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Review Article

Borderline Personality
A Review of Recent Research

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Borderline personality has been, for many years, a discredited diagnostic concept. In 1979 a review of the literature concluded that its validity status was very uncertain. The authors have reviewed research conducted since then and discuss it in terms of the Robins & Guze (1970) criteria. In spite of existing unclear issues, the balance is tipping in favour of the validity of borderline personality, as diagnosed with new research criteria. This development is taking place in the context of a growing interest in the area of personality disorders.

A useful starting point in this discussion of the validity of borderline personality is the review of Liebowitz (1979), which stated that, "When the St Louis approach to diagnostic validity is used as a guideline, the conclusion reached is that available data do not weigh conclusively for or against borderline's status as an independent entity". Since this statement was made, several sets of clinical and research criteria have yielded new data which permit a critical re-evaluation of the diagnosis. These new publications will be reviewed to assess whether the statement that the data "do not weigh for or against" can still be supported. This literature is predominantly American. "Borderline Personality" does not appear in ICD-9 (World Health Organization, 1978), but the term is used by one quarter of the psychiatrists in the UK (Macaskill & Macaskill, 1981; Tarnopolsky & Berelowitz, 1984). Such cases represent about 15–25% of the personality disorder diagnoses in a local ward; they are usually recorded here as suffering from explosive or hysterical personality disorders, or from a depressive illness (Kroll *et al*, 1982). Furthermore, this work illustrates some of the complex issues confronting researchers in personality disorders.

Diagnostic systems

Three well-known diagnostic systems are relevant to this paper: DIB, Spitzer and DSM-III criteria, and Kernberg's psychoanalytic construct.

Gunderson and co-workers (Gunderson & Singer, 1975; Gunderson & Kolb, 1978; Gunderson *et al*, 1981) abstracted symptoms and interactional patterns characteristic of the borderline personality, and developed a semi-structured interview (Diagnostic Interview for Borderlines, DIB) which examines social adaptation, impulse/action patterns, affects, psychotic phenomena, and interpersonal relationships, and which excludes major psychoses. A summary score indicative of borderline personality is derived from 140+ individual questions.

Spitzer *et al* (1979), on the basis of some empirical research, partitioned a hitherto muddled field into two personality disorders: Schizotypal personalities, related to schizophrenia, and Borderline personalities, discussed here. They are chronically unstable, vulnerable individuals, with difficult relationships, poor self-control, and low sense of identity, as described in the DSM-III eight-item checklist (APA, 1980).

Kernberg (1977, 1981) differentiated neurotic, psychotic and borderline "intrapsychic organisations", which are to some extent independent of manifest symptomatology. "Borderline personality organisation" is defined by (a) absence of a stable sense of identity; (b) use of primitive defence mechanisms (splitting and projective identification); and (c) partial retention of reality testing. Kernberg's interviewing method requires both phenomenological and psychodynamic expertise.

The DIB and the DSM-III checklist are essentially phenomenological, and they overlap and also differ. The DIB is wider, including several items on psychotic-like phenomena (brief psychotic episodes, drug-related psychoses, depersonalisation/derealisation) and on social functioning (the adoption of caretaker roles, work performance, and social presentability). However, this is partially counterbalanced by the scoring method: individual DIB items may not influence the final rating if the overall score from that section is too low. The DSM-III checklist contains two items not present in the DIB, namely "identity disturbance" and "affective

instability". Kernberg's system is not symptom-based but shares with the DIB the emphasis on certain psychotic features. Furthermore, some of the DIB/DSM-III items are clearly derived from psychoanalysis. For example, "identity disturbance" (DSM-III) originates in Eriksonian ideas; "caretaker roles" (DIB) describes a narcissistic identification.

Reliability and validity

There are so few 'objective' indicators of psychiatric disorder that diagnostic validity is difficult to assess. One could reduce validity to a matter of reliability (i.e. agreement between different assessors about the presence of the disorder), but a more substantial approach consists of marshalling information from a number of areas, and constructing a convincing argument for or against the existence of the disorder (Robins & Guze, 1970). Using this approach we will discuss validity under six headings: identification of a characteristic phenomenology; phenomenological independence from other psychiatric disorders; follow-up data; family studies; laboratory investigations and psychological tests; and treatment response. But first we need to examine the reliability of the diagnostic instruments.

Reliability

Reliability refers to the consistency of an assessment between raters and over time. It is best measured with the coefficient kappa (κ), which expresses better than chance agreement ($\kappa = 0$, chance agreement; $\kappa = 1$, perfect agreement). In general values above 0.7 are acceptable.

Using the DIB, acceptable κs, in some cases above 0.8, have been demonstrated for live interviews (Kroll *et al*, 1981*a*; Frances *et al*, 1984; Hurt *et al*, 1984), and case notes (McGlashan, 1983*a*; Armelius *et al*, 1985, calculated by us); for the agreement between notes and interviews (Armelius *et al*, 1985); and for two interviews of the same patient by different clinicians at least one week apart (Cornell *et al*, 1983). Individual subscales are also reliable, with only one exception (Frances *et al*, 1984).

For the DSM-III criteria, acceptable κ values above 0.7 were obtained with clinical interviews (Frances *et al*, 1984); perusing case notes (McGlashan 1983*a*); and with a new structured interview ($\kappa = 0.85$; Stangl *et al*, 1985).

Reliability of Kernberg's method has not been adequately reported (Kernberg *et al*, 1981). Bauer *et al* (1980) showed that blind assessors could differentiate borderline from psychotic "organisation" ($P = 0.024$) using interview transcripts.

In summary, the DIB is the most thoroughly tested and reliable research tool. The promising new DSM-III-based interviews have the advantage of addressing the full range of DSM-III personality disorders. It would be wise to continue using more than one set of criteria as the systems are being reassessed and modified. The reliability of Kernberg's method is not convincing, but the method addresses a different level of pathology, which is not easily measured. Other diagnostic systems which have not gained widespread acceptance include a checklist (Sheehy *et al*, 1980); the Ego Functions Inventory (Perry & Klerman (1980); and two self-report questionnaires (Conte *et al*, 1980; Hyler, in Hurt *et al*, 1984).

Validity: an application of the criteria of Robins and Guze

A unitary clinical description

"In general, the first step is to describe the clinical picture of the disorder" (Robins & Guze, 1970). Does research with the criteria reviewed identify a homogeneous group of patients?

Many studies applied both DIB and DSM-III criteria to case notes (McGlashan, 1983*a*; Pope *et al*, 1983), and interviews (Frances *et al*, 1984; Akiskal *et al*, 1985*a*). Kroll *et al* (1981*b*, 1982) and Barrash *et al* (1983) thoroughly examined 252 consecutive admissions. The DIB identified a larger number of cases than the DSM-III, and there were, naturally, some false positives and false negatives, mostly cases who met the DIB criteria and not the DSM-III. The commonest diagnosis for these discordant cases was non-borderline personality disorder. Cluster analysis improved the agreement and yielded a high sensitivity (0.83) and specificity (0.89) for the DIB against the DSM-III criteria.

In most studies there is a potential source of disparity: the DIB is a research tool, whereas the DSM-III data is obtained in routine clinical interviews. Gunderson *et al* (unpublished) addressed this using a structured DSM-III interview and identified about four-fifths of in-patients with personality disorders as borderline (DIB 84%; DSM-III 74%); sensitivity and specificity were both high, but better for the DIB against the DSM-III than the other way round.

A further improvement requires consideration of the reliability, frequency and discriminative power of each individual item or symptom. Table I shows these with data given by Frances *et al* (1984). When faced with low reliability, it is worth attempting to refine rather than discard the item in question. Kroll

TABLE I
Assessment of certain items diagnostic of borderline personality disorder[1]

Reliability (x)[2]		*Frequency, %*[3]		*Discriminative power (RR)*[4]	
		Gunderson's Diagnostic Interview for Borderlines[5]			
Impulsivity/action pattern	0.79	Social adaptation	86	Impulsivity/action pattern	3.3
Brief psychosis	0.70	Affects	84	Brief psychosis	3.1
Social adaptation	0.69	Interpersonal relationships	68		
Interpersonal relationships	0.67				
		DSM-III Borderline Personality Disorder			
Self-damaging acts	0.69	Impulsivity	89	Emptiness/boredom	4.4
Inappropriate anger	0.68	Affective instability	84	Intolerance/aloneness	3.8
Impulsivity/unpredictability	0.65	Inappropriate anger	80	Impulsivity/unpredictability	3.7
		Interpersonal relationships	77	Interpersonal relationships	3.5
		Emptiness/boredom	75		

1. This table was compiled by us from data published by Frances *et al* (1984).
2. Reliability: items with (x) ⩾0.65 are included.
3. Frequency: items present in at least 75% of the cases are listed.
4. Relative risk: calculated by us against non-borderline personality disorders (percentage of cases with item present divided by percentage of controls with item present); values above the median in each set are included; range for DIB was 1.2–3.2, and for DSM-III was 2.4–4.4
5. Each DIB category is a subscale comprising several items; each subscale is scored 0, absent; 1, moderate; 2, severe; only the percentage of score 2 is shown here.

et al (1981*b*) and Gunderson *et al* (unpublished) have examined the diagnostic value of items that appear in only one set.

All this research and work with other criteria (Gunderson, 1977; Sheehy *et al*, 1980; Soloff & Ulrich, 1981) has identified a characteristic borderline diagnostic core of unstable interpersonal relationships, with idealisation and denigration of others, intense unpredictable feelings, and impulsive, often self-destructive behaviour. Similarly, Maudsley psychiatrists think that the most frequent items among the borderlines were a pattern of unstable, intense interpersonal relationships and impulsiveness or unpredictability in potentially self-damaging areas (both DSM-III items); the most discriminating item, however, was brief, stress-related, psychotic episodes or regressions (a Gunderson item) (Tarnopolsky & Berelowitz, 1984). Bateman (unpublished) reported the only diagnostic study of borderline disorders conducted in the UK by a local author. He compared in-patient DIB-diagnosed borderlines with PSE-diagnosed neurotic and psychotic controls. A particularly high level of anxiety and irritability, externalised as violent destructive behaviour, anger, and hostility at interview, distinguished borderlines and neurotics. In addition, they presented depressive and non-specific psychotic features.

Kroll *et al* (1982) highlighted certain differences between British and American patients: "the British borderlines (DIB and DSM-III criteria) reported minimal drug abuse and no drug-related psychosis . . . evidenced no interest in caretaker roles; and although the majority reported derealisation and depersonalisation, so did the majority of British non-borderline patients". These differences should be further investigated.

Reported agreement for Kernberg's method with DIB and DSM-III was over 70% for in-patients, and about 60% for out-patients (Kernberg *et al*, 1981; Koenigsberg *et al*, 1983; Nelson *et al*, 1985). Some flaws limit the conclusions drawn from these studies, and further work using Kernberg's ideas should be undertaken, as his are the only criteria firmly based on a unitary psychological theory.

In summary, although some concordance is expected for sets developed within the same psychiatric culture (and Spitzer consulted with both Gunderson and Kernberg), the agreement found between DSM-III and DIB is high, considering the uncertainty about psychiatric diagnosis generally. However promising, these results say nothing about which instrument is more valid, a question to be resolved only by observing the relationship of external factors, such as prognosis, family distribution and treatment response, with the diagnostic criteria. In turn, the analyses ought to be extended to individual items in each set, a type of study only just being published (Goldberg *et al*, 1986; Soloff *et al*, 1986). So far we conclude that there is enough agreement in terms of reliability and clinical description to justify proceeding to another step of inquiry.

Phenomenological discrimination from other disorders

The question here is whether patients with an operationally diagnosed borderline personality can be distinguished from patients with other psychiatric conditions, in particular with schizophrenia, affective disorders, and other personality disorders.

Schizophrenia. Several studies with different methods have now placed the phenomenological distinction between borderline personalities and schizophrenic in-patients beyond reasonable doubt (Gunderson *et al*, 1975; Kolb & Gunderson, 1980; Soloff & Ulrich, 1981; Kroll *et al*, 1981*b*, 1982; Pope *et al*, 1983). For example, Gunderson *et al* (1975), using patients taken from the International Pilot Study of Schizophrenia, found that the borderline in-patients had significantly fewer psychotic symptoms than the schizophrenic group, with no evidence of thought disorder. The borderline group was also characterised by derealisation, a frenetic and stormy life-style, unusual and occult experiences, marked interpersonal difficulties, and suicide threats. Kroll *et al* (1981*b*) found only one DSM–III schizophrenic among 21 DIB-positive in-patients, and Pope *et al* (1983) found no DSM–III schizophrenics among 33 in-patients diagnosed as borderline according to Gunderson criteria.

However, the distinction between out-patients is less clear and less studied. Sheehy *et al* (1980), comparing borderlines (own criteria) and schizophrenics (Carpenter criteria), found that deficient management of impulses, intolerably unpleasant feelings, and idealisation/denigration of others were significantly more prevalent among the borderline patients. Pronounced failure of reality testing was more frequent among the schizophrenics, and was the best predictor of group differences. But Koenigsberg *et al* (1983) found that borderline out-patients had only non-significantly higher DIB scores than schizophrenic out-patients. These results are conflicting and also questionable. Sheehy's borderline criteria were not applied with research rigour, and Koenigsberg reported only global DIB scores for borderline patients versus a small heterogeneous control group of schizophrenic and manic–depressive patients. Therefore, while the distinction between florid forms of schizophrenia and borderline personality is well established, the distinction between milder forms of the two disorders requires further research.

Affective disorders. The coincidence of affective illness with borderline personality is much greater than statistically expected (Gunderson & Elliott, 1985; Perry, 1985). This relationship is also more complicated than the previously postulated inclusion of borderline personality under schizophrenia, and Gunderson & Elliott (1985) have listed four hypotheses to explain it. Two are that one disorder can be reduced to the other; for example, (a) drug-taking or promiscuity to relieve feelings of emptiness, dysphoria or depression, or (b) depression resulting from impulsivity and unsatisfactory relationships; the third (c) is that both disorders coexist independently in the same subjects; and the fourth (d) – their own, in the Meyerian tradition – postulates that affective symptoms or character traits arise from an interaction of influences peculiar to each individual. Research partially supports all the hypotheses, although Gunderson & Elliott's analyses lead them to accept the fourth.

In this section, evidence about the phenomenological distinction between borderline personality and a variety of affective disorders is considered. Gunderson & Kolb (1978) were able to discriminate borderline personality from neurotically depressed in-patients by the presence of drug-related psychotic experiences, anhedonia and dysphoria, interpersonal difficulties, and paranoid experiences. Sheehy *et al* (1980), with less formal methods, obtained similar results in a series of out-patients. Barrash *et al* (1983), summarising the findings of Kroll's group on 252 in-patients, found 48 with DIB-positive borderline personality and 77 patients with "affective disorders" not further specified; only three patients with affective disorder were DIB-positive. Soloff & Ulrich (1981) found that total scores, scaled section scores, and 19 individual DIB items all effectively differentiated borderline personality from RDC major (unipolar) depressives. It was also repeatedly noted that the items characteristic of each disorder are different (e.g. impulsivity *v.* affective state); and that the attendant emotions are different, the borderline personalities' 'depression' having schizoid qualities of boredom and emptiness. Borderline personalities also feel easily disappointed and let down, want to hurt themselves and are well aware of their rage.

By contrast, other studies of in-patients (Pope *et al*, 1983) and out-patients (Akiskal *et al*, 1985*a*) have found a proportion as high as 50% of major and minor affective illnesses among DIB-positive patients. It is of local interest that the British sample ($n = 47$) studied by Kroll *et al* (1982) showed seven DIB-positive cases, three with a secondary diagnosis of depressive neurosis and one with a primary diagnosis of major affective illness (DSM–III). Also, Bateman's (unpublished) pilot study in London found that among eleven in-patient DIB-borderlines, ten met the

PSE criteria for minor, and one for major, depressive disorders, although they differed in other ways (see above).

Independently of the procedural differences between the papers, our view is that this issue cannot be fully solved with single cross-sectional descriptive studies where the distinction between long-term personality traits and episodic affective symptoms is obscured; nor in a single centre, because of sample variations influencing the intake of patients to individual institutions. We will take up this discussion below with data from follow-up, family, and therapeutic studies.

Personality disorders. Several studies have failed to discriminate between *in-patients* with DIB borderline and non-borderline personality disorders (Kolb & Gunderson, 1980; Kroll *et al*, 1981*b*, 1982); Pope *et al* (1983) found that DSM–III borderline overlapped with histrionic personality disorder in women, and with antisocial in men. However, severity may be relevant, because cases could be distinguished in at least three *out-patient* samples (Sheehy *et al*, 1980; Perry & Klerman, 1980; Koenisgberg *et al*, 1983). More importantly, Barrash *et al* (1983) reanalysed with cluster analysis Kroll's in-patient samples and were able to distinguish between borderline and other personality disorders.

It should also be objected that (a) the diagnoses of non-borderline personalities were not standardised; and (b) assessing one single personality disorder ignores their multidimensional presentation. Both objections were met by Stangl *et al* (1985), who found, among out-patients, overall agreement ($\kappa > 0.7$) for the presence of any personality disorder, and for the presence of three individual types, borderline, histrionic, and dependent. The most frequent combination was borderline and histrionic, a finding related to that reported by Pope *et al* (1983), predicted by the DSM–III subgroup of 'dramatic' personality disorders, and obtained with cluster analysis by Kass *et al* (1985). The data of Frances *et al* (1984) further support the multi-dimensional viewpoint: in a sample of 26 borderline and 50 non-borderline out-patients, two-thirds of each group met the criteria for at least two DSM–III personality disorders.

So far this research shows, firstly, that some individual personality disorders (borderline or other) may be distinguished from each other, and secondly, that they may coexist in a variable number of subjects. This is also borne out by borderline and schizotypal personalities: (a) a large percentage of cases meet the criteria for both disorders (Spitzer *et al*, 1979; Frances *et al*, 1984), but (b) the two clusters can be separated by statistical analysis (Spitzer *et al*, 1979; Gunderson *et al*, 1983; Barrash *et al*, 1983). Furthermore, (c), no schizotypal patients were found in other borderline personality disorder samples (Pope *et al*, 1983); or the overlap was small (Kroll *et al*, 1981*b*, 1982; Akiskal, 1985*a*; Gunderson *et al*, unpublished). George & Soloff (1986) identified the risk of over-reliance on a single symptom group to distinguish the two. More about this is given in the next two sections.

Follow-up

Follow-up studies establish whether the patients can be said over time to have some other disorders which can better explain their original symptoms (Robins & Guze, 1970). A central question was whether borderline personalities were in fact not suffering from an early form of schizophrenia. In a five-year follow-up before the DIB and DSM–III were introduced (Carpenter & Gunderson, 1977), all the schizophrenic patients retained their original diagnoses but there was persistent diagnostic uncertainty about the borderline group. Despite the uncertainty, however, only one of the 24 borderlines was subsequently diagnosed as schizophrenic. More recently, no schizophrenics were found among DIB or DSM–III borderline samples after 4–7 years (Pope *et al*, 1983, $n = 27$) and after three years (Barrash *et al*, 1985, $n = 30$).

The second question concerned the relationship between borderline personality and affective illness. Pope *et al* (1983) found that of the mixed (borderline and affective) cases, 74% had possible/probable affective illness at follow-up, while the corresponding figure for the 'pure' borderline was only 23%. Akiskal (1985*a*) found a similar figure, 20% for melancholic episodes among 'pure' borderlines. Moreover, major depressions were equally prevalent among borderline and other personality disorders at three years, which argues against a *specific* link between borderline and affective disorders (Barrash *et al*, 1985).

The third question concerned the stability of borderline personality over time. The majority retained their original diagnosis (65% Pope, 60–90% Barrash), but some, in addition, received other personality disorder diagnoses as well, mainly in the 'dramatic group' (Pope). In only one or two cases was the diagnosis of schizotypal personality considered possible or present. McGlashan's (1983*b*) informal follow-up (average 15 years) on a large sample showed not only that few (16–24%) borderline personalities changed into schizophrenics, but also that 55% schizotypals developed schizophrenia.

The last question concerned social functioning. The presence of similar social outcome is a weaker argument for validity than the persistence of the diagnosis, for there is no one-to-one relationship between psychopathology and social functioning. Nonetheless, after five years, borderline patients had significantly better social functioning than schizophrenics (Carpenter & Gunderson, 1977), although at two years there had been no difference (Gunderson *et al*, 1975). In later studies, 'pure' borderline personalities presented outcomes intermediate between those of schizophrenic illness (worst) and affective illness (best) (Pope *et al*, 1983; McGlashan, 1983*b*, 1986).

In summary, borderline personalities tend to retain their diagnoses over time, but in addition they may present with other personality disorders, frequently of the 'dramatic' type. Several studies show that only a minority develop schizophrenia, in contrast with schizotypals. The majority of borderline personalities do not develop affective illness; a variable number display affective symptoms at follow-up, but probably no more than for other personality disorders. And the other way round? No one has yet examined whether affective illness resolves into a borderline state (Gunderson & Elliott, 1985). The hypothesis that borderline personalities are a variety of major affective illnesses is weakened by follow-up studies. Anecdotal evidence also indicates that symptoms tend to dilute with increasing age (confirmed by McGlashan, 1986), and that a tolerant partner, who buffers the patient's tendency to overreact, also helps. These issues too demand further attention. The natural history of the borderline disorders is only partially written; more work contributing to the debate about validity and providing a baseline for therapeutic trials is necessary.

Family studies

Robins & Guze (1970) argue that finding an increased prevalence of the same disorder in the relatives and in the index patients supports the validity of that diagnosis. Twin studies help to disentangle the relative aetiological importance of heredity and environment.

In this section we must consider both borderline (DSM–III or DIB criteria) and schizotypal personalities (the current concept of "borderline schizophrenia" in DSM–III), and their relationship to schizophrenia. In the Danish Adoption Study, Kety *et al* (1968) identified "B–3 or borderline schizophrenics" among index cases and relatives. The B–3 relatives were in the main relatives of schizophrenic index cases, supporting a genetic link between the two. A sample of B–3 subjects was used by Spitzer to define the criteria for DSM–III Schizotypal Personality Disorder. Kendler *et al* (1981) blindly applied Spitzer's criteria to the Danish records and confirmed that the schizotypals were more frequent among the biological relatives of chronic schizophrenic patients than among either relatives of controls or relatives of index B–3 cases. Gunderson *et al* (1983) went further, blindly re-examining the same records to look at both schizotypals and borderlines. They confirmed that among the B–3 relatives of chronic schizophrenics, the most prevalent diagnosis was schizotypal personality, not borderline. They also showed that the commonest diagnosis in the B–3 *index* cases was borderline personality (9 out of 10), and that their B–3 relatives had borderline rather than schizotypal features. These two studies therefore allow for two genetic propositions: (a) the mentally ill biological relatives of chronic schizophrenics are schizotypal and not borderline, and (b) the mentally ill relatives of borderline personalities are, in the main, themselves borderline. These propositions were supported by other samples; for example, among students and university staff (Baron *et al*, 1985). Also, Loranger *et al* (1982) found that borderline personality was ten times more common in the treated relatives of borderline patients than in the relatives of schizophrenic patients. Monozygotic twins of schizotypal patients have schizotypal disorders (33%) and not borderline (0%) (Torgersen, 1984). The most frequent diagnoses among relatives of borderline patients were 'dramatic' personality disorders (Pope *et al*, 1983).

The situation is complicated by the alternative hypothesis that borderline personality is genetically linked to affective illness (Stone, 1977). Among others, Soloff & Millward (1983) are often quoted to support this hypothesis, as they found that more borderline than depressed probands had relatives with "mood swings". This result, however, refers to a mixed group of 19 borderlines, 9 schizotypals and 20 cases who met both criteria; further analyses revealed the "depression" was actually more prevalent among relatives of schizotypals than borderlines. The homogeneity of the sample seems to be a crucial methodological precaution. Pope *et al* (1983) and Andrulonis & Vogel (1984) simply separated 'pure' borderlines from those who also had an affective illness, and found that the prevalence of depression was raised only in the relatives of the second, mixed, group. Torgersen (1984) found the same: "all the co-twins with an affective disorder were co-twins of schizotypal and borderline patients with a concurrent affective disorder as well". On the other

hand, numerous objections can be raised against these studies. The re-examinations of the Danish Adoption records are a secondary retrospective analysis, vulnerable to circularity – this was the sample from which the schizotypal set was originally defined. Torgersen's was the only twin study, and he was not blind to who was twin to whom. The identification and/or diagnosis of cases and relatives is open to question in many of the studies, and can be criticised in some of them.

In summary, we are left with consistent evidence, albeit of diverse quality, leading to an attractive hypothesis: that 'borderline' and 'schizotypal' are dimensions that coincide in some subjects, but nevertheless have separate pedigrees. What is needed to further test this is a multi-centre twin study (to ensure adequate numbers and avoid idiosyncratic samples), with careful attention paid to the distinction between pure and mixed cases, and to the identification and assessment of the relatives at risk, not just the probands.

Laboratory investigations and psychological tests

Biological data is as sparse and inconclusive in the area of borderline personalities as it was for the whole of psychiatry 15 years ago (Robins & Guze, 1970).

Much of the work with biological markers to assess the relationship with affective disorders is questionable, either because the cases studied had both syndromes concurrently (Carroll *et al*, 1981), or because watertight controls were not available. Akiskal *et al* (1985*b*) described a REM sleep pattern in borderlines similar to that found in depressives; there were differences, however, between those borderlines who had had an affective diagnosis at any time in the past and those who had not. Coid *et al* (1984) found a raised level of plasma metencephalin among self-mutilators who met DSM-III borderline criteria.

Singer (1977) has reviewed the literature on psychological tests. In brief, borderline personalities show ordinary reasoning on highly structured tests, but on projective ones they "demonstrate flamboyantly deviant reasoning and thought processes". Test results distinguish between borderline and schizophrenic in-patients, but for out-patients the distinction is less clear. Borderline patients' responses to WAIS, Rorschach and other tests have been reported (Kernberg *et al*, 1981; Soloff & Ulrich, 1981). Borderline personalities in both the USA and the UK showed a characteristic Minnesota Multidimensional Personality Inventory (MMPI) profile: 8 = schizophrenia, 4 = psychopathic deviate, and 2 = depression (Kroll *et al*, 1981*b*, 1982). MMPI scores also differentiate borderline from schizotypal personality (Goldberg, 1985; Stangl *et al*, 1985).

In one study, family features were blindly rated: Gunderson *et al* (1980) found that over-involvement between the parents, with neglect of the offspring, distinguished borderline from schizophrenic and neurotic families.

In summary, it is premature to draw conclusions from the biological data, but the results of psychological tests are in keeping with clinical observations (e.g. regression in unstructured situations) and with other research (e.g. difficulty in differentiating borderline from schizophrenic out-patients). The observation of a particular family pattern should be replicated with wider samples and other methods.

Treatment response

Although not specifically mentioned by Robins & Guze, treatment response contributes to the delineation of a disorder: therapeutic success may suggest the existence of a specific pathogenic or aetiological factor (e.g. Teitelman *et al*, 1979). Few controlled studies of treatment exist: this is probably because of the lack, until recently, of reliable diagnostic criteria; because psychoanalytic psychotherapy is only described in case reports; and because of the nihilism of many psychiatrists about personality disorders. Early pharmacotherapy studies illustrate, more than anything else, the conviction of the writers as to which of the major psychoses borderlines should be affiliated, and/or existing differences in their patients' presentation.

Antidepressants (Klein, 1977) and low dose neuroleptics were used (Brinkley *et al*, 1979; Serban & Siegal, 1984). Recently two double-blind, placebo-controlled trials reported the efficacy of moderate dose of neuroleptics on chronic severe populations. On one sample of volunteers, the effect on psychotic-like symptoms was noted (Goldberg *et al*, 1986); on another, of in-patients, the effect on psychotic-like and affective symptoms was noted (Soloff *et al*, 1986). The latter also tried amitriptyline and patients got worse, a point raised by Gunderson (1986) to argue the independence of borderline personalities from affective disorders (cf. also Gardner & Cowdry, 1985). These important papers improved the therapeutic trials to acceptable current standards; but Goldberg *et al* too hastily suggest that the diagnostic criteria be changed to fit the target of a particular drug. The approach advocated in this review is wider.

The classic Menninger Clinic project (Kernberg *et al*, 1972) compared supportive psychotherapy, classical psychoanalysis and "expressive psychotherapy"

conducted in an in-patient unit, to the third of which borderlines responded best. The sophistication of this study make the thought of replication daunting, but it is nevertheless surprising that nobody has attempted it.

In summary, good studies are just becoming available and have not yet contributed substantially to the issue of validity. Double-blind trials of medication, with detailed analyses of the effects, should continue and also be expanded to include psychotherapy with a design that helps identify the relative benefit of each (cf. Di Mascio *et al*, 1979).

Discussion

The papers reviewed, over 70 in all, published mainly between 1980 and 1986, show progress towards demonstrating the validity of borderline personality in terms of verifiable criteria. Three contributions were influential in this development.

In conceptual terms, Spitzer *et al* (1979) distinguished borderline ("unstable") from schizotypal ("borderline schizophrenia") personalities, a distinction empirically supported by themselves and others. The most important input to the research field, however, was Gunderson's Diagnostic Interview for Borderlines. The DIB conceives of borderlines in categorical terms, but this simplification has proved fruitful. The DIB provides a diagnostic score, like a screening instrument. More work is necessary on the relationships between the 140+ individual items; on the existence of subgroups (as a positive score can be obtained with different combinations of diagnostic statements); and on the prediction of external indicators. The third contribution, Kernberg's psychodynamic theory, is potentially amenable to ordinary research but little has been published so far. A fair assessment of Kernberg's psychoanalytic thinking has not been attempted here.

Research reviewed show that a group of patients with similar traits and symptoms sustained over a number of years can be identified in many institutions, in different countries, and in the community (Drake & Vaillant, 1985). It is frequently asked if borderlines are not a product of the North American culture. Borderline pathology has been recognised for years by psychoanalysts of different continents, and more recently by researchers in Europe (Kroll, Dahl, Torgersen, Bateman, Coid), in Australia (Mellsop) and among Hispanic samples in the USA (Castaneda & Franco, 1985). These patients are "unstable", "unpredictable" or "inconsistent" in their affects, impulses, identify and relationships, and are prone to transient psychotic episodes. Several research diagnostic criteria exist and they partially overlap, as is the case for other well-established psychiatric diagnoses: schizophrenia, for example, where they are also only partially concordant (Brockington *et al*, 1978). It will not surprise anybody if research shows that different sets, dimensions, or items of the borderline concept have different predictive power in terms of other variables; for example, prognosis (as shown for schizophrenia sets by Brockington *et al* (1978)), or heritability (as shown for schizophrenia by McGuffin *et al* (1984)).

Borderline personality and schizophrenia

To sustain its validity, the borderline concept had to prove first its separateness from schizophrenia. Independent studies with various criteria give the common message that borderline personalities and in-patient schizophrenics are reliably distinguished. Their longstanding features of borderline personalities stand out (e.g. impulsivity, chaotic lives, stormy relationships) and are remarkably different from those of the schizophrenics. In spite of some similarities (e.g. depersonalisation or derealisation) their symptoms also differ (e.g. characteristic phenomenology and course of the psychotic phenomena, cf. Pope *et al* (1985)). Furthermore, outcome, treatment response, psychological testing, and family studies all indicate that borderline personality as currently diagnosed is not a variety of schizophrenia. However, in out-patient settings, the distinction with milder, torpid, or remitted schizophrenics has not been studied well and is not so clear. We will suggest why, below.

Borderline personality and affective disorder

A variable, sometimes high proportion of cases present with both affective and borderline symptoms, at intake and follow-up. Firstly, depressions are common and multifarious conditions, the presence of which do not necessarily suggest that the concomitant personality disorder is dependent on them. Clinically, the assumption made is different: that some personalities are predisposed to depression. Secondly, the most characteristic features are not identical; the quality of the depression is frequently different. Barrash *et al* (1985) have shown that *other* personality disorders are equally at risk for depression, arguing against a specific unity between borderline and affective disorders.

Cases where both symptoms co-exist may explain some ambiguities: the development of affective symptoms such as dysphoric mood or self-harm cause borderline personalities to be admitted to hospital, when they appear more like affectively ill patients; among out-patients, while not in crisis, the

more schizoid features such as aloofness and doubts about themselves may predominate, obscuring the distinction from remitted schizophenics (a hypothesis to test).

Thirdly, an excess of cases with depression has been found at follow-up, but these were considerably reduced when affective disorders were controlled for at the initial interview. It follows that 'pure' and 'mixed' cases should be independently analysed in future studies. The same applies to family studies: an excess of affective disorders was found among the relatives of the mixed (borderline plus affective) cases, not among the relatives of 'pure' borderlines. It also seems – procedural weaknesses considered – that the most frequent diagnosis among the latter is borderline personality itself.

Fourthly, the precise variety of affective disorder should be specified, as different hypotheses about the unity apply. Biological markers would contribute valuably to this debate. Similarly, Kernberg argues that some but not all depressives function at borderline level; and depression is less likely in personalities with both borderline and antisocial features, which is consistent with the psychodynamic link of aggression and depression (Perry, 1985).

At one point it was somewhat dramatically thought that if borderlines could not be reduced to a schizophrenic-like condition they would be subsumed *in toto* under affective disorders, removing any basis for their validity. On present evidence this is not likely, but it might be either that some borderlines are particularly prone to depression, or that one subgroup is truly a sub-affective disorder. Depressive features were common in two studies in the UK, where the issue could be profitably examined. But if the different proportions of cases with depressive symptoms reflect uncontrolled selection of patients at intake, an epidemiological survey – or at least a multi-centre study – will be required.

Borderline and other personality disorders

The distinction between borderline and other pathological personalities must be discussed in terms of categories and dimensions. Following Frances (1982), these are not mutually exclusive concepts. Categories are extreme, paradigmatic or severe forms of a continuum, cases where a particular sector of the personality pathology is so extreme that by comparison others are overshadowed. Adopting a categorical model is expedient and simplifies research – witness the DIB. Somewhere in the process, however, the researcher is faced with a triple variation: (a) cases that differ in severity, (b) cases that only partially satisfy the criteria, and (c) cases where the category appears accompanied by others – now it may be called a dimension. The researcher is required to change from an ordinary to a wide-angle lens. A multidimensional approach is more true to clinical practice, and more realistic – although more complex to handle – for therapeutic trials.

The papers reviewed support the validity of borderline personality and the standing of a multidimensional approach. Succinctly: (a) the individual diagnostic items can be reliably assessed (e.g. Frances *et al*, 1984); (b) they cluster in stable sets, confirmed statistically (e.g. Spitzer *et al*, 1979; Barrash *et al*, 1983); (c) varieties exist, defined by the severity or completeness of the sets (e.g. Koenigsberg *et al*, 1983; Kass *et al*, 1985); (d) they appear both in pure forms and in combination (e.g. Pope *et al*, 1983; Frances *et al*, 1984; Stangl *et al*, 1985); and (e) some combinations are more frequent (e.g. borderline plus histrionic or schizotypal). However, these studies have not examined the whole spectrum of personality disorders, only the specific varieties noted above. The true distribution of pure/mixed forms would only come from epidemiological surveys. The need to study the existence of varieties within the current concept of borderlines is confirmed by many studies. The search for a unitary description of the borderline personality has led to the relative neglect of its possible heterogeneity. However, the existence of subtypes has always been argued for by descriptive (Grinker *et al*, 1968; Andrulonis & Vogel, 1984), pharmacological (Klein, 1977), and psychoanalytic (Rosenfeld, 1979) findings. The DIB captures a pathognomonic pole of impulsivity and unpredictability with proneness to psychotic episodes. Another pole, of identity pathology, as yet less reliably assessed, and less studied, should be explored further (it is relevant for the assessment of psychotherapies based on object-relations theory.) It is also possible that varieties will become more firmly established on aetiological grounds (e.g. brain damage (Andrulonis & Vogel, 1984)), by the proximity to affective disorders or by response to treatment.

Researchers should identify their cases with more than one set of criteria and assess for other personality disorders as well, to contribute to the debate about validity and about multidimensionality. It is foreseeable that new work will modify the diagnoses now employed and progressively change current theoretical and pragmatic assumptions about personality disorders.

Conclusion

We can now modify Leibowitz's statement to say that the scale has tipped in favour of the diagnostic status of borderline personality. What before was a vague, mythical or muddled concept has achieved

in many ways the significance of other commonly used psychiatric diagnoses. By this we mean that it has become a reasonable working description, assessed with acceptable objective criteria, allowing systematic investigation of its contents and of its limits, and useful to guide some clinical decisions. However, we would caution against the complacent reification of the diagnosis, as research in new – and some old – issues is clearly needed. These developments have taken place in the context of a growing interest in the whole field of personality disorders. If the 1970s were years of a renewed interest in schizophrenia, and the 1980s are witnessing considerable research in affective disorders, the 1990s will show unexpected developments in the investigation of personality disorders.

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