Sjöbing's Personality System: An Investigation
Into the Relationship Between Personality and
Psychopathology

David Jenness
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For many years, Henrik Sjöbring (1879-1956) occupied the Chair of Psychiatry at Lund University in Sweden. Like so many Europeans, his views and work on "normal" psychology and psychopathology were interdependent and mutually contributory. Like many Europeans, again, Sjöbring was basically a constitutionalist and was inclined to look to genetics as the ultimate model for differential psychology. On the more ontogenetic level, Sjöbring held (though he was by no means uninterested in "nurture") that the basic reality underlying human individual functioning, and the bridge between normal and abnormal functioning, is precisely the nervous system itself, which establishes the lifelong predisposition for normal personality development or for psychopathological development.

Sjöbring's underlying model for the neurophysiology of psychopathology is conceptually much simpler than that for normal personality. In the case of the former, the CNS "predisposition" is in essence a fait accompli; that is, all organic conditions (for definition of "organic," see below) are by definition non-natural, the result of damage due to noxious influences, single-gene substitutions, genic mutation, birth damage, etc. Sjöbring holds that most mental illness, and virtually all serious mental illness, has to be considered as "lesional." As such, it can be classified typologically, using traditional psychiatric labels based on description of symptoms, hypotheses as to etiology, etc. The labelling may be better or worse, of course, depending on the psychiatric "school," but since lesional illnesses are in the nature of accidents or "freaks," it is not absolutely urgent to define the universe of illnesses, to worry about the overlap of diagnoses, etc. Clinically, one uses whatever system seems to work adequately.

"Organic," then, means outside the scope of normal variation; such conditions are all-or-none; they can only do damage. An example might be taken from the field of mental endowment. Take an individual with tested IQ 40. We tend to think of "40" as a meaningful point on a scale representing the Gaussian distribution of mental ability: for every person with IQ 40 there is a corresponding person with IQ 160. But it has been claimed that there is a "bump in the curve" over the oligophrenic range, especially its lower reach. Penrose (1949) has calculated that there are too many idiots, and perhaps too many imbeciles, to be accounted for by the mathematics of a normal population with SD=15 points. Most evidence, in fact, points to the idea that the polygenic model works best in the "subcultural" or "familial" range of IQ's. Sjöbring does not claim that all IQ 40 cases have to be organic, in his sense; some no doubt belong to the polygenic normal variation model, but most are held to be lesional, and for these lesional cases "40" is a trivial number, merely a reflection of the fact that some of the lesional cases when tested will end up with that number on the scale.

Similarly, we call schizophrenia and manic-depressive psychosis "functional," but Sjöbring would not, since he reserves that term for "degenerative (i.e., progressive) abnormalities" caused by the individual's being relatively poorly endowed with regard to certain qualities, genetically determined, and distributed normally within the population as continuous dimensions. A degenerative or constitutional weakness facilitates -- predisposes in a relatively nondeterministic, or at least non-all-or-none, way -- the tendency to react with a functional pathological state to stress. For Sjöbring, if you are schizophrenic or depressive, you are organic, lesional; the factor that has caused the lesion has no corresponding beneficial counterpart. However, one can be schizothymic or cyclothymic (in Bleulerian terms; Sjöbring does not use this nomenclature) or schizoid and still...
be in the normal-personality population. In fact, to be such may indicate a dimension of positive mental health, rather than psychopathology, depending on one's endowment with other qualities.

So Sjöbring's system of normal personality, that is, of individual psychology, leaves the typological realm and enters the realm in which the predispositions are arranged according to continuous bipolar dimensions, all of which cover normal variation within the population (leprosy cases excluded), and all of which are mutually independent. In a sense, Sjöbring anticipated the modern multidimensional approaches to personality, such as those of Eysenck's and Cattell's. However, Sjöbring's system was built up on a far less operational basis than Eysenck's, for example, since the dimensions were first posited on the basis of extensive clinical experience; and these dimensions were not "factored out" of trait sets and their intercorrelations, as for example were Cattell's.

Of course it is true that a personality system can be both typological and dimensional. For example, the Sheldon-Parnell system uses three independent body build factors: viscerotonia, somatotonia, and cerebrotonia. But in fact extreme positions along any of the scales preclude extreme positions on any of the other scales. Using 10-point scaling, one can be 5-5-5, or 6-4-4, but not 1-1-1 or 9-9-9. Further, the combined rating 5-5-5 can itself be considered a "type," in that Sheldon has worked out the relative frequency of that combination of scores within the population. In a system such as Sheldon's, this paradox is built into the theory, but the same problem can permeate a system without being theoretically evident. It is one thing to claim that dimensions exist in nature independent of each other; it is another thing operationally to scale them or produce ratings of them independently.

While it is clear (Sjöbring, 1963) that for the originator of the system personality and psychopathology are assumed to be different and independent phenomena, this assumption has not been respected by many of the studies that have grown out of his system. There are probably two main reasons for this. First, the theoretical allegiances of other investigators may be such that they do not wish to endorse this distinction. They may feel, for example, that neurosis is neither the one nor the other, but in some way a blend of personality and psychopathology. Second, in the absence of adequate etiological knowledge and of good criteria for what psychosis, for example, really is, even descriptively, it is scientifically risky to go into a "population" and initially exclude a subset of individuals as being "lesional." Someone else may come along and wish to reconstitute the lesional group, claiming that the exclusion was wrongfully done and that thus the population employed was nonhomogeneous, etc.

Sjöbring's theory constructs four genotypic dimensions that are supposed to be sufficient to describe normal personality. They are: capacity, validity, solidity, and stability. Sjöbring claims that these did not originate as mere semantic entities, but were in fact deduced from his general neurophysiological model (Sjöbring, 1963) which was in turn deduced from a lifetime of clinical and observational work.
Capacity is the disposition to intellectual development. Like Cattell, who has extracted a general intelligence factor without the use of IQ tests, Sjöbring has not wished to make a distinction between "ability" and "temperamental" variables in the comprehensive assessment of personality. Nevertheless, the post-Sjöbring experimental studies have almost invariably omitted to scale "intelligence." It seems obvious why: most psychologists feel that we have more reliable methods for direct assessment of this aspect of human behavior. Whether or not this is so is or ought to be a scientific question, not a dogmatic assertion.

Validity means the degree of available "mean" energy supply in nervous functioning. It is the dimension of effective energy.

Solidity corresponds to inertia, or tracking accuracy, or functional efficiency, or the degree to which total functioning has been automatized. For example, locomotion, comprehensible speech, etc., are highly facilitated functions; they proceed without the expenditure of attention, great energy, and so on. In such functions, inertia is not lost when the behavior is not present. Solidity, then, means that sector of function that is under more-or-less permanent control, the "core" sector rather than the "problem" sector that requires more energy, acquisition, rehearsal, the formation of new skills and discriminations, etc. A Hebbian theory of sensorimotor integration, of neural loops arranged in stable phased sequences, etc., offers a possible analogue. Solidity is related to maturity, in that in absolute terms successfully functioning adults are always more "solid" than they were in youth.

Stability is perhaps the hardest dimension to conceptualize. It means emotionality in an expressive (e.g., communicative or signalling) sense, introversion/extroversion with reference to the social environment, concrete/abstract, ego-integrated, etc. It is a difficult concept: emotional lability in the psychiatric sense, for example, seems to fall into both the solidity and stability dimensions.

In order to make these dimensions at all explicit I have had already -- especially in the case of stability -- to use polar adjectives. Such smaller-scale, bipolar sets of characteristics are, in fact, what clinicians in Swedish studies actually may use, in the sense of keeping in mind, when they rate individuals on the Sjöbring dimensions. However, it is also implied that a truly experienced rater -- that is, one who really deeply understands the general neurophysiological and behavioral theory -- rates persons on a more global and direct basis. One of the pervasive problems with the Sjöbring system so far is the impossibility of specifying public and repeatable criteria for rating. However, attempts along these lines have recently been reported (see below, the Marken-Nyman Temperament Scale).

Figure 1 gives, for each of the dimensions (Capacity excluded), sets of loosely paired adjectives that have been or may be used for rating. That is, there are two sets for each dimension, one positive and one negative. In practice, judgments are not dichotomous: a 7- or 9-point rating scale is used, and the data are generally presented in terms of three ranges: sub-, medio-, and super-. For clinical or observational ratings, a mean or median or a mid-range has to be employed, especially since by the nature of the distribution most cases will fall
in the middle range, so that if anything judgments would need to be potentially finer in this range than at the extremes.

"Normals," in the statistical sense, must of course be found in the mid-range on these dimensions; but, with reference to Fig. 1, it is sometimes unclear as to where the best-endowed, best-predisposed, best-functioning, persons will be located. Such persons will, theoretically, never be found in the sub-range; presumably this is one reason why some investigators have violated Sjöbring's tenets and viewed the sub-poles as marking a predisposition to pathology, especially in theories of psychopathology that lays stress on "adjustment" or "positive mental health" and their lack. On the other hand, the best-off individual is not necessarily located at the super-extreme. Presumably it is desirable to be as supervalid as possible, but it may not be good to be too supersolid (for then one is rigid and unadaptive) or superstable (for then one is cold and abstract).

Fig. 1 also contains some cognate terms and constructs from other theorists; these are offered principally for orientation, but also with regard to their potential use in ascertaining the validity of the system. These terms have been included because investigators themselves (e.g., Essen-Möller, 1956) have made the comparison or because of theoretical resemblances, even if superficial. It is, of course, impossible to rationalize sets of theoretical constructs that were never meant to parallel each other; and the reader is advised not to let their presence in the figure draw him away from the Sjöbring frame of reference itself. In addition, beyond mere verbal inaccuracy and looseness, there are certain logical anomalies in the figure, when other systems are arranged with reference to the Sjöbring dimensions. For example, "viscerotonic-cerebrotonic" arranges itself quite neatly along the Stability dimension, but both terms occur under subvalidity. Note also the box near the bottom of the figure.

Figure 1 also contains, along the margins, certain syndrome terms that, in possible violation of Sjöbring's own views, are the logical extensions of normal personality variation into the realm of psychopathology. When we know more about the etiology of mental illness we may be in a position to gauge whether such an extension has been heuristic. It may be that certain behaviors in the mentally ill have only an accidental (and, for scientific progress, most unhappy) resemblance to behaviors in normals. Systematic genetic studies, for example, may show that "schizoid" personalities and "schizophrenia" never occur in the same material, and that their mechanisms are totally different. If that is the case, not only the extension of the table in Figure 1 but much of psychopathological research will be given a quick and embarrassed funeral.

The descriptive trait sets given in the figure do not permanently and universally comprise sub- and super-personalities in nature. That is, they are sets of judgmental tools more than constellations of fixed types. Each set is supposed to describe cases that fall into the middle-range on all dimensions other than the one dimension to which the adjective set applies. While the dimensions are independent, in theory, they may interact in infinite ways in a given personality. When three of the four dimensions (including Capacity) are represented in the mid-range, deviant characteristics amounting to sub-validity, or super-solidity, or whatever, are thrown into relief, so to speak, and that rating can be made from the adjectives offered. But if the rater has reason to believe, whatever
his decision method is, that the person falls into the extreme on more than one dimension, he must perform conditional ratings, he must adjust his basis for rating other dimensions accordingly (which of course means that he must follow a hunch about the nature of the interaction.) The most obvious example is the effect of an extreme in Capacity on ratings along another dimension. If a person is suspected or rated as subcapable, in judging Stability one does not lay great weight on the absence of the trait "mentally sophisticated." Similarly, subvalidity may be confused quite easily with subsolidity or supersolidity, depending on the particular trait. If one assesses subvalidity first, one then has to move the center of gravity, so to speak, of the Solidity scale in order to arrive at a truly independent and orthogonal assessment on this scale. Could the Sjöbring system be operationalized and standardized so as to guarantee the independence of successive or simultaneous ratings of the same person, on the various dimensions, this severe methodological problem would be minimized.

Even with global and intuitive judgments, though, presumably data from large groups of rated persons ought to reveal consistent non-independencies and intercorrelations. In that case, retraining of the raters might reduce the problem. On the other hand, perhaps the descriptive sets of adjectives are in practice less important than they seem. It may be, as mentioned above, that truly expert raters, who are completely familiar with the basic theory of which these descriptive word sets are merely crude images, do a better job of rating the more hypothetical variables -- the dimensions themselves, directly -- than rating the presumably less hypothetical traits seriatim and then somehow weighting these bits of observation into one numerical judgment. They may have a higher degree of reliability on the more abstract level, just as American psychiatrists, in reliability studies, may be shown to agree more on the diagnosis "schizophrenic" than on various subtypes. It may be that validity, solidity, and stability ratings are "over"- (i.e., multi-) determined, like the diagnosis "schizophrenia." Or it may be that various consistent errors and dependencies do exist in the rating process, but that they cancel each other out in large-N data, perhaps owing to the fact that the raters know that theory demands the more frequent use of scale numbers 4,5,6 than 1,2,3 or 7,8,9. In fact, as in all such assessment procedures, raters may have certain biases trained out of them in a way that buys reliability at the cost of validity.

Theoretically, this entire problem ought not to be crucial, because by definition the probability of being at an extreme on any dimension is small. Being at 1 on the solidity dimension (which is itself a rare event) in no way prevents one from coming up at 1 on the stability scale (see discussion of Sheldon somato-typing, above), but such an outcome is nevertheless extremely unlikely in the probabilistic sense. That is, it becomes a joint probability case where \( P = (1-\alpha)(1-\beta)(1-\gamma) \ldots \). It is perhaps for this reason that those who hold with adjustment or learning or developmental models for mental illness violate the Sjöbring system by saying: the psychotic must be someone whom natural variation puts at 1 (or 10) on one dimension and one dimension alone, and whom, moreover, pathologic accident pushes right off the scale into the "minus" range. (Such a range is not, of course, acceptable to Sjöbring.) Of course this reasoning is by no means logically necessary. As has been said before, the reason why our APA (1952) psychiatric classification system does not work well may be that we are matching differential etiologic hypotheses to symptom or trait descriptions that are de-
derived from normal personality theory and that are in fact not appropriate to pathology at all.

EXPERIMENTAL STUDIES

1. Essen-Möller (Essen-Möller, 1956)

The Swedish psychiatrist Essen-Möller and his colleagues did an exhaustive epidemiological study of prevalence of physical and psychiatric health and disorder in an entire south Swedish district in 1947. Among other aspects, he and three other psychiatrists, all of them Sjöbring-trained, assessed the personality variation, following the Sjöbring system, of 2550 persons by means of personal interviews in situ. Cases were located by the census method; the N of 2550 represents 98.8% of all individuals in the district.

The interviews consisted of free history-taking and direct observation, and lasted typically for one hour. Each person was seen by one psychiatrist. "During the whole interview, the individual's general behavior, his ability of contact-formation, his emotional intensity, fluency, attitude of tenseness and relaxation, intellectuality, etc., were subject to close observation." In addition to observation, the interviewer completed a standard check-list of health items, adjustment questions, life experiences, subjective attitudes toward the person's own developmental history, etc., but in no standard order and in no standard way. Directly after each interview, summary opinions of morbidity, diagnosis if any, natural and pathologic variants of personality, simple anthropometric estimates, etc., were recorded. For the four personality dimensions, a 9-point scale was used.

All personality distributions (i.e., distributions of ratings) were approximately normal, with mean around 5, except that the extremes were somewhat under-represented. Each of the four psychiatrists produced comparable rating distributions. Figure 2 gives means by sex, over-all mean, and standard deviation for all except the Capacity dimension.

As is evident in Figure 2, the female mean was lower than the male on all three dimensions. In terms of Stability, the mean (both sexes) for age-group 15 to 19 was 5.23, while that for 70 and over was 4.27. This trend was approximately linear over age and was true of both sexes individually. Thus advancing age was related to greater sub-Stability, in view of the descriptions in Figure 1 perhaps a surprising finding. It may be possible that a relativistic set of expectations on the part of the raters played a part in this relation: that is, that the raters expected stability in some sense to increase with age and that, this proving not so observationally, rather than their revising their expectations or attempting to counteract a suspected bias, the ratings at more advanced age levels came out artificially low.

As the theory predicts, greater Solidity was associated with advancing age.

While the raters reported having most "trouble" rating Validity, owing to
FIGURE 2

From: Essen-Moller, 1956. 9-point rating scales employed.

MEAN RATINGS

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OBTAINED AND EXPECTED MEAN RATINGS OF CERTAIN IMPAIRED AND DISORDERED

VALIDITY

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SOLIDITY

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<td>E</td>
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STABILITY

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<tr>
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<tr>
<td>Schizoid</td>
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*= .001 level of significance. All other results meet at least the .05 level.
the necessity to distinguish minor, perhaps lifelong, physical handicap and problems from subvalidity, the Validity rating distribution does not reflect this, either in terms of a displaced mean or a wide variability index.

The only substantial correlation coefficient for sets of two ratings (pairwise) was Validity-Stability: -.15. Close analysis of these and other data led the investigators to believe that rough body-build estimates (of clothed respondents) had tended to contaminate Stability ratings and had augmented the Validity-Stability correlation.

By using replies to the check-list of physical and mental symptoms (which was heavy on psychophysioic items) and volunteered complaints, the investigators were able to assign numerical ratings to functional impairment. They also obtained figures, based on gross psychiatric criteria, for the prevalence of neurosis and "schizoid" personality. (In both these areas they reserved opinion on the lesional-functional problem and simply used clinical experience of overt symptomatology.) By appropriate stratification of their entire sample they were able to analyze out "expected" mean ratings on all three personality dimensions (with stratification being by age, sex, etc.), and then to compare the observed mean ratings in the various impaired or psychiatrically disordered groups. Figure 2 gives all results that met or exceeded the .05 significance level. In almost all cases the impaired or disordered groups, when significance was demonstrated, had lower means than expected. However, the report of the study fails to say how many comparisons were not significant, in what direction these differences lay, etc., so that the reported differences alone may be merely sampling error. The sole difference where the observed mean rating is significantly higher than the expected is that in which "schizoid" is related to stability. In both sexes, schizoids were super-Stable with respect to the expected values. However, the diagnosis "schizoid" was positively related to advancing age. Since this study found that age was negatively related to stability, it appears that the schizoid-Stability relation is complex, if it exists: the two are clearly not identical entities.

2. Nyman (Nyman, 1956)

The study of Nyman, though published in the same year as Essen-Moller's, was done in 1953-1954. Nyman interviewed personally 300 20-year old army inductees (in Sweden at that time, at least, army induction was "universal" and at only one age). Although all inductees had to be at least fairly healthy both physically and mentally to serve in the army, one-half of them belonged to the "Army Service Corps," indicating that they had slight defects of one kind or another. This membership was known to Nyman, as was educational attainment, so that he did not rate his subjects on Capacity. (Of the inductees, 58% had completed elementary education, 39% the five-year high-school course, and 3% had qualified for university admission, though they had not matriculated.)

Nyman's method consisted of free conversation in an office for 45 minutes approximately, on neutral topics such as plans for the future, likes and dislikes, etc. He states that his ratings were based on verbal content, verbal style and fluency, expressive movements (facial, hands, posture, while smoking, etc.), psychomotor efficiency, affective appropriateness and expressiveness, etc. He
placed a strong emphasis on movement in arriving at global judgments, particularly of Validity and Solidity.

Thus Nyman's interviews were, in comparison with those in the Essen-Müller study, rather perfunctory and static, but they were also more standardized and with less scope for subject bias (e.g., misunderstanding of probes, distortion or failure to recall, etc.).

At the same time, Nyman wished to begin to move away from exclusively subjective, intuitive global judgments. After recording dimensional scale values for each individual, Nyman took time to make dichotomous paired-adjective judgments for predesigned sets much like those shown in Figure 1. Presumably, the "conditional" method was freely employed, wherein a previous scaling at an extreme on a dimension was taken into account in the paired-adjective task. Beyond this, of course, the nature of the judgments allowed very strong "halo" effects to occur.

Nyman used a 7-point scale. Results are shown in Figure 3; because of the different scale range, these means are not directly comparable to those in Figure 2. All distributions were more-or-less normal, but validity was skewed slightly to the left while solidity was skewed slightly to the right. These seem to be plausible outcomes: it would be expected that healthy, 20-year-old Army inductees would be vigorous and energetic relative to the general population, and that due to their youth they would tend to be subSolid.

The only significant intercorrelation among ratings was Validity-Solidity: .30. This is not in line with results from the Essen-Müller population study, and that coefficient is quite high. It can be argued, of course, that one could expect some significant intercorrelation when only one rater is involved, but this is certainly not an inevitable outcome, and only one large coefficient was obtained. It seems more likely that the two skewnesses already mentioned are represented as consistent summed deviations in producing this result, and that the correlation obtained more likely represents a "true" phenomenon in the sample than rating bias.

The individual correlations of dichotomous paired-adjective results with scale scores on the three dimensions offer little enlightenment. Usually the adjective set correlates most highly with the "appropriate" dimension - that is, the dimension that formed the theoretical basis for the formation of the adjective pair. However, in this regard, there are some cases where this is not true; by and large, fairly plausible semantic explanations can be educed for these exceptions. There was more "overlap" (that is, adjective pair - dimension score correlations of rather comparable magnitude) between Stability and Solidity than between Validity and Solidity. Had the latter been true, it would merely bear out the obtained dimensional intercorrelation in this study. The Stability-Solidity overlap, in terms of adjective pairs as "discriminating" items, may support the notion derived from an examination of Figure 1 dimension descriptions that the dimensions Stability and Solidity are more difficult to make explicit semantically, relative to each other, than are Stability and Validity or Solidity and Validity.
From: Nyman, 1956. 7-point rating scales employed.

<table>
<thead>
<tr>
<th>VALIDITY</th>
<th>STABILITY</th>
<th>SOLIDITY</th>
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<tbody>
<tr>
<td>M</td>
<td>SD</td>
<td>M</td>
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<tr>
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INTERCORRELATIONS

<table>
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<td>Stability</td>
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The inductees were independently (i.e., not by Nyman) given mental tests, objective body-build assessment, endocrinological examination, and reaction time tests. Intelligence testing included the Raven Progressive Matrices Test (non-verbal) and a combined battery of essentially vocabulary tests of intelligence. The latter, and not the former, showed quite strong correlations with stability, again suggesting, for example, that without medico- or superCapacity an individual cannot easily be superStable. The intelligence-testing results in general in this study also suggest that Sjöbring's hypothetic Capacity dimension may be slightly different from or more inclusive than the standard, or one or another standard, I_q battery in common use.

Reaction time was positively correlated with solidity, which theory would predict. The relation was slightly U-shaped; reaction time was also slightly positively correlated with sub solidity (≤ 3), which probably means that the extreme subSolids show poor attentiveness and thus produce an occasional very long RT.

Validity was positively associated with muscularity in all groups but those who were highly educated (eligible for university) or who had been clerks in civilian life.

Nyman, in his discussion of the study, begins to point to avenues for possible criterion-oriented, or perhaps construct, validity checks. He predicts, for example, that Validity in his sample would be correlated with eventual (post-Army) vocational success; that subSolidity would predict marital failure. Such studies would surely be welcome, though it is unclear to what extent successful outcomes would argue the general cogency and superiority of the Sjöbring system. For example, we already have fairly good predictors of vocational success (e.g., Strong Inventory, Minnesota Personality Scale, Kuder Preference, etc.).

3. The Nyman-Marke Temperament Scale (Nyman & Marke, 1962)

Nyman & Marke further restricted their material but significantly refined their method in devising a standardized, self-administering personality inventory with which to score the Sjöbring personality dimensions. (In doing so they introduced new problems, of course, such as reading comprehension, response set, etc., that are typical of such inventory methods.)

They began with 100 Yes/No items constructed to cover the three dimensions (Capacity, of course, excluded). These were selected by consensus of nine Sjöbring-trained psychiatrists. The 100-item inventory (preliminary form) was administered to a sample of teachers' college, nursing school, and technical college students in Sweden, aged 19 to 25. (N = 147m, 176f).

In the preliminary phase of the study, an item analysis was performed on the 100 items. Sixty items met the requirements of item validity (i.e., that they belonged in fact to the dimension postulated and to no other). Item cross-correlations established the orthogonality of the three dimensions as reflected in the items employed. The same subject group was retested on the 60-item inventory. Figure 4 contains an English translation of the Temperament Scale (translation by Alec Coppen), with V, S, and 50 indicating dimension membership for each item. The Scale was designed so as to avoid response bias, etc.
FIGURE 4

Marke-Nyman Temperament Scale
(Translated by Alec Coppen)

Instructions:
If your answer to the question is YES, make a ring round YES.
If your answer is NO, put the ring round NO.
Please answer all the questions even if you are not quite sure.
Check that no question has been omitted.

Circle denotes positive item on the scale.

<table>
<thead>
<tr>
<th></th>
<th>1. When you get bored, do you like to do something exciting?</th>
</tr>
</thead>
<tbody>
<tr>
<td>So</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>2. Do you prefer to dress simply and correctly rather than with some imagination in order to attract attention?</td>
</tr>
<tr>
<td>So</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>3. Do you prefer books that give a colourful description of real life to those books that contain well formulated thoughts?</td>
</tr>
<tr>
<td>St</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>4. Do you wish that you were not so easily worried and flustered?</td>
</tr>
<tr>
<td>V</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>5. Do you easily get tired out and feel in need of a rest?</td>
</tr>
<tr>
<td>V</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>6. Do you find it difficult to change your habits of work?</td>
</tr>
<tr>
<td>V</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>7. Can you stand being disturbed when working?</td>
</tr>
<tr>
<td>V</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>8. Do you more often make up your mind quickly rather than working out a decision slowly and carefully?</td>
</tr>
<tr>
<td>So</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>9. Do you prefer to work by yourself?</td>
</tr>
<tr>
<td>St</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>10. Would you describe yourself as a rather happy-go-lucky person who is not always careful and methodical?</td>
</tr>
<tr>
<td>S</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>11. Do you worry about difficulties long before they occur?</td>
</tr>
<tr>
<td>V</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>12. Do you like jobs that need rapid decisions?</td>
</tr>
<tr>
<td>V</td>
<td>YES</td>
</tr>
</tbody>
</table>
13. Do you find it easy to form close relationships with other people?

14. Do you often "sleep" on a problem before making a decision?

15. Do you think it is more important for a person to have a balanced judgment rather than a creative imagination?

16. Do you prefer change and excitement to security and peace?

17. Do you prefer to be respected rather than liked by your colleagues?

18. Do you tend to choose your friends because they are pleasant and congenial rather than they come up to your ideals of good taste and restraint?

19. Do you feel inclined to confide in someone when you are worried or sad?

20. Do you rehash and dramatize small incidents that have occurred to make a more amusing story?

21. Do you find it difficult to disguise your feelings and to act a part?

22. Do you feel you have to save your strength?

23. Do you follow the inspiration of the moment and start things which you will later find difficult to manage?

24. Can you undertake responsible tasks without feeling under pressure?

25. Because of your nature, does it take more out of you than it does most people to get something done?

26. When life gets dull do you long for something exciting to happen?

27. Do you avoid people who are interested in your personal affairs?

28. Do you lightheartedly make provocative statements because you like to shock people?

29. Do you think, first and foremost, that you should consider people's feelings even if you must go against your principles?
30. When you are doing one important job, do you get irritated when you must make a decision about a different matter?

31. Do you feel embarrassed when people come to you with personal confidences?

32. Do you find it easy to make up for lost sleep in the daytime?

33. Can you concentrate on a task even if the surroundings are disturbing?

34. Do you like people who quickly make up their mind even if they come to rash conclusions?

35. Do you get nervous and worried when urged to hurry up your work?

36. Do people often seek you out to confide in you?

37. Do you usually feel anxious in case you will be too late, e.g. when catching a train?

38. Do you get deeply moved by other people's misfortunes?

39. Do you prefer to have plenty of time, e.g. when going to a party?

40. Do you prefer to keep people at a certain distance?

41. Do you quickly make up your mind about people?

42. Are you satisfied with your ability to summon up the energy needed to deal with unexpected difficulties?

43. Have you many intimate friends?

44. Do you prefer not to be involved in other people's personal problems?

45. Do you think it is worse for people to be coarse and vulgar than spiteful and sarcastic?

46. Do you dislike people who freely express their feelings and who are very free and easy in their manners?

47. If anybody has an accident is your first thought to try and be of some help?
48. Could you easily cope with another job in addition to your usual one? [YES] [NO]

49. Do you feel calm and secure even when confronted by new tasks? [YES] [NO]

50. Do you prefer to spend an evening alone with a book or some hobby to being together with a group of friends? [YES] [NO]

51. Do you willingly take the initiative at your place of work? [YES] [NO]

52. Do you find it easy to influence and persuade people? [YES] [NO]

53. Do people say that you hide your feelings so that it is difficult to understand you? [YES] [NO]

54. Do you think that one ought to avoid the modern tendency to dress comfortably but somewhat carelessly? [YES] [NO]

55. Do you regard yourself more as reserved and somewhat cold rather than as a hearty and warm person? [YES] [NO]

56. Do you find it easy to make close contact with children? [YES] [NO]

57. Do you sometimes think that you don't have the strength to do as much as most of your acquaintances? [YES] [NO]

58. Are you regarded as fickle in your interests and opinions? [YES] [NO]

59. Do you find it easier to get on with a carefree happy-go-lucky person than with an unimaginative but trustworthy person? [YES] [NO]

60. Do you let yourself get convinced about something and find, after second thoughts, that you must change your opinion? [YES] [NO]

Please look through the questions once more and check that you have not forgotten to answer any.
Results showed satisfactory approximation to a normal distribution of scores on the dimensions. In general, women proved to be less Valid, and more Stable, than men. (The latter finding contradicts that of the Essen-Moller study.) Male teaching students were less Solid than technical students, and nurse trainees were more Valid than female teachers. There were no dimension intercorrelations greater than +0.15.

Split-half reliability analyses were done for each group on each scale, and by sex x group. Coefficients of +.64 to .84 were obtained, except for nurse trainees, whose reliability coefficient was only +.44 on the Stability dimension. The authors believe, in this respect, that nurses had special role expectations in the task; they felt obliged to demonstrate warmth, yet to show toughness and efficiency at the same time. The precise way in which these biases would lead to low split-half reliability figures, assuming the scales were properly constructed (e.g., "warmth" and "toughness" items randomly scattered) is unexplained.

A new sample of 365 general university students, including technical and professional students, was drawn. The low reliability of the nurse group was replicated. Male-female differences were not apparent in the new sample. In general, the dimensions seemed to be reliable, normal, and orthogonal.

In order to obtain another sample different in age, education, and social status from the earlier samples, the Scale was administered to 3300 Swedish car-owners. Subjects were for analytical purposes divided into not only male-female groups but into three broad age ranges and three educational strata.

In this sample, Validity was negatively associated with increasing age. This is a new finding, but theoretically plausible. Solidity increased with age, but decreased with educational level. Unlike the Essen-Moller results, Stability was not correlated with age, and in general the Essen-Moller Stability-age association (in the negative direction) seems to have been a fluke, probably the result of consistent rater bias.

In the Marke-Nyman study, no significant dimension intercorrelations were demonstrated.

A rather interesting construct-validity check was performed by getting a measure for each subject of the time taken to fill out the questionnaire. Validity was negatively correlated, and Solidity positively correlated with time taken, both of which findings are in accord with theory.

Fairly sizable subsamples were redrawn from the 3300 car-owner population, and it was found that subValids reported more nervous and psychophysiological complaints than matched controls, while Solidity was negatively associated with "dissociative" behavior on the Stroop color-word test. This finding appears plausible (see Figure 1).

Marke and Nyman also report on a special group of neurotics, not part of the car-owner sample, who generally scored low on both Validity and Solidity. The fact that neurotics as a class tend to score in one direction on certain of the dimensions may argue that the condition "neurosis" is independent of the various
personality dimensions. However, it is also possible that neurotics (leaving aside the lesional/functional problem) simply have a curtailed range of personality variation; that, in a sense, their condition interferes with the full range of personality development. Whichever the explanation, data on other special groups is needed to determine whether this finding applies to neurosis or to other conditions as well (see Coppen study, below).

4. Hagnell (Hagnell, 1966)

In 1957 Hagnell followed up the same cohort investigated by Essen-Möller ten years previously, plus 1013 new residents in the particular south-Swedish district. Hagnell was able to re-interview 99% of all remaining cohort members. Thus his very exhaustive study served not only as a current prevalence study, but also as a 1O-year incidence and "prognostic" study as well. In addition, Hagnell gathered data on duration of (new) illness, social-economic status, mobility, occupation, stress history in the intervening ten years, etc. He and his co-workers not only took histories of physical and mental illness and re-assessed each respondent on the Sjöbring dimensions (without referring to the Essen-Möller ratings), but employed a separate "impairment" scale similar to those used in the Midtown and Stirling County studies, and moreover applied gross psychiatric diagnoses, where pathology was found, based on coherent symptom patterns.

An interesting and unusual finding of the study was that neither impairment nor psychiatric diagnosis (that is, the presence of psychiatric illness per se) was related to SEI. It may be that there is something in Swedish social structure or community organization that prevents environmental factors from affecting individual mental health/illness, in the way that such factors have seemed to do in most prevalence studies in most cultures in recent years (e.g., Paris & Dunham, Midtown, Stirling County, Leighton's Yoruba studies, etc.).

In performing Sjöbring ratings Hagnell et al. excluded psychopathologic cases, but did include "current," "situational" or "late aesthetic" neurotics. These cases were held to be non-lesional. On the other hand, "character" and lifelong "aesthetic" cases, excluded from the normal group in 1947, were also excluded from the category called Mental Illness. In fact, the "mentally ill" in this study had to be judged so by the psychiatric global observation methods of the study and had to have consulted a physician. This makes an extremely stringent definition of mental illness, and perhaps an unfair one; it would be of interest to know what the ratio of treated to untreated mental illness is in Sweden. These various arbitrary methodological decisions left a certain group -- for example, character neurotics -- outside both the normal and psychopathologic groups, and in general they create problems in the assessment of the findings of the study (e.g., the lack of association of mental illness with SEI). Because of the differing constitution of the normal groups rated on the Sjöbring dimensions in the Essen-Möller and the Hagnell studies, it is perhaps not surprising -- though it is unfortunate -- not to find in Hagnell's report any statement of the correlation between the 1947 and 1957 sets of Sjöbring ratings on those from the original population.

The 1957 Sjöbring ratings (original respondents plus new respondents) form very normally distributed distributions, with no significant sex or age differences such as those reported in the earlier studies. Perhaps these null findings
are a result of the fact that very precise observed/expected ratios were calculated by the Weinberg expectancy, or cumulative risk, method. It may be that differences appearing in the earlier studies are due to the failure to use properly stratified analytic techniques, although such a criticism can less easily be applied to the Nyman study of 300 20-year-old male inductees, for example.

The principal finding of interest in the Hagnell study, with respect to our interest in the relation if any between personality and psychopathology, is the following: 1947 Sjöbring ratings did not predict mental illness incidence in the following ten years. That is, 1947 Sjöbring "deviants" (sub-, super-) did not become mentally ill in greater proportions than did members of the population as a whole. (As has been mentioned above, the definition of 1957 mental illness was unusually strict.) Thus, even if we worry about our definition of illness, it does appear that we have evidence against the hypothesis that temperament, or personality variation, "leads to" mental illness in particular groups. This does not mean, of course, that those who have become mentally ill will demonstrate "normal" personality in the Sjöbring system. Once again it appears that psychopathology and personality are distinct and independent things.

If Sjöbring personality deviation does not "predict" mental illness, there is an aspect of the Hagnell 1957 study that suggests that Sjöbring deviation may predict other illness. (Hagnell, 1966 a) Of 22 women who developed cancer between 1947 and 1957 (and who were still alive), 20 women had been classified in 1947 as subStable. There was no such relation demonstrated for men with cancer. Moreover, the relation seemed "linear," in that observed/expected ratio (by the Weinberg method) for each scale point on the Stability dimension was progressively greater as the Stability scale descended. However, the n's were too small at scale values 1, 2, and 3 to achieve statistical significance.

This result, of course, is "only" a correlation (or "only" a set of relative frequencies highly improbably under a null hypothesis). Cause-effect aspects remain obscure. The data show that the finding is not reflective of covariation with body build. Moreover, the possible contamination of the age variable (cancer incidence rises with age, and the Essen-Möller study found Stability to be negatively correlated with age) can be disproved when cancer cases in each Stability range are matched with all non-cancer cases of the same age. See Figure 5. This figure does reveal (see Controls column) the preponderance of subStables in an older group; and in both men and women the medioStable frequencies are curiously small. The significance statement, however, holds up when the medioStable group is omitted. Besides age and body build, there are of course any number of ad hoc propositions that one might educe with reference to this finding. Perhaps Swedish women are more exposed to carcinogens. Perhaps an endocrinological factor in women is the mediator of the relationship. A plausible model might be that subStability is associated with emotional under-control, affective lability, etc.; and that, as various studies have suggested (e.g., LeShan) stress within the preceding two years is associated with cancer; so that perhaps subStability is the predisposition, stress the agent, in contracting cancer. But if so, why does not the relation hold for subStable men? Differential amounts or types of stress, perhaps?

At any rate, this finding of Hagnell's is dramatic enough to suggest that
FIGURE 5

Persons who from 1947 to 1957 contracted cancer compared with all persons of the same age (from the original cohort) who during the same period did not contract the disease.

<table>
<thead>
<tr>
<th></th>
<th>MEN</th>
<th></th>
<th>WOMEN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cancer (20)</td>
<td>Controls (160)</td>
<td>Cancer (22)</td>
</tr>
<tr>
<td>Superstable</td>
<td>8</td>
<td>41</td>
<td>2</td>
</tr>
<tr>
<td>Mediostable</td>
<td>2</td>
<td>46</td>
<td>0</td>
</tr>
<tr>
<td>Substable</td>
<td>10</td>
<td>73</td>
<td>20</td>
</tr>
</tbody>
</table>

\[.30 > p > .20\] \hspace{1cm} \[.005 > p > .001\]
prospective and longitudinal studies of physical illness using the Sjöbring personality dimensions might prove fruitful, especially in so-called psychosomatic areas. It might be that a genetic factor or combination of factors underlies both physical illness of certain types and personality deviation of the Sjöbring dimensions.

5. Coppen (Coppen, 1966)

British psychiatrist Alec Coppen not only translated the Marke-Nyman Temperament Scale into English (see Figure 4), but has done a Sjöbring personality assessment, using the inventory, of British normals (relatives of patients hospitalized for physical illness at a British general hospital) and hospitalized British mentally ill (at the Maudsley Hospital in London).

Owing to the relatively small N of normals (62), the over-all dimension distributions of British normals, though approximately normal, are of little interest. Coppen's mentally ill group included 152 depressives, 77 schizophrenics, and 49 female severe neurotics; depressives and schizophrenics include both sexes, with a preponderance of women. Coppen found that Solidity was no different in psychiatric patients; that Stability was significantly higher in all patient groups than in normals; and, most marked, that Validity was significantly lower in all groups.

Recall that Essen-Moller found "schizoids" (i.e., normals) to be superstable; theoretical considerations demand that, in the absence of additional data and of evidence as to how "like" schizoids and schizophrenics are, this be regarded as merely a coincidence. Nyman's car-owning Swedish "neurotics" were found to be low on Validity and Solidity; but these were, of course, non-hospitalized cases.

In this study of Coppen's, the Marke-Nyman instrument did not discriminate among the different diagnostic categories of psychiatric cases. This seems to be additional evidence that psychopathology and personality are independent in the sense that kind of personality and kind of psychopathology are not related. As has been suggested, however, it may be true as a fact of nature that being psychiatrically ill interferes with personality development or at least the current "expression" of personality over the entire range. Coppen's study seems to lend support to that hypothesis in that clinical change is associated with a change in the Sjöbring scores. In this regard, Coppen's subgroup were 20 males and 42 females suffering from severe depression. It is not stated how these cases were treated; however, upon "recovery" (criteria not stated) mean solidity score remained unchanged, near the normal mean score, mean stability score was reduced toward the normal mean score, and mean validity score increased toward the mean normal score. See Figure 6. However, even after clinical recovery, depressive subjects continued to have very significantly lower Validity scores than normals. Despite the latter fact, the depressed/recovered findings seem to support the notion that being psychiatrically ill does demonstrably "interfere" with normal personality expression. It is obvious, of course, that we need data on groups other than the depressed.
FIGURE 6

Mean Temperament Scale scores before and after clinical recovery in patients suffering from severe depression, relative to mean scores in normal subjects.* (20-point scale)

<table>
<thead>
<tr>
<th></th>
<th>Solidity</th>
<th>Stability</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressed</td>
<td>11.0</td>
<td>8.2</td>
<td>7.2</td>
</tr>
<tr>
<td>Recovered</td>
<td>11.2</td>
<td>6.8</td>
<td>8.9</td>
</tr>
<tr>
<td>Normals</td>
<td>10.1</td>
<td>6.9</td>
<td>12.4</td>
</tr>
</tbody>
</table>

*Why patients and normals in general should have such markedly low mean Stability scores (where the theoretical mean score is 10) in this study is troublesome and unclear. Perhaps this reflects British nationality, but there is evidence in Coppen's paper that Swedish normals also have very low mean Stability scores. It appears that the Stability dimension of the Marke-Nyman scale needs re-examination.
CONCLUSION

With reference to our central interest in the relation between personality and psychopathology, the evidence from the various Sjöbring-derived studies, though complex, suggests that: one's personality is not a good predictor of whether or not he will fall ill psychiatrically, nor, if he does, of how he will fall ill; and there is presumptive evidence that being psychiatrically ill does in some sense disrupt one's personality, either in its development or its expression, while this disruption may prove to be not permanent, given complete recovery from illness. Various sub-hypotheses may be formed: for example, it may specifically be neurotics in whom personality development is curtailed (see Nyman study), while severe depressives may never recover sufficiently to allow them to express a normal degree of Validity.

Further progress along these lines is apt to be barred unless we can resolve the problem of whether we wish to follow Sjöbring's theory and exclude organic/lesional cases from our research, in which case we accept the verdict of "independence" between personality and psychopathology ab initio, or whether we wish to apply the personality assessment system to all persons and cope with the numerous theoretical and methodological problems involved (chief among which is the lack of good criteria for the presence and kinds of mental illness itself). It seems that the cautious, but probably defeatist, strategy would be to wait until we had adequate genetic knowledge to establish the integrity of various "deviant" groups, both normal and psychopathologic, and thus knowledge as to whether we can expect particular groups of persons to be located at certain positions along the Sjöbring dimensional scales, or "off the scale" entirely! While we cannot expect this kind of comprehensive and articulated knowledge to be given to us in the near future, it might be wise to continue Sjöbring-type studies with special emphasis on epidemiological and hereditary factors. Certain other personality systems include dimensions "cognate" (see Figure 1) to Sjöbring dimensions that have been demonstrated to show strong genetic loading. (For example, the Cattell J and F scales, and Eysenck's neuroticism scale, though this latter may be contaminated by an inability to control for intelligence variation. See Vandenberg, 1966.)

REFERENCES


