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role of epistemology within a new and enriched philosophical psychology.

### 337.4

#### The crisis in psychology

*Bakan D.*

*York University, North York, Ontario, Canada*

The crisis of psychology is not the lack of psychologists or lack of literature being produced. It is in the poor development of our understanding of human life, the science itself, and the relationship of the science to the world. Three senses in which there has been loss, subject matter, method, and mission, are discussed. The loss with respect to subject matter is associated with the systematic denial of the self-evident fact that mentation is essential to human conduct. The recent historical role of psychology in promoting the unfortunate idea that the main purpose of education is to fix responses rather than to enlighten and liberate is indicated.

## 339 SYM

### Cognitive science, new technologies, and psychological assessment Convener: H. Westmeyer

### 339.0

#### Cognitive science, new technologies, and psychological assessment

*Westmeyer H.*

*Free University of Berlin, Germany*

In the interchange of cognitive science and cybernetics, new technologies have been developed and applied to psychological assessment during the last decades. Based on IRT and artificial intelligence, a new generation of adaptive measurement devices is now available. Utilizing the technology of virtual reality makes it possible to present visual stimuli as well as other environmental conditions in psychological assessment in a completely new way. Knowledge-based expert systems are beginning to support or replace the psychological assessor and are becoming essential components of a more comprehensive normative approach to the diagnostic process. Some of these new advances in psychological assessment will be presented and discussed.

### 339.1

#### SmarTest: A generative adaptive multidimensional cognitive test battery

*Kyllonen P.C.*

*Armstrong Laboratory, San Antonio, Texas, USA*

The SmarTest project goal is to develop a prototype aptitude battery incorporating all

current, significant technology associated with abilities measurement. This includes computer delivery, item-generation (generative) technology, multidimensional adaptive technology, comprehensive cognitive abilities measurement, item windowing for response speed estimation, and a latent factor centered design. Testing projects in the USA and elsewhere are engaged in components of this research, but are working independently. Integration will produce a "next generation" prototype that measures a wider variety of abilities than are measured by current systems, in a shorter amount of testing time.

### 339.2

#### Virtual reality: A new technological tool for psychological assessment

*Juan-Espinosa M., & Colom R.*

*Universidad Autónoma de Madrid, Spain*

We take Virtual Reality as a new technological device for psychological assessment assisted by computers. Basic concepts, such as "viewpoint", "navigation", "manipulation", and "immersion" will be introduced. Referring to a pilot study on spatial orientation, we present a comparison of the effectiveness and subjective experience of navigation over virtual versus real worlds. Also a contrast of virtual reality and traditional ways of assessment of spatial orientation will be included. Certain technical issues, such as autonomic navigation, stereo and non-stereo vision, touch, etc., will be discussed. Finally, we highlight the possibilities of some extension to other domains of psychological assessment and realistic training simulations.

### 339.3

#### Spatial cognition in virtual and real environments

*Hunt E.*

*University of Washington, Seattle, USA*

Technological advances have made it possible to place people in "virtual worlds". These are primarily visual and auditory worlds, divorced from normal proprioceptive and kinetic cues. Enthusiasts have maintained that virtual environments represent tremendous opportunities for learning because participants can have direct experience with a virtual environment when placement in the corresponding real world is inappropriate. This assumes that information acquired in a virtual environment will transfer to actual environments. There are limits on such transfer. These limits are partially associated with characteristics of the learner. The results have implications for the use of virtual environments in education and training.

### 339.4

#### Supporting and analyzing the process of clinical assessment: Computer technology as an heuristic tool

*De Bruyn E.E.J.*

*University of Nijmegen, The Netherlands*

In analyzing individual cases, the clinical psychologist is confronted with many problems which cannot be answered by applying simple statistical rules. To justify his or her decisions, the psychologist has to perform various kinds of knowledge-based reasoning. However, in most clinical cases, the available knowledge is ill-defined and the diagnostician has to rely heavily on his or her personal knowledge and reasoning to get a solution. In this presentation, the focus is on concrete examples of computerized tools for supporting and analyzing the diagnostic process.

### 339.5

#### Computer-assisted assessment from a normative point of view

*Westmeyer H.*

*Free University of Berlin, Germany*

To avoid typical errors frequently occurring in the course of diagnostic processes, a normative approach to the diagnostic process is suggested and exemplified by an algorithmic model on the basis of an exact explication of the concepts of diagnosis, prognosis, and decision. Problems of implementing such a strictly normative model are discussed, and a more realistic, moderately normative model of the diagnostic process is proposed. Available software products relevant to this kind of normative approach are mentioned, and a program system which assists the psychological assessor in his or her efforts to implement a moderately normative model of the diagnostic process is outlined.

## 340 IPS

### Psychology of paranormal and pseudoscientific beliefs (C.C. French)

### 340.1

#### Believing in luck

*Smith M.D.*

*University of Hertfordshire, Hatfield, UK*

This paper presents a qualitative analysis of the structure, nature and implications of individuals' beliefs about luck. Interview and questionnaire data were collected from 59 individuals who considered themselves either very lucky or very unlucky. The data strongly suggested that belief in luck is related to, but significantly different from, belief in the paranormal, fate and superstition. In addition, the beliefs also differed from the assumptions psychologists typically make about the nature of luck, and have implications for people's under-