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Psychological Theories from a Structuralist Point of View

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Preface

Metatheoretical and, more generally, methodological analyses of psychological problems and theories have a long tradition; however, their impact on scientific practice, especially on the clarification and testing of existing psychological theories and the formulation of new ones, has so far been less than spectacular. The increased interest in theoretical psychology visible during the past ten or twenty years is associated with the hope that a change of this situation will gradually be effected. Thus, in their preface to the proceedings of the founding conference of *The International Society for Theoretical Psychology*, Baker et al. (1987, pp. Vf)[1] take up once more the objectives of a theoretical psychology formulated by Koch[2] already in 1951:

(a) Education in the methodology and logic of science.

(b) Analysis of methodological or foundational problems that are more or less unique to psychology. ...

(c) Internal systematization of suggestive, but formally defective, theoretical formulations.

(d) Intertranslation and differential analysis of conflicting theoretical formulations.

(e) Construction of new theory.

Reflecting on possible reasons for the relative inefficacy so far of methodological and metatheoretical analyses in psychology, it seems to me that the following two have been of prime importance:

(1) Many of the existing analyses are at best tenuously connected to concrete existing psychological theories, i.e., they deal with their subject matter in a too abstract, detached way. This detracts from the persuasive power which their results might otherwise have, and impedes the realization of these results within scientific practice.

(2) Theoretical psychology, as a metatheoretical discipline, is itself in need of an adequate methodology. Those who assume that e.g. informal logic and set theory play a comparable role in theoretical psychology as does statistics in empirical psychology, will find their

[1] Baker,W.J., Hyland,M.E., Van Rappard,H., & Staats, A.W. (Eds.) (1987). *Current issues in theoretical psychology.* Amsterdam: North-Holland.

[2] Koch, S. (1951). Theoretical psychology 1950: An overview. *Psychological Review*, **58**, 295-301.

expectations disappointed. Instead, analyses of psychological theories are usually conducted in an informal, narrative manner; as a consequence, the efforts to systematically study and compare psychological theories are frequently incompatible with one another and are guided by criteria separately conceived of by every new author. Obviously, this state of affairs does not promote the reliability of the results of theoretical psychology.

The present book is intended as a remedy for these two problems and to thereby contribute to the attainment of the objectives of theoretical psychology as originally formulated by Koch. Concrete psychological theories are reconstructed in a precise way and submitted to a thorough-going analysis by using the conceptual apparatus provided by the *structuralist approach* to scientific theories (see chapter 1 for an introduction to this new approach in the philosophy of science). While it must be ultimately left to the reader to decide whether the insights and outlooks emanating from this research represent true progress for theoretical psychology, progress which is associated with implications for scientific practice, the research presented in this book demonstrates that the structuralist approach is suited both for the precise reconstruction of existing psychological theories, and the construction of new ones.

After a brief introduction into the central ideas and concepts of the structuralist program (chapter 1), this book presents structuralist *reconstructions* of five psychological theory-nets (chapters 2 - 6), and structuralist *constructions* of two further ones (chapters 7 and 8). On the basis of these constructions and reconstructions, a first assessment of the current state of efforts to apply the structuralist approach to psychology is possible.

With one exception (chapter 6), the reconstructions of psychological theories published in this book have been presented and discussed at least at one of the first three conferences on "Psychological theories from a structuralist point of view", which were held in 1987 and 1988 at the Werner-Reimers-Foundation, Bad Homburg. At these conferences, the reconstructions were checked by psychological experts with respect to their substantial adequacy, and by philosophers of science with regard to their exactness and syntactical correctness.

It is planned to hold two further conferences in 1989 and 1990, respectively, at which additional reconstructions and constructions of psychological theories will be presented; these will be published in a second volume. A third volume will contain comments by psychologists and philosophers of science on the reconstructs and constructs presented in the first two books. However, the interdisciplinary character of the present research in theoretical psychology, in which psychologists cooperated closely with exponents of other disciplines, especially from philosophy of science, is already reflected in this volume by the fact that two of the authors (W. Balzer and M. Kuokkanen) are philosophers of science. I am very glad that they were willing to participate in this project.

This book would not have come into existence without assistance from several sides. Most of all, I would like to thank the Werner-Reimers-Foundation and its director, Konrad von Krosigk, for having made possible our conferences both by providing financial support and a congenial setting for the meetings. Thanks are also due to the Free University of Berlin for a grant which permitted the preparation of a manuscript ready for press. Special thanks are due to two people: Uwe Czienskowski, who prepared, with visible success, the printer's copy of the book manuscript; and Rainer Reisenzein, who helped to render the English of my

contributions more readable. Finally, I would like to express my gratitude to the Springer publishing house for its readiness to publish this volume.

Berlin, August, 1989 Hans Westmeyer

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Notational Conventions

The authors have attempted to use the standard notation of set theory and, in some chapters, the standard symbols for connectives and quantifiers as used in symbolic logic. Besides these conventions, each chapter has its own "formal style".

$\{... : --\}$	the set of ... such that $--$
$... \in --$	... is an element of $--$
$... \cup --$	the union of ... and $--$
$... \cap --$	the intersection of ... and $--$
$... \subseteq --$	... is a subset of $--$
$... \subset --$	... is a proper subset of $--$
$... \times --$	the Cartesian product of ... and $--$
$Po(...)$	the power-set of ...
$\neg ...$	the complement/negation of ...
$,,, : ... \Longrightarrow --$	$,,,$ is a function from ... into $--$
$D_I(...)$	$dom(...)$, i.e. the domain of ...
$D_{II}(...)$	$ran(...)$, i.e. the range of ...
$\|...\|$	the cardinality of ..., i.e., the number of elements of ...
$\emptyset$	the empty set
$\mathbb{R}$	the set of real numbers
$\mathbb{R}^+$	the set of positive real numbers
$\mathbb{N}$	the set of natural numbers
$... \wedge --$	... and $--$
$... \vee --$	... or $--$
$... \longrightarrow --$	... implies $--$
$... \longleftrightarrow --$	... is equivalent to $--$
$... :\longleftrightarrow --$	... is equivalent by definition to $--$
$\exists ...$	there exist ...
$\forall ...$	for all ...
$... = --$	... is identical to $--$
$... \neq --$	... is not identical to $--$
$... := --$	... is identical by definition to $--$
$... \cong --$	... is approximately identical to $--$
iff	if and only if