

SCIENCE AND HUMAN BEHAVIOR *TRANSLATED INTO PORTUGUESE*: CIÊNCIA E COMPORTAMENTO HUMANO

JOÃO CLAUDIO TODOROV

UNIVERSIDADE CATÓLICA DE GOIÁS AND UNIVERSIDADE DE BRASÍLIA

Science and Human Behavior was translated to Portuguese as part of the effort to begin a psychology course at the University of Brasília 40 years ago; one of the many results of the first visit of Fred S. Keller to Brazil. The book has been used continuously in undergraduate courses in Brazil since 1967.

Key words: *Science and Human Behavior*, Skinner, teaching of behavior analysis, translation of technical terms, Portuguese, Brazil

Dear Fred,

If this had been the 18th Century, I could have written a dedication which would have made things clear to everyone. As it is, I can only speak à deux. "To F. S. Keller" means "Thanks for many things"—in the late twenties for the only breath of behaviorism at Harvard—in the thirties for never failing and much needed reinforcement (which the layman, poor fellow, can only call faith)—and in the forties for showing how a science of behavior can be taught. S&HB could be written only because K&S came first.

Here's to the fifties and sixties!

Burrhus

February 1953

The above dedication was handwritten by Skinner in a copy of his recently published book. I have that copy now thanks to Fred Keller's wife, Mrs. Frances Keller, and his son, John V. Keller. Skinner's dedication of *Science and Human Behavior* (S&HB, 1953) to Fred Keller shows the importance of that friendship for the intellectual and scientific development of both. *Principles of Psychology* (Keller & Schoenfeld, 1950) was a landmark introductory textbook in the experimental analysis of behavior and prepared the way for S&HB. Naturally, these books were the first two on the topic of behavior analysis to be translated into Portuguese. On the 40th anniversary of the publication of *Principles of Psychology* (K&S), I wrote about its importance for the introduction of behaviorism in Brazil (Todorov, 1990). The 50th anniversary of S&HB offers me the opportunity to talk about the continuing story of that second book in Portuguese-speaking countries (with apolo-

gies to my Portuguese friends for including Portugal in that list!).

Fred Keller came to Brazil in 1961 as a Fulbright Scholar to teach for one academic year at the University of São Paulo (J. C. Todorov, 1996). The success of his work led to the invitation of a second Fulbright Scholar, John Gilmour (Gil) Sherman, then a young Ph.D. from Columbia University. Gil Sherman, Keller, Carolina Bori, and Rodolpho Azzi worked together at the request of the new University of Brasília (M. S. R. Todorov, 1995, 1997). This collaboration resulted in, among other things, the development and application of the Personalized System of Instruction (PSI; Keller, 1968, 1982, 1987).

In March of 1963 the plans for a psychology department in Brasilia were discussed with Fred Keller in New York. Keller seemed enthusiastic with the idea: "I agreed to join them, when my obligations at Columbia were discharged. Then I went to conventional teaching for one more term. I found it very difficult, however, to think about anything but Brasilia and our future operations there" (Keller, 1971). The introduction to the experimental analysis of behavior was planned as a two-semester course. The first semester was mainly the Columbia course as originally designed by Keller and Schoenfeld, using K&S as the textbook. The course was adapted to a personalized system of instruction by Keller and Gil Sherman and tested at Columbia in the autumn of 1963. This PSI course was then fully developed for the University of Brasilia by the effort of eight collaborators, including Carolina Bori and Rodolpho Azzi, and began in August of 1964. The second semester of the one-year introductory course included only readings focused on human be-

havior, with translations into Portuguese of some of the first (and now classic) experimental work on the analysis of individual human behavior. Among these were Greenspoon's studies with verbal behavior (Greenspoon, 1955), the conditioning of textual responses (Staats, Staats, Schultz, & Wolf, 1962), the use of tokens as reinforcers (Ayllon & Michael, 1959), and excerpts from *Experimental Foundations of Clinical Psychology* (Bachrach, 1962).

I joined the group in January of 1963 as a teaching assistant. While in São Paulo my duties included the translation of material to be used in the PSI course (that we called *Introdução à Análise Experimental do Comportamento—IAEC I and II*). In that year I was assigned the translation of *Science and Human Behavior*. As I only had formal classes of English at the high school level (enough to pass entrance examinations and to read textbooks in the English language for 4 years), Rodolpho Azzi supervised the translation, which was ready by the end of 1964. I had my work made less difficult by a translation to Portuguese of technical terms used in the operant literature, published in the *Journal of the Experimental Analysis of Behavior* (Azzi, Rocha e Silva, Bori, Fix, & Keller, 1963), one of the several initiatives of Keller in his first year in Brazil. It was a fascinating job because the book covers most of the field of psychology with which I had had contact through different theoretical languages in my undergraduate course. *Ciência e Comportamento Humano* was my last contribution to IAEC I and II. I had from January to July of 1965 to collect data and write my Master's thesis before going to Arizona State University's graduate program beginning in September. It is curious that the first experimental work conducted in Brasilia was published in the *Journal of Experimental Psychology: General*, and not the *Journal of the Experimental Analysis of Behavior* (Nazzaro & Todorov, 1966). Azzi, Fix, Keller, & Rocha e Silva (1964) published the first work in the experimental analysis of behavior done in Brazil in the *Journal of the Experimental Analysis of Behavior*.

In October of 1965 a major political upheaval at the University of Brasilia led to a disbanding of the initial group of behavior analysts. Nine teachers from several departments, including Rodolpho Azzi, were fired

for political reasons, resulting in the resignation of more than 200 teachers, by then representing more than 90% of the university faculty. Of the original group, only Robert Berryman remained. Fred Keller and Gil Sherman had been in Tempe, Arizona since August of 1964, and James and Jean Nazzaro returned to the United States in July of 1965. Graduate students were hired as the new teaching staff (Todorov, 1997, Table 3).

The first semester of the introductory course has survived (IAEC I). Today practically every psychology course in Brazil has some version of IAEC I; in several cases, that is the only contact with behavior analysis in a 5-year undergraduate professional course of study. As a result, undergraduate students usually read only the first chapters of *S&HB*; those including the subjects also covered by K&S. With the publication of more recent textbooks (Baum, 1994; Catania, 1998; Miltenson, 1967), the K&S text is seldom used. *S&HB*, however, can still be found in most university bookstores in Brazil.

Nowadays IAEC usually is a one semester course. The experience with a second semester based entirely on data from human subjects and on the second half of *S&HB* was lost. Parts of the book, however, are used in different courses—from child development to organizational behavior—so it has been selling regularly since the first printing (the last was in 2000).

As the analysis of cultural practices becomes a matter of interest for behavior analysts (e.g., Biglan, 1995; Guerin, 1994; Lamal, 1997; Sidman, 1989) *S&HB* will continue to be a seminal book for those interested in all aspects of human social behavior. The sections on controlling agencies are actually more relevant now than in the last century. Skinner was writing about government during the first years of the Cold War. It is interesting that contrary to fictional accounts of totalitarian governments (e.g., Orwell, 1949), Skinner's work and that of his followers (Lamal, 1997; Rakos, 1993) analyze control and counter control under the imperfect functioning of democratic systems—imperfect in the sense that a democratic system implies a continuous balance of control and counter-control. Dictatorships, on the other hand, are very good at the work of making any possibility of counter-control difficult.

Skinner's analyses in *S&HB* deal with the functioning of democratic governments, but in Brazil his name came to be associated with the political right. *Beyond Freedom and Dignity* (Skinner, 1971) is, in my opinion, a terribly misleading title, even in English. It permits the interpretation that the author is treating freedom and dignity in a less positive, if not pejorative, manner. The translation to Portuguese was a disaster: *O Mito da Liberdade* (The myth of freedom). With that title a leftist will hate the book before reading it, and that is what happened to Skinner in Brazil. Sometimes a friend from the intelligentsia will ask me, "How can you be a democrat and a Skinnerian at the same time?" My standard answer is, "Read *Science and Human Behavior*."

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