



On the Biol Res issue dedicated to F. Varela

Dear Editor:

I have seen the issue of Biological Research dedicated to Francisco Varela I. I think that it contains many good articles. Yet there is something that I think cannot be accepted, and it is attributing to Francisco the authorship of ideas, notions and concepts that are not his, as is done by Dr. Palacios and Dr. Bacigalupo in their introductory work (1). Their admiration or love for Francisco Varela goes to the extreme of inverting the order of the authors when they mention the book "De Máquinas y Seres Vivos" even though it is well known that order of the authors is Maturana and Varela. As far as I can see this may be a mistake that arises from their deep sentiment of love for Francisco Varela. To do so, however, is as much a lack of respect for me as for Varela. So I wish now to tell both about my relationship with Francisco Varela, and what happened that he appears as co-author of the two books that we published together. I also ask you please to publish this letter in the next issue of the journal Biological Research.

Francisco Varela was my student in Chile from 1966 until 1968, that was when he left for Harvard, and at his own request he continued being my student while he was in the USA, from 1968 to the end of 1970. The ideas and notions that lead to the development of the understanding of living systems as discrete networks of

circular process of molecular productions, as well as the nature of autopoietic systems are the product of the work that I did alone from 1960 to 1970. I continuously presented my thinking in my lectures in the biology course to the medical students of the University of Chile in the Faculty of Medicine. So when in 1971 Francisco said to me: "If what you teach about living systems is the case, then one should be able to formalize it". My answer was: "One formalizes only that which one understands, so before any formalization of the understanding of what living systems are, one should make a complete description of the kind of network of processes that constitutes them as autonomous entities." After that, and out of my friendship for him, I invited him to write with me what I was teaching. The result was the book "De Máquinas y Seres Vivos". So he appears as co-author of that book because he participated in its writing, not because he participated in the origin or the development of the ideas in it.

The same happens in relation to the understanding that the nervous system exists and operates as a closed network of neuronal elements that intersects with the organism at its sensory and effector surfaces. I came to this understanding during my study of color vision in pigeons in 1965 without any participation of Francisco Varela. As a student of mine, Francisco learned that the nervous system did not encounter the medium, that it was the organism that interacted with it, and that all that the nervous system did in its operation as a closed network of

changing relations of neuronal activities was to generate sensory/effector correlations in the organism through its internal dynamics. Furthermore, he learned from me too that the effective behavior of an organism in the medium in which it conserves its living was the spontaneous result of an evolutionary history in which organisms and medium have changed together congruently in a process that I called later "structural coupling" in a dynamics of "Natural Drift through the conservation of Autopoiesis and Adaptation". In this process he also learned from me that what we call cognition in daily and technical life does not and cannot constitute a representation of an independent reality or transcendental world. Moreover Francisco did not at all participate either in the development of what I called *Biology of Cognition*, *Biology of Language*, and *Biology of Love*.

Francisco Varela left Chile with Samy Frenk and Antonio Wood by the end of 1973 in search of a mystical master. I stayed in Chile, and in 1974 I began teaching a course in the Faculty of Science that I called "Biology of Cognition". I continued teaching this course until 1987. When Francisco returned to Chile in 1980 I was happy to receive him in my laboratory, and we went to the OAS to apply for a grant for the work that we thought we might do together, but which we did not do. This grant was eventually given, thanks to the help and imagination of Rolf Heacke, who had been a student of mine, and who created a project to teach my course of Biology of Cognition in the form of a series of ten

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