Description-Prescription Principle: A Proposal to NeuroQuantology

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Abstract
The aim of this paper is to briefly present how I developed the Description-Prescription Principle. First, I will present the old problem between realism and idealism and intend to demonstrate how this dichotomy needs to be overcome in this century. Second, I will show how the Describe-Prescribe Principle can solve this problem, imploring examples from the Principle. Finally, I will defend why ethics needs to be placed centrally in the field of science.

Key Words: collapse of the wave function, description-prescription principle, epistemology, linguistics

Realism and Idealism
My interests in physics, psychology, neuroscience, philosophy, religion, and other fields began when I started to ask myself these questions: Who am I? Why do I exist? Why am I conscious? What is the purpose of life? Is there any meaning? What is human morality? Can we really know what is right and what is wrong? What is human consciousness? How does the world work? I even go deeper and ask myself, why am I asking these things? Why do some people have impulses to ask questions and why do some people not? What are reality and imagination? And what are the differences between them? In sum, many of my younger years were spent absorbed by metaphysical and existential questions. However, I've always liked to attempt to solve these problems myself, because I don't have faith in Brazil's education system, which since the birth of Brazil has been too militaristic and characterized by the Jesuits.

As a child, I had a lot of out-of-body experiences, and I think this can explain why these questions of reality and imagination have plagued my mind. Was my brain creating everything during this altered state of consciousness? Or did my consciousness actually perceive something from reality? I was not absolutely convinced about Kardecism (Kardec, 2001; 2002; 2004; 2005; 2007a; 2007b), so I created a few experiments to prove or disprove the idea. During an out-of-body experience, for example, I would look at the time on the clock and then after snapping out, immediately look at the real time. However, never have the times been equal, which goes to prove that in this state, my mind was creating occurrences, rather than perceiving them. However, other situations in my daily life have shown me that real perception can occur during an out-of-body state, although mixed with imagination to some degree.

When I began to read epistemology books upon first entering the Universidade Federal de Minas Gerais (UFMG), I realized that these were age old philosophical questions. There was the Realism philosophy school arguing that the world is “out there” and is independent of observer cognition, language, and culture (Abbagnano, 2007). The researcher needs only to observe reality, and use a neutral method to describe the world in its essence. Traditional biologists, for example, believe that animals in the

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world are “out there;” they just need to be classified, categorized, and named. The biologist believes that she or he is neutrally describing the world how it is in essence, and that a scientific method is a way to separate objectivity from subjectivity. The same thing can be applied to traditional neuroscientific practice, psychology, physics, and so forth believing that there is a world “out there” independent of the researcher.

On the other hand, the Idealism philosophy defends that the world is created by our consciousness, because the world does not exist external to this (Abbagnano, 2007). Therefore the researcher does not perceive the world in its essence, they just create categories. In this case, a biologist that discovers a new exotic animal has not discovered the animal, but rather has solely created a new category. This goes on to explain why each culture has its own manner of categorizations. Whilst Realism has been based on determinism and mechanicism, Idealism has associations with relativism and free will, because there is a multitude of categorizations. Thereafter, I needed to come to terms with a more cohesive philosophy that could try to solve these old dichotomies of realism and idealism, objectivity and subjectivity, naturalism and culturalism, and determinism and free will, etc.

**Description-Prescriptions Principle**

How can we integrate the themes of realism and idealism, objectivity and subjectivity, naturalism and culturalism, without again coming to be categorized by dichotomy? During my graduate years in psychology, I studied cognitivism, cognitive neuroscience, and neuropsychology. In other words, I had the opportunity to learn a range of theories that were based on natural science and were inspired by realistic philosophy. The cognitivists, for example, have described memory, attention, judgment, and so on, and they believe that they have described the mind “out there.” On the other hand, I could study social psychology, sociology, anthropology, and other fields that can be classified as idealism theories. Because, many social researchers defend that reality and truth are social and cultural constructs; everything is relative.

I have the pleasure to say that psychology, like other intermediary areas, is a privileged field in science, because it is on the interface between natural and social sciences. We can classify psychological theories with inclinations to naturalist or culturalist tendencies, realistic or idealistic, in a continuum. Thereafter, I had the opportunity to analyze both sides, and make my own philosophical perspective. When I began studying Cognitive Linguistics with Adriana Tenuta at Faculdade de Letras (Fale/UFMG), I obtained new insights and ideas about the Realism and Idealism problem. I therefore began to develop a principle that I have called the Description-Prescriptions Principle.

**Description-Prescriptions Principle**

The description of A in terms of B is a prescription of C, where A is a target domain, B is a source domain and C is a cultural model (or idealized cognitive model).

Cognitive Linguistics contains a theory called the Cognitive Metaphor, or The Conceptual Metaphor, that has the metaphor as central in cognitive process, not just figurative language (Kövecses, 2002; 2006; Lakoff and Johnson, 1980). Metaphor processes occur in “mind” (actually in embodied experiences), and we are able to listen or watch their manifestations in language by metaphorical expressions. For example, when someone says “The year 2012 is coming fast, and 2009 has already passed,” he or she is conceptualizing TIME in terms of SPACE and MOVING OBJECTS. These italic expressions are just metaphorical expressions, manifested in language, because the metaphor, as said, occurs in the embodied mind. Below represents a cultural model of time, which was already studied by Cognitive Linguists.

The description of TIME (target domain) in terms of SPACE (source domain) is a prescription of NEWTONIAN TIME (cultural model). How it was sanctioned along the time by occidental society, today we are living in a common sense of “linear time.” Time is not a concrete thing, but we are able to conceptualize it in terms of space or moving objects, as demonstrated above. When Isaac Newton developed classical mechanics, he used these metaphors unconsciously. Time is uniform, linear, and
independent of the referential observer as well as an object moving in space. It is an example of a cultural model of time, not a literal description of time. Even though many people believe Newtonian time to be real and true, it is just metaphorical. It is deeply entrenched and conventionalized in our conceptual system. This is proven by the fact that Albert Einstein and other scientists have changed our perception about time and space by developing others metaphors.

| Table 1. An example of cultural model of time and its relation with description-prescription principle |
| Source domain: SPACE | TIME IS SPACE | Target Domain: TIME |
| The space in back of the body | Corresponds to | The past |
| The space in front of the body | Corresponds to | The future |
| The body space here and now | Corresponds to | The present |
| Moving object | Corresponds to | Flow of time |

Then, what can be concluded from this? We can argue that Isaac Newton did not just describe the world in terms of mechanism, but, at the same time, he described-prescribed a cultural model of UNIVERSE AS A MACHINE. And not only Newton, but others such as Descartes were influential in occidental society. Today, we are living in a world where many “things” work as machines. For example, The BODY IS MACHINE (KIDNEYS ARE FILTERS—“The kidneys filter the blood”; HEART IS PUMP: “The blood is pumped by heart”; BRAIN IS COMPUTER: “The brain has a lot of circuits”). If any machine wasn’t created by human beings, today anybody in occidental society would experience body as machine. In sum, all descriptions are potentially prescriptions, and we are living in a prescribed world.

Conclusions
The role of the observer in the collapse of the wave function, according to my analyses based on Cognitive Linguistics, is co-creating the world, because nobody has direct access to the reality “out there” (Ferreira, 2011). A way that we are able to co-create the world is through our “work abilities,” because we can create cars, computers, holograms, pants, and so on. This is the ontological function of work! So, we use these domains to conceptualize other domains, developing complex metaphors like BRAIN IS ELECTRIC SYSTEM (19th), BRAIN IS COMPUTER (20th), and BRAIN IS HOLOGRAM (21th). What will be the reality of the brain in the future generations? The idea is that we are co-creating the brain, not just discovering the brain “out there,” because in a culture that doesn’t have electric systems, computers, and holograms, there aren’t any metaphors like that.

Another way that we are able to co-create the world is through “language abilities,” because we can create science theories, ideologies, narratives, myths, common sense, and so forth. This is the ontological function of language! When we talk about a thing (like an atom) we are not referring to this thing in the world “out there” neutrally, but we are at the same time co-creating a cultural model of an atom. The atom was described since Democritus in terms of OBJECT/BALL/PIECE OF MATTER, and then we are living in a world where ATOM IS BALL, ATOM IS PIECE OF MATTER. However, the atom also has been conceptualized in terms of WAVE/FLUID, and then we are living in a world where ATOM IS WAVE, ATOM IS FLUID. The corpuscular cultural model of the atom is more prototypical in science than the ondulatory cultural model, and it explains the wave-corpuscle paradox: The concept “electron” can be understood in relation to these two cultural models.

In sum, describe-prescribe principle is a way to demonstrate that people are not observers of the world, but also co-creators, and it puts ethics in the center of science. Science, government, institutions, and people in general are not neutral in the knowledge process, but absolutely active. Today, we are living more or less a description-prescription of occidental society that started in the past. For example, HUMAN IS A FREE OBJECT IN SPACE

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1 We could have made a new category like the ontological function of thought. However, we are considering the thought as inherently symbolic. Then, the ontological function of language is already enough.
and human beings are we interested in co-creating?

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