SESSION III COMPUTER-BASED EDUCATION

Doris Aaronson, *President*

Personal computer software for teaching differential psychodiagnostics

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The third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1980), outlines for the student what symptoms to consider when attempting to arrive at an accurate differential diagnosis of eight broad psychiatric categories. This paper describes a program developed to instruct a medical or graduate student in the science of such decision making.

This paper describes a personal computer (PC) program for use in the instruction of differential diagnosis in psychiatry. The American Psychiatric Association's (1980) third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) provides appended outline decision trees that enable the student or clinician to make accurate differential psychodiagnostic decisions. I incorporated these decision trees into a program, written in BASIC, that allows the user to differentially diagnose symptomatology within the areas of psychotic features; irrational anxiety and avoidance behavior; mood disturbance; antisocial, aggressive, defiant, or oppositional behavior; physical complaints; academic or learning difficulties; and organic brain syndromes.

Typically, psychodiagnostic assessment is a prelude to psychotherapeutic services. Many theorists (e.g., Bishop, Sharf, & Adkins, 1975; Hurst, Weigel, Thatcher, & Hyman, 1969; Johnson, 1965) consider accurate psychodiagnostic assessment essential to effective treatment. Yet a significant body of literature suggests that clinicians make diagnoses based on biased value positions rather than on scientific judgments (Batson, 1975; Batson & Marz, 1979; Caplan & Nelson, 1973; Goffman, 1961; Halleck, 1971; Langer & Abelson, 1974; Rosenhan, 1973).

A primary problem concerning psychological "reality" is that it is relative. That is, instead of being fixed and static, as the standard model of science requires in the discovery of lasting empirical relationships, it does not stay constant over time, nor does it remain uninfluenced by attitudinal and cultural changes of the period.

Menninger (1963) defined diagnosis as a basic process "to differentiate, to distinguish, to designate. It is to recognize, to have knowledge of, or to come to an understanding of" (p. 36). Furthermore, he stated that "psychiatric nosology has often been a matter of mere listings or classification. Genera, species, types, and specific entities have been identified and described, sometimes with enormous elaborateness" (p. 419). Popper (1934) noted that the process of classification is just as dependent on the classifier's purposes as on the entity being classified.

Nevertheless, when a diagnostic nosology exists, in a quantifiable manner, a diagnostic program can be created. The degree or level of sophistication depends on the ability of the programmer and the needs of the user.

Many tests and programs exist that yield diagnostic impressions, yet many of these come in forms not suitable for training. For example, National Computer Systems (NCS) has an automated version of the Millon Clinical Multiaxial Inventory (MCMI) and the Millon Adolescent Personality Inventory (MAPI), which yield DSM-III Axis II diagnostic formulations. Although these two excellent tests provide quite good clinical information on an examinee, they do not aid the clinician in learning how the diagnostic conclusions are reached. It is not evident what kind of responses to what kind of questions asked in what order yield what kind of diagnostic impressions. Other researchers have developed direct patient-examiner interviews (Erdman, Klein, & Greist, 1983, 1985; Greist et al., 1973; Greist, Van Cura, & Kneppreth, 1973). If a trainee observes the process, it may be of a heuristic benefit, but this has yet to be tested empirically.

Thus, in response to an unmet clinical training need, I developed a differential psychodiagnostic tutorial pro-

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gram. It is not at all sophisticated or complex in its programming, and thus it can be easily enhanced. Users already sophisticated in BASIC can easily adapt or modify the program to suit individual needs or class structure. One suggestion is to include a branch that would provide the beginning student with more, or the advanced student with less, detail in symptom examples.

Psychodiagnostic accuracy is the key to appropriate treatment, yet such accuracy is difficult to teach. Bias in diagnosis has long been a problem in psychiatry (Stout, 1986), and APA continues to develop the DSM series. Even some professors view (and espouse) psychodiagnosis to be an "art."

The program described here, a departure from such art, returns to verifiable, repeatable science in which bias and value judgments play no role. The program, which was field tested in a private psychiatric hospital setting, can run on an IBM PC, IBM PC Jr., or IBM compatibles (Turbo XT, Leading Edge Model D, etc.). Little prior computer knowledge or sophistication is needed to run the program. No manual is necessary, and all instructions for use are summarized in one paragraph. The user is guided with response/control prompts every step of the way.

The program can be used not only in the teaching and training of differential diagnostic practice, but also to validate hypothesized diagnoses. Students and clinicians seem to enjoy playing "what if" scenarios with symptom categories and trying to "beat the computer" at formulating the correct diagnosis. This program can be an enjoyable tool to use in learning and teaching the logical, scientific way that the DSM-III should be used to differentially diagnose psychopathological conditions.

Those readers interested in receiving a free copy on disk should provide a formatted, double-sided, double-density 5½-in. floppy disk and a self-addressed, stamped return container to the author. Because different systems vary in their MS-DOS and BASIC commands, readers are encouraged to refer to their manuals for guidance in getting their system into BASIC.

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