

PHILOSOPHY OF SCIENCE AND TECHNOLOGY:

A PERSONAL REPORT

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Introduction

What follows is a summary of my work in the general philosophy and methodology of science and technology, as well as in the philosophy of some of their various branches. There is also a glance at my work in value theory and ethics insofar as it relates to science and technology. Finally all these various pieces are shown to be components of a new philosophical system hoped to be in harmony with contemporary science and technology and moreover one capable of stimulating their advancement.

1. Apprenticeship

My philosophical apprenticeship was unusually lengthy and unorthodox: it took two decades and did not involve attending any philosophy courses. In fact, I taught myself philosophy between 1936 and 1956. My teachers were books, journals, and a few amateurs like myself. On the other hand I was a regular physics student between 1938 and 1944. My first papers and my doctoral dissertation were in theoretical atomic and nuclear physics. I was lucky to work under the supervision of Dr. Guido Beck (1903-1988) from the moment he landed in Buenos Aires in 1943. He was an Austrian exile who had been an assistant to Werner Heisenberg in Leipzig, and had produced a large number of original papers and long review articles in a variety of subjects.

However, my earliest intellectual love was philosophy. So much so, that my first philosophy paper was published in 1939, whereas my first physics paper appeared five years later, and my latest in 1983. I went into physics for the love of philosophy, for I wished to refute the influential idealist doctrines, now nearly forgotten, expounded in the 1930s by the astrophysicists Sir Arthur Eddington and Sir James Jeans. The aim of my doctoral dissertation (1952) was to find out whether relativistic quantum mechanics preserved anything resembling Bohr's orbits: alas, it turned out that it does not.

Quantons, as I call the things that “obey” the quantum theory, are quite different from classons.

Thus, from the start I studied science for philosophical reasons. But, once I thought that I had acquired a scientific frame of mind and background, I began to approach philosophy in a scientific way. So, I was a philosopher among scientists and a scientist among philosophers – which, I am afraid, endeared me to neither.

My first work in the philosophy of science was a book-length criticism of Reuben Osborn and Wilhelm Reich’s combination of Freud with Marx. My thesis – inspired in my readings of Russell’s *Problems of Philosophy* and some Marxist works – was that psychoanalysis is neither scientific nor compatible with Marxism. I wrote that essay in the summer of 1938, shortly before being admitted into the Facultad de Ciencias Físicomatemáticas of the Universidad Nacional de La Plata. Fearing a police requisition of my home – which eventually came to pass – I gave the typescript for safekeeping to a physician-philosopher friend who, in turn, lost it. Good riddance.

My first published philosophical essay was “Introducción al estudio de los grandes pensadores” (1939), a long and pretentious commentary on a number of philosophical doctrines. In 1943 I published a criticism of classical positivism inspired in Emile Meyerson, and two philosophico-historical booklets, one on Newton’s work and the other on Maxwell’s theory of the electromagnetic field. *Nature* and Beck published short favorable reviews of both booklets. That same year I conducted a private seminar on the problem of causality at the Universidad Obrera Argentina, which I had founded five years earlier, and which was closed down by the military dictatorship at the end of 1943, when it had a total of 1,000 students and 50 teachers.

In 1944 I launched *Minerva*, a philosophical journal devoted to the defense of rationalism (in the broad sense) in the face of the Nazi onslaught on reason. In this endeavor I was helped by the philosopher Risieri Frondizi – who much later was elected rector of the Universidad de Buenos Aires – as well as by my lifelong friend Hernán Rodríguez. There I published “¿Qué es la epistemología?”, perhaps the first general discussion in Spanish on the nature of the philosophy of science, and one that was to be often quoted. Presumably the only noteworthy ideas of this paper were that (a) philosophy is nothing but the theory of science, (b) philosophy is unique among all the disciplines in that its own study is philosophical, and (c) these ideas can be elucidated with the help of certain algebraic notions. Half a century later I still subscribe to (b) and (c) but reject (a) most vehemently if only because it leaves out ontology and ethics – as I noted gleefully in the paper.

In a note on “Precursores, predecesores y predictores” (1944) I criticized the histories of ideas limited to the search for precursors, in denying the