



TOWARDS THE JOURNAL OF APPLIED COGNITIVE NEUROSCIENCE

In his book *The Structure of Science Evolution*, Thomas Khum defines a paradigm as “a set of beliefs, values and accepted techniques that define the exercise of a scientific discipline”. A new paradigm is a change of vision, a reconstruction of our knowledge in the light of discoveries; in the words of Socratics, “all cognition is a recognition”.

The new paradigms arise from the exhaustion of the old ones, confronting followers and detractors in the controversy that between established knowledge and the latest discoveries there is a single tool to settle debates, the “scientific evidence”. Without a doubt, “Cognitive Neuroscience” is the new paradigm of the last decades, which has allowed us to begin to understand the complex cognitive processes that occur in our brains. From Gazzaniga and Miller, through Kandel’s contributions to the present, cognitive neuroscience has built a nucleus of “transdisciplinary” knowledge of excellent transforming power in various disciplines such as neurology, psychiatry and psychology; that has led it to a constant construction process, accepting challenges, adapting its techniques, defining its methodology and its theoretical frameworks.

Neuropsychology is the discipline that investigates the relationships between cognitive processes, underlying brain mechanisms, and pathological disorders. It was the beginning of today’s applied

cognitive neurosciences. The concern with the connections between the brain and the mind is almost as old as the world. Plato and Hippocrates (400BC) thought that the brain was the basis of thought. The latter defines the sacred disease (epilepsy) as a medical condition and not, as previously believed, a possession of the devil. Aristotle, a century later, convinced everyone otherwise, that the heart was the seat of the mental process, which lasted for several centuries. After the medieval scientific obscurantism, towards the 18th century, Franz Josef Gall’s the Phrenology described cognition and behaviours related to the shape of the skull. Gall was the first to associate aphasia with a frontal injury, and he was probably the father of Neuropsychology. However, science never recognized him because his claims were unscientific, remaining at that time as a great charlatanism. After this failed attempt, neuropsychology was finally born in France with Paul Broca and his aphasia description due to a left frontal injury. Neuropsychology takes a significant boost with the locator school with names like Paul Broca, Karl Wernicke, Armand Trousseau, and Arnold Pick. At that time, in Europe, the psychologist school included authors such as John Hughlings Jackson, Pierre Marie, and Henry Head.

In the mid-20th century, Wilder Penfield in Canada reports on his cognitive studies

with brain stimulation. From the war wounded to the wounded patients, the neolocation took hold with the American neurologist Norman Geschwind who describes the disconnection syndromes. At the same time, in Russia, Alexander Luria developed the Pavlovian-influenced school of reflexology.

In the following years, neuropsychology addressed neurophysiology (EEG, evoked potentials, event-related potentials) and functional brain neuroimaging (functional magnetic resonance imaging-FMRI, positron emission tomography-PET).

Cognitive Neuroscience was born as a conjunction between cognitive psychology, which studies cognitive processes, and neuroscience, exploring the nervous system with different molecular, functional, computational studies and pathological aspects. Nowadays, the last step is developing the applied cognitive neurosciences that cover all human beings' activities (neurosciences applied to education, neuroeconomics, neuromarketing, sports, neuropolitics, etc.).

In Latin America, Neuropsychology born at the beginning of the 19th century with the role of Amusias by José Ingenieros (*La nouvelle iconographie de la Salpetriere*, 1906) reaching the golden age of the 90 with Andre Roch Lecous (Canada), Fernando Dalmás (Uruguay), Juan Azcoaga (Argentina), Julieta Heres (Mexico) and Alfredo Ardila (Colombia). They have been developed in parallel with international advances; however, most of the Latin American works have remained in the dark or have been published in local universities media or regional magazines in Spanish without global knowledge. Another difficulty from the region was the high publication

cost of most of the indexed international journals.

In addition, the development of science in general and of neurosciences in particular has been accelerated in recent years in the region with several specialized university degrees in almost all countries and even doctorates in neurosciences such as those of the Universidad Maimonides in Argentina or that from the Universidad de la Costa in Colombia. In the last two years, the Ibero-American Forum on Cognitive Neurosciences has been developed with great success, which brings together researchers from the region.

All these situations lead to a conceptual shift in neuroscience communication reflected in the launch of the Journal of Applied Cognitive Neuroscience (JACN). This is the first scientific journal in Ibero-America, rigorously peer-reviewed with international standards, continuous biannual edition, free of charge, whose purpose is to make known the published content (in English) in relation to all fields of neuroscience cognitive in Ibero-America, from a transdisciplinary perspective, and with a continuous search for innovation to be shared worldwide.

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