the logical requirements of research into schizophrenia

Donald Bannister

Calculations based on Bellak’s (1958) review of research into schizophrenia suggest that by 1958 well over 5,000 papers on the subject had been published. An index count of Psychological Abstracts since 1960 indicates that papers on schizophrenia have been produced at the rate of about 300 per year, with a growth rate of 10 percent per annum. Yet few, viewing the problem of schizophrenia in perspective, feel that any kind of breakthrough has been made. It may well be that the traditional cry, “more research is needed,” misses the point and that many of the investigations already carried out are of relatively little value because of our failure to meet the logical requirements for effective research within the area. The present paper aims to set out, in the form of dogmas, some logical requirements for research into schizophrenia.

Obviously, adversely critical generalizations cannot be fairly supported by carefully selecting from a huge literature the natural sitting ducks. Therefore, in choosing examples of error (as dogmatically defined), an arbitrary limit has been set, and only papers on schizophrenia published in the British Journal of Psychiatry since the beginning of 1964 will be considered.

The Need for Redefinitions of Schizophrenia

The concept of “schizophrenia,” it has been argued, is a semantic Titanic, doomed before it sails—a concept so diffuse as to be unusable in a scientific context. In support of this contention, it is customary to cite studies illustrating the lack of interjudge agreement insofar as schizophrenia and its subcategories are concerned (Kreitman, 1961), studies which indicate low interjudge agreement for alleged attributes of schizophrenia (Hunt and Jones, 1958), studies showing high overlap between schizophrenia’s characteristics and those of other categories (Freudenberg and Robertson, 1956; and Wittenborn, Holzborg and Simon, 1953), studies of unequal incidence rates which indicate diagnostic confusion (Mehlman, 1952; and Pasamanick, Dinitz and Lefton, 1959), studies of the degree to which the semantic uncertainties of the category allow judge characteristics to manifest themselves (Arrhoff, 1954), and studies which suggest the relative failure of the diagnostic category clearly to imply other decisions (Bannister, Salmon, and Leiberman, 1964). Equally relevant is the repeated finding that, when objective measures are applied to schizophrenics and other groups, schizophrenics generally yield the greatest score variance (Shakow, 1963).

“Schizophrenia,” as used, is a disjunctive category. If we assume, say, five major defining characteristics of schizophrenia (e.g., the traditional thought disorder, primary delusions, loss of volition, incongruity or flattening of affect, and disturbances of motility), then a patient may be included under this rubric because he manifests some but not necessarily all of these characteristics. We may, therefore, diagnose one person as schizophrenic because he manifests characteristics A and B and diagnose another as schizophrenic because he manifests characteristics C, D, and E. The two individuals are now firmly grouped in the same category—even though they do not specifically possess one common characteristic at this level of abstraction. Precisely because of such anomalies, it can be argued that, logically, disjunctive categories are too primitive for scientific use.

The logical utility of the already vague concept of schizophrenia has been little improved by tendencies to hybridize it (“schizo-affective,” “pseudoneurotic schizophrenia”), to make it a qualifier (“schizoid,” “schizophreniform”), or to distribute it (“with schizophrenic features,”

schizophrenic reaction’). To specify that it is a ‘syndrome’ or talk of ‘the schizophrenias’ is to articulate the semantic weakness of the concept. Broadly stated, the principle here implied is that research into schizophrenia, as such, should not be undertaken. Research can, however, take as its starting point some characteristic capable of being defined in its own right (e.g., thought disorder or delusions). It can attempt a total redefinition of schizophrenia in other terms (e.g., as an interpersonal strategy; see Laing and Esterson, 1964), though here the shift should be complete, and no operational equivalence need be assumed. Or it can fragment the category (i.e., process-reactive, good-poor premorbid personality, and paranoid-nonparanoid). But if we are to avoid simply multiplying the confusions of the parent concept, we should be prepared to follow the logic of our findings and argument, which may ultimately reframe the field in very different terms. Whatever kind of redefinition is adopted must allow for the early and maximum operation of the bootstraps effect—that process in science whereby relatively coarse concepts serve initially as foci but are rapidly redefined or abandoned in favor of more articulate concepts arising out of the research process itself.

Illustrations

A consideration of the literature on schizophrenia published in the British Journal of Psychiatry since 1964 reveals not only a widespread failure to attempt redefinition of schizophrenia but a failure, in terms of experimental design, to meet the logical requirements of the concept in its conventional form. Because schizophrenics are a subgroup of the class of ‘psychiatrically ill,’ any research designed to cast light on the nature of schizophrenia as a specific category must include nonschizophrenic psychiatric control groups as well as normals. Otherwise, any findings relate to the superordinate distinction between persons who are and persons who are not under psychiatric care and, thus, cannot carry implications for the subordinate class of ‘schizophrenics.’ In a paper published in 1966, May intercorrelated Taylor Manifest Anxiety Scale scores and measures of thought disorder for a population of schizophrenics. In testing hypotheses about thought disorder on schizophrenics (who were not specifically thought disordered), May failed to provide the control group of nonschizophrenic psychiatric patients necessary to delimit any findings.

Many studies do endeavor, to some degree, to redefine schizophrenia. One such attempt was the comparative study of phenothiazines’ and placebos’ effects on schizophrenics conducted by Goldberg, Klerman, and Cole (10). Linking their work to Bleuler’s (1911) distinction between fundamental and accessory symptoms, these authors include in their rating-scale concretizations of behavior such terms as ‘irritability,’ ‘hostility,’ and ‘indifference to environment.’ But because the central characteristic of schizophrenia as a concept is its omnibus nature, the addition of defining characteristics (i.e., particular lay concepts such as ‘irritability’ given rating-scale status) does not clarify. Rather, it confuses—especially when such arbitrary logical riders as the fundamental-accessory distinction must be added to cover them.

The Need for a Theoretical Framework

A second important principle is that any research into schizophrenia should be carried out within the language and assumptions of an overall theoretical framework. This requirement would counteract the prevailing tendencies to erect ‘psychologies of schizophrenics’ (as if schizophrenics were a logically distinct species) and to so mix concepts and assumptions that they can neither be cross-referred within the single study nor related to those propounded in other studies which, likewise, mix theoretical metaphors. Such problems may conceivably be traceable to the transfer of intellectual habits from general medicine to psychiatry. Because in the former discipline an overall theoretical framework (parametered by physiology) exists, abnormalities can be defined as deviations from an hypothesized normal system; thus, general medicine escapes the confusions inevitably attendant upon efforts to define and investigate abnormality without a contrasting definition of normality. Seldom proposing a specific concept
of normality, most papers on schizophrenia simply imply that we know what normality is or that it can be empirically defined without any kind of theoretical overview.

The flaws in such an assumption are obvious. On the one hand, extant theoretical frameworks (e.g., learning, Freudian, information, and construct theories) have not been developed to the point where they might provide parameters comparable to those yielded by the theoretical frameworks of the natural sciences; on the other hand, studies in schizophrenia cannot be additive unless they are carried out within a specified language and series of assumptions. Thus, we are faced not only with an intellectual silence as to the “seat of madness” but with an equal silence as to the seat of sanity.

Illustrations

Begelman (1966) compares schizophrenic and organic performances in abstracting, but it is clear that “abstraction” as a function is not a concept articulated by some overall theory of psychological process. Rather, it is a concept stemming from traditional logic imported into psychology. In attempting to elaborate his findings, Begelman utilizes concepts (e.g., “internal image,” “associated chains,” and “set”) whose cross-relationships are unknown since they are equally “cafeteria-selected.”

In another example, Sedman and Kenna (1965), investigating the use of LSD as a diagnostic tool for schizophrenia, administered the drug to a group of doubtful schizophrenics and a control group of depressive or personality-disordered patients; the borderline schizophrenics, they found, reacted more markedly. In the absence of some defined series of assumptions about behavior-drug interaction and the nature of schizophrenia in relation to normality, however, these data have little implicative value. Using Kretschmer's (1927) concept of “sensitive development” as documentation, they argued that sensitive personalities may actually become schizophrenic under the influence of LSD. But the term “sensitive” derives from no theoretical framework; it is a descriptive lay term with no specified network of defined implications. The whole experiment suggests only that LSD makes odd people odder, and that the odder they were to start with, the odder they become. Thus, we again revert to a lay level of definition, even though the lay terms in question are surrounded by a better than usual grade of syntax.

Optimism about the advancement of science is based on the conviction that, because each experimental undertaking elaborates previous work, science is progressive. But elaboration is not achieved merely by adding more data to the pile. What is elaborated is our thinking, and the coherence of the concepts we use is not necessarily advanced by adding “more data” in the manner of the standard schizophrenia experiment. Articulating this point of view is Popper's (1959) pronouncement that: “However rich a collection of statements might be assembled in this (inductive) way, it could never add up to a science. A science needs points of view and theoretical problems.”

The Linking of Conceptual and Operational Definitions

A further indication of psychiatry's need for a theoretical framework is the fact that a series of hierarchical links should be provided between conceptual and operational definitions used in research. Many studies of schizophrenia consist of providing one or two broad concepts at a fairly high level of abstraction (e.g., “distractibility,” “arousal,” and “regression”) and arbitrarily linking these to concrete experimental operations (usually formalized tests). Unless there are also provided a series of intervening concepts, each in themselves capable of operational definition and with clear superordinate and subordinate implications, other research workers are chaotically free to attach almost any operational definition to the original concepts. When contradictory findings inevitably ensue, it is logically impossible to decide whether the respective investigators are or are not talking about “the same thing.”

Illustrations

In an investigation of perseveration in chronic schizophrenics, Freeman and Gathercole (1966) operationally defined perseveration in terms of (1) a series of tests based on such instruments as the Bender-Gestalt, the Wechsler Memory
Scale, and the Stick Test Design of Goldstein and Scheerer and (2) standardized clinical procedures, such as asking the patient to carry out simple motor instructions and freely converse for about 5 minutes. Granted they subdivided their "perseveration" into types, but the authors failed to present a clearly stated series of assumptions which would enable one to say why or whether these particular operational definitions were preferable to others which might have been invented. Because the perseveration tests were not significantly intercorrelated, they concluded, "it follows that broad generalizations about perseveration based on the use of the single test situation will usually be misleading." One could go further and argue that broad generalizations about perseveration based on the use of a multiplicity of tests are misleading if the tests fail to intercorrelate positively; indeed, even intercorrelated tests avail us little if the explanatory links between concept and test do not clearly imply what further behaviors might be subsumed under the same generalization.

The search for a biochemical agent as a causal factor in schizophrenia frequently provides examples of the failure to link abstractions to operation definitions. Because "schizophrenia" is an abstraction with extensive implications involving a multiplicity of behavioral criteria, any direct link with a specific biochemical agent must be tenuous. It can be argued on semantic grounds that physiological and psychological modes of construing cannot be logically interrelated (Bannister, 1968), but whether this is true or not, it is quite certain that the vast majority of biochemical studies do not attempt to explicate relationships between the alleged causal agent and the omnibus abstraction of schizophrenia (e.g., Beattie, 1966; Kemali, 1964; and Rubin, 1965).

The Consideration of Process

Descriptions of static conditions, it has been claimed, are useful only as markers against which process can be delineated. If, as Kelly (1955) has proposed, man is a form of motion, those of us in the field of schizophrenia research are faced with two important questions: How does a person move into schizophrenia's ambit? and, once there, how do some individuals move out of this category's boundaries?

Even when a "disease entity" approach is not specifically adopted, research workers tend to be preoccupied with defining the "condition" rather than hypothesizing its underlying processes (hence, the popularity of group discrimination research designs). Although it is sometimes implied that process will be considered at some later date, when condition has been defined, this premise can be criticized on two grounds: (1) there is little evidence in the literature to suggest that such process studies are forthcoming; and (2) ideas of process cannot be added to research like icing to a cake; if they are present, they may from the outset radically affect the research design and the explanatory concepts used.

Illustration

McGhie, Chapman, and Lawson (1965a and b) studied the effects of distraction on schizophrenic performance in perception, immediate memory, and psychomotor ability. These studies are characteristic in that, while distractibility, a possible concomitant of schizophrenia, was examined by group comparison design, no hypotheses relevant to the process whereby schizophrenics (or anyone else) might become more "distractible" were proposed or tested. It is perhaps significant that the authors hypothesized differences in degree of distractibility between hebephrenics and other schizophrenic subgroups. Clearly, had process hypotheses been considered a basic research requirement, the authors would have been obliged to evolve not only a general process hypothesis for distractibility as a characteristic of schizophrenia but one which could account for its differential development and action in hebephrenics and other schizophrenics.

The Need for Long-term Research

As is true in most psychological fields, the literature of schizophrenia research is replete with overtures to which no opera will ever be written. In view of the problem's size, and the confusion which presently surrounds it, it would seem reasonable to argue that only long-term
Systematic research has even an outside chance of making a meaningful contribution. By utilizing an integrated approach to the problem of schizophrenia and subjecting its implications to the test of successive and consequential experiments, we may possibly make some inroads. At the very least, researchers would be forced to accept continuing responsibility for their conceptual offspring—rather than abandoning them, as is now common, at the church door of "the literature."

Systematic research is not purely a question of time, personnel, or money. It is a question of whether the hypotheses on which research is based are capable of steady, logical extension and test; this, in turn, depends on whether these hypotheses stem from some overall conceptual framework by which they can be related, one to another. If concepts are invented ad hoc or, on the basis of some sudden "insight," selected from lay, psychiatric, or psychological thought; if—arbitrarily—they are operationally defined; if studies are ritualistically linked to others in the literature which appear to be vaguely similar; if only the mechanics of experimental design are followed through; and if the total research effort is harnessed preemptively to the global notion of "schizophrenia," then the result will be more data. And data, it must be remembered have no inherent scientific value unless they demonstrate an internally coherent and logically extendible line of argument.

Conclusion
The five tenets for schizophrenia research here propounded are linked inferences from a general view of research in the behavioral field; they are eminently disputable and admittedly pious. Whether they are accepted or not, the moral of this tale would seem to be that almost any specification of logical requirements, however tolerant, will "rule out of court" a large number of the studies which constitute our literature on schizophrenia and force us to shelve those which we are about to undertake.

References


Donald Bannister, Ph.D., is currently a member of the Medical Research Council of the Bexley Hospital, Dartford Heath, Bexley, Kent, Great Britain.

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