is an idea, an intelligible shape.
The Greek philosopher\(^{(5)}\) stated that there were two spheres of concentration of knowledge regarding the senses: the Sensible World and the Intelligible World. In the first, considered to be inferior, knowledge is obtained from images (eikasia) and opinions (doxa). In the second, considered the superior, knowledge stems from reasoning (dianoia) to episteme (noesis). As a rule, we start from Doxa towards Noesis, the knowledge of the essence, an intelligible shape (eidos). The observation of the object leads naturally towards the need to codify this feeling, in a process that we may call language. Regarding this process, Aristotle distinguished Logos (study) in three kingdoms: \(\text{Techne}\), knowledge conveyed through language, which produces objects in the world and whose reproduction can be differentiated; \(\text{Praxis}\): work directed towards the construction of the Good life, where we are in a cosmic movement, which challenges us to make decisions about the best actions for individual and collective benefit; and \(\text{Episteme}\): the science that supports knowledge, which consists of describing, explaining and predicting a reality - i.e., analyzing what happens, determining why it happens in a certain way and using this knowledge to anticipate a future reality\(^{(6)}\).

A large portion of healthcare professionals remain attached to the sensitive world, that of appearances, superfluous, or, according to Aristotle's concept, the \(\text{Techne}\). For instance: consider an individual, Bianca. The second step, the definition, varies widely in literature, and generally includes the description that this is a complex Human Being with bio-psycho-socio-spiritual dimensions, whose physical characteristics are the characteristics of the species. The sciences have measured the biological, psychological and sociological characteristics well. We have an image of Human Beings that usually must include arms, legs, nose, eyes, hair (or the lack of), and other characteristics established by the standards of normalcy. When faced with one or more characteristics that stray from these standards, we experience a feeling of inquietude. These are the images of Human Beings that we relate to. We react reciprocally to how these shapes are appreciated by the sensory organs. But what is the Being in itself, the intelligible aspect?

In a novel of the history of Psychiatrics, the author\(^{(7)}\) talks about the early days of studying human nature in that specialty. It advanced from the first neurosurgical interventions, with Charles Bell, to the utilization of hypnosis, aimed at discovering the source of madness. Next, a small excerpt of the book is presented, expressing the grief of one of the greatest men in science about this non-material dimension of man\(^{(8)}\).

![Image](https://www.ee.usp.br/reeusp/)

We are in Dr. James Papez’s laboratory, a famous laboratory of Cornell University, which houses a collection of the most primitive brains. Here, for 25 years or longer, Dr. Papez has measured, weighed, compared these dead brains in an attempt to discover… what? Some explanation of the unknown in terms of what is known, some kind of bridge between this tangible thing, the brain, and the intangible thing, the spirit.

- What is in this - he asks, resting the compass over a human brain - which explains Napoleon's campaigns, Copernicus' theories, one of Beethoven's sonatas, the Euclidian principles, one of Keats' poems? A thousand brains lie in front of me: brains of the wise and brains of idiots, brains of children and brains of adults [...] Brains from human embryos in each stage of development [...].

There is no question that had piqued man's interest more persistently and passionately than the search for the nature of this immaterial part of the self, which they call spirit, mind, or soul. The greatest spirits of each century have sought incessantly the origin of this higher part of the man\(^{(9)}\).

The other author\(^{(10)}\) refers to this search to incite a reflection about the body, corporeality and subjectivity, by reflecting:

I would like to contribute so that everyone would be aware of something that we all know deep inside - that modern science and its ideals of objectivity mean to everyone - physicians, patients or simply to aware and concerned citizens - a tremendous alienation\(^{(11)}\).

It is not difficult to find the reason for this alienation, which binds us to the sensitive world. When we search the books regarding the history of Medicine and the development of the healthcare concepts, the interest for the body - the instrument of the spirit - is notable.

**THE SENSITIVE: THE HUMAN BODY AS AN INSTRUMENT OF CONTEMPLATION**

Especially for Galen, Medicine was concerned with the body of the man. Galenic ideas were revolutionary for the time, especially regarding nutritional and respiratory physiology. Paracelsus (1493-1541) rejected the Galenic theses and enhanced the techniques of body exploration, since Galen did not personally dissect bodies, having an aide that performed this activity\(^{(12)}\). Later, Andreas Vesalius (1514-1564) performed in-depth studies of human anatomy, culminating in the production of the treaty *De Humani Corporis Fabrica, Libri Septem* (better known as *On the Fabric of the Human Body*, and split into seven volumes: bones, muscles, circulatory system, nervous system, abdomen, heart and lungs, and brain)\(^{(13)}\). The body is then understood as the complex machine whose inner workings are extraordinary.

The period of scientific freedom started in the late 16th century, and provided great advances in the field of experimental Biology, the building of academies, the development of knowledge in the fields of Anatomy and Physiology, surgical techniques, Pharmacology, and the exploration of the causes of epidemics and concepts of hygiene, among other events. Great pioneers in these areas, such as Ambroise Paré, William Harvey, Realdo Colombo, Marcello Malphigi, Guy Patin, Antonio Maria Valsalva, and Giulio Casseri, among others, have delved into the deepest reaches of human corporeity, unveiling the secrets of hemorrhage con-
and especially, measured(10-11).

able forces. What was real was what could be seen, touched, clusters of mass, whose movements could be described in of the positivist sciences. However, nature was reduced to Human Being
to deciphering this corporeal complex, which some named
ods to calculate mass and volume, attentions were directed
describe the phenomena observed and the advanced meth-
y by the body and a diseases, with a range of resources to
mention systems arose, a creation of the then-called pathologic
atomy, which became popular in the fields of the mate-
istic philosophy of Wilhelm Leibniz and Karl Marx, and the
bales of surgical exploration were strengthened with the
ntroduction of anesthesia by Morton[8]. The disease
became the communicational focus, and the subject is the host that carries the malady that must be understood.

The way of relating between man and world was set. Newton was wrong when he postulated that we communicate with things that have a defined shape, and image that can be captured by the five senses:

We do not know the extension of the bodies by other means that our senses, which do not attain it in all bodies; however, since we perceive the extension in all perceptible bodies, we attribute it to all the others as well. We learn through experience that most bodies are hard; and since the hardness of the whole depends on the hardness of the parts, we correctly infer the hardness of the undivided particles, not only of those bodies we perceive, but also of all others. It is not from reason, but from sensation, that we conclude that all bodies are impenetrable[11].

In 1832, Sir Willian Crookes, an English physicist and chemist, began the investigations of what is known today as plasma[12], and based his research in the spiritualist currents, since the principles of materialism did not have resources to explain his findings. Matter, then, started to become dis-integrated. Later, in 1895, Wilhelm Conrad Roentgen discovered X-rays, and in the first part of the 19th century, James Clerk Maxwell warned about the existence of magnetic waves, which then gave rise to electromagnetism[12]. These findings rocked the pillars of science.

THE INTELLIGIBLE: A NEW WORLDVIEW THROUGH QUANTUM PHYSICS

A new paradigm was proposed by the German physicist Max Karl Ludwig Planck, who presented data from his experiences to a Physics congress, in December 1900. The already-weakened materialistic pillars were further shaken. Planck discovered the law of thermal radiation, which was the fundamental basis for the principles of the New Physics, or Quantum Physics. Later, Albert Einstein, Niels Bohr, Werner Heisenberg and Erwin Schodinger developed the main principles of the Quantum Theory, giving a new meaning to matter. They plunged human existentiality in an ocean of possibilities[12].

The laws of quantum physics contrast with the Newtonian laws because they do not determine a reality; for example, the real world is not the one we feel (sensitive world), but the one we can think of (intelligible world). In the old Newtonian physics, the placement of bodies could be determined as long as their initial conditions (position and speed) were known. This principle was known as Casual Determinism, and, even today, is taught in the Physics and Mathematics courses in a large share of the schools

10The term was coined by the physicist Irving Lagmvir in 1928. It is also known as the fourth state of the matter, since it has properties that are different from solid, liquid or gaseous elements. One example of natural plasma is the aurora borealis, a phenomenon visible to the naked eye in glacial regions during certain periods of the year.
around the world. The mathematician Pierre Laplace was the one who best explained the principles of determinism with the publication of his book about celestial mechanics, the content of which explained the movement of the universe through numbers. Laplace was called by Napoleon to clarify a few points, since it was usual to mention God in themes related to the mysteries of the universe. Napoleon would have asked Laplace: *Monsieur Laplace, you have not mentioned God, not even once, in your book. Why is that? – Because I did not need that hypothesis*. 

In order to clearly understand the motivation brought by Quantum Physics, it is necessary to demonstrate the convictions, beliefs and values of Classic Physics, led by Newton and Maxwell, among other great scholars who studied from the physical phenomena to the outskirts of Einstein’s Theory of Relativity. In total, there are five concepts that outline determinism: Continuity (every movement or change in electrons, atoms and in the macroscopic world is continuous and can be predetermined), Placement (material objects - regardless of size - travel through time at a finite speed), Strong objectivity (the material world is placed ready, and does not depend on the conscience - in this case, we observers - to exist), Materialistic Monism and Reductionism (everything in the world is matter - atoms and other smaller particles - and can be reduced to numbers), and lastly, Epiphenomenalism (all the subjective phenomena are secondary to matter - in other words, everything happens in an ascendant way; particles form atoms, which form molecules, which form cells, which form man, in particular the brain that thinks and creates). Scientific Realism was thus established.

These are the concepts opposed by Quantum Physics. Where there used to be Continuity, now there are Quantum Leaps or Discontinuity (electrons are unstable in the subatomic world, i.e., they do not follow a specific route, but they leap randomly from one orbit to another in the atom), Quantum Non-placement (electrons can be in more than one location at the same time, and they are only located in time and space when they are observed. Speed is not fully known since there is no linearity). Subjectivity, Materialistic Monism and Reductionism became Uncertainty, Probability and Possibility, since it is not possible to identify the initial position and speed of electrons with Newton’s absolute precision.

As an experimental science, quantum physics monitors the behavior of subatomic structures through its advanced devices of molecular disaggregation. These molecules originate in the macroscopic world, but the reason why they behave in certain ways is still a question that remains in the field of uncertainties and possibilities. In this sense, according to classic physics, the body is an aggregation of atoms which are randomly grouped and originate the structures that we know (organs and tissues). Quantum physics observed, from the viewpoint of atomic disaggregation, that electrons are in several places at the same time, and their specific location cannot be determined until an observer interferes, which is named Conscience. According to this perspective, the body would be the result of the creation of conscience, which uses the molecules that are available throughout the universe. This conscience has been called Spirit or Soul.

The question that has been discussed is: if we create our own reality, why do we not notice it? A physicist states that we are rarely in a state of consciousness with freedom of choice. It only occurs when we are creative, for example, when we feel a deep compassion for another being, when we have moral insights or when we are in communion with nature. Most of the time, we live the reality of others, in everyone’s materiality. Everything that is placed in the world has passed, firstly, through the conscience, or the intelligible world, before taking shape.

There is the question: if we create reality, where would God be? Quantum researchers and authors have no specific definition of God. However, they believe in the existence of God and believe it to be a Higher Intelligence, the source of the raw matter, so that we, sparks of His love, could be-in-the world. These sparks have been named consciousness.

It is worth noting that quantum physics has sought conceptual axis for the term conscience in spiritualist currents, since matter is not static and predictable as it was once thought. Matter then becomes movements of conscience. The new science is based on the old Platonic and Cartesian statements about the existence of the spirit, the conscience that inhabits the body but is not definitely bound to it. This science is named Physics of the Soul, and it has allowed us to leave Copernicus’ enclosed world towards a more infinite universe.
SPIRITUALITY: THE COMMUNICATIONAL BRIDGE BETWEEN BODY AND SPIRIT

Healthcare professionals use principles of classic physics in their everyday practice, either in the verification of temperature, heart rate and frequency, blood pressure, epide-miologic calculations, cutting-edge magnetic resonance imaging diagnostics, laboratory exams, and laser surgeries, among others. The measuring instruments have been the most common means of communication between professionals and patients. This possibility of unveiling the mysteries of the disease has only been possible with the descriptive possibility of old physics, built upon the principles of Newtonian linearity associated to mathema-tical advances. As such, its contribution to the healthcare sciences is undeniable. However, they are calibrated to capture only the materialized expression of the soul, or conscience.

Until now, with the rare exception of spiritualist and spiritist currents, our consciences have been imprisoned in the carbon atoms that make up the human body. The quantum paradigm, or the spirit, looks far beyond what our limited senses can see: the Intelligible World, where life happens.

As such, spirituality has been the reconciliatory term between Science, Philosophy and Religion, since the materialistic view of the world and of other people no longer provides theoretical subsidies to understand the post-modern world. We erased the platonics teachings that warned us to seek knowledge beyond the sensitive aspects from our historic memory - in other words, beyond the information that we capture through the sensory organs. Never before has so much been spoken about Science and Spirituality, as is the case nowadays.[12,14-17]

From the moment when a spiritual dimension is acknowledged, there is the need to reformulate the concepts that guide professional practice, since these concepts make interpretation possible and guide the communicational response which, in the case of health, results in care for the patient. Communicational spiritualization is perhaps one of the means of reinterpreting the perceptions of the sensitive world. Where we visualize images of grief, composed of pictures characterized by gestures, expressions and sounds, we perceive, through a spiritualized perspective, that these are outpourings of the soul.

There are a number of concepts about the term spirituality in literature. From an etymological point of view, Spirituality refers to spiritual things, which in turn comes from the Latin Spiritus - stemming from breathing; divine breath, proper of the spirit or belonging to it; lacking corporeality; immaterial[18]. Several authors seek to assume the etymological root when they refer to the concept of spirituality. However, conceptual carelessness has led authors to mistake, purposefully or not, spirituality with religiosity. As such, a respected theologian is adamant when he states that spirituality is not the monopoly of any religion, but a dimension of human individuality. Religions, in their own way, are one of several means that lead one to experience transcendence.

Florence Nightingale, the precursor of the science of care – Nursing – defined spirituality as [...] feelings that emerge through conscience of a presence that is higher than the man, detached from the material field [...][17]. Following the same route, Jean Watson understands that spirituality is [...] of man’s transcendental nature [...], which can move forward, with the use of the mind, to higher levels of consciousness, finding sense and harmony in existence[19].

In this conceptual context, assuming the spiritual dimension as a mechanism of transcendence towards the intelligible world means overcoming communicational barriers currently impregnated with the materialistic habit of being-in-the-world. If the quantum paradigm suggests that conscience, or the soul, comes first and creates reality, why not think about spirituality as the communicational bridge between body and spirit? Why not use it as a means to perceive the necessities of the soul, since the disease is a reflection of the reality materialized by a sick conscience? To those that wish to reflect about this possibility, it seems to be necessary to calibrate the perspective, extracting the materialistic dust that obfuscates the image of the whole, and relieve the load of scientificism, accumulated over the centuries.

CLOSING REMARKS

Self-knowledge, the search for beauty, arts, poetry, and music, can all instrumentalize the conscience with philosophical and emotional contents that will allow for a new way of perceiving the movements of the world. As such, spirituality becomes the way in which we perceive the new, the hope, and we also develop the ability of self-transcendence, which allows us to fly towards the Intelligible World. There does not seem to be a magical formula for the spiritualization of healthcare. There are quantum possibilities. The first step is to inspire the courage to shatter the fetters that bind us to the historical lethargy of materialism. We are the observers, and the possibility of transcending the sensitive world towards the intelligible depends exclusively on the activation of the thought through will.

Sofia Amundsen, a character created in a well-known philosophical romance, is faced with a mysterious envelope, with the inscription Who are you? on it. Upon reading the message, a course in Philosophy starts, through mail, with an unknown teacher. Sofia is invited to see the world in a different light. Everything that seems to be real is challenged by the teacher, and from there the story develops, with a surprising ending[20].

There is a passage in the book [20] that we use to finalize this article. This excerpt is about an explanation of the philosophy teacher about the soul, based on a conception by the Greek philosopher Plotinus (Plato’s antecessor).
Plotinus saw the world as split in two poles. On one end is the Divine Light [...] on the other end is the total darkness that the Divine Light cannot reach. But darkness does not actually exist for Plotinus. It is only the absence of Light. Imagine, if you will, a huge bonfire blazing in the night, Sofia. Sparks leap from the fire into several directions. Around the bonfire, the night is illuminated, and a few kilometers away it is still possible to see a faint light. If we move further away, we can see a tiny shiny point [...] and if we keep moving, we will stop seeing the Light.

Imagine now reality as if it were this bonfire. God is the one who burns, and the outer darkness is the cold matter from which men and animals are made. The eternal ideas, which are archetypes of all creatures, are close to God. The human soul is but a spark. But in all nature a small part of this Divine Light shines. We can see it in all living beings, even in a rose [...] We see that He sparkles on a sunflower or on a poppy. We have a clearer idea about this insurmountable mystery in a butterfly that flies off a branch [...] But we are closer to God in our own soul. Only then, we can join the Great Mystery of Life (20).

As such, we understand that quantum communication in healthcare, which retrieves the Spiritual Being as a transcendent consciousness, can be the strategy towards a new way of establishing dialogue between the many scientific, philosophic, spiritualistic and religious currents. Perhaps this form of relating with the world allows healthcare professionals to understand human conditions better and with more dignity as the expression of the spiritual conscience, minimizing the communicational setbacks pertinent in the interpersonal relations in healthcare(21).

REFERENCES