

The following article was written as part of the Special Feature, Personality Disorder Criteria: Empirical or Theoretical, published in Volume 1, Issue 1 of this journal. Owing to the distinguished career of the author in matters both empirical and theoretical, it was decided to publish his perspectives on the topic following a period in which the views of others had an opportunity to be reflected on, as well as enabling his contribution to serve as the Feature's capstone.

Theodore Millon

THE DEFINITION OF PERSONALITY DISORDERS AND THE CRITERIA APPROPRIATE FOR THEIR DESCRIPTION

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Most psychiatric definitions are fuzzy, difficult to translate into diagnoses, and lacking in causal reference; as a consequence, diagnoses also tend to be unreliable and difficult to relate to methods of treatment (Eysenck, Wakefield, & Friedman, 1983). The concept of *personality disorders* has inherited the well-known difficulties attending the notions of psychopathy and sociopathy, which were notorious as wastepaper categories for the disposal of patients not otherwise diagnosable. It raises, in particular clarity, the problem with all psychiatric diagnoses, namely whether *categorical diagnostic entities* are suitable for the description of psychiatric disorders, or whether *dimensional approaches* are more appropriate (Eysenck, 1970).

The writer has argued, and produced supporting experimental evidence, that the categorical approach to classification may be more suitable to the actuarial point of view, but that it has no scientific backing and contradicts the great mass of empirical evidence (Eysenck, 1955, 1960; S. B. G. Eysenck, 1956; Trouton & Maxwell, 1956). The argument relies very much on a method of analysis introduced specifically to decide between the applicability of categorical classification and the applicability of dimensional analysis (Eysenck, 1950, 1952a). The statistical details are of no concern here, but the logic on which this approach is based may be of interest. Criterion analysis suggests that if we have two groups—say, schizophrenics and normals—it is possible to argue that schizophrenics incorporate some kind of qualitatively different disease process, which is absent in normals, and which gives rise to a separate diagnostic category that is differentiated from

normals (and presumably from all other psychiatric categories). Alternatively, it is possible to argue that there is a *continuum* from a normal state through somewhat abnormal, odd, schizoid, psychopathic, or what-not states to genuine schizophrenia, so that the underlying trait or disposition increases as we go further along this continuum from one end to the other.

This model, which has since become known as the "threshold model," was originally suggested for psychosis by Eysenck (1952a) and is illustrated in Figure 1. The abscissa shows the increasing genetic predisposition to schizophrenia; the normal curve gives a frequency distribution in the population; the cross-hatched curve gives a frequency distribution of affected individuals; and the stippled line *P* shows the likelihood of being affected at a particular level of *X*, the genetic predisposition.

The argument underlying criterion analysis is now as follows. If the threshold model obtains, then we can look for a number *n* of tests or measures, whether psychological, physiological, biochemical, or what not, which discriminate at a high level of statistical significance between the two groups (i.e., the normals and the schizophrenics), equated for age, sex, socioeconomic status, and so forth. As all these tests may be assumed to measure to some extent the genetic predisposition, they should be found to *correlate* both within the normal group and within the schizophrenic group. Furthermore, it should be possible to extract a general factor of "psychoticism" from these intercorrelations, and the loadings on this factor should be *proportional* for the normal and the schizophrenic groups. And finally, there should be a proportionality between the factor loadings for normals and schizophrenics, on the one hand, and the discriminative ability of the *n* tests, on the other. All of these consequences are required to maintain the relevance of the threshold model, but none of them would be found if the categorical disease model were applicable. As Eysenck (1952b) has shown, the evidence supports the threshold model, and it decisively rejects the categorical model of disease.

Direct evidence for the applicability of the dimensional approach to per-

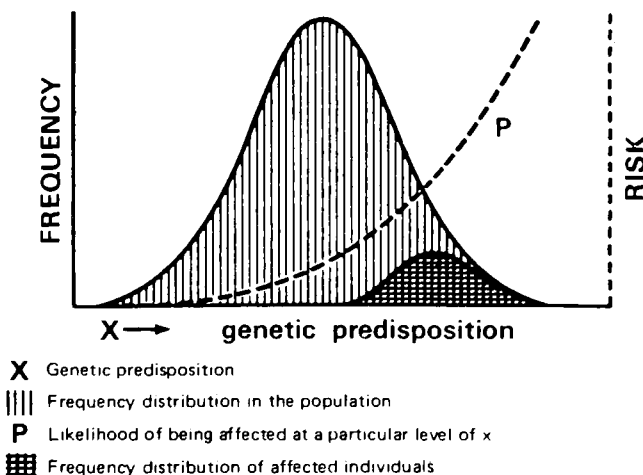


Figure 1. Diagram illustrating the "threshold model" of disease.

sonality disorders is given in a paper by Tyrer and Alexander (1979). An interview schedule was used to record the personality traits of 130 psychiatric patients, 65 with a primary clinical diagnosis of personality disorder and 65 with other diagnoses. The results were analyzed by factor analysis and three types of cluster analysis. Factor analysis showed a similar structure of personality variables in both groups of patients, supporting the notion that personality disorders differ only in degree from the personalities of other psychiatric patients. The authors argue that their results "support the concept of personality disorders as being at the extreme of a multi-dimensional continuum" (p. 166). The authors agree with Shepherd and Sartorius (1974) that in spite of its "elusiveness" (Lewis, 1974), the concept of *personality disorder* is still a useful one, a conclusion that seems to be contrary to their own dimensional approach. The "elusiveness" of concepts of psychopathy and personality disorder is a result of the variable combination of three major dimensions of personality, and the problem cannot be eliminated by using categorical diagnostic concepts. Unless we go over to a dimensional approach, *personality disorder* might forever remain elusive.

This finding is in good accord with evidence from numerous genetic studies investigating the *Erbkreis* surrounding psychotic disorders (Eysenck, 1972). What is found among the relatives of psychotic patients is a profusion of socially maladjusted, schizoid, antisocial, aggressive, psychopathic, delinquent, alcoholic, and addictive personalities of various kinds, clearly differentiated from normal people but equally clearly not psychotic in the psychiatric sense. These would, then, be the people who, in Figure 1, lie to the left of the affected group (schizophrenics) but are sufficiently close to it to be differentiated from the more normal persons lying to the left of the mean of the frequency distribution. This continuum has been labeled "psychoticism" and it has proved possible to measure it by means of personality questionnaires (H. J. Eysenck & S. B. G. Eysenck, 1976). There is by now quite a large literature surrounding this concept, which has been summarized by Claridge (1981, 1983).

Psychoticism is one of three major dimensions of personality that emerge time and time again from the statistical analysis of large numbers of traits organized in a variety of ways. Royce and Powell (1983) have surveyed the whole literature and have listed those traits and combinations of traits they consider best supported by the evidence. At the lowest level we have a series of some 20 traits, organized at the second level into some 7 factors. These are themselves correlated and give rise to 3 major dimensions of personality, which Royce and Powell call "emotional stability," "emotional independence," and "introversion-extraversion"; Figure 2 shows their arrangement. These factors are very similar to those emerging from my own studies (H. J. Eysenck & M. W. Eysenck, 1985). I have labeled these *psychoticism* (for emotional independence), *extraversion-introversion*, and *neuroticism* (as opposed to "emotional stability"); it will be convenient to refer to these dimensions in terms of their initial letters: *P*, *E*, and *N*.

The precise meaning of these superfactors or dimensions is shown in Figures 3, 4, and 5, which show in some detail the characteristic traits of each. It is the correlations between these traits that give rise to the three independent dimensions. They are given here to lend some body to our

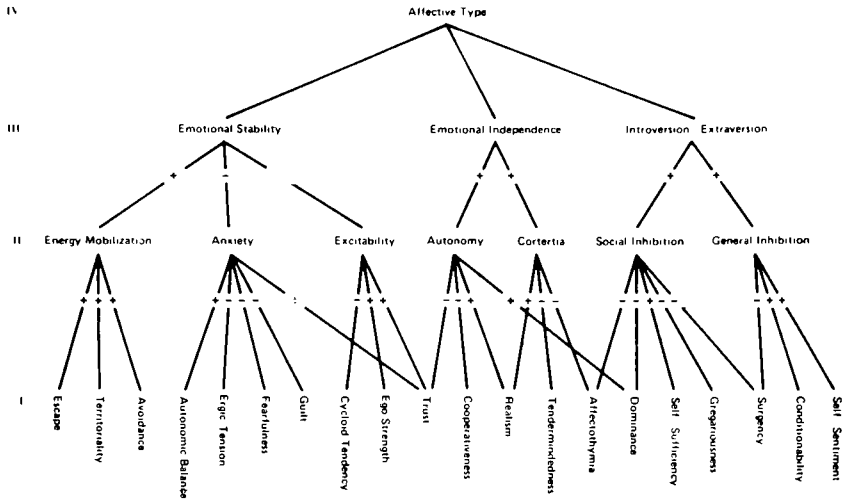


Figure 2. The hierarchical structure of personality. From Royce and Powell (1983). Used with permission.

discussion, as precision in the use of terms is essential to a proper understanding of the argument. A much more detailed presentation of these personality dimensions (and the evidence underlying their variation) is given elsewhere (H. J. Eysenck & M. W. Eysenck, 1985).

The experimental study of these dimensions of personality has very firmly established a number of points that are stated only very briefly here: (a) The same dimensions emerge from many different studies, using different rating and self-rating instruments, applied to different populations and different sexes, ages, etc. (b) The same factors emerge from studies in many different countries, including African and Asian as well as European and North and South American populations. There seems to be no doubt from these cross-cultural studies that these dimensions are characteristic of humankind in general, regardless of differences in culture and nationality (Barrett & Eysenck, 1984; H. J. Eysenck & S. B. G. Eysenck, 1983). (c) There is a strong genetic component to all three dimensions, accounting

Figure 3. Traits characteristic of high psychoticism.

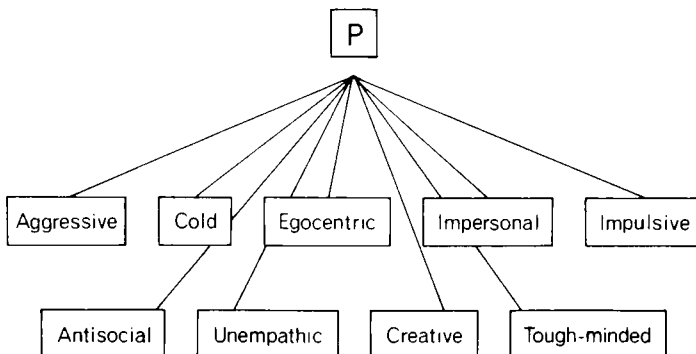
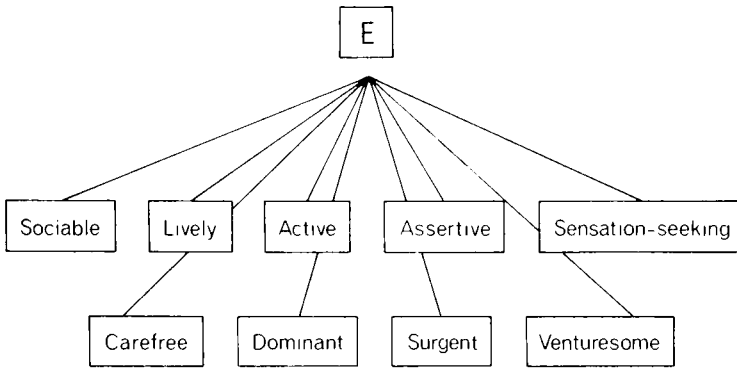
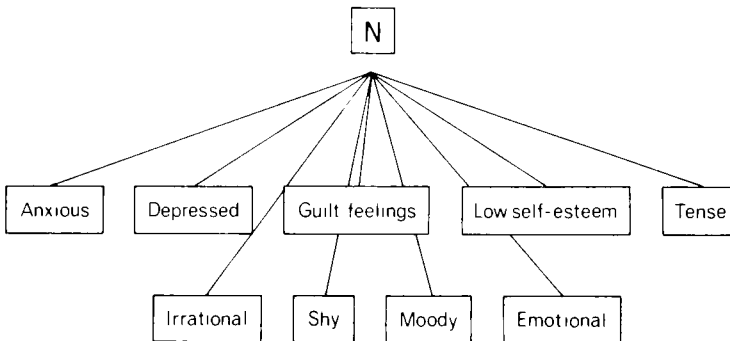


Figure 4. Traits characteristic of high extraversion.



for something like two thirds of the total variance (Fulker, 1981). (d) There exist biological theories involving the limbic system, the reticular activating system, and the hormonal system, giving a *causal basis* to individual differences along these three dimensions of personality (H. J. Eysenck & M. W. Eysenck, 1985). It thus seems very likely that what DSM-III calls "personality disorders" is really a combination of these dimensions of personality and is not to be diagnosed in any categorical fashion. H. J. Eysenck and S. B. G. Eysenck (1978) have argued that personality disorders of various kinds will be found in the octant in the three-dimensional personality space defined by *P*, *E*, and *N* where high scores on all three personality dimensions are combined; that is, the space characterized by high *P*, high *E*, and high *N* (Eysenck, 1980). It is also argued that differences in behavior will be found depending on the *degree of predominance* of one or the other of these three factors, and quite generally their mutual integration. Thus the concept of *personality disorders* is not seen as a categorical diagnosis but as behavior characterized by the confluence of three major dimensions of personality, determined in its precise operation by the predominance of one or another of these, and shading gradually and imperceptively into more normal types of behavior.

Figure 5. Traits characteristic of high neuroticism.



It is interesting to compare this conception with what DSM-III has to say. As the manual states, traditionally, in diagnosing personality disorders, the clinician has been asked to find a single, specific personality disorder that adequately describes the individual's disturbed personality functioning; as is also pointed out, this can usually be done only with difficulty, "since many individuals exhibit features that are not limited to a single personality disorder" (p. 306). The manual suggests that diagnosis of more than one personality disorder should be made when the individual meets the criteria for more than one. Thus the intention is to retain the categorical method of diagnosis, but to alter it in such a way as to approach somewhat the dimensional model.

What is of particular interest, however, is the suggestion made in DSM-III that personality disorders should be grouped into three clusters. These clusters, as it happens, resemble quite closely the psychological personality dimensions of *P*, *E*, and *N*. The first cluster includes paranoid, schizoid, and schizotypal personality disorders; individuals with these disorders often appear "odd" or eccentric. This clearly is the essence of the *psychoticism* factor. The second cluster includes histrionic, narcissistic, antisocial, and borderline personality disorders; and it is stated that individuals with these disorders often appear dramatic, emotional, or erratic. These traits are characteristic of *extraversion*. The third class, then, includes avoidant, dependent, compulsive, and passive-aggressive personality disorders; and it is stated that individuals with these disorders often appear anxious or fearful. This description clearly resembles our *neuroticism* factor. (DSM-III also has a residual category, which is labeled "atypical, mixed or other personality disorder"; this is used for other specific personality disorders of all conditions that do not qualify as any of the specific personality disorders described in this manual. Clearly this is a wastepaper category of no particular interest.)

We can see that on the descriptive side there is a good deal of agreement between DSM-III and the system of personality description elaborated by psychologists, the only point of argument really being whether a categorical or a dimensional system is better suited to the description of personality disorders. It would, I think, be difficult to argue in favor of a categorical system, which is really a relic of the medical diagnostic model erroneously applied to behaviors that are by nature continuous in their manifestations and impossible to categorize in this fashion. As the description in DSM-III makes clear, practically all the behaviors used to describe the various types of personality disorders are conceived in terms of *more or less* rather than *either-or*; in other words, implicit in the description of DSM-III is the dimensional system rather than a categorical one, although this is not explicitly acknowledged by its authors.

Descriptively, there may seem to be little difference between the two approaches—diagnosing patients with personality disorders as belonging to one or more of the three clusters described in DSM-III, or stating their position in the three-dimensional space created by *P*, *E*, and *N* in a quantitative manner by reference to the three axes defining this space. There are, however, certain advantages to the system here suggested, which may be enumerated as follows.

1. A precise and quantitative statement is always to be preferred to a

vague and nonquantifiable one. The behaviors that give rise to assigning a person a position on the *P*, *E*, and *N* dimensions have been carefully selected on the basis of literally hundreds of descriptive studies using ratings, self-ratings, miniature situations, and experimental laboratory settings in order to study the interrelations between these behaviors and to quantitatively analyze them and demonstrate the existence of independent factors that serve to summarize a large body of knowledge. The precision gained by this empirical and statistical procedure would be thrown away if we regressed to a simple categorical nomenclature.

2. DSM-III is purely descriptive; it contains no mention of casual factors. It is thus purely heuristic and pragmatic, but science clearly seeks far more than simple descriptive convenience. Personality factors *P*, *E*, and *N* have been carefully investigated and related to biological causes that determine the behaviors so described. In addition, there are many theories specifying the precise way in which these biological constraints determine behavior. Thus antisocial behavior has been suggested to be linked with extraversion, and perhaps with psychoticism, through the failure of extraverts, and possibly high *P* scorers, to form the conditioned socialized responses that, through a process of Pavlovian conditioning, produce a "conscience" in human beings as a consequence of thousands of experiences of praise and blame, reward and punishment (Eysenck, 1977). Studies supporting this view can be found in Hare (1970); Newman, Widom, and Nathan (1985); and Trasler (1978). Such theories provide a mediating link between the genetic basis of the personality variables and the behaviors actually observed. They are clearly testable and may be important in devising methods of treatment, which, in the case of personality disorders in particular, has hitherto proved rather unsuccessful. This lack of success may be due to the atheoretical approach of psychiatry illustrated in DSM-III.

How does all this relate to the question of whether the criteria for the personality disorder should be formulated in explicit and behavioral form or phrased in a conceptual and generalizable manner? Clearly the concepts involved, whether those incorporated in the three clusters postulated by DSM-III or the combination of three personality dimensions proposed by the writer, are all based on the explicit analysis of *behaviors*, whether observed, rated or self-rated. This inevitably must be the basis of any descriptive system, and it is interesting (and perhaps important) to note that there is good agreement in these observations between the psychiatric authors responsible for DSM-III and the psychologists whose observations are incorporated in the writer's proposed descriptive system. Such observations of behavior are absolutely fundamental for any descriptive system and must form the basis for any kind of theory. Furthermore, in coming to a diagnosis, whether categorical or phrased in dimensional terms, it is these behaviors, made as explicit as possible, that must determine the final form this diagnosis takes. The more clear-cut the behaviors in question, and the more clearly defined, the more reliable will be the diagnosis.

However, in science description is clearly not enough. As argued in the preceding discussion, the concepts derived from behavior require integration into some form of causal theory that would *explain* the observed phenomena, *integrate* them, and perhaps lead to a better *understanding* of the dynamics of the situation (Eysenck, 1957). The strong influence of genetic

factors in this field suggests that mediating factors implied in such a theory would be of a psychophysiological or possibly a hormonal kind, and the writer's theories have certainly tended in that direction (Eysenck, 1967). It cannot, of course, be claimed at the moment that the theories are more than provisional, as they require much further research before they can be accepted as adequately accounting for the observed phenomena; nevertheless, there is already a good deal of evidence to support the view that they are going in the right direction, even though clearly requiring greater precision and possibly alteration as further research results accumulate.

It is, of course, realized that in science it is very unusual to have a clear-cut advance from observation to theory, or a simple direct link from theory to observation; usually what we find is an interplay in which odd and unusual observations require theoretical advances and modifications, and theoretical models lead to observations that might otherwise not have been made. The so-called hypothetico-deductive model is frequently invoked, and ideally, of course, science should consist in theory-testing experimental demonstrations. The reality of scientific research is too complex to be easily pinned down in terms of some philosophical scheme of this kind. Nevertheless, some integration between observation and theory, fact and hypothesis there must be, and to unduly stress either the one or the other does not advance the process of discovery. Advances in theory help in the clarification of existing observations and lead to the discovery of new facts; greater rigor in observation and extension of factual research may lead to changes and modifications in theories. While thus acknowledging the primacy of explicit behavioral observations, I would not like to be thought of as in any way opposed to theoretical formulations that incorporate these observations, unify them in some form of system, suggest and lead to further observations, and possibly even suggest methods of treatment (Eysenck, 1977). This is the process by means of which behavior therapy has advanced in other fields of psychiatric disorders (Eysenck, 1982; H. J. Eysenck & Rachman, 1964), and there is no reason to suppose that in the field of personality disorders the way to advance would be any different (Stumphauer, 1973, 1979). What is important, of course, is that theory should not decline into idle speculation, as has been the case too frequently in relation to psychoanalytic views, or that behavioral observations should be subject to "interpretations" of a form inherently untestable. As T. H. Huxley said: "Those who do not go beyond fact never get as far as fact"; but in going beyond fact he had in mind theories strictly testable along scientific lines, leading to predictions that could be verified or disproved. Such theories do now exist and already have a good track record. It would seem that by making further deductions from these theories and by testing them exhaustively in terms of observable behaviors, we should be able to gain a better understanding of this mysterious field of *personality disorders* that have hitherto proved the most baffling of all psychiatric disorders.

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