

The Assessment of Personality in Young Adulthood: Data on a Normative Sample

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The Personality Assessment Schedule has been modified for use with young adults living in the community. It has been administered to a population sample of 129 subjects aged 24-26 years. It proved possible to achieve a reliable assessment of personality trait. Further, utilising both clinical and statistical approaches personality types were defined. The dimension reflecting types of personality also proved reliable. Guidelines are provided as to what constitutes deviant scores on the elicited personality dimensions.

Introduction

The assessment of personality is of crucial importance in psychiatry. However, this is a complex area where not only is there poor consensus about definition and fundamental constructs (Berger, 1982), but also about the assessment of personality dysfunction and the nature and assessment of personality disorder. It is not surprising that previous reviewers have described a lack of agreement and construct bias amongst clinicians (Walton & Presley 1973; Tyrer et al., 1983). A distinction needs to be made between personality traits, personality types or dimensions, and personality disorders. The relationship between personality types (a field mostly the province of psychologists) and personality disorders, remains unclear. The DSM-III-R manual (1987) offers helpful clinical guidelines:

"The diagnostic criteria for Personality Disorders refer to behaviours or traits that are characteristic of the person's recent (past year) and long term functioning ...".

A large number of personality traits may contribute to a personality type and there are many such types. However, if a type is viewed as a dimension, then some types in certain individuals will be present to such a severe extent as to seri-

ously impair social and personal adjustment and functioning (Allport 1937), and in these circumstances may be viewed as being present to such an abnormal degree as to reflect a personality disorder. This dimensional approach implies that personality disorder differs from normal variation by degree, but it has been suggested that some disorders such as schizotypal and borderline personality disorders are qualitatively different.

More recently a range of standardised questionnaires and interview measures of personality disorder have been developed. Key developments have been the Personality Assessment Schedule - PAS (Tyrer et al., 1979); the Adult Personality Functioning Assessment - APFA (Hill et al., 1989) in the UK, and the SIDP (structured interview for DSM-III-R - Pfohl et al., 1982); Personality Disorder Examination (PDE - Loranger et al., 1983) and Structured Clinical Interview for DSM-III-R Personality Disorders (SCID II - Spitzer et al., 1987) in the USA. Any such instrument needs to make allowance for concurrent psychiatric disorder and/or to use intervals when the subject is free of acute psychiatric disorder.

The Tyrer questionnaire uses the concept of personality-created maladjustment, using the impact of personality on social adjustment to indicate the extent of the personality abnormality. It was

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initially designed to assess deviant personality traits in a disturbed clinical population. Thus, the PAS is organised so that both the patient and an informant complete the questionnaire, a technique devised to provide information about the subject's usual or habitual functioning when not affected by psychiatric disorder.

The data from his clinical population was then subject to multivariate analysis and 13 discrete personality types were generated which were later aggregated to four types which he subsequently aligned to personality disorders (Tyrer, 1988) (see Table 4). The authors assert that the PAS has adequate psychometric properties (Tyrer & Alexander, 1988).

The APFA developed by Hill et al. (1989) focuses on the assessment of patterns of specific and general dysfunction over time, covering a range of social domains thus producing information about pervasiveness and persistence of abnormality. However, the authors themselves pose the question as to whether the measure of general social dysfunction can be regarded as synonymous with the concept of personality disorder. They go on to assert that possibly the diagnosis of personality disorder should require the presence of psychological dysfunction as well as social dysfunction.

Some of the above instruments have relied on a profile analysis of behaviour and personality traits alone, some include other historical data, and yet others are oriented to major classificatory systems (e.g., DSM-III-R). All the questionnaires and schedules available have been designed to assess personality disorder in clinical populations. We therefore decided to modify a questionnaire for a non-clinical population.

Aims

Our aims and method, therefore, differ from those of Hill et al. (1989). Guided by the work of Tyrer et al. (1979) we started with the premise of the existence of personality traits which could be identified by clinical interview. Our primary aim was to draw a profile of defined personality traits in a random sample of the population in order to allow the generation of normative data. The secondary aim was to ascertain whether and in what way they may group together into specific personality types. For the latter purpose we used both clinical and statistical approaches. The relationship of person-

ality types to independent measures of social and psychiatric functioning will be described in later papers.

The above approach allows profiles of traits to be drawn which can contribute to classification into personality types, or to "dimensions" reflecting severity of personality types. However, it is not intended to allow a classification into DSM III personality disorders, though it may contribute to such an exercise.

Thus the aims of our research which is mainly descriptive, have been to define types or dimensions of personality in young adults living in the community. However, one main hypothesis was that the personality types identified may differ qualitatively from those found in an older clinical sample.

Method

Modification of the Personality Assessment Schedule

The PAS (Tyrer et al., 1979) was originally designed for use in an adult clinical population with both a patient and an informant. Some modification proved necessary for use with a younger population living in the community. First, external informants were not interviewed as it was expected that our subjects would be capable personally of providing accurate accounts. However, we recommend that in the presence of severe psychiatric dysfunction that either an informant be interviewed as suggested by Tyrer et al. (1979) or the model of Hill et al. (1989) is used and personality assessment undertaken during illness episodes and again subsequent to an episode. Second, the original 24 traits and their probes were examined and the content adapted to a young adult population. Third, after piloting, the attribute "eccentricity" was dropped as the interviewees found difficulty in understanding the relevant probes and appropriate responses were not always forthcoming. Fourth, some of the probes were altered; for instance, the original probe for "pessimism" appeared to relate more to depression; and the probe for "introspection" was thought to need clarification for our population. Fifth, Tyrer and his colleagues had utilised a 9 point scale. However, it was unlikely that serious personality dysfunction would be sufficiently common in the population

studied to merit an extensive scale with such emphasis on deviance.

Hence it was decided that a 5 point scale would suffice and we therefore narrowed the pathological and extended the "normal" ends of the scale. For these purposes we broadly followed the model proposed by Goldberg et al. (1970) in the Standardised Psychiatric Interview using a five point scale:

- 0 = Absent
- 1 = Mild, minimally present
- 2 = Just sufficient to be seen as pathological
- 3 = Marked
- 4 = Severe

The Tyrer instrument and our modification of it, is a semi-structured open ended interview. During the structured interview, specific probes are offered which consist of standard questions aimed at encouraging the interviewees to provide descriptions of their behaviour and these are used as a basis of the codings of our scores. However, if there was any difficulty in the young adult understanding the question or insufficient information was forthcoming to allow a rating to be made, an open-ended technique was used. This allows the interviewer to rephrase the question, keeping as close to the original theme as possible, or even going beyond this if it is deemed necessary.

A single interviewer (CK) interviewed 10 subjects and these interviews were videotaped. In order to gather data for interrater reliability, two research workers (IK & AW) rated the responses to the subjects from the videotapes. The data were subjected to an analysis of variance and intra-class correlations were calculated for each of the personality traits and also for the personality types established by multivariate analyses.

Reliability

With the limitation of resources we considered it more efficient to explore the agreement coefficients derived from examining independent ratings by all three raters on the above group of ten children rather than from a relatively large sample examined by two raters. Product moment correlation coefficients were not used, as rater scores can differ by a constant across raters and this may not be reflected in the co-efficient. Hence it seemed appropriate to use analysis of variance and intraclass correlation coefficients - the latter provide what is essentially an average correlation - and take into account systematic error which can

Table 1. Correlation of coefficients of PAS trait and cluster dimension ratings using analysis of variance.

Traits	r →									
	1	2	3	4	5	6	7	8	9	10
Conscientious, Sensitive										
Shyness, Pessimism, Childishness, Rigidity										
Hypochondriasis, Dependence, Aloof, Introspective, Suspicious										
Anxiety, Lability, Vulnerability, Callousness										
Worthlessness, Irritable, Aggressive										
Impulsive, Irresponsible, Submissive										
Optimistic, Resourceless										
Dimensions derived from Cluster Analysis										
	1	2	3	4	5	6	7	8	9	10
Withdrawn										
Inhibited										
Anxious										
»Gendiff« Clinical										
Antisocial										

serve to lower coefficients (Kolvin et al., 1991; Winer, 1971). The results of the reliability study are shown in Table 1.

Population

The Newcastle Child Development study (Neligan et al., 1976) was a population survey of the development of premature children. A control group for the original study was selected on a random basis for comparison with the index groups and this control group constitutes the subject of our research. Thus the original random sampling procedure enabled the gathering of normative data on a battery of measures in the geographically defined population. The subjects were selected from a total population of births between 1 June 1961 and 31 May 1962. The randomisation procedure enabled the sample to be structured in such a way that its social class distribution resembled that of the whole population of the same age (Neligan et al., 1976, pp. 12). These children were assessed at the ages of 5 and 7 years when extensive data were collected on behaviour, temperament, cognitive and family and social factors. A catch-up longitudinal design (Robins, 1980) was used to study a sample of a population studied previously at specific times in childhood but not monitored subsequently.

Thereafter, at a later point in the longitudinal time span, the population was re-assessed and this constitutes the catch-up phase during which 129 subjects were studied at the ages of 24–26 years. These constitute our community sample of young adults. The strength of this design is that it allows reference to assessments in early development which constitutes the longitudinal component of this research and will be the subject of other reports.

The modified PAS was one of a battery of instruments used in a longitudinal study of temperament and personality from childhood into adulthood. This paper is confined to the PAS alone.

The overall emotional adjustment of the group was assessed by Standardized Psychiatric Interview (Goldberg et al., 1970) and was well within expectation in this age group. All the subjects proved fully cooperative – none suffered from concurrent acute psychiatric disturbance. Where moderate disturbance was present, on clinical grounds, it was not thought to give rise to distortions in the assessment.

Classification of Personality

We have used two different approaches to order our data – first, clinical and second, statistical.

Clinical Approach to the Classification of Personality

We examined a range of themes from the clinical and theoretical literature but few seemed to have direct relevance to clinical practice, or applicability to a general population. The concept of an “easy-difficult” temperament advanced by Thomas and Chess (1977) seemed to incorporate a variety of temperamental styles which have considerable clinical utility and we therefore tried to establish an analogous concept of an “easy-difficult” personality. We decided to characterise a “difficult” personality by a series of seven personality attributes which were likely to make a negative impact in social and family contexts with scores ranging from 0–28. The qualities we used to describe a generally difficult personality were as follows:

Suspiciousness	Callousness
Irritability	Irresponsibility
Impulsiveness	Childishness
Aggression	

The Statistical Approach

Secondly, classical statistical approaches of Principal Component analysis and Cluster analysis were employed. All the modified PAS traits were used. Principal Component analysis is a widely used technique for explaining a covariance structure and hopefully the derived components will represent more basic variability in the data than the observed variates (Maxwell, 1977).

Principal Component Analysis is a particularly useful technique in those situations where the data may not fit classical assumptions of multi-normality (Taylor 1979). Reviews suggest that the first few rotated components “often give a robust identification of major trends in the data” (Taylor 1979).

On the other hand, the purpose of cluster analysis is to identify those subsets of features or individuals which cluster together in the sense of having much in common within each cluster, but little in common between clusters (Aldenderfer and Blashfield 1984). In Ward’s cluster analysis (1963) the coefficients are of the dissimilarity type which with iterative relocation with hierarchic fusion, derives clusters of relatively equal sizes. The clusters need to be viewed in terms of ability to interpret and predict (Everitt, 1977).

The twin methods of Principal Component Analysis and Cluster Analysis not only summarise relationships between features but may also highlight new harmonies or structures (Kolvin et al. 1991). However even when clusters are identified and are theoretically distinct from each other, in practice there may be degrees of marginal overlap in clinical samples.

Results

Reliability

The results of the reliability testing of the individual traits using Analysis of Variance are shown in Table 1. If an intra class correlation co-efficient greater than, or equal to 0.6 is taken as satisfactory then 7 out of 23 traits do not reach this level. The lowest coefficients are found for Optimism and Resourcelessness, followed by Irresponsibility, Impulsiveness, Submissiveness, Worthlessness and Aggressive. The average intra class correlation co-efficient was 0.66.

In contrast, and as is to be expected, the five dimensions proved to have satisfactory intra-class correlation coefficient with two of the five being greater than 0.8 and all of the five above 0.6.

Description of the Traits

The first aim of this research was to describe personality traits in a normal population, and secondly to examine the nature of any personality types that may emerge.

A number of the traits showed an interesting distribution in the normal population. For example, the distribution of the impulsivity trait suggests that most individuals consider themselves to have a relatively low impulse level in comparison to their peer group. However, a few individuals did have extreme scores, such as the young man who drove a train for the first time because it was a pleasant evening. A difficulty in the scoring system was highlighted by our results – the scale we used is able only to assess the presence of a trait, or its absence but not reverse of the trait. Thus the anchor point resides in normality with extreme or high scores reflecting a pathological level of functioning. There was one exception to this – optimism and pessimism which are designated separately on the questionnaire, but are in fact mirror

images of each other, and therefore prior to multivariate analysis the scoring for optimism was reversed.

Grouping of Traits

The next aim of the study was to examine whether the traits would group together into personality types. This was examined in three different ways: two statistical methods and a clinical construct approach. When Principal Component Analysis was applied to the data five meaningful components emerged, all with eigen values greater than 1, and which together accounted for 50% of the variance. The components and their loadings are illustrated in Tables 2 and 3. The *first* component is a general one and we have labelled it dependent, anxious and sensitive. The *second* represents a pessimistic personality with a worthless perception of oneself. The *third* is of aggression, suspiciousness and irritability. The *fourth* is an immature, impulsive personality and the *fifth* represents aloofness, shyness and introspection.

Principal Component analysis is not a classification method, but it can describe dimensions which may suggest a classification system.

The data was therefore subjected to Cluster analysis by Ward's method (1963). The cluster

Table 2. Personality traits. Principal component analysis with varimax rotation.

	Component 1 Dependent	Component 2 Pessimistic	Component 3 Aggressive	Component 4 Impulsive	Component 5 Withdrawn
Pessimism	.26	.79	—	—	—
Worthlessness	.39	.42	—	.39	—
Optimism (R)	—	.89	—	—	—
Ability	.49	—	.30	—	.20
Anxiousness	.69	.31	—	—	—
Suspiciousness	—	—	.72	—	.27
Introspection	.36	—	—	—	.39
Shyness	.29	—	—	—	.62
Aloofness	—	—	—	—	.74
Sensitivity	.69	—	—	—	.20
Vulnerability	.68	—	—	—	—
Irritability	.31	—	.60	—	—
Impulsiveness	—	—	—	.80	—
Aggression	—	—	.76	.25	—
Irresponsibility	—	—	—	.71	.21
Childishness	—	—	—	.27	—
Resourceless- Ness	.53	—	—	—	—
Dependence	.81	—	—	—	—
Rigidity	.62	—	—	—	—
Hypochondriasis	.32	—	—	.31	—
Percentage of Variance	19.3	10.6	8.0	6.6	5.7
Eigen Value	4.45	2.45	1.83	1.51	1.30

For simplification, loadings <0.2 have not been listed

Table 3. Cluster analysis - Wards method.

Cluster I: "Antisocial" n = 43		
Descriptive Variable	T Value	
Impulsiveness	0.33	
Callousness	0.29	
Aggression	0.22	
Irresponsibility	0.16	
Cluster II: "Anxious" n = 26		
Descriptive Variables	T Value	
Anxiousness	1.15	
Sensitive	1.01	
Resourceless	0.97	
Vulnerability	0.92	
Irritability	0.89	
Dependence	0.78	
CLUSTER III: "Inhibited" n = 26		
Descriptive Variables	T Value	
Introspection	0.64	
Conscientiousness	0.61	
Submissiveness	0.37	
Childishness	0.30	
Rigidity	0.28	
Cluster IV: "Withdrawn" n = 34		
Descriptive Variables	T Value	
Optimism (R)	0.64	
Aloofness	0.49	
Shyness	0.46	
Suspiciousness	0.34	
Pessimism	0.32	

Only the first five of the "anxious" variables have been summated to give personality dimensions.

numbers are determined by the presence of sharp changes in the fusion coefficients with the number of clusters before these sharp changes accepted as the most probable solution (Aldenderfer and Blashfield, 1984). Four meaningful clusters were obtained as illustrated in Table 4.

The *first* cluster describes an impulsive, callous personality. The *second* cluster describes an anxious, sensitive individual. The *third* cluster describes an introspective, conscientious and rather submissive personality. Finally, the *fourth* cluster describes an aloof, shy personality with a rather negative view of the world. Unusually the four cluster solution incorporated 100% of the sample.

Dimensions of Personality

Each cluster can be viewed as representing a personality pattern or type and a measure of the extent of personality dysfunction can be generated simply

Table 4. Comparison of classifications.

Tyrer	Clinical Newcastle	PCA Dimensions	Cluster Groupings
Antisocial (Sociopathic)	Difficult	Aggressive Impulsive	Antisocial
Dependent (Passive Dependent)	-	Dependent	Anxious
Inhibited (Anankastic)	-	Inhibited	Inhibited
Withdrawn (Schizoid)	-	Withdrawn	Withdrawn

by summing the scores on the characteristics of personality traits for each cluster to give a *dimension* of personality. For those purposes dimensional scales were derived by summating scores on traits listed under the four headings in Table 3. Thus the range of scores for the first cluster dimension would be 0-16 and the subsequent three would be 0-20.

The reliability of the personality dimensions based on the statistically derived clusters all proved satisfactory with the withdrawn personality dimension having the highest reliability.

The third approach used to define personality dimension was a clinical one using the concept of a generally difficult personality. This proved to be rather similar to groupings derived from statistical methods. In addition our clinical impression was that on assessment there were also easily recognisable dependent and withdrawn personalities. The comparison between the groupings is illustrated in Table 4 and the similarities between the clinical and statistical patterns are striking.

Means and standard deviations of the four personality dimension scales on the 129 subjects of the random sample are given in Table 5. As a guide we suggest that scores of two standard deviations or greater above the mean should be seen as deviant in a general population of young adults.

DISCUSSION

It proved possible to provide a reliable assessment of personality traits in a community sample of young adults, using a modified version of the PAS. Personality dimensions which seemed meaningful (and reportedly consistent over time) appeared readily identifiable in our subjects. This provides some empirical evidence for refuting Mischel's

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(1968, 1973) arguments about the lack of existence of any stable personality dimension. Principal Component analysis with Varimax rotation and cluster analysis of the data resulted in very similar personality patterns and these were strikingly similar to those described by Tyrer et al. (1979) for a clinical population. Together they provide strong evidence of factorial validity. In addition these findings suggest that the personality types described in a normal population differ only in degree from the personality types found in a clinical population and that the types of personality in the different populations (clinical and community) are likely to be part of the same spectrum. This is of critical importance as it suggests that measures of personality patterns derived from a general population survey may have the potential for representing pathological deviance at their extremes. Further work is needed to establish appropriate cutoffs for such deviance but in the meantime we have suggested a formula for this based on standard deviations (see Table 5). Our method lends itself to the definition of personality types; but the question arises of whether extremes of such types represent disorder? Some would argue that certain personality disorders are qualitatively distinct and cannot be defined by a dimensional approach (Khouri et al., 1980). However, even if it cannot define disorder, our instrument provides one way of measuring some facets of such disorders.

The clinical construct of a difficult personality type was very similar to the antisocial type described by the statistical methods, and also by Tyrer. This congruence is encouraging, and perhaps we should have been more adventurous in using a clinical basis to conceptualise other personality types. However the difficulties of clinical bias (Walton & Presley, 1973) must be borne in mind if this approach is to be pursued further. The relationship of the major personality types to major specific psychiatric disorders has been studied by Tyrer and colleagues (1983), but it remains to map the relationship of our personality dimensions and the psychiatric disorders occurring in late adolescence and early adulthood in a general population. Our sample contained no acute psychiatric disturbance and too little in the way of other psychiatric disturbance to make a major contribution to this topic. More empirical work needs to be undertaken and should address the question of how personality may be influenced by fluctuating circumstances; and of course to explore the predictive validity of personality types and dimensions.

Table 5. Personality dimensions on a random sub-sample of the population. Means and Standard Deviations.

		Male	Females
<i>Antisocial</i> Dimension	Mean	10.2	8.5
	SD	4.6	3.8
	Cut-off	19/20	16/17
	%	3.0%	2.0%
<i>Anxious</i> Dimension	Mean	8.5	11.2
	SD	4.3	5.3
	Cut-off	17/18	21/22
	%	3.0%	6.4%
<i>Inhibited</i> Dimension	Mean	9.6	10.5
	SD	3.8	3.9
	Cut-off	17/18	18/19
	%	1.5%	4.8%
<i>Withdrawn</i> Dimension	Mean	5.3	6.0
	SD	3.0	4.1
	Cut-off	11/12	14/15
	%	3.2%	4.8%
<i>Gendiff</i> Dimension	Mean	14.7	12.9
	SD	5.7	4.5
	Cut-off	26/27	21/22
	%	4.5%	3.2%

Mean scores on personality dimensions derived from cluster analysis. The above means and standard deviations are based on the random sample of 129 subjects.

Finally, there remain the question of the comprehensiveness of Tyrer's 24 traits and the extent to which they can be linked closely to personality disorders adumbrated by DSM-III-R or ICD-10. Recent work suggests that though the PAS diagnostic categories do not accord entirely with either ICD-10 or DSM-III-R descriptions, there is a considerable degree of overlap between them (Tyrer & Alexander, 1988). However, DSM categories are not necessarily static and any assessment device closely geared to such diagnoses is likely to be unhelpful in long-term studies.

The aims of the current research were primarily in relation to the epidemiology of personality rather than personality disorders in clinical populations. The methods we have employed utilizing a trait approach, followed by statistical methods and complemented by a clinical construct model, are geared to describe personality types (and the development of personality dimensions). It is suggested by Tyrer and Ferguson (1987) as well as Hill et al. (1989) that personality deviance may be understood by its effect on social adjustment alone. Whether the personality types or patterns described by the modified PAS relate to independent measures of social functioning is a crucial practical

and theoretical theme and is one of the exercises which is currently being addressed.

The modified PAS is now available for use in community research.

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Résumé

L'échelle d'évaluation de la personnalité a été modifiée pour son emploi avec des jeunes adultes vivant dans la communauté. Elle a été administrée à un échantillon de population de 129 sujets âgés de 24 à 26 ans. Il fut prouvé qu'il était possible d'atteindre une évaluation fiable des traits de la personnalité. Au-delà, en utilisant à la fois l'approche clinique et statistique des types de personnalité on été définis. La dimension reflétant les types de personnalité est également apparue fiable. Des directives sont fournies qui permettent de repérer les scores déviants en ce qui concerne les dimensions de personnalité choisies.

Zusammenfassung

Die „Personality Assessment Schedule“ wurde modifiziert, um sie bei jungen, selbständig lebenden Erwachsenen anwenden zu können. Sie wurde bei einer Bevölkerungsstichprobe von 129 Personen im Alter von 24–26 Jahren angewandt. Es war möglich, zu einer reliablen Beurteilung der Persönlichkeitsmerkmale zu kommen. Darüber hinaus wurden unter Anwendung sowohl klinischer als auch statistischer Verfahren Persönlichkeitstypen definiert. Die Dimension bezüglich der Einteilung in Persönlichkeitstypen erwies sich ebenfalls als reliabel. Zur Erfassung devianter Werte im Hinblick auf die untersuchten Persönlichkeitsdimensionen werden Richtlinien angegeben.

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