

## JOSEF BROŽEK AND PSYCHOLOGY IN CZECHOSLOVAKIA

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BROŽEK's personal and literary contacts have been world-wide and involved countries as widely separated as Japan (with HOSKOVEC, 1966), India (1980), South Africa (1979), and Brazil (1979b). Furthermore, the subject matter involved not only psychology but other disciplines as well, especially nutritional anthropometry and body composition (e.g., in India, BROŽEK, 1966a, in Japan, BROŽEK, 1975) and ethnomusicology (BROŽEK, 1955, 1956c, 1957c, 1958, 1965).

His work report for the last 10 years includes sections on Slavica, Sovietica, Alemanica, Iberoamericana and Hispanica (BROŽEK, 1983). The present account will be limited to his literary contacts with Czechoslovakia, with special reference to contemporary psychology and the history of psychology.

As is typical of the author's approach, the flow of scientific information was bidirectional.

At times the geography of international exchange of scientific information becomes more complex, as when a review of Soviet investigations on the role of the central nervous system in the pathogenesis of arterial hypertension appeared not only in English (SIMONSON and BROŽEK, 1959) but also in Spanish (SIMONSON and BROŽEK, 1960) and in Czech (BROŽEK and SIMONSON, 1960).

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## BROŽEK'S WORK REPORTS

Two of the "bibliographical accounts" cover much of his professional life time. The 1973 report deals with the years 1937-1972 while the 1983 report registers the author's scientific activities in the past decade.

The 1973 account groups the publications under the following headings: Human variability, methods of measurement, performance and fatigue, nutrition and behavior, aging, history of psychology, and international exchange of scientific information.

The 1983 report is restricted to history of psychology and the influence of malnutrition upon behavior, reflecting the changes in the author's professional interests. On the other hand, the geographical scope is substantially broadened. In particular, the references document the author's expanded contacts with the German-speaking areas of Europe as well as with Latin America and Spain.

## WEST TO EAST

### CONTEMPORARY U.S. PSYCHOLOGY

A comprehensive report (BROŽEK, 1971a) covers six aspects of contemporary American psychology: sources of information, philosophical considerations, the institutional setting, spectrum of interests and activities, university teaching and academic degrees and the neighboring disciplines. Whenever possible, the information was presented in quantitative form, e.g. the number of psychologists in different categories of employment.

Separate attention was devoted to the new American periodicals (HOSKOVEC and BROŽEK, 1966a), study of psychology at American universities (1966b), basic reference books (1966c), research projects (1966d), and contemporary American societies for the study and application of psychology (1966e). In addition, the Proceedings of the 73rd Annual Convention of the APA were reviewed (1966f).

### AGING

In the area of gerontological psychology, a report was provided (BROŽEK, 1966b) on the Symposium on Adjustment to Aging, held on 8 August 1964 within the framework of the XVth International Congress of Applied Psychology (Ljubljana, Yugoslavia) and organized by prof. BROŽEK.

The second communication dealt with psychological results obtained in a longitudinal study, carried out at the Laboratory of Physiological Hygiene, University of Minnesota, on factors associated with the development of coronary heart disease (BROŽEK, 1968). Statistically significant differences in several personal characteristics were established between individuals who eventually developed coronary heart disease and the control group of men who remained free of the disease. The experimental group had initially higher scores on "activity drive", "masculinity" of interests, and on the psychoneurotic scale ("hypochondriasis").

### MALNUTRITION AND BEHAVIOR

The topic has been of long-standing concern to the author whose interest in the subject was stimulated in 1938 by his observations made during his work, as a

psychotechnologist, in Zlín (today's Gottwaldov) in Moravia.

A review of the world literature on neurophysiological disturbances resulting from maintenance of inadequate diets, subsequently published in the form of a chapter in the American Physiological Society's Handbook of Physiology (BROŽEK and GRANDE, 1960), appeared in Czech in the form of a small monograph (BROŽEK and GRANDE, 1959).

A survey, focused on the author's experimental investigations on the effects of acute starvation, prolonged caloric restriction (semistarvation), and vitamin (esp. thiamine) deficiency on human behavior, appeared both in Czech (BROŽEK, 1961a) and in Slovak (1961b). Considered are also clinical and field studies, and studies on animal behavior.

The study of thiamine restriction and deficiency, in which both behavioral and biochemical methods were used, added to the then available information about man's thiamine requirements and provided a comprehensive characterisation of the changes, some of which were rapid and profound (personality, some motor functions), resulting from maintenance on a thiamine-free diet. Supplementation of the experimental diet with synthetic vitamins resulted in recovery that was striking both in terms of speed and degree.

For a comprehensive review of the recent literature of the effects of subclinical and clinical malnutrition in children see BROŽEK, 1978a, 1984.

Whereas the vitamin studies, concerned with specific nutrients, required sophisticated diets, the study of semistarvation was concerned with a problem that has plagued humanity from times immemorial: restricted amount of food.

The behavioral effects of semistarvation on different categories of functions differed widely, with no negative impact on sensory functions, essentially normal performance in a variety of measures of intelligence, differential effects on motor functions (with greatest effects on strength), and marked effects on personality.

#### GENETICS OF BEHAVIOR

The report (BROŽEK, 1971c) was prepared as the introduction to a Symposium on the Genetics of Human Behavior, held in Brno in association with a larger conference devoted to Gregor MENDEL. The author, who chaired both sessions of the special symposium, clarified the various uses of the term "genetic psychology" and discouraged the use of the term as a synonym for "developmental psychology". In BROŽEK's view, the meaning should be restricted to the study of the "heritability" of behavior.

In his survey of research on animal genetic psychology, special attention was devoted to work reported in a monograph, edited by V.K. FEDOROV (1969), director of the laboratory of the Genetics of Higher Nervous Activity in Pavlovo (earlier "Koltushi"), near Leningrad, a unit in the complex of laboratories of the USSR Academy of Sciences.

Experiments reported in this volume dealt with the inheritance of such characteristics as "emotionality" in rats and susceptibility to audiogenic seizures, and general motility in the crosses between two species of fish (sturgeon and sterlet). Special attention was given to the inheritance of "mobility" (*podvizhnost'*) of the nervous

processes, defined behaviorally as the capacity to adapt to changes (reversal) in the "meaning" of conditioned stimuli; the Russian synonym is "skorost' peredelki" -the speed of transformation of conditioned responses, such as turning in a T-maze to the right when sound is presented and to the left when a light appears. Crossbreeding was used as the principal method for studying the nature of inheritance (BROŽEK, 1971d).

## EAST TO WEST

### BOOK LISTS AND BOOKS REVIEWS

Through nearly 20 years, since 1961, at roughly yearly intervals, booklists of "Recent Slavic Books in Psychology", compiled by prof. BROŽEK himself or in cooperation with various coworkers, were appearing in *Contemporary Psychology*. It was my pleasure to assist in this effort when I visited Dr. BROŽEK in USA in the sixties and seventies. In a separate section, the booklists included books from Czechoslovakia. The coverage was comprehensive.

In *Isis*, the highly regarded journal of the History of Science Society, BROŽEK reviewed books concerning the older Czech physiologists Georgius PROCHÁSKA (1749-1820 BROŽEK, 1957a) and Jan Evangelista PURKYNĚ (PURKINJE) (BROŽEK, 1956a, b, 1957b, 1960a, b).

As the advisory editor of the *Contemporary Psychology*, prof. BROŽEK arranged for reviews of Czech and Slovak books in this widely-read journal. These reviews constituted for the Western reader the principal source of information about developments of psychology in Czechoslovakia. I remember gratefully that he skilfully edited my reviews written for the journal. He provided assistance also in preparation of papers concerning the history of psychology in East Europe which I presented at Lehigh University (1965 and 1971) as well as at the APA Convention in New York, 1966. He, jointly with John A. POPPLESTONE and Marion White McPHERSON, also advised me on the program of research in the Archives of the History of American Psychology in Akron, Ohio, 1983.

### REPORTS ON CZECH PSYCHOLOGY

BROŽEK and HOSKOVEC (1966) wrote a report on psychology in Czechoslovakia including such topics as book reviews, periodicals, educational institutions, research centers, institutes, and clinics. Later BROŽEK and HOSKOVEC (1973) supplemented an earlier account by a report on "Psychology in Czechoslovakia: Bibliographical documentation and quantitative characterization".

BROŽEK (1977a, b, 1981) has written about several outstanding figures of Czech psychology: Jan Evangelista PURKYNĚ, Mihajlo ROSTOHAR and Václav PRÍHODA.

J.E. PURKYNĚ (1787-1869). BROŽEK (1971b) views PURKYNĚ's contributions as relevant to a number of scientific disciplines, even though he was, first and foremost, a physiologist. PURKYNĚ's specific significance for psychology is large and not adequately assessed.

BROŽEK notes that the syllabus of lectures given, in Czech, during the Spring semester of 1860 at the Faculty of Medicine in Prague documents anew PURKYNĚ's



broad view of physiology. PURKYNĚ included not only topics which would be viewed as falling into an area between physiology and psychology ( "On Senses in General", "On the Movements of Higher Animals and Man", "Nervous System as the Instrument of Mental Life") but lectured also on the psychological aspects of animal life and on man as a "psychological organism".

PURKYNĚ's concern with matters psychological was especially prominent at the very beginning of his activity as an innovative investigator. The *Beiträge zur Kenntnis des Sehens in subjektiver Hinsicht*, especially the first (1819) volume, were not only an important contribution to psychology but played a significant role in PURKYNĚ's professional career as well. This volume was decisive for the fortunate turn which his life took. Having opened a new vista to students of nature, it earned him the friendship and the patronage of Goethe who was engaged in similar studies. Since Goethe stood at that time at the pinnacle of his fame, his protectorship facilitated PURKYNĚ's academic advancement.

Prof. BROŽEK spent the summer of 1973 in Czechoslovakia, and devoted much of his attention to the transcription (with the assistance of Edith HOSKOVEC, who is Austrian), and a preliminary analysis of PURKYNĚ's unpublished German manuscripts (notes for university lectures), dealing with psychological topics. He studied the original manuscripts in the Literary Archives (Literární archiv, Památník národního písemnictví, Prague 1 -Hradčany, Strahovské nádvoří 132).

During his stay in Czechoslovakia we visited dr. P. ŽALUD (in Ústí nad Labem, the town in North Bohemia not far from Libochovice, which is the PURKYNĚ's birth place) who attracted our interest by his article "J.E. Purkyně and contemporary psychology of sensory perception", published 1964 in the journal *Czechoslovak Psychology*. Dr. ŽALUD assisted effectively in the deciphering of some difficult passages in the manuscripts.

M. ROSTOHAR (1878-1966). Prof. BROŽEK (1978b) selected for a more intensive historical study another scientist -Mihajlo ROSTOHAR whom he regards as a psychologist of international stature. Although a Slovenian by birth, he was the founder of the first laboratory of experimental psychology at the Czech University of Prague in 1911/1912. As is true of many other of the world's laboratories of psychology, the lines of the Prague laboratory go back to Wilhelm WUNDT's Institute of Psychology in Leipzig where ROSTOHAR spent some time in 1911.

ROSTOHAR's Prague laboratory was short-lived. It was associated with the Institute of Physiology and did not directly affect the institutional history of psychology in the Department of Philosophy of Charles University.

ROSTOHAR made significant contributions as teacher, administrator, and scientist to psychology at the Masaryk (now PURKYNĚ) University in Brno, the capital of Moravia, where he was active for 25 years (1924-1949). He left Czechoslovakia in 1949 and returned to his native Slovenia, a man old in years but vigorous in physical health and spirit. Finally he was able to establish a Department of Psychology at the University of Ljubljana.

BROŽEK paid special attention to ROSTOHAR in a report on his studies on the history of psychology in Yugoslavia, presented at the 4th Congress of Yugoslav

Psychologists on 13-17 October 1971. Research in the Historical Archives of the University of Ljubljana and in ROSTOHAR's private papers failed to clarify the puzzle of why ROSTOHAR was not given a chair of psychology at the newly created Slovenian University, following the end of the Second World War, even though ROSTOHAR was the man who organized, in November 1918, a Commission for the Foundation of a Slovenian University in Ljubljana.

Prof. BROŽEK was particularly interested in the personal and social factors leading to the establishment of a separate section in the Department of Philosophy, at the University of Ljubljana, devoted to experimentally oriented psychology.

V. PRÍHODA (1889-1979). BROŽEK (1981) wrote a special review of the four-volume treatise about *Ontogenesis of Mental Life*, written by Václav PRÍHODA, prof. of Charles University. The work is viewed as representing a significant achievement, not readily matched in the world literature. The treatise was published by the State Educational Publishing House in Prague in 1963 (Vol. 1 - first 15 years of age), 1967 (Vol. 2. 15-30 years), 1970 (Vol. 3. 30-45 years), 1974 (Vol. 4. Second half of the life till death). It is praised as a thoughtful, well documented result of close to a quarter of century labor.

#### CLOSING COMMENTS

In teaching courses on the history of psychology at Charles University I utilize extensively the work of prof. BROŽEK, especially in the area of contemporary historiography of psychology (BROŽEK and PONGRATZ, 1980) and objective psychology (BROŽEK and DIAMOND, 1976, 1982a, b).

Josef BROŽEK has served as an effective mediator between different cultural and linguistic areas, emphasizing their positive contributions to the universal body of knowledge. Through his travels, personal contacts, world-wide correspondence, extensive exchange of publications, and hospitality extended to scientists of many nations, he and Mrs. BROŽEK have added an important human component to the concern for world cooperation and peace.

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In August-September 1983 the author had the opportunity to work in the Archives of the History of American Psychology, University of Akron, Akron, Ohio and the associated special book collections, including the extensive Josef and Eunice BROŽEK collection, held in the Bierce Library of the University. The author wishes to express his thanks for access to these valuable sources of information.

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