

# SOME CORRELATES OF PSYCHOTICISM REVISED AND REVISITED

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The Eysenck Personality Questionnaire includes a scale for the measurement of Psychoticism which is a development of the corresponding scale in the P.E.N. Inventory. In contrast to the original scale, the present one has a greater amount of unique variance, and its common variance seems to be accounted for in terms of a Conformity-like construct.

Given the choice of construction-strategies available to him, the procedure a test developer follows will be principally a matter of his personal taste. Some support for the assertion that taste is as good a guide as any comes from the comparative studies of Hase and Goldberg (1967), but there is some evidence that the validity of a developed scale is a joint function of its area of use and the strategy adopted for its construction (Butt and Fiske, 1968).

Typically, however, the applied psychologist selecting a scale will be less interested in its history than in its present properties (e.g. its reliability) and its likely utility in a particular selection or classification programme. On the other hand the academic psychologist, or indeed any psychologist interested in finding out why a particular scale operates as it does, will be at least as interested in its conceptual or theoretical provenance. With specific reference to the measurement of personality traits, Fiske (1971) and Jackson (1971) argue convincingly that a clear formulation of the construct to be measured is an essential step in the production of the device for measuring it, the studies referred to in the first paragraph notwithstanding. Jackson's (1970) summary of stages from conceptualisation to measurement of a construct is exemplified in the Personality Research Form (Jackson, 1974). In contrast to this, the Edwards Personality Inventory (Edwards, 1967) has little apparent relation either to psychological theory or to practical application, in spite of its equally appealing psychometric properties.

The questionnaire measurement of Psychoticism stands in further contrast to Jackson's measurement of Murray's set of dynamic traits. It will be recalled that much of Murray (1938) is given over to the conceptualisation of each of these hypothesised constructs, together with a specification of the antecedents and the behavioural and subjective indicators of the operation of each. The origin of the questionnaire measurement of Psychoticism, however, was the empirical finding that two orthogonal dimensions were required to discriminate between normals, neurotic and psychotic patients. The first of these was construed as Neuroticism, the set of covarying variables linked by this

construct now being well defined (Eysenck, 1967; Eysenck and Eysenck, 1969a). The second of these dimensions was defined initially by clusters of clinical symptoms and signs and by performance on perceptual and motor tasks. The starting point for the definition of the corresponding construct, labelled Psychoticism, was the hypothesising of a dimension on which normals and psychotics could be ordered, this dimension being independent of both Neuroticism and Extraversion (Eysenck and Eysenck, 1968a). In contrast to this vague initial conceptualisation of the construct to be measured, however, the specification of the characteristics of the first published scale designed to measure the operation of this construct by means of self-report, the P-scale of the P.E.N. Inventory, was very clear (Eysenck and Eysenck, 1968a, 1968b, 1969b, 1972). At that time, the description of the construct depended primarily on the content of the items of the P-scale.

The present writer's hypothesis that Psychoticism could be construed principally as a form of hostility was supported in a factorial study using normal subjects (Forbes, 1973). This finding was confirmed in a study of psychotic patients by Verma and Eysenck (1973). These studies, using the first-published version of the P-scale in the P.E.N. Inventory, also showed the unwanted correlation between P and N noted in the Eysencks' previous work.

Davis (1974) concluded that the logical basis of its construction was questionable, that it was a poor scale, and that the P-scale was in fact a good measure of emotionality. Finding that it had a very high loading on a factor otherwise defined by Neuroticism (Eysenck) and also by the scales of Alienation, Discomfort and Social Nonconformity in the Psychological Screening Inventory (Lanyon, 1970), Mehryar, Khajavi and Hekmat (1975) concluded that it could be construed as a measure of psychological discomfort. Some support for this latter view is afforded by Shaw, MacSweeney, Johnson and Merry (1975), who found a numerically small but statistically significant difference between the P-scale scores of depressed and recovered patients. That study showed no significant differentiation of normals and patients on the P-scale of the P.E.N.; McPherson, Presly, Armstrong and Curtis (1974), using the version of the P-scale to be discussed below, reported an identical finding but also noted that *within* psychotic patient groups, scores on the P-scale were significantly related to the incidence of specific psychotic symptoms and signs.

Given these as well as other findings (Segraves, 1971) the nature of the construct of Psychoticism is not easy to discern, particularly since its principal psychological definition lies in the set of items supposedly reflecting its operation, and this set of items has been altered from that originally published. The set now published (Eysenck and Eysenck, 1975) is virtually independent of N(euroticism), the lack of independence between P and N in the original P.E.N. Inventory being regarded as a serious flaw. It also affords rather better discrimination

between female subjects. On the other hand, there is little overlap in the content of the current and original set of items.

Table 1 shows the content and loadings ( $r_{ci}$ ) of those items having loadings greater than 0.4, together with their probabilities of endorsement in the Psychotic direction (pP), on the first unrotated principal component of the matrix of correlations between the 25 P items in the pre-publication version of the E.P.Q., obtained by the writer from the sample described below. (Tables containing scale means and standard deviations, the inter-variable correlation matrix, and tables of the data referred to in the first paragraph of the Discussion are obtainable

TABLE 1  
Leading items from E.P.Q. P-scale. (Decimal points omitted.)

Item	Content	$r_{ci}$	pP
23	Would you take drugs which may have strange or dangerous effects?	585	249
39	Do good manners and cleanliness matter much to you?	497	300
93	Would you like other people to be afraid of you?	464	083
6	Would being in debt worry you?	456	192
19	Do you believe insurance schemes are a good idea?	434	105
74	Do you think people spend too much time safeguarding their future with savings and insurances?	425	451
47	Do you think marriage is old-fashioned and should be done away with?	417	176
59	Does it worry you if there are mistakes in your work?	413	265

from the author.) With the possible exception of item 93 it would be difficult to defend the view that these items are indicators of hostility as conventionally measured by self-support devices (e.g. Buss and Durkee, 1957; Caine, Foulds and Hope, 1967). If there is indeed any common significance among these items it seems to be a rejection of some of the conventional values and standards of the silent majority in Western society. Without conviction, the present writer hypothesised that the principal trait the P-scale was measuring could be construed in terms of non-conformity.

The Eysencks (1972, 1975) continue to assert the lack of empathy and consideration for others that is a mark of the high P scorer. Forbes (1973) found no support for this contention with regard to the original P-scale, and with the possible exception of item 93, indicators of this attribute are not conspicuous among those listed in Table 1. Similarly, items reflecting passive extrapunitiveness which had defined the first principal component within the items of the original P-scale, are also absent from this set. By inspection, then, it could be hypothesised that performance on the current P-scale could best be construed in terms of conformity, that it was no more related to empathy than the original had been, and that it was unrelated to Hostility. Data collected simultaneously with those on the P-scale permitted an investigation of these

hypotheses. They also permitted an examination of its claimed independence from both Neuroticism and Extraversion.

In brief, the aim of this study was to clarify the relationships between the current P-scale with the constructs of Hostility, Conformity and Empathy, and with those of Extraversion and Neuroticism/Emotionality. In order to achieve this aim, marker variables were selected to define a test-space with the following principal dimensions:

1. Emotionality/Neuroticism, defined by the five FHIDs of the scale of Stability in the C.P.S. (Comrey, 1970), the Neuroticism (eN) scale of the E.P.Q., and the Self-Criticism (SC) scale of the Personality Deviance Scales (F.P.D.S.), which are a revised and extended version of the HDHQ (Caine, *et. al.*, 1967), devised for the investigation of Foulds' (1971) model of personality-illness relationships.
2. Extraversion, defined by the five FHIDs of the Extraversion scale of the C.P.S. and the Extraversion (eE) scale of the E.P.Q.
3. Hostility, defined by the five FHIDs of the Trust/Hostility scale of the C.P.S. and the Criticism of Others (CO) scale of the Personality Deviance Scales.
4. Conformity, defined by the five FHIDs of the Conformity scale and by the Social Desirability scale (R) of the C.P.S.
5. Empathy, defined by the five FHIDs of the Empathy scale of the C.P.S., and by the Manipulation of Others (MO) scale of the F.P.D.S. Given the supposed lack of consideration of others characterising the high P scorer, it is not unreasonable to assume that such a person would, in Foulds' (1965) terms, regard other people as objects, and it was expected that the F.P.D.S., MO scale would be the best reflection of this.

(Since the F.P.D.S. was also under scrutiny at this time, although for different reasons, its remaining four scales were included. Two of these, Acting-out Hostility (AH) and Urge to Act Out (UA) were expected either to contribute to the hypothesised Hostility factor or to disappear into a Limbo of specific factors. The remaining two, Dominance (DS) and Independence (ID) were expected to form a doubleton factor of the Ascendancy-Submission type.)

## METHOD

The subjects were 168 men and 145 women reading Psychology Intermediate and Stage I at the University of Otago. Most were aged between 18 and 21 years, the mean for the whole group being 19.55. They completed the E.P.Q., the C.P.S. and the F.P.D.S. in closely-supervised groups of between 35 and 40. A coding system was devised whereby those who wished knowledge of results could obtain it while remaining anonymous. (Only about 40 did not wish it.) Item scores on each test were card-punched, and listings and card-output of the FHID- and scale-scores obtained.

The orthogonalisation of the matrix of correlations between the 35 marker variables was done by principal factor analysis. Squared multiple correlation estimates were made for the communalities, and factors were extracted using the Jacobi iterative method. Six factors were expected, but seven were extracted and rotated to orthogonal simple structure. The first six of these were almost identical to the six reported below. The seventh had no loadings exceeding  $\pm 0.30$ . A five-factor rotation produced a blurred version of the pattern shown in Table 2. The six-factor rotation, as expected, produced the clearest pattern. Six principal factors were then extracted from the matrix of correlations between the 35 marker variables together with P, and rotated to the orthogonal simple structures shown in Table 3.

## RESULTS

In Table 2 it is evident that apart from the intrusion of some of these scales, the factor pattern emerges clearly as expected.

Factor I is an Extraversion factor, the marker variables of E.P.Q. Extraversion (eE) and C.P.S. FHIDs 26-30 having the highest loadings on it. The Dominance (DS) and Independence (ID) scales make a slight contribution to its definition, as does C.P.S. FHID 24. Although a facet of the C.P.S. Stability scale, examination suggests Rhythymia-like features in it. The composition of this factor, indeed, is reminiscent of Cattell's second-order factor of Exvia.

Factor II is a Hostility factor, marked as predicted by C.P.S. FHIDs 1-5 and by the CO scale of the F.P.D.S. The extrapunitive aspect of this manifestation of hostility is underlined by the additional contributions of the F.P.D.S. scales AH, MO and UA.

Factor III is the predicted Neuroticism/Emotionality factor, defined by the five FHIDs of the C.P.S. Stability scale, by E.P.Q. Neuroticism (eN), and by the Self-Criticism (SC) scale of the F.P.D.S. Presumably some plausible reason for the appearance of F.P.D.S. scales UA and ID on this factor could be thought out, but it would be based only on speculation, and in any case is not germane.

Factor IV is an Empathy or Concern for Others factor, defined as predicted but for the added loadings of Social Desirability (R) from the C.P.S. and the AH and UA scales of the F.P.D.S. Hindsight suggests that the contribution of R could have been predicted—lack of concern for others' welfare is not a good thing to admit (R). Further, the person claiming concern for others is unlikely to vent his spleen upon them (UA and AH).

Factor V is the expected Conformity factor, but while Social Desirability (R) does contribute to its definition, the size of that contribution is less than expected, and distinctly less than that made to Factor IV.

Factor VI looks like the expected Ascendancy-Submission one, defined mainly by the DS and ID scales of the F.P.D.S., with a slight

contribution (negative) from the SC scale from that set, slighter greater ones from FHID 21 (Lack of Inferiority Feelings) and FHID 30 (No Stage Fright) from the C.P.S. A discussion of the composition of this factor is not, however, germane to this study.

Table 3 shows that rotating the six factors extracted from the matrix of correlations between these marker variables with the addition of E.P.Q. Psychoticism (eP) to orthogonal simple structure produced a result virtually identical to the pattern shown in Table 2. The rank order of the magnitudes of the six factors is the same, and differences in absolute size of loadings of variables on factors are trivial. No variable with a loading exceeding  $\pm 0.30$  in the marker-variable matrix does not have one in the matrix of marker variables plus eP. Similarly, variables without such a loading in the first matrix have none in the second.

Within the limits imposed by the set of marker variables employed, certain conclusions can be drawn about the characteristics of the currently-available P-scale. First, it meets the Eysencks' criterion of being independent of both Neuroticism and Extraversion. Its correlation with eN in this sample is  $+0.107$ , its loading on the Neuroticism factor,  $+0.070$ . The correlation with eE is  $-0.036$ , its loading on the Extraversion factor,  $+0.002$ .

Second, it differs from the first-published version by being virtually independent of Hostility. Its highest correlation with any variable defining that factor is  $-0.233$  (C.P.S. FHID 1, Lack of Cynicism), and its loading on the factor here labelled Hostility is  $+0.160$ .

Third, contrary to expectations based on the Eysencks' description of the high P scorer, it is unrelated to Empathy. Its highest correlation with such a variable in this sample is  $-0.241$  with C.P.S. FHID 40 (Lack of Selfishness), its loading on the Empathy factor is  $0.172$ . This confirms the Forbes (1973) finding with the original P-scale.

Fourth, in accordance with the expectations based on the data reported in Table 1, the highest correlation of P in this study ( $-0.402$ ) is with a C.P.S. variable (FHID 9, Respect for Law). This and its correlations with the four other FHIDs defining the C.P.S. scale of Conformity combine to produce its loading of  $-0.576$  on that factor. Again this contrasts with the present writer's findings with the original P-scale.

## DISCUSSION

A component analysis carried out on the matrix of correlations between all the items of this pre-publication version of the E.P.Q. in the same sample of subjects resulted in the emergence of four recognisable components, each being defined by one of the presumptive P, E, N and L item-sets. None of the presumptive P items loaded more highly on the other three components than on that defined by itself

and the remaining twenty-four. While the loadings of these items on that component were typically lower than those of the E, N and L items on the components which they defined, they were high enough for their use as the basis for a linear composite to be defensible.

The mean unweighted score in this sample was low (4.41), its standard deviation relatively large (3.00), and the distribution of scores was markedly skewed. These are the hallmarks not of scales used to measure common traits in a normal population, but rather of scales sensitive to deviant or symptomatic behaviours (see, for example, Cronbach, 1971, p. 479; Gordon and Gregson, 1970). Almost by definition such features of behaviour are rare in a random sample from a normal population and so a scale designed to measure these should

TABLE 2

Rotated factor matrix of reference variables. (Loadings in excess of  $\pm 0.30$  are underlined. Decimal points are omitted.)

Variable	I	II	III	IV	V	VI	$h^2$
(CPS) Fhid 1	-016	<u>-715</u>	-094	157	108	145	577
2	020	<u>-579</u>	-070	125	-213	-109	414
3	146	<u>-607</u>	-083	183	-015	-182	464
4	050	<u>-584</u>	043	127	087	056	372
5	057	<u>-586</u>	-161	070	-026	-031	379
11	-078	169	-132	027	<u>636</u>	030	459
12	-012	-188	-188	-133	<u>658</u>	-031	523
13	-058	203	-088	053	<u>700</u>	-015	546
14	-084	-027	-115	176	<u>625</u>	-014	443
15	050	-210	127	-034	<u>373</u>	-185	237
21	197	022	<u>-590</u>	-056	035	<u>381</u>	537
22	238	-197	<u>-628</u>	083	162	004	523
23	129	-046	<u>-746</u>	056	086	-032	587
24	338	-225	<u>-556</u>	049	-042	042	480
25	<u>-028</u>	-070	<u>-669</u>	043	233	-046	511
26	<u>764</u>	-065	050	-036	-103	105	614
27	<u>696</u>	-042	-179	195	-032	-091	566
28	<u>810</u>	-112	-223	121	-061	208	780
29	<u>734</u>	-085	-155	139	-062	071	598
30	<u>436</u>	-016	-189	153	-001	385	398
36	229	-093	-029	588	-003	-081	414
37	214	-126	-070	<u>755</u>	005	040	639
38	094	-244	031	<u>664</u>	048	-040	514
39	089	-179	081	<u>723</u>	-127	113	598
40	067	-030	-107	<u>597</u>	215	-024	420
R	-146	-091	-142	<u>427</u>	<u>333</u>	205	385
(EPQ) eE	<u>823</u>	019	-177	078	026	122	730
eN	-052	153	<u>825</u>	-035	-039	-095	719
(FPDS) AH	191	<u>325</u>	203	-335	-142	247	377
SC	-221	006	<u>749</u>	-018	-094	<u>-354</u>	744
MD	100	<u>431</u>	012	-611	155	091	601
DS	<u>390</u>	<u>066</u>	-110	-180	-107	<u>555</u>	520
UA	016	<u>379</u>	<u>409</u>	-443	-030	180	540
CO	-052	<u>799</u>	178	-200	003	-027	713
ID	365	063	<u>-313</u>	062	-087	<u>489</u>	485
$\Sigma a^2$	3.931	3.403	<u>4.006</u>	3.446	2.284	1.336	18.407
% Total Est. Common Variance	20.54	17.78	20.93	18.00	11.93	6.98	96.17

not afford so much discrimination between individuals within that population as a scale measuring, say, emotionality or extraversion. On the contrary, given the relative smallness of groups formed on the basis of their members showing severe clinical or social pathologies it is reasonable to suppose that the frequency of co-occurrence of personality or attitudinal variables which are specifically related to them should be high within those groups and probably as low outside them as their more conspicuous pathological concomitants. Under these circumstances, the skewed distribution of P-scores is a commendation of the scale rather than an embarrassment. (It also suggests that it is better construed as measuring a unipolar rather than a bi-polar variable.)

TABLE 3  
Rotated factor matrix of reference variables together with P. (Conventions as in Table 2.)

Variable	I	II	III	IV	V	VI	$h^2$
(CPS) Fhid 1	-014	-712	-087	-151	138	151	579
2	019	-584	-071	-129	-201	-107	415
3	146	-609	-079	-182	006	-178	463
4	051	-579	044	-122	100	055	367
5	057	-586	-160	-069	-010	-030	378
11	-076	188	-130	-011	636	025	463
12	-011	-166	-188	152	647	-041	506
13	-057	225	-087	-035	694	-024	545
14	-082	-010	-111	-159	633	-019	446
15	053	-205	137	046	395	-183	255
21	201	021	-585	057	048	386	538
22	241	-199	-622	-078	186	009	525
23	130	-046	-749	-054	081	-034	590
24	339	-229	-555	-049	-036	043	481
25	-028	-063	-673	-037	224	-051	512
26	765	-066	051	033	-102	101	613
27	696	-043	-178	-196	-031	-094	566
28	812	-114	-219	-121	-048	209	780
29	734	-088	-153	-141	-054	071	598
30	438	-011	-191	-152	-005	377	394
36	230	-098	-023	-589	029	-075	416
37	214	-124	-073	-755	015	035	638
38	094	-242	030	-661	063	-042	511
39	090	-182	080	-725	-108	112	597
40	068	-025	-106	-591	230	-025	420
R	-144	-084	-136	-417	355	210	390
(EPQ) eE	824	021	-176	-077	025	116	730
eN	-053	154	826	034	-044	-096	722
(FPDS) AH	192	326	198	330	-165	239	376
SC	-225	007	743	015	-110	-359	744
70	100	441	005	613	114	079	600
DS	395	063	-103	179	-097	560	525
UA	015	390	399	443	-083	164	541
CO	-053	799	174	197	-023	-030	711
ID	368	062	-311	-063	-083	487	484
(EPQ) P	002	160	070	172	-576	-031	393
$\Sigma\alpha^2$	3.951	3.452	3.979	3.452	2.648	1.331	18.813
% Total Est. Common Variance	20.11	17.57	20.25	17.57	13.48	6.77	95.76



Whether the P-scale is a measure of behavioural variables already firmly attached to an existing trait construct is rather dubious. The reliable variance of the P-scale in the present sample, as estimated by coefficient alpha, is 0.679. This is close to the estimates reported by Eysenck and Eysenck (1975). The estimated variance predictable from the marker variables in this study was 0.398, rather less than 59 percent. At the end of the analysis the variance of P accounted for ( $h^2$ ) was 0.393. From this and the loading of P on the Conformity factor, it follows that this composite accounted for about 84 percent of the predictable variance of P, but only about 49 percent of its reliable variance.

Plainly, even in the unlikely event of there being a universally accepted and unambiguous definition of conformity occurring simultaneously with agreement that the C.P.S. Conformity FHIDs are an ideal measure of its operation, it could not be invoked to account for more than half of the differentiation between normal individuals with respect to Psychoticism. In terms of the variables used in this study, half the differentiation afforded is unique to the P-scale. This is a greater degree of uniqueness than was found in its earlier version in the P.E.N.

The Eysencks suggest that Psychoticism may be related to the construct of Tough-Tender-mindedness, and adduce some evidence in support of the view. The invocation of this construct may be of some heuristic value in mapping the domain of Psychoticism at a descriptive level. Of more interest, however, is the fact that it is already known that high P scorers show perceptual and psychomotor disturbances akin to those found in severely ill psychiatric patients (e.g. Eysenck, 1952; Eysenck *et. al.*, 1957). Models and modes of experimentation in the area of cognition are typically more robust and less fustian than those found in the areas of personality traits and social attitudes (e.g. Rabbitt and Dornic, 1975), although other than very simple cognitive processes may be as difficult to relate to biological processes as are personality trait-constructs. In any event, should Psychoticism be found to be related to individual differences in information-processing, it will be a useful construct indeed.

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## REFERENCES

- Buss, A. H., and Durkee, A. An inventory for measuring different kinds of hostility. *Journal of Consulting Psychology*, 1957, 21, 343-349.
- Butt, S. D., and Fiske, D. W. Comparison of strategies in developing scales for dominance. *Psychological Bulletin*, 1968, 70, 505-519.
- Caine, T. M., Foulds, G. A., and Hope, K. *The Hostility and Direction of Hostility Questionnaire*. London: University of London Press, 1967.
- Comrey, A. L. *The Comrey Personality Scales*. San Diego: Educational and Industrial Testing Service, 1970.
- Cronbach, L. J. *Essentials of psychological testing*. Second Edition. New York: Harper and Row, 1961.
- David, H. What does the P scale measure? *British Journal of Psychiatry*, 1974, 125, 161-167.
- Edwards, A. L. *Edwards Personality Inventory*. Chicago: Science Research Associates, 1967.
- Eysenck, H. J. *The scientific study of personality*. London: Routledge & Kegan Paul, 1952.
- Eysenck, H. J. *The biological basis of personality*. Springfield: Thomas, 1967.
- Eysenck, H. J., and Eysenck, S. B. G. A factorial study of psychoticism as a dimension of personality. *Multivariate Behavioural Research*, 1968a. All-clinical special issue, 15-31.
- Eysenck, H. J., and Eysenck, S. B. G. *Personality structure and measurement*. London: Routledge and Kegan Paul, 1969a.
- Eysenck, H. J., and Eysenck, S. B. G. *Eysenck Personality Questionnaire*. London: Hodder and Stoughton, 1975.
- Eysenck, S. B. G., and Eysenck, H. J. The measurement of psychoticism: a study of factor stability and reliability. *British Journal of Social and Clinical Psychology*, 1968b, 7, 286-294.
- Eysenck, S. B. G., and Eysenck, H. J. Scores on three personality variables as a function of age, sex and social class. *British Journal of Social and Clinical Psychology*, 1969b, 8, 69-76.
- Eysenck, S. B. G., and Eysenck, H. J. The questionnaire measurement of psychoticism. *Psychological Medicine*, 1972, 2, 50-55.
- Eysenck, H. J., Granger, G. W., and Brengelmann, J. C. *Perceptual processes and mental illness*. (Maudsley Monograph, Number 2.) London: Chapman and Hall, 1957.
- Fiske, D. W. *Measuring the concepts of personality*. Chicago: Aldine, 1971.
- Foulds, G. A. *Personality and personal illness*. London: Tavistock, 1965.
- Foulds, G. A. Personality deviance and personal symptomatology *Psychological Medicine*, 1971, 1, 222-233.
- Forbes, A. R. Some correlates of psychoticism. *New Zealand Psychologist*, 1973, 2, 2-14.
- Gordon, A. V., and Gregson, R. A. M. The Symptom-Sign Inventory as a diagnostic differentia for paranoid and non-paranoid schizophrenics. *British Journal of Social and Clinical Psychology*, 1970, 9, 347-356.
- Hase, H. D., and Goldberg, L. R. Comparative validity of different strategies of constructing personality inventory scales. *Psychological Bulletin*, 1967, 67, 231-248.
- Jackson, D. N. A sequential system for personality scale development. In Spielberger, C. D. (Ed.), *Current topics in clinical and community psychology. II*. New York: Academic Press, 1970.
- Jackson, D. N. The dynamics of structured personality tests: 1971. *Psychological Bulletin*, 1971, 78, 229-248.
- Jackson, D. N. *The Personality Research Form*. Goshen: Research Psychologists Press, 1974.

- Lanyon, R. I. Development and validation of a psychological screening inventory. *Journal of Consulting and Clinical Psychology*, 1970, 35, Pt. 2, 1-24.
- McPherson, F. M., Presly, A. S., Armstrong, J., and Curtis, R. H. 'Psychoticism' and psychotic illness. *British Journal of Psychiatry*, 1974, 125, 152-160.
- Mehryar, A. H., Khajavi, F., and Hekmat, H. Comparisons of Eysenck's PEN and Lanyon's Psychological Screening Inventory in a group of American students. *Journal of Consulting and Clinical Psychology*, 1975, 43, 9-12.
- Murray, H. A. *Explorations in personality*. New York: Oxford University Press, 1938.
- Rabbitt, P. M. A., and Dornic, S. (Eds.) *Attention and Performance, V*. London: Academic Press, 1975.
- Verma, R. M., and Eysenck, H. J. Severity and type of psychotic illness as a function of personality. *British Journal of Psychiatry*, 1973, 122, 573-585.
- Segraves, R. T. Intercorrelations between the Sjöbring and Eysenckian personality dimensions. *Acta Psychiatrica Scandinavica*, 1971, 47, 288-294.
- Shaw, D. M., MacSweeney, D. A., Johnson, A. L., and Merry, J. Personality of alcoholic and depressed patients. *British Journal of Psychiatry*, 1975, 126, 56-59.