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AN ITEM-FACTOR ANALYSIS OF THE GPQ  
ADMINISTERED TO A SAMPLE OF NEW ZEALAND SCHOOL CHILDREN

A thesis submitted in partial fulfilment of the  
requirements for the degree of Master of Arts in  
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The 1963 version of the Children's Personality Questionnaire was administered to 374 New Zealand children aged from 8 to 14 years with a mean age of 11 years 5 months attending state primary and intermediate schools. Both Forms A and B were administered to each child. Items designed to load on CPQ factor B (Intelligence) were omitted for simplicity of analysis, leaving 130 items in each Form.

Data obtained were factor analysed using the principal components method, Varimax rotation, communalities in the diagonals, and proceeding to oblique rotation. Separate analyses were carried out on Form A and Form B and thirteen factors extracted from each Form, as follows, for comparison with the remaining thirteen CPQ factors.

<u>Form A Factors:</u>		<u>Form B Factors:</u>	
A1	Assertiveness	B1	Self-control (Conformity)
A2	Conformity	B2	Self-reproach
A3	Dependency	B3	Confidence
A4	Serious-mindedness	B4	Sociability
A5	Shyness	B5	Tender-mindedness
A6	Security	B6	Emotional Maturity
A7	Confidence	B7	Consociation
A8	Self-satisfaction	B8	Laxity
A9	Irresolution	B9	Serious-mindedness
A10	Self Sentiment	B10	Egocentricity
A11	Defeatism	B11	Passivity
A12	Placidity	B12	Realism
A13	Participation	B13	Friendliness

Items from all CPQ factors except I (Tough minded-versus-Tender minded) showed significant loadings ( $\text{sig.} = \pm 0.30$ ) on four or more of the emergent factors, indicating that the items did not clearly define the CPQ factors which they are alleged to measure. However, 89 items from Form A and 85 items from Form B showed significant loadings on only one emergent factor. Ten of the CPQ factors provided recognisable contributions to the emergent factors. Form A factors showed only two significant intercorrelations ( $\text{sig.} = \pm 0.30$ ) whereas there were six such intercorrelations among the Form B factors and thirteen among the CPQ factors.

It is suggested that the Form A factors may provide a more suitable reference frame for the measurement of personality dimensions among New Zealand children. Before proceeding to adaptation of an international test which has demonstrated its discriminatory ability, further research including replication with both representative samples and special groups should be undertaken.

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## INTRODUCTION

One of the tests used by the Psychological Service of the Education Department of New Zealand in investigating social and academic difficulties of primary school children is the Children's Personality Questionnaire (CPQ) (Porter & Cattell, 1963).

The Interim Manual for the Children's Personality Questionnaire claims that the CPQ yields a general assessment of personality development of 8-12 year olds by measuring 14 Bipolar dimensions of personality which have been found by psychologists to approach the total personality (Porter & Cattell, 1963). These factors are linked with those of the related Pre-School Personality Questionnaire (Dreger & Cattell, In preparation), the Early School Personality Questionnaire (Cattell & Coan, 1966), the High School Personality Questionnaire (Cattell & Cattell, 1969), and the Sixteen Personality Factor Questionnaire (Cattell, Eber, & Tatsvoka, 1970). Cattell regarded all these questionnaires as broadly equivalent scales for measuring personality dimensions at different age levels.

The Interim Manual asserts that, by working with these 14 factors individually and in different combinations, predictions of school achievement are possible, especially under-achievement, tendency towards delinquency, likelihood of leadership potential, and possible need for clinical help in avoiding excessive emotional disturbance. The Handbook issued with the earlier form of the CPQ shows in addition scale-scoring available for neuroticism versus stability, anxiety versus adjustment, and extraversion versus introversion (Porter & Cattell, 1959).

However, the 14 factors of the CPQ do not appear to have been investigated by any research at the appropriate age levels in New Zealand. Adcock, Adcock & Walkey (1971) conducted research with New Zealand samples on the closely-related adult version, the Sixteen Personality Factor Questionnaire (Cattell & Eber, 1957; Cattell et al., 1970), and discovered that, though items vary considerably in their significance cross-culturally, major factors are reasonably stable. Cattell, Schmidt, & Pawlik (1973) recently reported on a cross-cultural comparison of the personality factor structures of 10-14 year olds in U.S.A., Japan, and Austria. This included as a less important feature measurement using the CPQ and the HSPQ, in English and translations, which showed "substantial

stability" for 9 factors (Cattell, Schmidt, & Pawlik, 1973, p. 210).

Likewise, the norms supplied with the CPQ, which are used by the Psychological Service in its assessments, were not calculated from samples of New Zealand school children.

Further, the instrument was developed as a downward extension of the 16 PF which has been criticised on the grounds that "it does not measure the factors which it purports to measure at the primary level (Howarth & Browne, 1971, p. 117; see also Adcock, 1971; Eysenck & Eysenck, 1969). Commenting on this allegation Dielman (unpublished article) drew attention to procedural defects in Howarth & Browne's replication and concluded that insufficient evidence had been presented to outweigh "the evidence from forty or more mutually integrating studies" of the existence of such factors and the capability of the 16 PF to measure them consistently.

Comments by the three reviewers in The Sixth Mental Measurements Yearbook (Buros, 1971) unanimously advocated caution in the use of the CPQ for a variety of reasons.

Robert D. Wirt commented:

"Nowhere are there data which describe the norm groups. . . . The reader is given skimpy secondary data on validity and is referred to other sources for further detail. The references cited for this purpose relate almost exclusively to general texts on the subject of test construction . . . having nothing whatever to do with the particular standardization of the CPQ (pp. 260-261)."

Wilbur L. Layton also criticised the CPQ on the grounds that there was no information given in the Handbook to indicate how the sample was obtained, nor was there any further information about the normative sample (p. 257).

The third reviewer, Anne Anastasi, echoed these criticisms:

"Norms are reported for each sex separately, but age differences (which are only significant in three traits) are handled by the use of correction terms. The normative samples comprise 735 boys and 741 girls aged 8 to 12, not otherwise described. . . . Validity is discussed largely in terms of factorial analysis of items, based primarily on a group of 200 boys and girls not otherwise described. . . . Many references are to Cattell's Personality and Motivation Structure and Measurement in which studies pertaining to the age level 8 to 14 receive only brief and general mention because they were still in progress when the book was published (p. 257)."

While these comments were based on the 1959 edition of the CPQ Handbook (Porter & Cattell, 1959), the Interim Manual (Porter & Cattell, 1963) supplied for use with the revised 1963 edition of the CPQ was aimed primarily at increasing the reliability of the scales and did not represent a change in the scales themselves (Buros, 1971, p. 256).

The consensus was that, lacking further evidence, this instrument should be used solely for research purposes and Wilbur L. Layton added that it "must be considered a research test which should not be used in counseling or otherwise dealing with individual children (p. 260)."

In view, however, of the scarcity of tests for personality measurement of children it is not surprising that the CPQ has come to be used in precisely this field.

This study was therefore initiated because the CPQ is in practice being used for individual personality assessment in New Zealand primary and intermediate schools. The object of the study was to conduct an item-factor analysis of this instrument, using the principal components procedure, with a sample of 374 New Zealand primary and intermediate school children in Standard 2 to Form 2. Emergent factors are compared with those the CPQ was originally designed to measure and the allegiance of specific items is investigated in order to assess whether the CPQ appears to be measuring the personality factors it purports to measure, and thus whether its present use in New Zealand primary and intermediate schools is justified.



PART 1

REVIEW OF RELATED RESEARCH

In investigating the CPQ a major difficulty was the paucity of information specifically relating to the instrument. Cattell himself regarded the CPQ as a closely related form of the 16 PF for use with the 8-12 year old age range as attested by his references to it in the Handbook of the 16 PF (Cattell et al., 1970):

"The information in this technical Handbook is thus relevant to all six equivalent forms of the 16 PF, and also, with some modifications, to the personality factor questionnaires for other age ranges which use the same personality dimensions and concepts. (These parallel tests include . . . the CPQ . . .) (p. 2)."

"Unlike a host of questionnaire scales which have been offered to psychologists in the past, the 16 PF, HSPQ, CPQ, ESPQ, and PSPQ are accompanied by extensive cross-checked, factor-analytic research publications and systematic relations to a central personality model and body of theory (p. 3)."

"Investigation at different ages by a series of coordinated cross-sectional analyses at different points in the growth period has established that the chief personality factors in the 16 PF exist also throughout the developmental sequence. Four scales have thus been developed - the HSPQ, CPQ, ESPQ, and the PSPQ whereby comparisons can be made of personality measurements of people at different ages, or of parents and children on the same factors (p. 10)."

"The basic scientific position of the constructors of the 16 PF (and of the associated range of instruments, namely, the HSPQ, CPQ, ESPQ, and PSPQ) is that the greatest psychological utility lies in instruments with scales built around pure scientific concepts of personality structure (p. 299)."

Thus it became necessary to heed the comment by Anne Anastasi in Buros (1971) that the CPQ "should be considered within the framework of the other inventories constructed by Cattell and his associates and of the factorial research on personality traits that led to their development (pp. 256-257)." A major feature of Cattell's personality tests is his claim to have derived his personality dimensions by scientific analysis of items designed to sample the entire personality sphere. The theory underlying this claim is now discussed.



### Bases of Cattell's Personality Theory

Hall & Lindzey (1970, p. 2) distinguished four major streams of thought which have influenced the development of personality theory since 1900:

1. Clinical observation including the theories of Freud, Jung, and McDougall.
2. The Gestalt tradition emphasising the unity of behaviour as in Wertheimer, Kohler, and Lewin.
3. Experimental psychology, and in particular learning theory, which led to "increased concern with carefully controlled empirical research, a better understanding of the nature of theory construction, and a more detailed appreciation of how behaviour is modified (Hall & Lindzey, 1970, p. 2)."
4. Psychometrics, which focus upon the measurement and study of individual differences.

This last has led to increasing sophistication in measurement and the quantitative analysis of data (Cattell, 1965, p. 5).

Foremost among these empirical methods has been the technique of factor analysis and this in turn has led to a further theoretical position the outstanding proponents of which are Raymond B. Cattell, H. J. Eysenck, J. P. Guilford, Cyril Burt, and L. L. Thurstone. Of these "Cattell's theory is by far the most comprehensive and fully developed theory of personality based on factor analysis (Hall & Lindzey, 1970, p. 380)."

### General Sources of Data

In the formulation of his theory the confluence of all the foregoing major streams of thought is evident in Cattell's utilisation of three major sources of data:

1. The life record (L-data) which may be obtained from such sources as actual school records, or ratings by other persons who know the individual in real-life settings, such as teacher- or parent-ratings (Cattell, 1963).
2. Objective testing (T-data) obtained by creating special situations in which the individual's behaviour may be objectively scored. Over 400 such tests have been listed by Cattell & Warburton (1967). This type of testing was first applied to exploration of personality dimensions among adults but since 1957 such tests have been extended downward

to older children and further to young children. Cattell & Howarth (1962) state:

"The main finding, as in the corresponding field with questionnaire measures of personality, has been that the same primary factors are discoverable, changed somewhat in expression, through the change in age, but essentially identifiable (p. 145)."

3. Self-rating questionnaires (Q-data) which involve the individual's own statements about his behaviour and thus provide a "mental interior" to the external record yielded by L-data, and yield the same primary factors (Cattell, 1959).  
Cattell (1963) commented that "clarification of the rating factor situation is important, because these personality factors are the real, criterion behavior, from which Q and T-data, as merely test data, must draw their validity (p. 219)." While it is debatable whether L-, Q-, or T-data do in fact represent "real" behaviour, evidence of similar factors emerging from these three different methods of measurement would tend to confirm the existence and constancy of such dimensions of personality.

#### Search for General Source Traits

By conducting separate factor analytic studies using all three types of data Cattell hoped to identify general traits<sup>1</sup> arguing that if the same source traits emerged from all three types of investigation this would tend to confirm that the source traits were real functional unities and not mere artifacts of the method. He later claimed that:

"As research is now showing, these source traits correspond to real unitary influences - physiological, temperamental factors: degrees of dynamic integration; exposure to social institutions - about which more can be found out once they are defined (Cattell, 1950, p. 27)."

Extensive analyses by Cattell and his associates led him to the conclusion that a similar factor structure emerged from L-data and Q-data, but somewhat different factors tended to emerge from T-data. Howarth & Browne (1971, p. 136) claimed that Cattell

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<sup>1</sup>Trait is defined by Cattell (1965) in his glossary as "a unitary configuration in behavior such that when one part is present in a certain degree, we can infer that a person will show the other parts in a certain degree." He also distinguishes between surface traits (or correlation clusters) and source traits (factors) (Cattell, 1957, pp. 10-18). See also Hall & Lindzey, 1970, p. 386.

had failed to show this and quoted a study by Cattell & Saunders (1950) in which Cattell himself said that "except for two or three instances, the known personality factors, contrary to our hypothesis, are not outcrops of the same factor in a different media (p. 256)." In reply, Dielman (unpublished article) pointed out deficiencies in the procedures employed in Howarth & Browne's (1971) investigation.

Since factor analysis is a method for determining the number and nature of the underlying variables among large numbers of measures (Kerlinger, 1965, p. 630), a critical determinant of the factors extracted is the population of items selected for analysis, and Cattell has repeatedly stressed the importance of sampling the entire "personality sphere":

"The psychometrist of personality, if he is to get an unbiased picture of the whole, must have some concept of the totality of human behavior, which we shall call the PERSONALITY SPHERE. This may be roughly defined as what people do over a sample 24-hour period, and it will vary somewhat with different ages and culture (Cattell, 1965, p. 60)."

In deciding on a basis for determining the total personality sphere, Cattell turned to language as an indicator, arguing that:

"It would be strange if language had not yet developed reference symbols for all aspects (of human nature) having any importance . . . . Language vocabulary on the whole appears almost to have reached a plateau in its development of symbolism for personality traits (Cattell, 1946, p. 215)."

Though Cattell conceded that language is not guaranteed to cover all aspects of personality behaviour, he contended that it does cover all those which have social and material importance for humanity and cited this as his justification for taking language as the basis of his concept of the personality sphere. This he went on to describe more fully:

"The Personality Sphere may be considered to present a complete surface, constituted by many 'trait areas,' each trait area defined by a trait term and abutting on traits most closely resembling it, the whole constituting an endless but finite continuum of behavior meaning. If trait character is represented by direction as in factor-analytic representation, the sphere must be considered as one in n-dimensional space (Cattell, 1946, p. 216)."

Cattell utilized Allport & Odbert's (1936) list of approximately 4500 trait names from an unabridged dictionary and condensed these to under 200 by grouping near-synonyms and

discarding rare and metaphorical terms. These were then intercorrelated and further reduced by empirical clustering procedures to yield 35 surface traits. Ratings on these provided the basis for the initial L-data factor analysis. The main personality factors that Cattell considered reasonably well established in both L- and Q-data are listed in Table 1.

TABLE 1

Major Personality Factors found in both L-data and Q-data

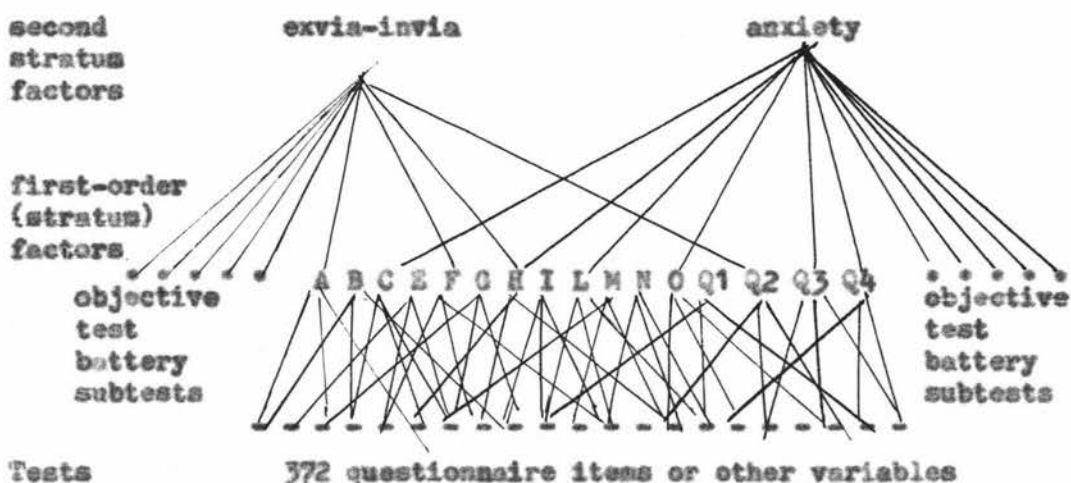
Symbol	Technical Title	Popular Label
A	Affectothymia-Sinothermia	Outgoing-Reserved
B	Intelligence	More intelligent-Less intelligent
C	Ego strength	Stable-Emotional
E	Dominance-Submissiveness	Assertive-Humble
F	Surgency-Desurgency	Happy-go-Lucky-Sober
G	Superego strength	Conscientious-Expedient
H	Parmia-Threctia	Venturesome-Shy
I	Premia-Harria	Tenderminded-Toughminded
L	Protension-Alaxia	Suspicious-Trusting
M	Autia-Praxernia	Imaginative-Practical
N	Shrewdness-Artlessness	Shrewd-Forthright
O	Guilt proneness-Assurance	Apprehensive - Placid

Adapted from Cattell, 1965, p. 365

Cattell regarded the 12 personality factors in Table 1 as source factors, or primary factors. Carrying this a stage further, he then calculated correlations between these primary factors themselves and so obtained second-order factors. Interestingly, some of the T-data factors, which it will be remembered did not on the whole match the factors found on L- and Q-data, seemed to correspond to the second-order factors in L- and Q-data. For example, the T-data yielded directly the Anxiety and Exvia-Invia (extraversion-intraversion) factors which appeared as second-order factors from the Q-data, as shown in Figure 1.

FIGURE 1

Second-order Factor Structures and the Relation of Questionnaire and Objective Test Factors



Cattell, 1965, p. 118 (data based on the 16 PF)

In the Handbook for the CPQ, Porter & Cattell (1959) left no doubt that they claimed to have considered "all personality dimensions" and taken into account "the total personality" (p. 4). Wilbur L. Layton (Buros, 1971) remarked that "since Cattell believes he has discovered 14 or more pure factors in the personality domain, he feels free to discuss the behavioral meaning of these factors at all age levels from 8 to 80 (p. 122)."

Porter & Cattell (1959) themselves stated:

"Finally it should be noted that throughout these discussions, young adult and adult associations (occupation, adjustment, group behavior) are brought in to enrich the meaning of most of the factor-dimensions. These additional associations are a permissible part of the discussion because it has been established that each of the CPQ personality dimensions continues in essentially similar form as applicable to all later ages. However, adult associations of a dimension are useful as well as merely permissible, since they point up the adult occupational, mental health, and other expectations for a child in terms of his present profile on the factors (p. 24)."

In view of the lack of adequate reporting of confirmatory research these claims appear extravagant. The strength of Cattell's conviction that he had indeed reliably identified factors which were real functional unities broadly applicable to all ages was doubtless responsible for the downward extension to the CPQ,



justification for which is not documented in the Handbook by longitudinal evidence, factor analytic or other, and for other practices which have attracted criticism.

In an endeavour to check the extent to which personality factors found at other age levels are also to be found with 12-year-olds, Hundleby & Cattell (1968) used the CPQ, some objective tests, educational criteria, and home and family background measures with a sample of 273 sixth-grade children, 141 boys and 132 girls, with a mean age of 11 years 11 months. Using the principal components method, 17 factors were extracted and 8 of these were identified in the light of previous findings at other age levels. Their sample comprised the complete sixth grade of a small town in East Central Illinois, whereas the sample in the present investigation comprised all the Form 1 and 2 children together with a sample of children from Standards 2, 3, and 4, a total of 374 children, 183 boys and 191 girls, with a mean age of 11 years 5 months, in a small New Zealand town. However, no direct comparisons of the two studies were possible because Hundleby & Cattell did not make any separate analysis of the CPQ in its entirety.

#### Criticisms of Procedure

The controversy concerning the adequacy of Cattell's factor system in the development of the 16 PF was initiated by Levonian (1961) and continued by Eysenck & Eysenck (1969), Howarth & Browne (1971) and Dielman (unpublished article). Howarth & Browne's (1971) chief criticisms arose from Cattell's use of targetting and parcelling.

Targetting, which was aimed at the 12 factors which Cattell had observed in two early rating studies (Cattell, 1945, 1947), had earlier elicited forthright comment from Eysenck & Eysenck (1969):

"The outstanding fact about such systems as those of Cattell and Guilford is not that they are objective, and based on correlation and factor analysis, but that they are subjective, and based on arbitrary and intuitive judgments. . . . objectivity demands that factor analysis should begin . . . with the intercorrelation and factor analysis of items. Yet this has in fact not been done . . . . At no time did either (Guilford) or Cattell intercorrelate all the items in his scales in one single analysis, to establish the fact that the postulated factors did in fact exist, and emerge with the correct items having high loadings on these and only these factors (pp. 326-327)."

The second practice which attracted criticism, that of packaging, probably arose from the practical difficulties involved

in compressing the greatest possible item meaning coverage into the small matrices which could be factored at that time and would not have been necessary had modern computing programmes for factor analysis been available. Thus the practice was adopted on practical rather than theoretical grounds, but this packaging plus the actual structuring of the items and their sometimes complex response alternatives (some answers had four alternatives) "has rendered his task of factoring to be unnecessarily confused (Howarth & Browne, 1971, p. 132)."

Further, in the development of the 16 PF factoring was carried out by means of the group centroid by which method 19 factors were extracted and then rotated to simple structure. This procedure again was probably adopted because of the limited computing programmes available. Kerlinger (1965) commented that the centroid method "is a computational compromise to avoid the excessive computational labor of more satisfactory solutions (p. 659)" and went on to state: "It will no doubt be replaced in time by the principal factors and other mathematically and statistically more satisfying methods." Howarth & Browne (1971) also commented that the principal components method "offers advantages in accuracy and determinacy and rapidity of computer processing and is preferable for large-scale item-factoring. Cattell himself is now using this method (p. 121)."

Howarth & Browne's (1971) criticisms were summarised as follows:

"Cattell & Eber (1957) state that every item has a demonstrated saturation on each factor which it sets out to measure. They do not mention packaging and targeting, and leave the reader with the impression that item factoring has been used. Moreover, they state that they have "proof that each of the questionnaire factors corresponds to a primary personality factor found elsewhere, i.e. beyond the questionnaire realm, notably in rating in real-life behavior situations" and thus imply that cross-media relations have been clearly demonstrated (p. 2). In the most recent manual (Cattell et al., 1970) it is stated that "the central feature of the 16 PF is that it is firmly based on the personality sphere concept -- a design to ensure initial item coverage for all the behavior that commonly enters ratings . . . . Thus, it has been built up not only by factoring of a questionnaire material, but is part of the general structuring research on personality in everyday life rating data (p. 6)." (pp. 137-138)."

After noting that these claims were not fully supported in the literature, they concluded that Cattell's questionnaire factor system had been developed on the basis of inadequate investigation of the primary factors.

Dielman (unpublished article) countered this allegation by pointing out that in the 22 years the 16 PF had been in use "it has undergone several revisions, each based on item analysis, and a vast body of criterion evidence has accumulated (see Cattell, Eber & Tatsouka, 1970)," and by questioning the methods of factoring employed by Howarth & Browne in the studies on which their criticisms were based.

A major paper by Cattell et al., (1973) reported:

"As a part of a 25-year program, now nearing completion, designed to map the principal personality factor structures in objective behavioral expressions, there exist in the literature, at present, some 12 interlocking researches at the pre-adult level. A complete survey of these studies, bringing out the essential structural findings for child personality and making precise pattern comparisons with the adult source trait findings (Cattell et al., 1965), is about to appear (Cattell & Bolz, in preparation). Meanwhile, the present paper presents the results for three of the most important of these studies, not previously reported (p. 182)."

In these studies, seventy behavioural measures (T-data) and a dozen questionnaire scales (Q-data) were applied to samples of American, Japanese, and Austrian children in the 12 to 14 years age range, the objectives being to test the specific relations of Q- to T-data factors, and to check structure in Q-data across cultures. The authors concluded that "the specific Q-T personality factor alignments so far hypothesized (Cattell, 1955, 1957) are thus supported in three testable instances," and that "The frequently expressed doubts that primary personality source traits will preserve their form across cultures seem unjustified on the basis of present experimental evidence (pp. 209-210)."

In endeavours to identify major dimensions of personality it has been noted that similar factors sometimes appear at different levels (see Fig. 1). This phenomenon seems to be well-attested and was reported in a joint factorial study of the Guilford, Cattell and Eysenck Scales (Soueil, Eysenck & White,



1969) which found that though primary factors were non-replicable from one investigator's set of questions to another's, higher order or "super-factors" were replicable. This led to the suggestion that "for experimental work and also for practical and applied work super-factors rather than primary factors are more likely to give useful and worthwhile results (p. 250)."

Other investigators, using somewhat different procedures, have found different sets of replicable factors in the personality domain (Guilford & Zimmerman, 1956; Comrey & Jamieson, 1966).

While there is general agreement that it is possible to identify replicable factors for personality measurement, different sets of factors appear to emerge with the use of different methods of measurement, procedure, and/or analysis. Adcock et al. (1971) considered that despite the difficulties of measurement there is far more agreement with regard to basic personality dimensions than is commonly assumed and accepted that the major dimensions of personality represented by Eysenck's Neuroticism and Extraversion and Cattell's second-order equivalents were well-attested, but suggested that emphasis in research should in future be on the primary factors since these appeared to be ill-defined.

#### Cross-cultural Studies

Hall & Lindzey (1970) suggested that the generality of Cattell's factors was supported by the fact that these studies had ranged over different age groups (adults, adolescents, children) and different countries (U.S.A., Britain, Australia, France, Italy, Austria, and Japan) but gave no source for this statement (p. 389).

Cattell (1957) referred to a study then in progress comparing American, British, French, Italian, Indian, and Chinese groups for similarity of factor patterns of the 16 PF but suggested there might be both culture-free and culture-bound factors (p. 417).

Intercultural differences in score level on transcultural factors were found by Morris & Jones (1956) and by Cattell (1957) who reported that "British populations are significantly more schizothyme than Americans, and that French are more surgent than

either (p. 418)." Tsujioka & Cattell (1965) also reported on the "constancy and difference in personality structure and mean profile, in the questionnaire medium, from applying the 16 PF test in America and Japan." A diagram showing intercultural differences in anxiety (one of Cattell's second-order factors) between samples from United States, United Kingdom, Japan, Italy, France, and India appeared in Cattell (1965, p. 122).

Jamison & Comrey (1969) found a substantial correspondence between British and American personality factor structures based on variables derived from the Comrey Personality Scales, but also "many significant differences in factor scores between the two samples. The British were found to be more shy, submissive, compulsive, and hostile, and less dependent than their American counterparts (p. 57)."

It seems possible that at least some of these studies have assumed cross-cultural stability of personality factors which the respective tests were designed to measure in the original culture, and have merely tested for differences in cross-cultural scores on these factors. No preliminary research has been reported to ascertain whether individual items designed to load on a specific factor were in fact loading on that factor.

This point was well made by Adcock (1973) when reviewing the British Standardisation of the 16 PF (Saville, 1972):

"Differences in score distribution as between one country and another may be the result of real sample differences with regard to the variables measured or may be a function of differences with regard to what is being measured by the test items. In the latter case differences which the test user may be inclined to interpret as reflecting differing basic personality patterns may really be due to the failure of some items to tap the factor which they are supposed to represent (p. 43)."

Local norms may therefore merely mask the unsuitability of the test for local conditions, and Adcock suggested that "what is needed is a thorough analysis of the data obtained to provide evidence for a more adequate British version of the test (p. 43)."

Similar reasoning led to the decision to undertake this present item-factor analysis of the CPQ rather than proceeding directly to a New Zealand standardisation based on the possibly

erroneous assumption that the basic factor structure remained unchanged in a cross-cultural context.

However, in reporting on their 25-year programme, Cattell et al. (1973) report a substantial cross-cultural stability for U.I. 16, Assertiveness, U.I. 19, Independence, U.I. 21, Exuberance, U.I. 23, Capacity to Mobilize, U.I. 24, Anxiety, U.I. 25, Realism, U.I. 28, Asthenia, U.I. 32, Extraversion, and U.I. 33, Disway, and less definitely for some eight other factors (p. 210).

#### New Zealand Studies

Within the New Zealand setting Forbes & Dexter (1972) administered the 1970 version of the Comrey Personality Scales to a group of 179 university and teachers' college students and found that, while factor analysis confirmed that the basic structure of the scales was almost identical with that found in the American normative sample, the means of the two samples showed significant differences on all but one of the eight scales.

Adcock et al. (1971), in studying the suitability of the 16 PF items for New Zealand subjects, reported that their results though not complete appeared to reveal a lack of confirmation of the Cattell factors themselves and suggested that until further evidence was available recent research "is not so much undermining the factorial basis of the 16 PF as drawing attention to the weakness of the test as a practical instrument and particularly in a cross-cultural context (p. 3)."

Despite the fact that "all the recent evidence seems to indicate that the items themselves do not define the factors to which they are alleged to relate" Adcock et al. (1971) drew attention to their finding that the factors which did emerge were in many cases strikingly similar to the 16 PF factors as described. They suggested in explanation:

"that the present situation has arisen from the writing of items to measure factors established by other research and without a comprehensive re-analysis of the new items, a task which has been impracticable with such a large battery. If we add to this a commendable desire to choose items which are not too transparent to testee scrutiny we have an ideal situation for items to switch their allegiance to related factors when administered to subjects with a rather different reference frame. That this may be occurring may be often disguised by the

fact that the related factors are already involved in a second-order factor and lack of precision in items merely inflates this when second-order factors are calculated. Refinement of item form and allocation might well reduce the higher-order variance appreciably (p. 3)."

Ngairi V. Adcock (1973) reported the results of a test to assess the reliability of data obtained from a New Zealand student sample using the 16 PF:

"The procedure used was essentially that of comparing the number of significant intracorrelations for the test variables scored for each of the 16 PF traits with the number of significant correlations between such variables and variables relating to other traits. It is argued that, if all intracorrelations were significant, and no intercorrelations with variables from other traits occurred, the test would obviously be ideal, but, if the proportion of significant correlations within the trait cluster were less than that with other variables, the trait concerned would lack any capacity to discriminate."

Using a discrimination index based on this concept produced results which suggested that six of the 16 PF factors showed zero capacity to discriminate. A comparison with results from earlier studies conducted on the same sample led to the conclusion that any attempt to discriminate between university students on an individual basis with regard to the factors N, Q2, Q1, L and M would be highly misleading. A special weakness was found with regard to items relating to the anxiety factors. After noting that in most cases it was not so much the existence of the 16 PF factor which was in doubt but rather the scoring values to be attributed to the variables themselves, the author concluded "a large-sample study could well be expected to provide scoring patterns which would be far more useful for New Zealand subjects."

In view of the close relationship between the 16 PF and the CPQ, these findings confirmed the need for the present study to investigate whether the CPQ items were actually loading on the factors for which they were designed.

#### Claims regarding Usefulness

With regard to the usefulness of the CPQ in the field of personality measurement Cattell, starting from the axiom that in almost any field of endeavour personality and ability together decide the outcome, proceeded to make comprehensive and even sweeping claims for his personality measures in educational and social analyses:

"The tasks of the school psychologist cover a very wide field. Years ago he was mainly concerned with improvement examinations, predicting achievement (scholarship selection), and analysing the causes of backwardness. With the advent of the child guidance clinic and counseling, his work has come to embrace, in addition, essentially clinical problems and the tasks of vocational guidance, while to this has recently been further added the group dynamics of the classroom. Every one of these can receive help from good personality-source-trait measurement, but much of it is more appropriately studied in the Handbooks for the HSPQ and the CPQ since the 16 PF comes into action only at sixteen or seventeen years of age (Cattell, 1970, p. 229)."

Referring specifically to the CPQ, the Handbook (Porter & Cattell, 1959) listed some of these uses as:

"weighting the scores to get a better prediction of further school performance than could be obtained from abilities alone; similarly predicting special performances, e.g. artistic creativity, leadership; screening classes for children needing attention in a child guidance clinic, e.g. on anxiety level, withdrawal, etc; finding how closely the child's profile resembles certain maladjusted groups, etc; studying changes of personality under various educational influences; conducting research on the importance of various personality factors to various performances and preferences, and so on (p. 39)."

Several reports in addition to those cited in the bibliography of the CPQ Handbook, notably by Porter (1964, 1965), do support the usefulness of the CPQ in differentiating between normal and disturbed children or in identifying differing profiles of talented and under-achieving children.

Werner (1966) used the CPQ to measure the personality dimensions of 87 talented and underachieving boys and girls in elementary school and concluded that the CPQ does indeed discriminate talented from underachieving children, e.g. talented girls scored higher on dependency, conforming and conscientious factors, while underachieving girls scored higher on happy-go-lucky, heedless, and excitable, than the average 8-12 year old girls. Similar findings were reported by Wenning & Smouse (1967) who administered Form A of the CPQ to 5th and 6th grade children and a peer group attending a child guidance clinic and found that the clinic children scored lower on dominant, happy-go-lucky, and higher on restrained, guilt-prone, introverted, neurotic. Similar conclusions were reached by Rosenblast (1967) in his study of the personality dimensions of disadvantaged youth, again using the CPQ.



The closely-related ESPQ was the personality measure used by Barton, Dielman, & Cattell (1971) in their investigation of prediction of school grades from personality and I.Q. measures. They reported that "personality variables in general significantly increase the prediction of school grades over and above that amount of prediction achieved by using intelligence variables alone (p. 325)."

Using the ESPQ, Dielman, Cattell & Lepper (1971, p. 141) reported finding significant relationships between rated behaviour-problem dimensions and three ESPQ dimensions: Assertiveness (positively), Shrewdness (positively), and Intelligence (negatively).

As Adcock et al. (1971, p. 3) remarked of the 16 PF, the fact that the test "has given reasonable results in practice, especially where intercultural differences are at a minimum, can be understood from the evidence that the more important factors are well-attested, and the test can be assumed to be measuring these even if in a rather attenuated form."

#### Summary

To summarise, this review has looked at Cattell's procedures in arriving at his major personality factors; the downward extension of these factors to the CPQ by utilising items specifically designed to load on the factors already accepted by Cattell as representing the complete personality sphere; the various criticisms regarding such targetting and the methods of packaging and factor analysis employed. Cross-cultural differences have been found in scores on specific factors and even in the factors themselves, nevertheless it appears that the CPQ is in practice capable of differentiating between personality profiles both in the fields of social adjustment and academic achievement, though exactly what factors it is measuring and which items are consistently loaded on these do not appear to be completely clear.

In view of such evidence, the uncritical transposition of the CPQ to the New Zealand setting appeared unjustified without further investigation of three aspects: first, the cross-cultural stability of the factors themselves; secondly, whether the items

were consistently loading on the factors for which they were designed; and thirdly, whether local norms matched the original Table of Norms sufficiently closely to justify the present use of the CPQ for the purposes of the Psychological Service. The present study is a preliminary investigation of the first two aspects of this problem.

PART 2

PROCEDURE

SAMPLE

The sample was drawn from two state schools in Masterton, which is a town of almost 20,000 population in the centre of a farming district.

One of these was the Lansdowne School, a contributing school, that is, one comprising classes from new entrants at 5 years of age to Standard 4, approximately 10-11 years of age. All children in Standards 2, 3 and 4 were included in the sample. The school included pupils from various strata, being situated on the fringe of a highly-desirable housing area, near a main country route, not far from the main commercial area, and included a state housing settlement.

The other school was the Masterton Intermediate School, the only state school for Form 1 and 2 age levels in Masterton at the time, and the sample therefore comprised all Form 1 and 2 pupils attending state schools in Masterton.

The two Forms of the CPQ were administered to 412 children but 34 of these were discarded because only one Form of the questionnaire was completed due to absences and 4 because of incomplete answers to the questionnaire itself. The final sample therefore consisted of 374 children, 191 girls and 183 boys.

Age

Since the aim was to investigate the use of the CPQ in primary and intermediate schools the age range was not limited to that for which the CPQ was designed, i.e. 8-12 years of age, but included all children in Standards 2, 3, 4, and Forms 1 and 2. Ages ranged from 8 to 14 years with a mean of 11 years 5 months. Numbers and percentages of children of each age group are given in Table 2.



TABLE 2  
Number and Percentage of Children of each Year of Age

Age in Years	Number of Children	Percentage
8	20	5.3%
9	35	9.4%
10	57	15.2%
11	91	24.3%
12	103	27.6%
13	65	17.4%
14	3	.8%
Totals	374	100.0%

### School Class

Numbers and percentages of children in each school class are given in Table 3.

TABLE 3  
Number and Percentage of Children in each School Class

School Class	Number of Children	Percentage
Standard 2	50	13.4%
" 3	49	13.1%
" 4	71	19.0%
Form 1	97	25.9%
" 2	107	28.6%
Totals	374	100.0%

### Race

Only two categories were provided for, non-Maori and Maori. The only criterion was the child's own self-identification. The sample comprised 81.4% non-Maori, 18.6% Maori.

### Socio-Economic

Based on father's occupation, data were classified on a 6-point scale according to the Socio-Economic Index devised by Elley & Irving (1973) which is included in Appendix 1. The Index was based on national statistics on male occupations taken from the 1966 Census and "reflects (1) the degree of educational

preparation typically found amongst workers in each occupation, and (11) the extent to which society places a monetary value on their contribution (p. 3)."

Thirty-four subjects were not included in the calculation of percentages for the following reasons: information not given, father deceased, mother's occupation given. Where the mother was the principal bread-winner her occupation could have provided a similar guide to the socio-economic level, but since the Index was based only on male occupations such information unfortunately had to be excluded.

Numbers and percentages in each category are given in Table 4, together with percentages for New Zealand as a whole. The null hypothesis was that there was no significant difference between the sample and New Zealand as a whole. With a chi square of 6.4935 and 5 degrees of freedom, the null hypothesis could not be rejected at the customary .05 level. Thus there appeared to be no significant difference on the Socio-Economic Index between the composition of the sample and of New Zealand as a whole.

Level 1 of the Index contributed 5.0276 of the 8.4935, thus confirming the position revealed by Table 4, which shows that the percentage composition of the sample approximated that of New Zealand as a whole except at Level 1, higher professional and administrative work (Sample 11.2%; New Zealand 5.8%). This difference was almost matched by that at Level 6, unskilled repetitive work (Sample 7.1%; New Zealand 12.1%). The composition of the sample therefore differed from that of New Zealand as a whole mainly at the two extremes of the scale.

TABLE 4

Number and Percentage of Children on each Socio-Economic Level compared with the Percentage for New Zealand as a whole

Socio-economic level	Number in sample	Percentage	
		Sample	New Zealand
1	38	11.2%	5.8%
2	72	21.2%	19.3%
3	42	12.3%	13.3%
4	81	23.8%	28.2%
5	85	24.4%	21.3%
6	24	7.1%	12.1%
Totals	340	100.0%	100.0%

### INSTRUMENT

The Children's Personality Questionnaire (CPQ), published 1963 by The Institute for Personality & Ability Testing (IPAT), Champaign, Illinois, was designed by Porter & Cattell to measure scores on 14 factors, developed as a downward extension of the 16 PF. It consists of two Forms, A and B, each comprising two Parts. Each Part consists of 70 items, 65 of which offer two choices, and 5 of which offer three choices and are designed to measure an Intelligence factor. The 1963 edition of the CPQ was used. Particulars of test design and use are given in the Handbook (Porter & Cattell, 1959) and the Interim Manual (Porter & Cattell, 1963). A copy of the CPQ, Forms A and B, is included in Appendix 2.

There are separate answer sheets (Appendix 3) which are the same for both Forms, on which the child marks the box corresponding to his choice. A scoring stencil is provided for each Form, yielding a raw score on each factor. These raw scores are converted to sten scores by using the Tabular Supplement with Norms for the CPQ, and an individual personality profile recorded on another sheet, the "CPQ Test Profile." This records the raw scores for each factor in all four Parts of the test, the sten score calculated on the total of these for each factor, and includes a panel on which the profile is graphed.

Since this investigation was an item-factor analysis the scoring stencils were not used nor were any individual scores calculated. The data were transferred directly from the answer sheets on to punched cards.

The following changes and additions were made to the answer sheet:

1. Substitution of an identity number for the child's name since the school authorities preferred anonymity to be preserved;
2. State whether Maori or non-Maori;
3. State father's occupation.

## METHOD

Detailed instructions for administration of the questionnaire are given in both the Handbook (p. 13) and the Interim Manual (p. 2). These instructions were modified for the purpose of this investigation as appears below.

First the Principals of the two schools were interviewed together and the following points, mainly in the interests of uniformity of administration, were presented in writing and discussed:

1. All classes were to answer the questionnaire during one of the morning periods of school.
2. The normal class teacher was to administer the questionnaire.
3. Since teachers of younger children would need to read the questionnaire aloud, it was to be read to all children in Standards 2, 3, and 4. The children in the intermediate school read the questionnaire for themselves. (The Handbook states that validity is not affected, p. 14, though no supporting data are given).
4. Since younger children have a shorter attention span, the children in Standards 2, 3, and 4 were to be given a 10-minute break between the two Parts of each Form of the questionnaire.
5. There was to be at least one day's break between administration of Form A and Form B, and each child was to answer both Forms.
6. A general information sheet about the investigation was provided for the teachers who would be administering the questionnaire (Appendix 4).
7. A page of instructions for administration was provided for each teacher: one version for the primary school teachers and another, slightly amended, for the intermediate school teachers. Both versions are included in Appendix 5 (A and B).

#### ANALYSIS

The data were transferred to punched cards, items being scored 1 for selection of the left-hand choice on the answer sheet, that is, the first half of the item, and 2 for selection of the right-hand choice. There were no missing data. The intelligence items presented a special case in that they offered three choices whereas all other items offered only two. Thus, in order to simplify analysis, it was decided to omit the intelligence factor and its respective items from the analysis. The two correlation matrices therefore consisted of 130 items from each of the two Forms (A and B) administered to 374 subjects (191 girls and 183 boys).

The actual analysis was carried out at the University of Auckland by a programme adapted to accommodate the 130 variables and perform a principal components factor analysis and Varimax rotation, with communalities in the diagonals, and proceeding to oblique rotation. Hence, the loadings referred to in the discussion are oblique primary factor loadings. Significant loading for interpretation purposes was arbitrarily defined as being .30 or greater, positive or negative. The procedure was carried out separately on Form A (Parts A1 and A2) and Form B (Parts B1 and B2) and the resulting matrices of oblique primary factor loadings are shown in Appendix 6 (A and B).

With a large correlation matrix the principal components method (Hotelling, 1933) has several advantages and the laborious computing procedures required have been eliminated by the advent of high-speed electronic computers. Kerlinger (1965) comments that this method is:

"mathematically satisfying because it yields a mathematically unique solution of an R matrix. Perhaps its major solution feature is that it extracts a maximum amount of variance as each factor is calculated. In other words, the R matrix is expressed in the smallest number of factors by the method. . . . It is strongly recommended, therefore, that social scientific and educational researchers use the principal factors method (p. 661)."

Cattell (1952) pointed out that because of the great fraction of variance taken out in the first few factors this method "permits better calculations of scores or correlations than would be possible for the same number of first factors in the centroid extraction (p. 132)." For the same reason the first few factors

"may, for certain purposes, be used to summarise the original data (Lawley & Maxwell, 1971, p. 2)."

Since the GPQ was designed for 14 factors, and since the items designed to load on the Intelligence factor had been omitted, it was decided to take out 13 factors. In Form A the extraction of 13 factors brought the cumulative percent of trace to 36.0058 (Appendix 7 A) and in Form B to 32.3705 (Appendix 7 B).

Orthogonal rotation, which keeps the angles between the factor axes at  $90^\circ$  and therefore provides zero correlation between factors, may be more mathematically satisfying than oblique rotation. However, it seems unrealistic to assume such complete independence of personality factors. Cattell (1952, p. 210) remarks: "Orthogonality and positiveness are merely tidiness compulsions in the mathematical, but not scientific, mind." To demonstrate the necessity of oblique rotation Cattell & Dickman (1962) devised a dynamic model of physical influences using 80 balls selected to cover the range of size, weight, and height of rebound. They showed that a simple structure of high significance existed in the data and was attainable by oblique rotation but not by orthogonal rotation.

Oblique rotation, in which the angles between axes may become acute or obtuse angles, is an attempt to locate factors which conform more closely to psychological "reality." Kerlinger (1965) states: "There is no doubt that factor structures can be better fitted with oblique axes and the simple structure criteria<sup>1</sup> better satisfied (p. 670)." The matrices showing the correlations among the oblique primary factors for each of Forms A and B separately are given in Tables 5 A and 5 B. The correlations among the GPQ factors, which were measured on the full length test, Form A plus Form B, are given in Table 5 C.

Discussing the degree of correlation Cattell (1952) states:

"Experience shows that in the psychological realm, the free pursuit of inherent factor structure rarely finishes with  $r$ 's of more than 0.4 among the reference vectors, and the majority of  $r$ 's are below 0.3. Sociological and physiological factorizations have yielded some  $r$ 's in the region of 0.6 and 0.8, but still the majority lie below

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<sup>1</sup>Thurstone's (1947, p. 335) requirements for simple structure in effect maximise the number of zero loadings in the rotated factor matrix.



0.3 . . . . To allow them to become too highly correlated is to run the risk of (1) confusing or fusing two distinct factors so that one dimension of the space is lost, (2) leaving too much of the factor space unexplored for possible hyperplanes, and (3) losing the guiding influence which one factor can exert upon another (p. 211)."

The low correlations between the oblique factors in the present investigation give some grounds for confidence that these dangers have been avoided and indicate that the factors obtained are clearly distinct from one another and therefore more likely to provide adequate coverage of the total factor space.

There was, however, a marked difference in the number of correlations greater than 0.30 occurring among factors from Form A and Form B. Whereas Table 5 A, showing correlations among factors from Form A, lists only two correlations greater than 0.30, Table B, showing correlations among factors from Form B, lists six greater than 0.30 including one of 0.50.

Correlations among the original Cpq factors, which were extracted from the combined Forms A and B, are considerably higher (Table 5 C). There are twenty-six greater than 0.30, and six of these are greater than 0.40, though none as great as 0.50. Since four of these correlations greater than 0.40 occur between the factor Q4 and other factors, the question arises whether the factor Q4 has been permitted to become too oblique. However, the fact that of these correlations two are negative and two positive, and that all occur within a range of 0.05 (-0.41 with G, 0.42 with H, 0.44 with D, and 0.46 with Q3) indicates that at least Q4 is well placed in the factor space between the other four factors.

The Handbook states that "The A and B Forms are then made by putting even items in A and odd items in B, to ensure factor loading equivalence of the A and B scales (p. 8)." Given this method of construction, separate analysis of Forms A and B should yield the same factors as a joint analysis of the two Forms combined, and, presumably, similar correlations between those factors. If items are consistently loading on the factors for which they were designed. The present investigation found that this does not appear to be the case.

TABLE 5 A  
Correlation among Oblique Primary Factors,  
Form A (Parts A<sub>1</sub> and A<sub>2</sub>)

	A1	A2	A3	A4	A5	A6	A7
A1	1.00	-0.24	-0.15	0.19	0.00	-0.11	-0.14
A2	-0.24	1.00	0.29	-0.31+	-0.28	0.20	0.05
A3	-0.15	0.29	1.00	-0.14	-0.12	-0.03	0.05
A4	0.19	-0.31+	-0.14	1.00	0.12	0.02	0.03
A5	0.00	-0.28	-0.12	0.12	1.00	-0.17	-0.10
A6	-0.11	0.20	-0.03	0.02	-0.17	1.00	0.06
A7	-0.14	0.05	0.05	0.03	-0.10	0.06	1.00
A8	-0.11	-0.11	-0.00	0.04	0.14	0.08	-0.02
A9	-0.23	0.03	0.00	-0.16	0.13	-0.09	-0.08
A10	0.01	-0.30+	-0.21	0.28	0.07	0.14	0.08
A11	-0.28	-0.15	-0.09	0.00	0.22	-0.03	-0.11
A12	0.11	0.00	0.05	-0.01	-0.13	0.00	-0.14
A13	0.23	-0.05	-0.17	0.13	-0.11	0.08	0.09

	A8	A9	A10	A11	A12	A13
A1	-0.11	-0.23	0.01	-0.28	0.11	0.23
A2	-0.11	0.03	-0.30+	-0.15	0.00	-0.05
A3	-0.00	0.00	-0.21	-0.09	0.05	-0.17
A4	0.04	-0.16	0.28	0.00	-0.01	0.13
A5	0.14	0.13	0.07	0.22	-0.13	-0.11
A6	0.08	-0.09	0.14	-0.03	0.00	0.08
A7	-0.02	-0.08	0.08	-0.11	-0.14	0.09
A8	1.00	-0.08	0.26	0.25	-0.04	-0.03
A9	-0.08	1.00	-0.04	0.16	-0.06	-0.12
A10	0.26	-0.04	1.00	0.12	-0.03	0.23
A11	0.25	0.16	0.12	1.00	-0.09	-0.13
A12	-0.04	-0.06	-0.03	-0.09	1.00	-0.08
A13	-0.03	-0.12	0.23	-0.13	-0.08	1.00

**Note:** Factors showing a correlation .30 are A2 with A4 (-0.31) and A2 with A10 (-0.30). Checking on A4 with A10 we find a correlation of 0.28, approaching the .30 criterion.

Significant correlations are indicated by a +



TABLE 5 B

Correlation among Oblique Primary Factors,  
Form B (Parts B<sub>1</sub> and B<sub>2</sub>)

	B1	B2	B3	B4	B5	B6	B7
B1	1.00	-0.10	0.05	-0.08	0.33+	0.16	0.11
B2	-0.10	1.00	-0.00	-0.06	-0.04	0.02	0.32+
B3	0.05	-0.00	1.00	0.18	0.08	-0.15	0.01
B4	-0.08	-0.06	0.18	1.00	-0.13	-0.14	-0.10
B5	0.33+	-0.04	0.08	-0.13	1.00	0.04	-0.04
B6	0.16	0.02	-0.15	-0.14	0.04	1.00	0.00
B7	0.11	0.32+	0.01	-0.10	-0.04	0.00	1.00
B8	-0.37+	0.15	-0.03	0.17	-0.29	-0.02	-0.00
B9	-0.06	0.17	-0.23	-0.24	0.00	0.14	0.05
B10	-0.03	0.07	-0.05	0.17	-0.26	0.08	0.13
B11	-0.39+	0.18	-0.05	0.01	-0.14	-0.03	0.04
B12	-0.08	0.07	-0.33+	-0.28	-0.00	0.11	0.00
B13	-0.01	-0.01	-0.14	-0.16	-0.06	-0.03	0.04
	B8	B9	B10	B11	B12	B13	
B1	-0.37+	-0.06	-0.03	-0.39+	-0.08	-0.01	
B2	0.15	0.17	0.07	0.18	0.07	-0.01	
B3	-0.03	-0.23	-0.05	-0.05	-0.33+	-0.14	
B4	0.17	-0.24	0.17	0.01	-0.28	-0.16	
B5	-0.29	0.00	-0.26	-0.14	-0.00	-0.06	
B6	-0.02	0.14	0.08	-0.03	0.11	-0.03	
B7	-0.00	0.05	0.13	0.04	0.00	0.04	
B8	1.00	0.01	0.21	0.27	-0.03	-0.07	
B9	0.01	1.00	-0.06	0.06	0.50+	0.19	
B10	0.21	-0.06	1.00	0.07	-0.11	-0.15	
B11	0.27	0.06	0.07	1.00	0.09	-0.00	
B12	-0.03	0.50+	-0.11	0.09	1.00	0.21	
B13	-0.07	0.19	-0.15	-0.00	0.21	1.00	

Note: Factors showing a correlation .30 are:

B1 with B5 0.33      B5 with B8 -0.29      B5 with B11 -0.14  
 B1 with B8 -0.37      B8 with B11 0.27  
 B1 with B11 -0.39  
 B2 with B7 0.32  
 B12 with B3 -0.33      B3 with B9 -0.23  
 B12 with B9 0.50

Significant correlations are indicated by a +

TABLE 5 C

Correlations among CPQ Factors  
(Measured on Full Length Test, Form A plus Form B)

	A	B	C	D	E	F	G
A	1.00						
B	0.07	1.00					
C	0.12	0.25	1.00				
D	-0.38	-0.28	-0.15	1.00			
E	-0.14	0.10	0.07	0.33	1.00		
F	-0.15	0.01	0.13	0.19	0.33	1.00	
G	0.18	0.19	0.15	-0.33	-0.18	0.00	1.00
H	0.10	0.19	0.24	-0.13	0.06	0.26	0.27
I	0.32	0.07	-0.05	-0.29	-0.43	-0.39	0.21
J	-0.13	-0.09	-0.09	0.32	0.03	-0.03	-0.18
N	-0.35	-0.16	-0.07	0.39	0.37	0.22	-0.29
O	-0.14	-0.19	-0.31	0.23	-0.06	-0.15	-0.36
Q3	0.30	0.18	0.13	-0.35	-0.29	-0.17	0.37
Q4	-0.29	-0.14	-0.13	0.44	0.38	0.19	-0.41
	H	I	J	N	O	Q3	Q4
A							
B							
C							
D							
E							
F							
G							
H	1.00						
I	-0.15	1.00					
J	-0.23	-0.03	1.00				
N	-0.15	-0.38	0.26	1.00			
O	-0.37	0.07	0.20	0.20	1.00		
Q3	0.13	0.33	-0.22	-0.48	-0.25	1.00	
Q4	-0.18	-0.19	0.25	0.42	0.30	-0.46	1.00

**Note:** B (Intelligence) is the only factor not showing a correlation of .30 with at least one other factor.  
(From CPQ Handbook, p. 38)

PART 3

IDENTIFICATION AND DISCUSSION OF FACTORS

Since the interpretation of a factor involves some comparison with the CPQ factors which the questionnaire was designed to measure a description of these is given in Table 6 (see p. 32). Reference is also made to the somewhat fuller descriptions of these factors given in the CPQ Handbook (Porter & Cattell, 1959, pp. 25-37). Cattell and his associates claim to have discovered factors in the personality realm which remain reasonably invariant concepts over repeated studies. These have been coded with U.I. (Universal Index) numbers. Since this system of numeration has been revised it should be noted that the reference to the U.I. numbers in Table 6 is to Cattell (1957, p. 830, Table A 8). An "L" denotes that the factor was derived from life record data, and a "Q" denotes that it was derived from questionnaire data.

The CPQ factor on which each item was designed to load, and the factors on which each item actually did load in the present investigation are given in Table 7. Note that the prefixes "A" or "B" denoting which Form of the CPQ the factor was derived from have been omitted for the sake of clarity. Tables 8 A and 8 B provide a list of all Form A and B factors with their titles keyed to the numbers used in Table 7.

TABLE 6

Titles and Symbols for Designating the Fourteen Personality Dimensions Measured by the CPQ

Designation	Universal Index Number	Technical Title (Popular Title in Parentheses)
A	U.I.(L) 1	Schizothymia-versus-Cyclothymia (Reserved, stiff-versus-Easy going)
B	U.I.(L) 2	Mental defect-versus-General Intelligence (Less intelligent-versus-More intelligent)
C	U.I.(L) 3	Dissatisfied emotional instability-versus Ego strength (Emotionally unstable-versus-Emotionally mature)
D	U.I.(L) 4	Phlegmatic temperament-versus-Excitability (Phlegmatic-versus-Excitable)
E	U.I.(L) 5	Submissiveness-versus-Dominance (Submissive-versus-Dominant)
F	U.I.(L) 6	Desurgency-versus-Surgency (Serious-versus-Happy go lucky)
G	U.I.(L) 7	Lack of rigid internal standards-versus-Super ego strength (Frivolous-versus-Persevering)
H	U.I.(L) 8	Threctia-versus-Parmia (Shy-versus-Venturesome)
I	U.I.(L) 9	Harria-versus-Premia (Toughminded-versus-Tender minded)
J	U.I.(L) 10	Zeppia-versus-Coasthenia (Vigorous-versus-Internally restrained)
N	U.I.(L) 14	Naturalness-versus-Shrewdness (Simple-versus-Shrewd)
O	U.I.(L) 15	Confident adequacy-versus-Guilt proneness (Complacent-versus-Self reproaching)
Q3	U.I.(Q) 18	Poor self sentiment formation-versus-High strength of self sentiment (Lax-versus-Self controlled)
Q4	U.I.(Q) 19	Low ergic tension-versus-High ergic tension (Composed, relaxed-versus-Driven, tense)

Adapted from Porter & Cattell (1959, pp. 6, 7, 25-37)

TABLE 7

The Form A or B Factor on which each Item is loaded and the CPQ Factor on which each was designed to load (omitting the Intelligence Items)

Item No.	Form A Factor		Form B Factor		CPQ Factor
	Part A <sub>1</sub>	Part A <sub>2</sub>	Part B <sub>1</sub>	Part B <sub>2</sub>	
1	3	2	7, 9	2, 6	A
2	10, 13	11	3	11	A
3	3, 7	-	-	11	C
4	11	2, 7	3	5	C
5	2, 8	-	2	13	A
6	5	2	3, 12	3	C
7	2	5	9, 12	-	A
8	10	2	-	2, 3	C
9	5	11	-	4	A
10	5	11	12	2	C
12	3	3, 8	6	1	D
13	2, 13	1	6	3	E
14	3	-	5, 7	6	F
16	9	2	-	1	D
17	1	2	1	-	E
18	12	1, 3, 11	4, 5	5	F
20	2, 5	12	-	-	D
21	3	13	7	2, 5	E
22	3	7, 11	1, 6	6	F
24	12	2, 13	-	1	D
25	1, 3	3	-	7	E
26	1	1	-	8	F
28	8	3, 5	13	6	D
29	3, 6	-	9, 12	6	E
30	1	1	-	8	F
31	3, 4	3, 4	3	9	G
32	2, 8	-	5	2	H
33	1	1	2	5, 9	I
34	1	12	4	4	J
35	2	-	7, 12	7	G
36	4	9	2	9, 13	H
37	1	4	5	2, 4	I
38	-	9	12	5	J
39	-	-	2, 5	11	G
40	5, 13	9	6, 13	-	H

Item No.	Form A Factor		Form B Factor		CPQ Factor
	Part A <sub>1</sub>	Part A <sub>2</sub>	Part B <sub>1</sub>	Part B <sub>2</sub>	
41	-	1	11	5	I
42	2	-	-	3	J
43	3	3	-	13	G
44	5	6	13	2	H
45	4	1, 4	2, 6	5	I
46	12	6	2	6	J
47	8	-	10	13	G
48	6	11	2	-	H
49	1	1	-	2, 9	I
50	6, 10	6	2	-	J
51	1, 10, 13	4, 9	1	-	N
52	11	11	-	12	O
53	2	10	13	1, 5	Q3
54	2, 9	1, 13	1	4	Q4
55	1, 10	4	7	-	N
56	7	10	2, 4	9	O
57	8	4	11	-	Q3
58	9	3	9	1	Q4
59	-	2	8	-	N
60	7	2, 5	2	11	O
61	4	-	1	1	Q3
62	2	3	11	10	Q4
63	3	4	7	8	N
64	7, 8, 11	8	11	3	O
65	3	-	-	6	Q3
66	3	12	6	8	Q4
67	3	4	1	1, 10	N
68	2	11	4	10	O
69	9	10	1	13	Q3
70	6	3	6	5	Q4

**Notes:** In the text, Form A factors are denoted by prefixing the number with "A", and Form B factors with "B". In the above Table these prefixes have been omitted for the sake of clarity.

TABLE 8 A

Titles and Symbols for Designating the Thirteen Personality Factors obtained by Item-factor Analysis of Form A of the GPQ

Designation	Title
A1	Assertiveness
A2	Conformity
A3	Dependency
A4	(low pole of) Serious-mindedness
A5	Shyness
A6	Security
A7	(low pole of) Confidence
A8	Self-satisfaction
A9	Irresolution
A10	Self Sentiment
A11	Defeatism
A12	Placidity
A13	Participation

TABLE 8 B

Titles and Symbols for Designating the Thirteen Personality Factors obtained by Item-factor Analysis of Form B of the GPQ

Designation	Title
B1	Self-control (Conformity)
B2	Self-reproach
B3	(low pole of) Confidence
B4	(low pole of) Sociability
B5	Tender-mindedness
B6	Emotional Maturity
B7	Consociation
B8	Laxity
B9	Serious-mindedness
B10	Egocentricity
B11	Passivity
B12	Realism
B13	Friendliness



The number of items in each Form which loaded on no factors, or on one, two or three factors is shown in Table 9.

TABLE 9  
Number of Items which Loaded on 0, 1, 2, 3 Factors

	Form A	Form B
Number of items loading on 0 factors	15	24
" " " " " 1 factors	89	85
" " " " " 2 factors	23	21
" " " " " 3 factors	3	0
	<u>130</u>	<u>130</u>

The number of items which did not load on any factors, especially in Form B, indicates that, if the emergent factors appear to be useful personality measures, such items should be either revised or omitted when assessing children in terms of the emergent factors. The considerable number of items which showed significant loadings on only one factor, however, confirms the independence of such items and their usefulness as measures of their respective factors.

A feature of the original CPQ design was that factors were balanced for "response sets" (Porter & Cattell, 1959, p. 8) so that responses contributing to the factor were symmetrically distributed as shown in Table 10. The distribution of responses in the present investigation is shown in Table 11 for Form A, and Table 25 (p. 60) for Form B. Only Factors A1, A4, B5, B9, and B11 are well balanced.

In the following discussion, factors extracted from Form A are referred to by the number denoting the order in which they were extracted, that is, in descending order of the amount of total variance they contribute, prefixed by "A". Factors extracted from Form B are numbered similarly, prefixed by "B". Note that any Form A factor does not necessarily correspond to the Form B factor bearing the same number. Since there is no need to refer to the different Parts of each Form, no confusion should arise between Factor A 1 (denoting the first factor extracted from Form A data) and Part A<sub>1</sub> (denoting Part A<sub>1</sub> of Form A of the CPQ). Porter & Cattell's CPQ factors are referred to by the letter allocated to them, as shown in Table 6, prefixed by "CPQ". Table 6 lists these alphabetically in descending order of amount of variance explained (Cattell, 1964, p. 31).

TABLE 10

Arrangement of Items in Test Forms with Respect to Factors  
Position of High Scoring Response  
 CHILDREN'S PERSONALITY QUESTIONNAIRE

Factor	Form A (Parts A <sub>1</sub> and A <sub>2</sub> )		Form B (Parts B <sub>1</sub> and B <sub>2</sub> )	
	Left-hand	Right-hand	Left-hand	Right-hand
A	1, 9	2, 5, 7	2, 5, 7	1, 9
C	3, 10	4, 6, 8	4, 6, 8	3, 10
D	12, 16, 28	20, 24	20, 24	12, 16, 28
E	17, 25	13, 21, 29	13, 21, 29	17, 25
F	14, 18, 22	26, 30	26, 30	14, 18, 22
G	35, 47,	33, 41, 49	33, 41, 49	35, 47
H	32, 44, 48	36, 40	36, 40	32, 44, 48
I	37, 45	33, 41, 49	33, 41, 49	37, 45
J	34, 38, 42	46, 50	46, 50	34, 38, 42
N	51, 53, 67	59, 63	59, 63	51, 55, 67
O	64, 68	52, 56, 60	52, 56, 60	64, 68
Q3	57, 65	53, 61, 69	53, 61, 69	57, 65
Q4	54, 58, 62	66, 70	66, 70	54, 58, 62

Adapted from Tabular Supplement with Norms for the GPQ, p. 24

In discussing each factor which emerged in the present investigation the items which have significant loadings on that factor are first tabulated. A significant loading has been arbitrarily defined as being 0.30 or greater, positive or negative. For each item there is given its number on the questionnaire, prefixed by either 1 or 2 denoting Part 1 or Part 2 of the Form under discussion, its loading on the factor, the actual wording of the item, and the GPQ factor on which the item was originally designed to load.

The items were designed by Porter & Cattell as bipolar variables. In some studies using dichotomous items (Cattell & Coan, 1959; Cattell, 1963) verbal labels have been adjusted to signs so that for each item the second alternative response represents the response contributing to the particular pole of the factor under discussion. It is important to note that this has not been done in the present investigation. The items are given in the exact form in which they appear in the questionnaire, and the present analysis was

TABLE 11

Arrangement of Items in Test Forms with Respect to Factors

Position of High Scoring Response

FORM A (Parts A<sub>1</sub> and A<sub>2</sub>)

Factor	Part	Left-hand Position	Right-hand Position
1	A <sub>1</sub>	17, 25, <u>33</u> , <u>49</u> , 51, 55	<u>26</u> , <u>30</u> , 34, 37
	A <sub>2</sub>	18, <u>33</u> , <u>41</u> , <u>49</u>	<u>13</u> , <u>26</u> , <u>30</u> , 45, 54
2	A <sub>1</sub>	13, 20, 32, 35	5, 7, 42, 53, 54, 62, 68
	A <sub>2</sub>	1, 24, 59, 60	4, 6, 8, 16, 17
3	A <sub>1</sub>	1, 21, 29, 63, 65, 66	3, <u>12</u> , 14, 22, <u>25</u> , <u>31</u> , <u>43</u> , 67
	A <sub>2</sub>	70	<u>12</u> , <u>18</u> , <u>25</u> , 28, <u>31</u> , <u>43</u> , <u>58</u> , 62
4	A <sub>1</sub>	<u>31</u> , 61	36, <u>45</u>
	A <sub>2</sub>	<u>31</u> , 51, 55, 67	37, <u>45</u> , 57, 63
5	A <sub>1</sub>	6, 40	9, 10, 20, 44
	A <sub>2</sub>	7, 28	60
6	A <sub>1</sub>	29, 48, <u>50</u> , 70	
	A <sub>2</sub>	44, 46, <u>50</u>	
7	A <sub>1</sub>	64	3, 56, 60
	A <sub>2</sub>	4	22
8	A <sub>1</sub>	32	5, 28, 47, 57, <u>64</u>
	A <sub>2</sub>		12, <u>64</u>
9	A <sub>1</sub>	16, 54, 58, 69	
	A <sub>2</sub>	36, 38, 40, 51	
10	A <sub>1</sub>	2, 51, 55	8, 50
	A <sub>2</sub>	53, 56, 69	
11	A <sub>1</sub>	4, 64	<u>52</u>
	A <sub>2</sub>	2, 68	9, 10, 18, 22, 48, <u>52</u>
12	A <sub>1</sub>	18, 24, 46	
	A <sub>2</sub>	20, 34, 66	
13	A <sub>1</sub>	40	2, 13, 51
	A <sub>2</sub>	54	21, 24

**Note:** Similarly-numbered items which load on the same factor in both Parts of the Form are underlined. In all cases, such items have loaded in the same direction.

designed so that a negative loading indicates selection of the first alternative response by the subject and a positive loading indicates selection of the second alternative response. Thus to obtain a description of the responses contributing to the particular pole of the factor under discussion, it is necessary to read the first half of the item where a negative loading is shown, and the second half of the item where a positive loading is shown.

A brief interpretation of each emergent factor includes discussion of items loading on that factor, noting the CPQ factor on which these were designed to load, and making particular mention of any "double" items, that is, similarly-numbered items which load on the same factor in both Parts of the Form under discussion (the CPQ was designed so that all similarly-numbered items should load on the same CPQ factor).

A list is then given showing the number of items attracted from individual CPQ factors and finally the number of high-loading items which also loaded on other emergent factors in the same Form.

In view of the specific aims of the present investigation, discussion of the emergent factors has been deliberately limited to comparison with the CPQ factors as described in the CPQ Handbook.

In naming the emergent factors a single verbal label has been preferred to the two separate bipolar labels used for the original CPQ factors. This single verbal label is intended to indicate a personality dimension on which the subject may be regarded as showing more or less of the quality represented by that particular factor. It should be noted that in the discussion of each factor, therefore, the description relates to either the "high" or "low" pole of that factor.

It will be noted that no attempt has been made to establish whether the alternative responses to each item do in fact represent the "high" and "low" poles of the factor; this was felt to be outside the scope of the present investigation.

TABLE 12  
FORM A, FACTOR A1 - ASSERTIVENESS

Item No.	Loading	Wording of Item	CPQ Factor
1 30	0.7757	Would you rather be a tap dancer or a soldier.	F
1 26	0.7103	Would you rather work with books in a library or be a General in the Army	F
2 13	0.6129	Would you rather be a school teacher or a great hunter	E
2 30	0.5650	Would you rather be the captain of a peaceful ocean liner or captain of a sub. in war	F
2 49	-0.5547	Would you rather be a space pilot or an artist	I
2 33	-0.5248	Can you touch a big bug or would you dislike to touch one	I
1 37	0.5192	Would you rather collect stamps or play football	I
1 33	-0.4860	Which story would you like better, one about killing Indians or how Indians made clothing.	I
1 49	-0.4788	In a play would you rather be a speed pilot or a famous writer	I
2 54	0.4261	At a loud bang, do you jump or just look around	Q4
2 41	-0.4173	Would you rather be an animal doctor or a piano player	I
1 55	-0.4055	If you were a wild animal, would you rather be a lion or a fast horse	N
1 51	-0.4030	Would you like to go fishing by yourself or play games with children.	N
2 45	0.3999	When you hear a sad story, do tears come to your eyes or are you not bothered	I
2 18	-0.3929	Do you think you could learn to fly an airplane or would it be too difficult	F
2 26	0.3840	Would you rather own a small, friendly dog or a big, powerful dog	F
1 25	-0.3799	Would you like better to have bears here now or to hear stories about bears	E
1 17	-0.3718	Would you rather hunt birds or draw pictures of birds	E
1 34	0.3287	Do loud noises scare you or do you just laugh at them	J

#### FACTOR A1 - ASSERTIVENESS

This factor included four "double" items, which accounted for seven out of the nine highest loadings. Two of these (1 30 and 2 30; 1 16 and 2 26) were designed to load on CPQ factor F (Serious-versus-Happy go lucky) from which one other item (2 18) also appeared. The other two (1 33 and 2 33; 1 49 and 2 49) were from CPQ factor I (Tough minded-versus-Tender minded) from which three other items (1 37, 2 41, 2 45) also appeared. Thus, with the exception of item 2 13 from CPQ factor E (Submissive-versus-Dominant), the highest three loadings were from CPQ factor F and the next five from CPQ factor I. Table 5 C shows a correlation of -0.43 between CPQ factors I and E.

No other items from CPQ factors F or I appeared clustered together in any other Form A factor in the present investigation, although item 1 22 from CPQ factor F supplied the highest loading on Factor A3.

This raises the question whether limiting extraction to 13 factors has caused a fusion of what are actually two dimensions as suggested by Cattell (1963, p. 227). This suggestion is supported by the fact that seven of the ten items designed to load on CPQ factor I and five of the ten items designed to load on CPQ factor F, appeared here. Further, the signs of all the "double" items were consonant with the original bipolar design of the CPQ, that is, items which were designed to load in the same direction on the original CPQ factor did in fact load in the same direction on the Form A factor."

The face-significance of the items reveals that the subject scoring highly on Factor A1 is self-reliant, takes responsibility, is tough, and practical, providing a good match with CPQ factor I (CPQ Handbook, p. 32). Despite the number of items attracted from CPQ factor F, Factor A1 bears little resemblance to the description of CPQ factor F (CPQ Handbook, p. 29), and in fact more closely resembles CPQ factor E (CPQ Handbook, p. 28) from which it attracted only one highly-loaded item, though two other items appeared with lower, but still significant, loadings.

The highest four loadings include an element of belligerence, which appears logically related to the qualities of self-reliance and toughness, and the highest nine represent characteristics popularly associated more with boys than girls. The CPQ Handbook notes that on CPQ factor I, which is named in the opposite direction from Factor A1, "girls score at a significantly higher level than boys (p. 32)."

Correlation of Factor A1 with sex of subjects could be further investigated. However, in view of the sex ratio of the sample (191 girls to 183 boys) and the fact that Factor A1, being the first extracted, represents the factor accounting for the greatest proportion of the total variance, it seems unreasonable to suggest that this factor is merely a function of the sex composition of the sample.

In view of the predominance of items actually designed to load on CPQ factor I, the fact that CPQ factor E seems otherwise unrepresented, and bearing in mind the face-significance of high-loading items, it appears that this Factor A1 could best be regarded as an amalgam of the low scoring pole of CPQ factor I (Tough minded) and the high scoring pole of CPQ factor E (Dominant). In naming Factor A1 both these terms have been avoided to prevent implying that Factor A1 is synonymous with either of the CPQ factors. The term "Assertiveness" has been selected as being sufficiently neutral morally to accommodate the "good" aspect of leadership potential as well as the "bad" aspect of an inclination to bullying.

Items attracted from CPQ factors:

I (seven items), F (five items), E (three items), N (two items), J (one item), and Q4 (one item).

Items loading on other Form A factors:

None of the first nine items loaded on any other Form A factor.



Table 13

FORM A, FACTOR A2 - CONFORMITY

Item No.	Loading	Wording of Item	CPQ Factor
1 13	-0.6403	Does your teacher think you are good at sitting still or that you run around too much	E
2 8	0.6299	Do you make a lot of mistakes or just a few	C
1 42	0.5816	Do teachers scold you or think you are all right	J
2 1	-0.5783	Do you finish your school work quickly or does it take you too long	A
1 68	0.5370	Do people think that you make many mistakes or few mistakes	O
1 53	0.4888	School life is hard or easy	Q3
2 24	-0.4711	In class, do you sit quietly or do you like to move about	D
1 7	0.4503	Do you work slowly or quickly	A
2 6	0.4382	Do grown-ups think you are naughty or well-behaved	C
2 16	0.4333	Does teacher sometimes say you are careless and untidy or does she never say so	D
2 17	0.4176	On a playground do you make a lot of noise or play quietly, without so much noise	E
2 59	-0.3908	Are you good because you like to be good or because you get into trouble if you are bad	N
1 32	-0.3808	Are you doing as well as you should in your work or could you do better	H
1 54	0.3756	In your school work do you often forget or do you feel sure you can remember things	Q4
2 60	-0.3713	Are you getting along well or do you have many problems	O
1 35	-0.3452	Do you obey the rules all the time or only when someone is looking	G
1 62	0.3394	When a small thing upsets you, do you get so mad you want to throw things, or can you keep calm	Q4
1 20	-0.3298	In your family are you the happy one or the one in trouble	D
2 4	0.3285	Do you think many children do better work than you or are you as good as anyone else	C
1 5	0.3138	Does your mother think you are too lively and restless or quiet and calm	A

#### FACTOR A2 - CONFORMITY

From the point of view of matching with any CPQ factor this factor presented a confused picture. It attracted items from eleven different CPQ factors, the only one not being represented being CPQ factor F. In the ten highest loadings, seven CPQ factors were represented: two items from each of CPQ factors A (Reserved, stiff-versus-Easy going), C (Emotionally unstable-versus-Emotionally mature), and D (Phlegmatic-versus-Excitable), and one item from each of CPQ factors E, J, O, and Q3. There were no "double" items.

In addition to attracting items from such a wide range of CPQ factors, Factor A2 also included among its ten highest-loading items two which loaded on other Form A factors. It was the only Form A factor which showed significant correlations with other Form A factors, -0.31 with Factor A4 and -0.30 with Factor A10. The correlation between Factor A4 and Factor A10 was 0.28, approaching the 0.30 level of significance.

Despite the apparent confusion, however, the items showed a recognizable relationship on face-significance, combining the characteristics of conventional, conforming from CPQ factor E (Submissive-versus-Dominant) which supplied the highest-loading item; calm, and does not get into difficulties from CPQ factor C; ready to cooperate from CPQ factor A; and placid, not restless from CPQ factor D.

On reading the contributing items, the emergent picture of a careful, conforming and well-behaved child was indeed so consistent that it gave rise to suspicions that a subject scoring highly on Factor A2 would be either unnaturally "good" or else trying to ingratiate himself by giving the "right" answers. However, taking the responses at their face value, conformity and complacency appeared the outstanding features so that CPQ factor Q3 (Lax-versus-Self controlled) provided the best general match although it contributed only one item. Description of CPQ factor Q3 in the Handbook includes the ability "in directing behavior by this self-concept responsive to public opinion (p. 36)." This Factor was therefore named "Conformity".

##### Items attracted from CPQ factors:

A (three items), C (three items), D (three items), E (two items), O (two items), Q4 (two items), one each from G, H, J, N, Q3.

##### Items from top ten loading on other Form A factors:

1 13 loads on A13, 2 24 loads on A13.

TABLE 14

## FORM A, FACTOR A3 - DEPENDENCY

Item No.	Loading	Wording of Item	CPQ Factor
1 22	0.6836	If two children were fighting on the playground, would you let them fight or go and tell the teacher	F
1 12	0.6055	Do you sometimes speak angrily to your parents or is it wrong to do so	D
1 29	-0.5141	Is mother's way of doing things always better or is your own new way sometimes better	E
1 1	-0.4718	When visiting a new building do you like to have someone show you around or do you like to find your own way	A
2 25	0.4588	When you get a new game as a present, do you like to try it first yourself or have someone show you how to play it	E
1 43	0.4599	When mother calls, do you wait a while or do you come right away	G
2 70	-0.4550	If you were angry, would you go quietly to your room or would you slam the door as you went	Q4
2 12	0.4247	If it is wrong to do something do you still do it sometimes or not do it	D
1 14	0.4081	When your friends argue, do you join the argument or keep quiet till they finish	F
2 53	0.4078	When people talk about a place you know well, do you start telling them about it too, or do you keep quiet until they finish	Q4
1 25	0.4054	Would you like better to have bears here now or to hear stories about bears	E
1 21	-0.4032	Would you rather talk with your teacher or talk with a good friend	E
2 62	0.3999	If you don't like the food, do you complain or eat it anyway	Q4
1 3	0.3929	Do you think you could do well at almost anything or just a few things	C
2 31	0.3861	If a dog were barking at you, would you shout, "Shut up!" or say, "He's trying to be a good dog"	G
1 66	-0.3608	When you are hurried do you still put your clothes away or just leave them	Q4
2 43	0.3505	When mother is annoyed with you, is it often her fault or do you generally feel you were wrong	G
1 65	-0.3342	At home would you first help wash the dishes or listen to music or TV	Q3
1 31	0.3274	Would you rather go to the movies or to a church	G
2 28	0.3254	Are you disappointed often or hardly ever	D
1 63	-0.3132	Do you like to listen to long stories or do you get tired	N

TABLE 14

## FORM A, FACTOR A3 - DEPENDENCY

Item No.	Loading	Wording of Item	CPQ Factor
1 67	0.3042	Do you wish school would not be such a bother or is school all right as it is	N
2 18	0.3038	Do you think you could learn to fly an airplane or would it be too difficult	F

FACTOR A3 - DEPENDENCY

This factor included four "double" items, all positively loaded. One of these (1 12 and 2 12) was designed to load on CPQ factor D (Phlegmatic-versus-Excitable) and was the only "double" item of which both parts appeared in the highest ten. Two other "double" items came from CPQ factor G (Frivolous-versus-Persevering) and the fourth from CPQ factor E (Submissive-versus-Dominant).

Among the ten highest-loading items, one other item (1 29) appeared from CPQ factor E, but no other items from CPQ factors D or G. However, two items appeared from CPQ factor F (Serious-versus-Happy go lucky), one of them being the highest loading on Factor A3, and another two items from CPQ factor Q4 (Composed, relaxed-versus-Driven, tense).

Of the six CPQ factors represented in the ten highest-loading items, three (D, E, A) also appeared in the ten highest-loading items of Factor A2. The correlation between Factor A2 and A3 was 0.29 and they show the similar characteristics of conformity and good behaviour. The CPQ factors F, G, and Q4, which did not appear highly placed in Factor A2, provided the added dimensions of serious, conscientious, tense, aware of adult criticism.

In view of these dimensions, and since the high-loading items indicated by their face-significance dependence on and obedience to the direction of others, particularly adults, this Factor A3 was named for the quality of being dependent.

Items attracted from CPQ factors:

E (four items), G (four items), Q4 (four items), D (three items), F (three items), N (two items), and one each from A, C, and Q3.

Items from top ten loading on other Form A factors:

1 29 loads on A6, 2 12 loads on A8.

TABLE 15  
FORM A, FACTOR A4 - SERIOUSMINDSNESS

Item No.	Loading	Wording of Item	CPQ Factor
1 61	-0.5487	Would you rather read funny books or do arithmetic	Q3
2 31	-0.4820	If a dog were barking at you, would you shout, "Shut up!" or say, "He's trying to be a good dog"	G
2 37	0.4742	Would you rather go to school or go on a long trip in a car	I
2 57	0.4648	Would you rather learn a lesson in school or watch a game	Q3
1 31	-0.4558	Would you rather go to the movies or to a church	G
2 63	0.4308	Do people like best those who are good or those who tell clever jokes	N
1 45	0.4027	Would you rather read a book or play ball	I
2 51	-0.3922	Would you rather read short stories or a long book	N
2 67	-0.3795	Do you like better a teacher who is easy to get by or one who is strict	N
2 55	-0.3716	Do you laugh when others make mistakes or not laugh at them	N
2 45	0.3586	When you hear a sad story, do tears come to your eyes or are you not bothered	I
1 36	0.3557	Are your feelings easily hurt or not easily hurt	H

Note: The "low" pole of this Factor is described in this Table, and discussed in the text.

FACTOR A4 - SERIOUSMINDEDNESS

This factor included two "double" items: 1 31 and 2 31 from CPQ factor G (Frivolous-versus-Persevering) from which no other item appeared, and 1 45 and 2 45 from CPQ factor I (Tough minded-versus-Tender minded) from which one other item appeared. First and fourth positions were taken by items from CPQ factor Q3 (Lax-versus-Self controlled).

CPQ factor A (Simple-versus-Shrewd) supplied the largest number of items (four). Table 5 C shows that the highest correlation between any two CPQ factors is -0.48 between N and Q3. There is also a correlation of 0.37 between Q3 and G; and 0.33 between Q3 and I; and -0.38 between I and A.

Factor A4 therefore appears to represent a combination of items from these four correlated CPQ factors (Q3, G, I, N).

The correlation of -0.31 between Factors A4 and A2 shown in Table 5 A could not, however, be accounted for by postulating that items from the same CPQ factors were loading on both Form A factors, since this was not the case. CPQ factor Q3 was the only CPQ factor appearing in the top ten items of both Factor A4 and A2, and even then was represented in Factor A2 by a single item appearing in sixth position.

Factor A4 is characterized by a frivolous, subjective, thoughtless, and undisciplined approach, lacking persistence and sensitivity. It provides a good match for the low scoring pole of CPQ factor G (Frivolous-versus-Persevering), but it is difficult to encompass the different nuances of meaning in one word. The pole here described indicates a superficial approach together with lack of thought for others, oneself, or the future, that is, a general lack of seriousmindedness.

Items attracted from CPQ factors:

N (four items), I (three items), Q3 (two items), G (two items), and one item from H.

Items from top ten loading on other Form A factors:

2 31 loads on A3, 1 31 loads on A3.



TABLE 16  
FORM A, FACTOR A5 - SHYNESS

Item No.	Loading	Wording of Item	CPQ factor
2 7	-0.6732	Do you find other children take advantage of you or are they kind to you	A
1 9	0.5003	Do you have many friends or just a few good friends	A
1 44	0.4934	Are most children kind to you or are they sometimes unkind	H
1 40	-0.4540	Do new teachers frighten you or do you usually like them	H
1 10	0.4112	Do you think you smile a great deal or do not smile much	C
1 6	-0.4008	Do you feel nervous at school or are you happy	C
2 60	0.3374	Are you getting along well or do you have many problems	O
2 28	-0.3015	Are you disappointed often or hardly ever	D
1 20	0.3013	In your family are you the happy one or the one in trouble	D

FACTOR A5 - SHYNESS

This factor had no "double" items. It included two items from each of CPQ factors A (Reserved, stiff-versus-Easy going), H (Shy-versus-Venturesome), C (Emotionally unstable-versus-Emotionally Mature), and D (Phlegmatic-versus-Excitable). Item 2 60 from CPQ factor O (Complacent-versus-Self-reproaching) seems quite logically included being loaded to signify "do you have many problems".

Apart from a correlation of -0.38 between the CPQ factors A and D, the CPQ factors contributing to Factor A5 were not found to be closely correlated in the original CPQ analysis. However, on face-significance, there is a common element of nervousness, especially in relation to other people both children and adults, and a consciousness of troubles. Although items from CPQ factor A show higher loadings, CPQ factor H seems a better match since the child is shy and distrustful rather than stiffly reserved.

Items attracted from CPQ factors:

Two items from each of CPQ factors A, H, C, D, and one from O.

Items loading on other Form A factors:

1 40 loads on A13, 2 60 and 1 20 on A2, 2 28 on A3.



TABLE 17

## FORM A, FACTOR A6 - SECURITY

Item No.	Loading	Wording of Item	CPQ Factor
2 50	-0.6122	First thing in the morning are you ready for fun or are you still tired and sleepy	J
1 48	-0.4738	Are your parents always ready to hear you talk or are they sometimes too busy	H
1 70	-0.4677	When mother calls you in the morning, do you just jump right up or find it hard to wake up	Q4
2 46	-0.4224	Do people pay enough attention to you or do you have to do things to make them notice you	J
1 29	-0.3956	Is mother's way of doing things always better or is your own new way sometimes better	E
1 50	-0.3470	If a trick is played on you, do you laugh or get a little angry	J
2 44	-0.3038	Does your father do things with you or do you not like to bother him when he is busy	H

FACTOR A6 - SECURITY

Together with Factors A9 and A12 this factor showed only negative loadings. It had one "double" item (1 50 and 2 50) from CPQ factor J (Vigorous-versus-Internally restrained) from which one other item also appeared. Two items came from CPQ factor H (Shy-versus-Venturesome). On Face-significance, the item from CPQ factor Q4 ("When mother calls you in the morning, do you just jump right up or find it hard to wake up") closely resembles the item from CPQ factor J which supplied the highest loading ("First thing in the morning are you ready for fun or are you still tired and sleepy"), but with the added element of relationship to parent. Since this element appeared in five out of the seven items loading on Factor A6, the item from Q4 nicely combines the characteristics of feeling secure and accepted, lively and untroubled.

While the low-scoring pole (unworried, relaxed) of CPQ factor Q4 implies these characteristics, the high-scoring pole of CPQ factor F provides a close match on almost every point: "talkative, cheerful, serene, happy-go-lucky, frank, expressive, mercurial, quick and alert (CPQ Handbook, p. 29)." The Handbook continues, "such persons "have generally had an easier, less punishing, more optimism-creating environment (p. 29)."

Items attracted from CPQ factors:

J (three items), H (two items), one each from Q4 and E.

Items loading on other Form A factors:

1 29 on A3, 1 50 on A10.

TABLE 18  
FORM A, FACTOR A7 - CONFIDENCE

Item No.	Loading	Wording of Item	CPQ Factor
2 4	-0.6130	Do you think many children do better work than you or are you as good as anyone else	C
1 56	0.5513	Can you do most things well or can others do things better	O
1 64	-0.4282	Do your plans often not work or do they work out well	O
2 22	0.4109	Are you good at walking a fence or a log or are others better	F
1 60	0.3725	Can you easily stand up in class and talk or do you feel shy	O
1 3	0.3395	Do you think you could do well at almost anything or just a few things	C

Note: The "low" pole of this Factor is described in this Table, and discussed in the text.

FACTOR A7 - CONFIDENCE

This factor had no "double" items, but included two items from CPQ factor C (Emotionally unstable-versus-Emotionally mature), and three items from CPQ factor O (Complacent-versus-Self-reproaching). The only other significantly-loaded item was from CPQ factor F (Serious-versus-Happy go lucky) and fits in well with the general picture of lack of confidence in physical, mental and social ability.

A child scoring high on this pole of Factor A7 not only feels inferior to others in attempted performances, but even when faced with individual tasks feels inadequate, incompetent, and likely to fail.

A dimension which seems unexplored is the standard of performance which the child sets for himself, which could affect his assessment of his own inadequacy especially if the standard is unrealistically high.

Factor A7 provides a reasonable match for CPQ factor O.

Items attracted from CPQ factors:

O (three items), C (two items), and F (one item).

Items loading on other Form A factors:

2 4 on A2, 1 64 on A8 and A11, 2 22 on A11, 1 3 on A3.

TABLE 19  
FORM A, FACTOR A8 - SELF-SATISFACTION

Item No.	Loading	Wording of Item	CPQ Factor
1 5	0.5900	Does your mother think you are too lively and restless or quiet and calm	A
1 28	0.5818	Do they say you shout at people when you get excited or do they think you are patient	D
2 64	0.4933	Does mother say you talk too much or are you quiet	O
1 57	0.4392	Would you rather go to school or work at home	Q3
1 47	0.3361	If you know the answer, do you raise your hand or wait to be called on	G
1 64	0.3359	Do your plans often not work or do they work out well	O
2 12	0.3117	If it is wrong to do something do you still do it sometimes or not do it	D
1 32	-0.3039	Are you doing as well as you should in your work or could you do better	H

#### FACTOR A8 - SELF-SATISFACTION

This factor had one "double" item from CPQ factor O (Complacent-versus-Self reproaching). Highest loading was supplied by an item from CPQ factor A (Reserved, stiff-~~versus~~-Easy going) but no other items from this factor appeared. Two items, including the second highest loading, came from CPQ factor D (Phlegmatic-versus-Excitable) and one item from CPQ factor H (Shy-versus-Venturesome). All these items fit a picture of a child who not only sees himself as quiet, patient, hard-working and virtuous, but has confidence that others concur with his complacent self-image.

The remaining items, 1 57 from CPQ factor Q3 and 1 47 from CPQ factor G, are interesting in that the CPQ factor on which they were designed to load seems to fit the factor A8 rather better than does the specific item, judged on face-significance.

The low-scoring pole of CPQ factor O represents the complacency of vigorous, active self-confidence. There is a closer match with the low-scoring pole of CPQ factor D, described in the CPQ Handbook as "placid, self-sufficient, deliberate, self-effacing, constant, not restless (p. 27)." The inclusion of the two items from CPQ factor O, however, does serve to emphasize the element of smugness which must be included. The title "Complacent" from CPQ factor O has therefore been avoided and "Self-Satisfaction" substituted.

(Factor A8 - continued)

Items attracted from GPQ factors:

D (two items), O (two items), one each from A, Q3, G, H.

Items loading on other Form A factors:

1 5 and 1 32 on A2, 2 12 on A3, and 1 64 on A7 and A11.

TABLE 20  
FORM A, FACTOR A9 - IRRESOLUTION

Item No.	Loading	Wording of Item	GPQ Factor
2 51	-0.4751	Would you rather read short stories or a long book	N
2 36	-0.4625	Do you have a hard time deciding which games to play or do you make up your mind quickly	H
1 16	-0.4463	When someone is slow does it bother you or does it not bother you	D
1 69	-0.4200	When you read, do you find it hard to keep your mind on it or can you read right on to the end	Q3
2 38	-0.4165	If you were high up on a big rock, would you be scared or would you like looking around	J
1 54	-0.3377	In your school work do you often forget or do you feel sure you can remember things	Q4
2 40	-0.3239	Do you feel afraid of things that might happen to you or are you satisfied with things as they are	H
1 58	-0.3205	In dreams do animals chase you or are dreams nice	Q4

FACTOR A9 - IRRESOLUTION

Together with Factors A6 and A12 this factor showed only negative loadings. No "double" items were included. The factor is also notable in that the loading of the item occupying first place was the lowest of any factor. While the eight items were drawn from six different GPQ factors, a reasonably logical pattern emerged.

There appear to be two main components: a difficulty in concentration, evidenced in items 2 51, 2 36, 1 69, 1 54, and an apprehensive uncertainty especially about the future, evidenced in items 1 16, 2 38, 2 40, and 1 58. These two components may be reconciled by extracting a common element which might be termed Focalisation, or Systematization. The reported behaviours appear to centre around a characteristic inability to "sort things out", to

(Factor A9 - continued)

evolve a personally-satisfying organisation of the experiential and thought world in which the child can anchor himself in an organised scheme of things. This would result in difficulty in seeing things in context, taking a long-term view, or weighing alternatives and making choices.

If this interpretation is correct, the factor is unlike any of the CPQ factors and it may be that this amorphous aspect is a function of the child age group which has yet to develop a life-orientation.

To postulate such a factor, however, seems a somewhat more distant inference than can be justified by the face-value of the items listed, and the term "Irresolution" has been selected in an attempt to relate more concretely to the reported behaviour. The positive term Resolution was avoided because of its stronger connotations of persistence, whereas the Irresolution permits the stress to fall closer to the meaning of a situation which is unresolved.

Items attracted from CPQ factors:

H (two items), Q4 (two items), one each from N, D, Q3, J.

Items loading on other Form A factors:

1 54 on A2, 2 51 on A4.

TABLE 21  
FORM A, FACTOR A10 - SELF SENTIMENT

Item No.	Loading	Wording of Item	CPQ Factor
1 50	0.6111	If a trick is played on you, do you laugh or get a little angry	J
1 2	-0.5291	When a child laughs at you do you feel badly or do you laugh too	A
2 69	-0.4997	When people play a joke on you do you get all upset or take it quietly	Q3
2 56	-0.4612	Would you rather be called clever or nice and kind	O
2 53	-0.4447	If a classmate calls you a bad name, do you usually fight or pretend you do not care	Q3
1 8	0.4286	In your group is someone else the leader or are you the leader	C
1 55	-0.3304	If you were a wild animal, would you rather be a lion or a fast horse	N
1 51	-0.3235	Would you like to go fishing by yourself or play games with children	N

FACTOR A10 - SELF-SENTIMENT

Factors A8, A9, and A10 each attracted eight items, drawn from six different CPQ factors. Despite this, the face-significance of the items on each Form A factor showed a considerable degree of congruence in meaning, suggesting that the original CPQ items may switch their allegiance in a different reference frame as found by Adcock, Adcock & Walkey (1971) in a series of studies designed to check the suitability of the 16 PF items for New Zealand subjects.

A concern for and sensitivity about maintaining dignity, together with a need to maintain an adequate self-concept, seems to be the focal element, and is consonant with selected aspects of the CPQ factors listed. The direction of loading on the item from CPQ factor J indicates acts individualistically, self-sufficient; from CPQ factor A indicates aloof, jealous, disturbed by criticism; from CPQ factor Q3 concern with self-sentiment; from CPQ factor N aloof and fastidious.

Factor A10 is negatively correlated with Factor A2 (-0.30) and positively with Factor A4 (0.28). These correlations confirm the interpretations of the factors, A2 showing need to conform and A10 the need for maintenance of self-identity, while A4 indicates a certain detachment.

Items attracted from CPQ factors:

Q3 (two items), N (two items), one each from J, A, O, G.

Items loading on other Form A factors:

1 55 on A1, 1 51 on A1 and A13, 1 2 on A13, 1 50 on A5.



TABLE 22  
FORM A, FACTOR A11 - DEFEATISM

Item No.	Loading	Wording of Item	CPQ Factor
2 52	0.6058	Do you succeed in most things you try or do things often go wrong for you	O
1 52	0.5053	When you say, "I bet I'm right," are you, in the end, right most of the time or wrong most of the time	O
2 48	0.4774	If people ask you to do too many things, do you find a way to do them or do you get all mixed up	H
1 64	-0.4765	Do your plans often not work or do they work out well	O
2 22	0.4702	Are you good at walking a fence or a log or are others better	F
2 10	0.4154	If you got lost, would you know what to do or would you be scared	C
2 9	0.4092	Do people like your ideas or do they not like them	A
2 2	-0.3628	When losing a game, do you sometimes give up and save your energy, or always play harder	A
1 4	-0.3483	In a game in the playground, do you stand around or run a lot	C
2 18	0.3117	Do you think you could learn to fly an airplane or would it be too difficult	F
2 68	-0.3013	When a problem is too hard, do you give it up for a while and forget it or keep working on it.	O

FACTOR A11 - DEFEATISM

This factor was the only Form A factor in which the two highest loadings were contributed by a "double" item, from CPQ factor O (Complacent-versus-Self-reproaching) which also contributed two further items. There was one item from CPQ factor H (Shy-versus-Venturesome) and two each from CPQ factors F (Serious-versus-Happy go lucky), C (Emotionally unstable-versus-emotionally mature), and A (Reserved, stiff-versus-Easy going).

In describing these CPQ factors the Handbook supplies the common feature of worrying, associated with a defeatist attitude, feelings of inadequacy, and a tendency to quit. Factor A11, does not, however, readily match any one of these CPQ factors in entirety.



(Factor A11 - continued)

Items attracted from CPQ factors:

0 (four items), two items each from F, C, A, and one from H.

Items loading on other Form A factors:

2 22 on A7, 1 64 on A7 and A8, 2 18 on A1 and A5.

TABLE 23  
FORM A, FACTOR A12 - PLACIDITY

Item No.	Loading	Wording of Item	CPQ Factor
1 24	-0.5477	If people push you in a bus, do you just smile or do you get mad	D
2 66	-0.4266	If friends borrow your things without asking, is it all right or are you angry	Q4
2 34	-0.4054	Do you wish you were better looking or are you good-looking now	J
2 20	-0.3731	If people pester you, do you just laugh it off or do you get angry	D
1 46	-0.3402	If someone has a new idea, do you say it is good or wait a while to make sure	J
1 18	-0.3004	Do you go to buy your own toys or does mother do it	F

FACTOR A12 - PLACIDITY

Together with Factors A6 and A9 this factor showed only negative loadings.

There were two items from CPQ factor D (Phlegmatic-versus-Excitable), including the highest loading, and two items from CPQ factor J (Vigorous-versus-Internally restrained). Second highest loading was supplied by an item from CPQ factor Q4 (Composed, relaxed-versus-Driven, tense).

The meaning is difficult to interpret. The items from CPQ factors D and Q4, occurring in three of the four highest loadings, indicate the placid, composed, relaxed, self-effacing found in Factor A8, and it should be noted that there is a correlation of 0.25 between these two Form A factors. However, the element of smugness found in Factor A8 is missing, and the negative loading on "Do you wish you were better looking or are you good-looking now" from CPQ factor J tends to confirm that smugness is not a component of Factor A12.

The items from CPQ factor J do not appear to be functioning in the way for which they were originally designed, since item 1 46

(Factor A12 - continued)

is loaded in the opposite direction from the one for which it was designed, though item 2 34 is loaded in the designed direction. This means that these two items, designed to load in the same direction, are in fact loading significantly in opposite directions. The common element may be a desire for group acceptance, which is reconcilable with the placid, unfussing component of the other items, so the label "PLACIDITY" was selected for this factor. Why 1 13 from GPQ factor F should load on Factor A12 is unclear, but as it is the lowest significant loading it exerts minimal influence on the composition of the factor.

Items attracted from GPQ factors:

D (two items), J (two items), one each from Q4 and F.

Items loading on other Form A factors:

No items load on any other Form A factors.

TABLE 24  
FORM A, FACTOR A13 - PARTICIPATION

Item No.	Loading	Wording of Item	GPQ Factor
2 21	0.5886	Would you rather write a book or be the main actor in a play	E
1 2	0.4528	When a child laughs at you do you feel badly or do you laugh too	A
1 13	0.3781	Does your teacher think you are good at sitting still or that you run around too much	E
1 51	0.3633	Would you like to go fishing by yourself or play games with children	N
2 54	-0.3293	At a loud bang, do you jump or just look around	Q4
1 40	-0.3117	Do new teachers frighten you or do you usually like them	H
2 24	0.3042	In class, do you sit quietly or do you like to move about	D

FACTOR A13 - PARTICIPATION

All items except the first, which loaded only on this factor, showed higher loadings on another Form A factor. In five cases the signs were reversed (items 1 2 on A10, 1 13 and 2 24 on A2, 1 51 and 2 54 on A1) while item 1 40 had a higher loading on A5 but with the same sign. The second item on Factor A13 also occupied second place on Factor A10, while the third item on Factor A13 occupied first place

(Factor A13 - continued)

on Factor A2, but in both cases with the sign reversed.

In view of these multiple loadings, the most distinctive item should be 2 21, in first place, which was designed to load on CPQ factor E (Submissive-versus-Dominant). CPQ factor E also supplied the item with third highest loading, with both items originally designed to load on the Dominant pole. The description in the CPQ Handbook includes assertive, self-assured, attention-getting. With the exception of item 1 40, all items loading on A13 are compatible with this description, though there is here a stronger element of active and sociable than is explicit in the CPQ description. It is, however, possibly implicit in attention-getting. On face-significance, one would have expected the sign on item 1 40 to have been the reverse.

The relationship between Factor A13 and Factor A1 which both incorporate elements from the high-scoring pole of CPQ factor E (Submissive-versus-Dominant) is somewhat confused. The only two items loading on both Form A factors have their signs reversed in each case. The element of assertiveness appears to incorporate the aspect of belligerence in Factor A1, but to be expressed by an active, participating sociableness in Factor A13. For this reason, "Participation" has been selected as the title for this Factor A13.

Items attracted from CPQ factors:

E (two items) and one each from A, N, Q4, E, D.

Items loading on other Form A factors:

1 51 and 2 54 on A1, 1 13 and 2 24 on A2, 1 40 on A5, 1 2 on A10.

TABLE 25

Arrangement of Items in Test Forms with Respect to Factors  
Position of High Scoring Response  
 FORM B (Parts B<sub>1</sub> and B<sub>2</sub>)

Factor	Part	Left-hand Position	Right-hand Position
1	B <sub>1</sub>	17, 22, 51, 54, <u>61</u> , <u>67</u> , 69	
	B <sub>2</sub>	12, 16, 53, 58, <u>61</u> , <u>67</u>	24
2	B <sub>1</sub>	5, 33, 39, 45, 46, 48, 50	36
	B <sub>2</sub>	<u>56</u> , 60 1, 10, 32, 44, 49	8, 21, 37
3	B <sub>1</sub>		2, 4, <u>6</u> , 31
	B <sub>2</sub>		<u>6</u> , 8, 13, 42, 64
4	B <sub>1</sub>	56	18, <u>34</u> , 68
	B <sub>2</sub>	9	<u>34</u> , <u>37</u> , 54
5	B <sub>1</sub>	14, <u>18</u> , 39	32, 37
	B <sub>2</sub>	<u>18</u> , <u>33</u> , 38, 41, 53	4, 21, 45, 70
6	B <sub>1</sub>	12, 13, 40	<u>22</u> , 45, 66, 70
	B <sub>2</sub>	28, 29	<u>1</u> , 14, <u>22</u> , 46, 65
7	B <sub>1</sub>	14, 55	1, 21, <u>35</u> , 63
	B <sub>2</sub>	25	<u>35</u>
8	B <sub>1</sub>	59	
	B <sub>2</sub>	26, 30, 63, 66	
9	B <sub>1</sub>	1, 7, 58	29
	B <sub>2</sub>	31, 33	36, 49, 56
10	B <sub>1</sub>	47	
	B <sub>2</sub>	68	62, 67
11	B <sub>1</sub>	41, 57	62, 64
	B <sub>2</sub>	3, 60	2, 39
12	B <sub>1</sub>	29, 35	6, 7, 10, 38
	B <sub>2</sub>		52
13	B <sub>1</sub>	28, 40, 53	44
	B <sub>2</sub>	5, 36, 43, 69	47

**Note:** Similarly-numbered items which load on the same factor in both Parts of the Form are underlined. In all cases, such items have loaded in the same direction.

TABLE 26

## FORM B, FACTOR B1 - SELF-CONTROL (CONFORMITY)

Item No.	Loading	Wording of Item	CPQ Factor
2 16	-0.7161	Are you usually quiet or do you talk a lot	D
2 58	-0.5393	When you get angry, do you keep silent or do you talk back	Q4
1 61	-0.5363	At the end of the day, is it easy to sit still or do you move around a lot in your chair	Q3
2 67	-0.5087	Do you do things you should do or things you like to do	N
1 22	-0.4883	Are you usually quiet in school or do you like to say what you think	F
1 51	-0.4596	Do you look arithmetic problems over to correct mistakes or finish up quickly	N
2 61	-0.4407	Would you rather do your work or try to get someone else to do it for you	Q3
1 67	-0.4320	Do you finish all your jobs or do you sometimes leave some unfinished	N
2 53	-0.3218	When the class makes noise, do you sit quietly or add to the noise	Q3
2 12	-0.4204	When you get good news, do you take it quietly or do you have to dance up and down	D
1 54	-0.4117	Do you think you are always polite or are you perhaps a little too noisy	Q4
2 24	0.4089	Do you sometimes feel like disobeying older people or never feel that way	D
1 69	-0.3836	When you are playing, do you usually keep the rules or sometimes break them	Q3
1 17	-0.3782	Would you rather listen to a teacher or talk yourself	E

FORM B, FACTOR B1 - SELF-CONTROL (CONFORMITY)

This factor included two "double" items which occupied four of the top eight loadings. One of these (1 61 and 2 61) was designed to load on CPQ factor Q3 (Lax-versus-Self controlled) from which two other items appeared (2 53 and 1 69). The other "double" item came from CPQ factor N (Simple-versus-Shrewd) from which one other item appeared (1 51). Items from these two CPQ factors thus provided seven out of the fourteen significant loadings on Factor B1.

However, the highest two loadings came from CPQ factors D (Phlegmatic-versus-Excitable) and Q4 (Composed, relaxed-versus-

**(Factor B1 - continued)**

Driven, tense). CPQ factor D provided two other items and CPQ factor Q4 one other item but all of these were placed much lower.

The appearance of CPQ factors D, Q4, and Q3 in the first three loadings is of particular interest in view of the comments in the CPQ Handbook that "in the adult 16 PF it has not been possible clearly, factorially, to separate Q3- and D (p. 36)" and "both actual correlations and resemblances in content confirm some association between Q4 (Tension) and Low Self-Sentiment (Q3-) . . . and Excitability (D). This association would be expected from the known grouping together of these factors (in adults) in the second-order anxiety factor (p. 37)." Of these three CPQ factors, the one which Factor B1 most closely resembles is CPQ factor D which lists placid, self-sufficient, deliberate, self-effacing, constant, not restless as constituent behaviours (p. 27).

The quietness which appears so prominently in Factor B1 is, however, somewhat different from the placidity of CPQ factor D. Considered in the light of the other significantly-loaded items, this quietness appears to be less an inherent placidity of temperament than the result of self-control and a striving to conform to approved ethical standards, both of which feature in the description of CPQ factor Q3 on page 36 of the Handbook. This interpretation is further strengthened by the appearance of the item from CPQ factor Q4 as the second-highest loading since this item was designed to load on the Driven, tense pole of that factor.

Factor B1 bears a close resemblance to Factor A2 (Conformity) except that Factor A2 reveals more explicitly that the standards to which the child is striving to conform are adult standards. For this reason, Factor B1 is named "Self-Control" rather than matching it exactly with Factor A2 as "Conformity." However, the match is sufficiently close to suggest that it should be indicated in the naming of this factor by including "Conformity" in parenthesis.

Factor B1 showed correlations of 0.33 with Factor B5 (Tender mindedness) -0.37 with Factor B8 (Lexity) and -0.39 with Factor B11 (Passivity).

Items attracted from CPQ factors:

Four items from CPQ factor Q3, three from each of D and N, two from Q4, and one from each of E and F.

Items from the top ten loading on other Form B factors:

2 53 loads on B5, 1 22 on B6, and 2 67 on B10.



TABLE 27

## FORM B, FACTOR B2 - SELF-REPROACH

Item No.	Loading	Wording of Item	CPQ Factor
2 49	-0.6050	Do you get upset when you quarrel with your friends or don't you mind	I
1 60	-0.5355	If you do something wrong, do you worry about it a lot or soon forget it	O
1 48	-0.5781	Do you worry about being punished or does it never worry you	H
2 21	0.5781	When mother is angry with you, do you feel all right anyway or feel like crying	E
1 39	-0.4349	Are you sad when mother is cross with you or do you soon forget about it	G
1 50	-0.4247	Do you worry about not getting good grades in school or are you sure you will do well	J
2 37	0.4171	Can you easily forget your mistakes or do they worry you	I
2 10	-0.4157	Do you wish your mother would help you more or does she help you too much	C
2 1	-0.4047	If children don't play with you, do you feel badly or do you start another game	A
1 56	-0.3855	Do you feel lonely and sad often or hardly ever	O
1 46	-0.3790	Would you rather have a small dog or a baseball set	J
1 36	0.3721	Do you think that grown-ups understand you well or do they hurt your feelings	H
2 44	-0.3671	Are adults sometimes difficult or are they mostly kind	H
1 33	-0.3648	Do you feel badly if you get to school late or is it all right if you are only a few minutes late	I
2 32	-0.3517	Do you think your classmates sometimes laugh at you or don't they ever	H
1 45	-0.3124	When you cannot go out, do you complain or don't you care	I
2 8	0.3123	Can you always do things well or some days are you not much good at things	C
1 5	-0.3090	Would you go and speak to a little boy or girl who is crying or send someone to his mother for help	A



FORM B, FACTOR B2 - SELF-REPROACH

This factor had no "double" items. It attracted items from eight CPQ factors and its constituent items load on five other Form B factors.

The interpretation of this factor was rendered difficult by the wide range of CPQ factors represented. To attempt to interpret Factor B2 in terms of the contributing CPQ factors meant that the description became so wide-ranging as to be valueless. A different approach was therefore employed.

It will be remembered that the CPQ was designed so that similarly-numbered items in Form A and Form B contributed to opposite poles of the same CPQ factor. This being the case, items loading on one pole of a Form A factor should load on the opposite pole of any equivalent Form B factor. In view of this, a check was carried out on similarly-numbered items in Form A to ascertain which Form A factor in the present investigation each of these loaded on. Factors A1 (Assertiveness), A3 (Dependency), A6 (Security), and A11 (Defeatism) appeared most frequently.

Five of the Form A items bearing similar numbers to the Form B items were found to load on Factor A6 (Security). The directions of these loadings were then checked. It should be noted that whereas Factor A6 describes the high-Security pole of the factor, Factor B2 describes the low-Security pole. Thus, the signs of the loadings in Form B should logically be the reverse of the signs of the loadings in Form A. In every case, the signs were found to conform to this logical pattern.

Six of the Form A items bearing similar numbers to the Form B items were found to load on Factor A11 (Defeatism). The directions of these loadings were then checked and again found to correspond with those expected.

Such a finding tends to confirm that similarly-numbered items in Form A and Form B are consistently measuring in the direction in which they were originally designed to measure.

Further, the check provided an indication of the nature of Factor B2.

Briefly, the check suggested a negative correlation with Factor A1 (Assertiveness), a positive correlation with the Factor A3 (Dependency), a negative correlation with Factor A6 (Security), and a

(Factor B2 - continued)

positive correlation with Factor A11 (Defeatism). This outline was confirmed by the considerable homogeneity revealed by inspection of the individual items. There appear to be two main elements: first, worrying (about doing anything wrong, being punished, not getting good grades in school, making mistakes) and secondly, insecurity in personal relations (feels lonely and sad, gets upset about quarrels with friends, or when mother is angry or cross, and feels the need of more help and understanding from both children and adults).

Although the general picture of this factor contains elements from several Form A factors (A1, A3, A6, A11) it does not match any one of them closely.

The importance of the most highly-loaded items is well shown, however, on checking the descriptions of GPQ factors I (GPQ Handbook, p. 32) and O (GPQ Handbook, p. 35), which provided the two top items. Factor I (Tough minded-versus-Tender minded) includes subjective, dependent, seeking help, attention-seeking, anxious, and Factor O (Complacent-versus-Self reproaching) includes worrying, anxious, depressed, cries easily, sensitive, tender, easily upset, strong sense of duty, exacting, fussy, hypochondriacal, phobic symptoms, moody, lonely, brooding.

GPQ factor O therefore provides a good match despite the fact that it contributed only two items to Factor B2. Although at first glance worrying appears the outstanding characteristic a closer inspection reveals an element of self-reproach, either implicit or explicit, in the first seven items. The name of the high-scoring pole of the GPQ factor O (Self-reproach) has therefore been adopted for Factor B2.

Factor B2 showed a correlation of +0.32 with Factor B7 (Consociation).

Items attracted from GPQ factors:

Four items from each of GPQ factors H and I; two items from each of GPQ factors A, C, J, O; one item from each of GPQ factors E, G.

Items loading on other Form B factors:

1 56 and 2 37 on B4, 1 39 and 2 21 on B5, 1 45 and 2 1 on B6, 2 8 on B3, 2 49 on B9.

TABLE 28

FORM B, FACTOR B3 - CONFIDENCE

Item No.	Loading	Wording of Item	CPQ Factor
2 42	0.6796	Are your ideas better than the other children's or generally not quite so good	J
2 13	0.5666	Do you think your ideas are right and good or are you not sure	E
1 6	0.5181	Are you usually sure of yourself or do you sometimes feel uncertain	C
2 6	0.5062	Do you think you will do well when you grow up or just fair	C
1 4	0.4305	Can you finish your work faster than others or do you take longer	C
1 31	0.3733	In school, do you do well what is wanted or do your friends please teacher better than you do	G
2 8	0.3667	Can you always do things well or some days are you not much good at things	C
2 64	0.3636	Can you read well or do most children read better	O
1 2	0.3271	Does almost everyone like you or only some people	A

**Note:** The "low" pole of this factor is described in this Table and discussed in the text.

FORM B, FACTOR B3 - CONFIDENCE

This factor included one "double" item (1 6 and 2 6) from CPQ factor C (Emotionally unstable-versus-Emotionally mature) from which two other items also appeared (1 4 and 2 8). The items from this CPQ factor occupied third, fourth, fifth and seventh placings in order of loading and therefore represent an important contribution to Factor B3.

Face-significance of the items confirms the resemblance to CPQ factor C which includes "discouraged by his inability to meet good standards of behaviour (CPQ Handbook, p. 27)" and also includes the element of dissatisfaction. However, while in the CPQ factor the dissatisfaction is with family and school, in Factor B3 the dissatisfaction is rather with himself.

The item with the highest loading (2 42) came from CPQ factor J (Vigorous-versus-Internally restrained) and the second highest (2 13) came from CPQ factor E (Submissive-versus-Dominant). Neither of these CPQ factors had any other item loading on Factor B3.

(Factor B3 - continued)

Factor B3 bears little resemblance to CPQ factor J (CPQ Handbook pp. 33-34) or to CPQ factor E (CPQ Handbook pp. 28-29) though possibly consistent with the Submissive pole of CPQ factor E due to the self-image of lower competence.

There is, however, a close match with Factor A7 (Confidence). Factor B3 shows a similar lack of confidence in mental and social ability, though there is no indicator for a sense of inferiority in physical ability as there is in Factor A7. Factor A7 does include two similarly-numbered items (4 and 64) with loadings in consonant directions.

Factor B3 (low confidence pole) showed a correlation of -0.33 with Factor B12 (Realism).

Items attracted from CPQ factors:

Four items from CPQ factor C, and one item from each of CPQ factors A, E, G, J, O.

Items loading on other Form B factors:

1 6 on B12.

TABLE 29  
FORM B, FACTOR B4 - SOCIABILITY

Item No.	Loading	Wording of Item	CPQ Factor
2 34	0.5161	When you have a new idea, do you tell it or keep it to yourself	J
1 34	0.5046	If someone says, "Let's all do this," do you say, "Good, let's do it" or do you first ask, "why?"	J
2 54	0.4046	Are you happy to see your school friends or sometimes do you not want to see people	Q4
2 9	-0.4026	Do you like just one close friend or lots of them	A
1 68	0.3738	Do you have a good time or do things go wrong	O
1 56	-0.3632	Do you feel lonely and sad often or hardly ever	O
1 18	0.3299	When something of yours needs fixing, do you ask father to mend it, or fix it yourself	F
2 37	0.3074	Can you easily forget your mistakes or do they worry you	I

Note: The "low" pole of this Factor is described in this Table and discussed in the text.

FORM B, FACTOR B4 - SOCIABILITY

This factor included one "double" item (1 34 and 2 34) which supplied the highest two loadings and came from CPQ factor J (Vigorous-versus-Internally restrained) which includes a lack of gregariousness.

The two items from CPQ factor O (Complacent-versus-Self reproaching) which occupied fifth and sixth placings reinforce the central idea of loneliness, not feeling accepted or free to participate (CPQ Handbook p. 35).

The wording of items 2 54 and 2 9 from CPQ factors Q4 (Composed, relaxed-versus-Driven, tense) and A (Reserved, stiff-versus-Easy going) respectively also fits this interpretation but indicates that the loneliness is at least partly by choice. This aspect appears in four of the eight items loading on this Factor B4 (2 34, 2 54, 2 9, 1 18). The term "aloneness" might therefore be more accurate.

Despite the fact that it did not supply a single item for factor B4, CPQ factor E (Shy-versus-Venturesome) provides the best overall match, including shyness, impeded in expressing himself, preferring one or two close friends to crowds, avoiding large parties, somewhat distrustful (CPQ Handbook, p. 31).

Comparing this Form B factor with the factors found in Form A, it appears that Factor B4 and Factor A5 share the common basic element of loneliness, but whereas Factor B4 depicts this combined with a solitary disposition Factor A5 includes a stronger sense of mistrust, even apprehension. For this reason, it was decided not to allot the same title to both factors.

Sociability was preferred to gregariousness since it stresses more strongly the idea of sharing ideas (2 34) and having a good time (1 68) rather than simply liking to have people around.

Note that Table 29 and this description relate to the low pole of the factor.

Items attracted from CPQ factors:

Two items from each of CPQ factors J and O, and one item from each of CPQ factors A, E, I, Q4.

Items loading on other Form B factors:

1 56 and 2 37 on B2, 1 18 on B5.

TABLE 30

## FORM B, FACTOR B5 - TENDER-MINDEDNESS

Item No.	Loading	wording of Item	CPQ Factor
2 45	0.5919	Do you like to read about wars and battles or do they frighten you	I
2 18	-0.5724	Would you rather learn how to play the piano or drive a car	F
2 33	-0.5564	Would you rather play checkers or baseball	I
2 21	0.4269	When mother is angry with you, do you feel all right anyway or feel like crying	E
2 38	-0.3502	Would you rather go out with your parents or with your good friends	J
1 32	0.3478	When people start talking as you listen to TV or radio, does it bother you or don't you hear them talking	H
2 4	0.3447	When walking across a narrow bridge, do you like looking down at the water or does the height upset you	C
2 70	0.3352	Do you often fight for your rights or do you keep quiet in quarrels	Q4
1 37	0.3292	Would you rather go on a hike or read a good book	I
2 41	-0.3276	Do you like to stay after school with the teacher or would you rather play	I
1 14	-0.3253	Would you rather be president of a business or a jet pilot	F
2 53	-0.3196	When the class makes noise, do you sit quietly or add to the noise	Q3
1 39	-0.3073	Are you sad when mother is cross with you or do you soon forget about it	G
1 18	-0.3040	When something of yours needs fixing, do you ask father to mend it or fix it yourself	F

FORM B, FACTOR B5 - TENDER-MINDEDNESS

This factor included one "double" item (1 18 and 2 18) from CPQ factor F (Serious-~~young~~-Happy-go-lucky) from which one other item also appeared (1 14).

Four items came from CPQ factor I (Tough minded-~~young~~-Tender minded) and occupied first, third, ninth and tenth placings. The technical title given this pole of the CPQ factor I is Promsia, an abbreviation of "protected emotional sensitivity." Other items



(Factor B5 - continued)

appearing are readily reconciled with the description of this CPQ factor (CPQ Handbook, pp. 32-33). This includes aversion for rough people and rough games, anxious imaginativeness, associated with overprotected homes, avoiding rough and adventurous situations, like to depend on the teacher, artistic and neat, interested in school, and rated anti-social. Factor B5 has therefore been named for this pole of CPQ factor I.

Factor B5 resembles the "low" pole of the Form A factor A1 (Assertiveness) though the "roughness" referred to in the description of Factor B5 becomes the stronger "belligerence" of Factor A1. The resemblance to Factor A1 is confirmed by inspection of its contributing items, the first nine placings being supplied from CPQ factors I, E, F which also supplied the first four placings in Factor B5. Factor B5 also resembles the Form A factor A4 (Serious-mindedness) though with the "roughness" of B5 much attenuated. Thus the description of Factor B5 apparently lies somewhere between these two Form A factors.

Factor B5 showed a correlation of 0.33 with Factor B1 (Self-Control).

Items attracted from CPQ factors:

Four items from CPQ factor I, three from CPQ factor F, and one item from each of C, E, G, H, J, Q3, Q4.

Items loading on other Form B factors:

In the top ten placings only two items loaded on other Form B factors: 2 33 on Factor B9 and 2 21 on Factor B2.



TABLE 31  
FORM B, FACTOR B6 - EMOTIONAL MATURITY

Item No.	Loading	Wording of Item	CPQ Factor
2 29	-0.5116	When a visitor comes to your house do you talk to him first or do you feel too shy	E
2 14	0.4604	Are you afraid in the dark or is there nothing to be afraid of	F
1 70	0.4300	If children play with your things without asking, do you shout at them or do you let them play	Q4
2 22	0.4125	When you have to see the doctor, is it hard to be brave or don't you care a bit	F
2 28	-0.3619	When people laugh at you, do you laugh too or do you get mad at them	D
1 12	-0.3557	When others say bad things about you, do you quietly object or are your feelings hurt	D
2 46	0.3524	Are you scared of being spanked or just a little scared	J
2 1	0.3393	If children don't play with you, do you feel badly or do you start another game	A
1 13	-0.3385	Do you like to cross a busy street or are you afraid to cross	E
2 65	0.3330	When playing do you complain a little when you do not win or do you keep quiet	Q3
1 66	0.3228	If people tease you do you get angry and shout or walk away and leave them	Q4
1 40	-0.3057	When with strangers, do you feel you can go up and speak to them or are you afraid to	H
1 45	0.3025	When you cannot go out, do you complain or don't you care	I
1 22	0.3032	Are you usually quiet in school or do you like to say what you think	F

FORM B, FACTOR B6 - EMOTIONAL MATURITY

This factor included one "double" item (1 22 and 2 22) from CPQ factor F (Serious-versus-Happy-go-lucky) from which one other item (2 14) appeared in the second placing. There were two items from each of CPQ factors D (Phlegmatic-versus-Excitable), E (Submissive-versus-Dominant), and Q4 (Composed, relaxed-versus-Driven, tense). These four CPQ factors supplied nine of the fourteen items loading on Factor B6, and the appropriate poles of each give a broad description of its nature: happy-go-lucky, phlegmatic, dominant, composed, relaxed.

The descriptions of these CPQ factors in the Handbook (pp. 27-37) provide further matching characteristics:

from CPQ factor D - placid, self-sufficient, not easily jealous;

from CPQ factor E - self-assured, independent-minded;

from CPQ factor F - serene, talkative, cheerful;

from CPQ factor Q4 - (not) irrationally worried, (not) irritable.

Despite these contributions the closest overall match is with CPQ factor C (Emotionally unstable-versus-Emotionally mature) which combines placid, constant, calm, stable, realistic, adjusts to facts, phlegmatic. The face-significance of individual items confirms that Factor B6 is measuring emotional maturity.

The social confidence of this factor contrasts with Factor A5 (Shyness) but the Form A factor includes a stronger element of actual distrust. Factor B6 can be distinguished from Factor B4 (Sociability). Though both factors include interpersonal situations, Factor B4 refers more specifically to the interpersonal relationship and Factor B6 more specifically to the situational behaviour.

Items attracted from CPQ factors:

Three items from CPQ F, two from each of CPQ factors D, E, Q4, and one from each of CPQ factors A, H, I, J, Q3.

Items loading on other Form B factors:

In the top ten placings only one item loaded on another Form B factor: 2 1 on Factor B2.

TABLE 32

FORM B, FACTOR B7 - CONSOCIATION

Item No.	Loading	Wording of Item	GPQ Factor
2 25	-0.6854	When you grow up would you rather be a lawyer in an office or fly a plane	E
1 14	-0.5952	Would you rather be president of a business or a jet pilot	F
1 55	-0.5069	Would you rather talk to people or show them a game you know	N
2 35	0.4079	Would you rather be a bus driver or a doctor	G
1 1	0.3942	Would you like to play with mechanical toys or with friends	A
1 21	0.3681	Should everyone have his own airplane or are family cars enough	E
1 63	0.3194	Would you rather see a movie about cowboys and Indians or about how people in another country live	N
1 35	0.3171	Would you rather be a cowboy or a minister in a church	G

FORM B, FACTOR B7 - CONSOCIATION

This factor included one "double" item (1 35 and 2 35) from GPQ factor G (Frivolous-versus-Persevering) but no other item from that factor appeared. There were two items from GPQ factor E (Submissive-versus-Dominant) in first and sixth placings and two items from GPQ factor N (Simple-versus-Shrewd) in third and seventh placings. The item in second place came from GPQ factor F (Serious-versus-Happy-go-lucky). The remaining item came from GPQ factor A (Reserved, stiff-versus-Easy going).

The interpretation of this factor is not simple. There are elements from each of the five GPQ factors as described in the GPQ Handbook, pp. 25-34. Included in these descriptions are:

GPQ factor A - attentive to people, sociable, casual

" " E - kindly, soft-hearted, conventional

" " F - serious, concerned, sticks to inner values

" " G - responsible, conscientious, attentive to people

" " N - company-seeking, sentimental, simple.

The two core characteristics are a preference for dealing with people rather than things, shown in the first five loadings, and a

serious, concerned approach shown in the first item and the last three items. Item 2 35 nicely illustrates the involvement of both these characteristics with the response "a doctor" revealing a serious, concerned attitude in dealing with people which approaches paternalism.

The title Consociation expresses the aligning with other people and includes both the paternalistic element, either as business president or as minister, as well as association in more equal friendship.

Of the CPQ factors, G (Frivolous-versus Persevering) provides the best match, though it lays more stress on the element of seriousness and somewhat less on the preference for dealing with people than does Factor B7.

Factor B7 showed a correlation of 0.32 with Factor B2 (Self-reproach) indicating the common element of seriousness. There is no near match in the Form A factors.

Items attracted from CPQ factors:

Two items from each of CPQ factors E, G, N; one from each of A, F.

Items loading on other Form B factors:

1 14 on B5, 1 1 on B9, 1 35 on B12.

TABLE 33  
FORM B, FACTOR B8 - LAXITY

Item No.	Loading	Wording of Item	CPQ Factor
2 30	-0.6708	Are you happy to study in a noisy room or should your study room be quiet	F
2 26	-0.5881	If you have torn a book, would you return it to the library or try to repair it first	F
2 63	-0.5733	If you were a teacher, would you let the children be noisy or would you make them be quiet	N
2 66	-0.3403	When your school work is wrong, do you feel it is no use or do you feel you must do better	Q4
1 59	-0.3314	Would you rather go on a walk with a friend or go to a picnic with mother	N

FORM B, FACTOR B8 - LAXITY

This factor included only five items, with no "double" item. The first two items came from CPQ factor F (Serious-versus-Happy-go-lucky) and show the typical happy-go-lucky, talkative, careless (as

(Factor B8 - continued)

opposed to careful) approach. Two other items came from CPQ factor N (Simple-versus-Shrewd) but their face-significance readily associates them with the items from CPQ factor F. The remaining item (2 66) came from CPQ factor Q4 (Composed, relaxed-versus-Driven, tense) which "represents the level of aroused and undischarged drive (CPQ Handbook, p. 37)."

The correlation of -0.37 with Factor B1 (Self-Control) provides a further clue to the nature of this factor, easy-going, unconcerned, showing a casual, nonchalant, somewhat irresponsible attitude, lacking the energy or drive to make an effort. CPQ factor F provides a good match.

There is no close match among the Form A factors, though Factor A2 (Conformity) includes among its behaviours at the opposite pole careful concentration on doing good work.

Items attracted from CPQ factors:

Two items from each of CPQ factors F and N; one item from Q4.

Items loading on other Form B factors:

No item loaded on any other Form B factor.

TABLE 34  
FORM B, FACTOR B9 - SERIOUS-MINDEDNESS

Item No.	Loading	Wording of Item	CPQ Factor
2 56	0.6369	Would you rather be an actor or a scientist	O
1 29	0.5581	Do you wish you were so good-looking that people would turn to look or don't you like people to look	E
1 58	-0.4348	Do you get up early or like to sleep late	Q4
1 7	-0.4100	Would you rather be a minister in a church or a doctor in a hospital	A
2 31	-0.3784	Do you listen to the news sometimes or always go to play when it comes on	G
1 1	-0.3566	Would you like to play with mechanical toys or with friends	A
2 36	0.3356	Do you tell jokes well or find it hard	H
2 33	-0.3354	Would you rather play checkers or baseball	I
2 49	0.3003	Do you get upset when you quarrel with your friends or don't you mind	I

FORM B, FACTOR B9 - SERIOUS-MINDEDNESS

This factor had no "double" item and drew on seven different GPQ factors for its nine items. Two items appeared from each of GPQ factors A (Reserved, stiff-versus-Easy going) and I (Tough minded-versus-Tender minded) but none of these in the top three placings. The two items from each of these GPQ factors A and I showed contradictory loadings in both cases.

The highest-loading item came from GPQ factor O (Complacent-versus-Self-reproaching), the second highest from GPQ factor E (Submissive-versus-Dominant), and the third from GPQ factor Q4 (Composed, relaxed-versus-Driven, tense).

The descriptions of the appropriate poles of the seven GPQ factors, in order of loading, give the following: complacent, submissive, composed/relaxed, reserved/stiff, persevering, shy, tender minded. Most of these are reasonably compatible with the face-meanings of the items which include reserved, precise, aloof, self-effacing, serious, detached.

Factor B9 showed a correlation of 0.50 with Factor B12 and both include a common concern to deal with realities.

Of the Form A factors, Factor A4 (Serious-mindedness) is a close match, though measuring the opposite pole. In the lower-placed items it appears that the Serious-mindedness of Factor B9 is somewhat more impersonal than that of Factor A4. Two similarly-numbered items (31 and 36) appear in both Factor B9 and Factor A4 with loadings in consonant directions.

Items attracted from GPQ factors:

Two items from each of GPQ factors A and I, one item from each of O, E, Q4, G, H.

Items loading on other Form B factors:

1 29 and 1 7 on B12, 1 1 on B9, 2 36 on B13, 2 33 on B5, 1 49 on B2.



TABLE 35

FORM B, FACTOR B10 - EGOCENTRICITY

Item No.	Loading	Wording of Item	CPQ Factor
2 62	0.5348	Do you do your homework and your chores at the same time each day or at any time	Q4
1 47	-0.4723	On a playground, do you do what you want to do or do what most people want	G
2 67	0.3923	Do you do things you should do or things you like to do	N
2 68	-0.3422	Do you think you could learn to fly an airplane or would you rather be a policeman	O

FORM B, FACTOR B10 - EGOCENTRICITY

Only four items loaded on this factor, none of them "double" and all of them from different CPQ factors.

The highest placing was taken by an item from CPQ factor Q4 (Composed, relaxed-versus-Driven, tense) which "has been shown to correlate with measures of strength of . . . self-assertive drive (CPQ Handbook p. 37)." This matches the individualistic, impulsive, somewhat selfish behaviours evident on inspection of the items listed under Factor B10.

The other CPQ factors all include certain aspects of the behaviours listed:

CPQ factor G - fickle, undependable, disregards obligations to people

CPQ factor N - cool, aloof

CPQ factor O - self-confident, expedient

but CPQ factor Q4 provides the best general match.

There is no close resemblance to any other factor from Form B, the highest correlation being -0.26 with Factor B5 (Tendermindedness). This is consonant with the negative correlation apparent on face-significance between Factor B5 and Factor A1 (Assertiveness). However, the assertiveness of Factor A1 includes an element of belligerence.

Items attracted from CPQ factors:

One item from each of CPQ factors Q4, G, N, O.

Items loading on other Form B factors:

2 67 on B1.



TABLE 36  
FORM B, FACTOR B11 - PASSIVITY

Item No.	Loading	Wording of Item	CPQ Factor
2 2	0.5820	Do wonderful things happen every day or are most days rather dull	A
1 62	0.4398	Do you make your bed yourself or do you leave it for mother to make	Q4
2 3	-0.4347	Does mother say you are too slow or do you do things quickly	C
1 64	0.4121	When you start new things, do you do them fast or slowly	O
2 39	0.3828	Do you help a lot around the house or just a little	G
1 57	-0.3510	On days when there is no school, do you just do whatever comes up or plan what you will do for the day	Q3
1 41	-0.3466	To help mother, would you rather draw some pictures for her or clean up your room	I
2 60	-0.3042	Do you sometimes like to just sit and feel hopeless or are you always on the go	O

FORM B, FACTOR B11 - PASSIVITY

Items loading on this factor came from seven different CPQ factors. Two items came from CPQ factor O (Complacent-versus-Self reproaching), both loading in the direction of the Self-reproaching pole. Factor B11 does not appear to incorporate this element so strongly, being limited to a general despondency.

The top three loadings came from CPQ factors A (Reserved, stiff-versus-Easy going), Q4 (Composed, relaxed-versus-Driven, tense) and C (Emotionally unstable-versus-Emotionally mature).

CPQ factor A (CPQ Handbook p. 25) provides no close match, the obstructiveness noted at the appropriate pole being manifest in Factor B11 as a passive unhelpfulness. The description of the appropriate pole of CPQ factor Q4 includes reference to "aware of being criticized by parents for untidiness, phantasy and neglect of good goals (CPQ Handbook p. 37)" but again the degree of tension over this is weaker in the Form B factor. The description of CPQ factor C includes evading responsibilities, quitting, discouraged by "inability to meet good standards of behaviour (CPQ Handbook p. 27)" as some of the less conspicuous characteristics of the appropriate pole, but the Form B factor lacks the overtones of excitable emotional instability included in the CPQ factor.

(Factor B11 - continued)

Factor B11 showed a correlation of -0.39 with Factor B1 (Self-control), the negative correlation appearing to be related to the conscientious, persevering element in Factor B1.

There is some similarity to Factor B8, but the laxity of that factor is associated with a cheerful, happy-go-lucky carelessness rather than the discouraged depression of Factor B11.

In the Form A factors, there is some resemblance to the opposite pole of Factor A2 (Conformity) which is consistent with the correlation between Factor B11 and Factor B1, since it was noted in the discussion on Factor B1 that both Factor A2 and Factor B1 include Conformity as a central element. There is a marked contrast in speed and perseverance in finishing a job or school work.

Passivity has been selected as the title to this factor to encompass the slowness, lack of alertness, involvement or planning, and a tendency to mope.

Items attracted from CPQ factors:

Two items from CPQ factor O, one item from each of A, Q4, C, G, Q3, I.

Items loading on other Form B factors:

No item loaded on any other Form B factor.

TABLE 37  
FORM B, FACTOR B12 - REALISM

Item No.	Loading	Wording of Item	CPQ Factor
1 7	0.7709	Would you rather be a minister in a church or a doctor in a hospital	A
1 35	-0.5332	Would you rather be a cowboy or a minister in a church	G
1 38	0.4687	When your friends fight, do you try to settle it for them or do you just leave them alone	J
1 6	0.4000	Are you usually sure of yourself or do you sometimes feel uncertain	C
1 10	0.3960	When you have started a big job, do you soon forget about it or find that you cannot forget it	C
2 52	0.3296	If your mother is sad, do you feel sad too or try to cheer her up	O
1 29	-0.3000	Do you wish you were so good-looking that people would turn to look or don't you like people to look	E

FORM B, FACTOR B12 - REALISM

This factor included no "double" item, and the only two items to come from the same CPQ factor were originally designed to load in opposite directions but here loaded in the same direction (1 6 and 1 10). Six different CPQ factors were represented.

The direction of loading of item 1 6 is puzzling. Not only did it load on this factor in the opposite direction from its supposedly matching item (1 10), but it also loaded in a non-consonant direction on Factor B3 (Confidence) which showed a correlation of -0.33 with Factor B12.

Factor B12 also showed a correlation of 0.50 with Factor B9 (Serious-mindedness).

The apparently confused picture begins to fall into a pattern (with the exception of item 1 6 which appears completely inexplicable) when common behaviours are extracted from the CPQ factors and the two Form B factors involved:

CPQ factor A, Reserved, stiff pole:

Cool, aloof, hard, precise, cold

CPQ factor G, Frivolous pole:

Demanding, impatient, disregards obligations to people

CPQ factor J, Internally restrained pole:

Acts individualistically, self-sufficient

CPQ factor C, Emotionally mature pole:

Stable, calm, phlegmatic, realistic

CPQ factor O, Complacent pole:

Cheerful, resilient, tough, placid, given to simple action

CPQ factor E, Dominant pole:

Self-assured, independent-minded, hard, stern, tough

Factor B3, Confidence pole:

Emotionally mature, confident in mental and social ability

Factor B9, Serious-mindedness:

Cool, aloof, precise, realistic, serious

From the face-significance of the items there emerges an unemotional, practical approach in coping with reality. The inclusion of the last item suggests a tendency to operate on a physical, rather than emotional or spiritual, basis.

Items attracted from CPQ factors:

Two items from CPQ factor G, one item from each of A, G, J, O, E.

Items loading on other Form B factors:

1 7 and 1 29 on B9, 1 6 on B3, 1 35 on B7.

TABLE 38  
FORM B, FACTOR B13 - FRIENDLINESS

Item No.	Loading	Wording of Item	CPQ Factor
2 47	0.4875	When your parents have visitors do you run away and play or stop to talk with them	G
1 44	0.4645	Do grown-ups talk all the time or often listen to you	H
2 36	-0.4175	Do you tell jokes well or find it hard	H
2 43	-0.4089	Do you like to do new things or would you rather do those things you know best	G
2 5	-0.4082	Can you remember people's names or do you forget them easily	A
1 53	-0.4010	Would you rather tell your mother about things at school or about a visit to a farm	Q3
1 28	-0.3858	When people ask if you will do something, is it easy to decide or hard to decide	D
2 69	-0.3378	When you are playing, do you usually keep the rules or sometimes break them	Q3
1 40	-0.3057	When with strangers, do you feel you can go up and speak to them or are you afraid to	H

FORM B, FACTOR B13 - FRIENDLINESS

This factor included no "double" item. The items in first and fourth placings came from CPQ factor G (Frivolous-versus-Persevering) and those in second and third placings came from CPQ factor H (Shy-versus-Venturesome) from which one other item appeared in lowest place. All loaded consistently on the appropriate pole.

Despite the fact that the item from CPQ factor G supplied the highest loading, the persevering, determined, conscientious emphasis characterizing that factor is not evident in Factor B13.

However, both items from CPQ factor G fit very well on face-meaning with the description of CPQ factor H (CPQ Handbook, p. 31) which includes adventurous, likes meeting people, responsive, genial, friendly, impulsive, and frivolous. CPQ factor A (Reserved, stiff-versus-Easy going), which supplied the item in fifth place, likewise includes reference to good natured, warm, ready to cooperate, attentive to people, sociable, soft-hearted, casual, warm-hearted.

In the descriptions of these two CPQ factors (CPQ Handbook pp. 25--32) it appears that CPQ factor H relates more to temperament and shows higher hereditary determination while CPQ factor A relates more to attitude.

(Factor B13 - continued)

Thus, while at the low poles both list aloof, cold, CPQ factor H is withdrawn, retiring, self-contained, but CPQ factor A is critical, obstructive, suspicious.

Though there was no significant correlation with any other Form B factor, Factor B13 bears some resemblance to Factor B4 (Sociability) which at the low pole includes the loneliness of a solitary disposition and thus matches more closely CPQ factor H. A comparison of the items loading on Factor B4 with those loading on Factor B13 reveals that the B4 items refer more to feelings and ideas, while the B13 items refer more to overt behaviours. This tends to confirm the distinction, and explains why Factor B4 has been matched with CPQ factor H while Factor B13 has been matched with CPQ factor A. The inclusion of the item from CPQ factor D (Phlegmatic-versus-Excitable) is easily explained in view of its "ready to cooperate" content.

While the Sociability of Factor B4 is intended to convey an inner quality of temperament, therefore, Friendliness has been selected for Factor B13 to denote overt performance of specific acts of outreaching friendliness. Since one of the Form B factors has to be reversed to make this comparison, however, it is difficult to judge whether this is a valid distinction.

Items attracted from CPQ factors:

Three items from CPQ factor H, two items from each of CPQ factors G and Q3, one item from each of CPQ factors A and D.

Items loading on other Form B factors:

2 36 on B9, 1 40 on B5.

#### PART 4

#### GENERAL DISCUSSION AND CONCLUSIONS

Each factor has been presented in turn, listing the contributing items and noting which CPQ factors these were drawn from with special reference to those occupying the higher placings. An attempt has been made to identify the core characteristics of each emergent factor by inspection of the face-significance of the items, reference to the CPQ factors on which they were originally designed to load, and comparison with other emergent factors from the same Form (especially those with which there were significant correlations) and from the other Form.

Finally a label for each factor has been suggested. It should be noted that this is not to be regarded as a name intended to encompass the full meaning of the factor concerned but rather as a convenient reference notation to enable the meaning of the factor to be more readily borne in mind during discussion than if referred to only by its number.

In general, the names of the original CPQ factors have not been used for three reasons: first, to avoid the implication that any emergent factor corresponds exactly to any CPQ factor; secondly, because of the considerable overlap of items loading on CPQ factors and the emergent factors as shown in Tables 39 and 40, notably Factor A2 (Conformity) which attracted items from eleven CPQ factors; and thirdly, because there are no statistical tests upon which to base decisions as to the identities of factors so that any identification of the emergent factors with the CPQ factors would have been largely on an intuitive basis.

Some more general considerations remain to be discussed before proceeding to conclusions and implications.

#### Comparison with New Zealand investigation of 16 PF factors

In the absence of any New Zealand-based investigations of the CPQ factors, and in view of Cattell's contention that "each of the CPQ personality dimensions continues in essentially similar form as applicable to all later ages (CPQ Handbook, p. 24)," brief consideration is now given to some analyses of the 16 PF factors.

Eysenck & Eysenck (1969) analysed the 16 PF factors into primary, secondary and tertiary levels and found only eleven were reasonably well defined. Further, not one of these comprised



TABLE 39

Number of significantly-loaded Items from each CPQ Factor  
and the Form A Factors on which these loaded (sig. =  $\pm .30$ )

CPQ factor	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	Number of Form A Factors on which loaded:
A	0	3	1	0	2	0	0	1	0	1	2	0	1	7
C	0	3	1	0	2	0	2	0	0	1	2	0	0	6
D	0	3	3	0	2	0	0	2	1	0	0	2	1	7
E	3	2	4	0	0	1	0	0	0	0	0	0	2	5
F	5	0	3	0	0	0	0	1	0	0	2	1	0	5
G	0	1	4	2	0	0	0	1	0	0	0	0	0	4
H	0	1	0	1	2	2	0	1	2	0	1	0	1	8
I	7	0	0	3	0	0	0	0	0	0	0	0	0	2
J	1	1	0	0	0	3	0	0	1	1	0	2	0	6
N	2	1	2	4	0	0	0	0	1	2	0	0	1	7
O	0	2	0	0	1	0	3	2	0	1	4	0	0	6
Q3	0	1	1	2	0	0	0	1	1	2	0	0	0	6
Q4	1	2	4	0	0	1	0	0	2	0	0	1	1	7
Number of CPQ Factors on which loaded:	6	11	9	5	5	4	3	6	6	6	5	4	6	76



TABLE 40  
Number of significantly-loaded Items from each CPQ Factor  
and the Form B Factors on which these loaded (sig. =  $\pm .30$ )

CPQ factor	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	Number of Form B Factors on which loaded:
A	0	2	1	1	0	1	1	0	2	0	1	1	1	9
C	0	2	4	0	1	0	0	0	0	0	1	2	0	5
D	3	0	0	0	0	2	0	0	1	0	0	0	1	4
E	1	1	1	0	1	2	2	0	0	0	0	1	0	7
F	1	0	0	1	3	3	1	2	0	0	0	0	0	6
G	0	1	1	0	1	0	2	0	1	1	1	1	2	9
H	0	4	0	0	1	1	0	0	1	0	1	0	3	6
I	0	4	0	1	4	1	0	0	2	0	0	0	0	5
J	0	2	1	2	1	1	0	0	0	0	0	1	0	6
K	3	0	0	0	0	0	2	2	0	1	0	0	0	4
O	0	2	1	2	0	0	0	0	1	1	2	1	0	7
Q3	4	0	0	0	1	1	0	0	0	0	1	0	2	5
Q4	2	0	0	1	1	2	0	1	1	1	1	0	0	8
Number of CPQ Factors on which loaded:	6	8	6	6	9	9	5	3	7	4	7	6	5	81

only the items originally designed to load on it. Howarth & Browne (1971) in Canada and Adcock et al. (1971) in New Zealand have conducted similar studies and found a similar lack of confirmation of the 16 PF factors. However, Adcock et al. (1971) report "Our own studies do not even agree between similar subjects samples taken a year apart and do not yet provide any sound basis for an alternative scoring scheme. Instead of fifteen factors we find statistical evidence (Guttman and Scree criteria) for at least twice this number."

However, reporting a further investigation of the 16 PF factors Ngairé V. Adcock (1971) accepted ten of the emergent primary factors and six second-order factors. These were:

Primary factors:

1. Cycloid emotionality
2. Sociability
3. Meticulousness
4. Marital Status Syndrome
5. Threectia or social shyness (16 PF factor H)
6. Compassion, Affectionate
7. Social Concern
8. Social Dependency
9. Submissiveness (possibly Dominance in negative form)
10. Need for Excitement

Second-order factors:

1. Emotionality
2. Female sex
3. Social Dependency
4. Dominance v. Threectia (16 PF factors H and E)
5. Premia or Refinement (16 PF factor I)
6. Surgency (16 PF factor F)

Only two of the expected factors failed to appear: G (Weaker superego strength-versus-Stronger superego strength) and Q3 (Low self-sentiment integration-versus-High strength of self-sentiment).

Adcock et al. (1971), on the other hand, found that the most highly confirmed factors were G and I (Harris-versus-Premia) and the most doubtful were N (Artlessness-versus-Shrewdness) and Q1 which does not appear in the CPQ version.

In the present investigation, Table 39 which shows that seven items from CPQ factor I (Tough minded-versus-Tender minded) loaded on Factor A1 (Assertiveness) confirms that this CPQ factor is the best defined. It was also the only CPQ factor in either the Form A or Form B investigation to load on less than three emergent factors.

Table 39 also shows that items from CPQ factors A, D, H, N, and Q4 loaded on seven or more different Form A factors. Table 40 gives similar information for Form B, showing items from CPQ factors A, E, G, O, and Q4 loaded on seven or more different Form B factors.

Table 41, which lists the Form A factors and gives the Form B and CPQ factors which best matched each of these, shows that the CPQ factors which failed to appear clearly defined in the present investigation were A (Reserved, stiff-versus-Easy going), C (Emotionally unstable-versus-Emotionally mature), and N (Simple-versus-Shrewd).

These findings agree with those of Adcock et al. (1971) in confirming CPQ factor I as the best defined and CPQ factor N as one of the most poorly defined, though it must be remembered that the comparison is between corresponding factors from the 16 PF and the CPQ.

#### Matching factors from Form B

Table 41 shows the Form B and CPQ factors which best match each of the Form A factors and the correlations between these. Several of these correlations are significant, though the correlation between Factors B5 (Tender-mindedness) and B9 (Serious-mindedness) both of which have elements in common with A4 (Serious-mindedness) is 0.00.

There appears to be no close match among the Form A factors for Factors B7 (Consociation) and B13 (Friendliness). A comparison of Tables 8 A and 8 B shows more emphasis in Form B on sociability dimensions, three Factors including differing aspects: B4 (Sociability), B7 (Consociation), and B13 (Friendliness). This personality dimension has possibly been absorbed in Form A by Factors A3 (Dependency), A5 (Shyness), and A13 (Participation) although not appearing so strongly in the actual naming of the factors.

In comparing Form A with Form B factors, and more especially reading through the lists of items loading on each Form A factor, a vague but discernible pattern of regression emerges when viewed from the "relation to authority" standpoint. Taking the appropriate pole of each Form A factor in turn, there appears to be a regression from bossy exercise of authority (A1 Assertiveness), through competent conformity (A2 Conformity), rigid rule-keeping (A3 Dependency), a don't-care attitude (A4 Serious-mindedness), a feeling that others

TABLE 41

Form B and CPQ factors which best match each Form A Factor, and the correlations between those

Form A factor	Best match from Form B factors	Correlations	Best match from CPQ factors	Correlations
A1 Assertiveness	-B2 Self-reproach -B5 Tender-mindedness B10 Egocentricity	B2/B5 -0.04 B5/B10 -0.26 B2/B10 0.07	E Submissive-versus-Dominant I Tough minded-versus-Tender minded Q3 Lax-versus-Self controlled	E/I -0.43
A2 Conformity	B1 Self-control -B8 Laxity -B11 Passivity	B1/B8 -0.37 B8/B11 0.27 B1/B11 -0.39		
A3 Dependency	B2 Self-reproach		None	
A4 Serious-mindedness (low pole)	B5 Tender-mindedness -B9 Serious-mindedness	B5/B9 0.00	G Frivolous-versus-Persevering	
A5 Shyness	B4 Sociability (low pole) -B6 Emotional Maturity	B4/B6 -0.14	H Shy-versus-Venturesome	
A6 Security	-B2 Self-reproach			
A7 Confidence (low pole)	B3 Confidence (low pole) -B12 Realism	B3/B12 -0.33	F Serious-versus-Happy go lucky O Complacent-versus-Self reproaching	
A8 Self-satisfaction	None		D Phlegmatic-versus-Excitable None	
A9 Irresolution	None		J Vigorous-versus-Internally restrained	J/Q3 -0.22
A10 Self Sentiment	None		Q3 Lax-versus-Self controlled O Complacent-versus-Self reproaching	
A11 Defeatism	B2 Self-reproach		D Phlegmatic-versus-Excitable, relaxed-versus-Driven, tense	D/Q4 0.44
A12 Placidity	None			
A13 Participation	None		E Submissive-versus-Dominant	

are taking advantage of you (A5 Shyness), that others can't be bothered to notice you (A6 Security), that others can do better than you (A7 Confidence), that elders are critical (A8 Self-satisfaction), uncertainty and apprehension (A9 Irresolution), that anything you do will go wrong (A11 Defeatism), letting others have their way (A12 Placidity), and finally withdrawal (A13 Participation).

Further consideration of this apparent gradation along one continuum lies in the realm of personality theory and as such is outside the scope of this investigation, but appears consonant with the development of self-competence which has appeared in various forms in much of such theory.

This pattern of gradation does not appear in such an orderly sequence in Form B, and the two extreme poles are not so well marked.

#### Matching factors from the CPQ

Apart from CPQ factors A, C, and N as noted on page 87, CPQ factors appeared as recognisable entities included in the emergent factors from Form A.

CPQ factor A showed elements in common with Factors A2 (Conformity), A5 (Shyness), and A11 (Defeatism) while CPQ factor C showed common elements with Factors A2, A5, A11, and also A7 (Confidence) as shown in Table 39. This suggests that these four emergent factors may represent merely a rearrangement of the constituent elements from the contributing CPQ factors including CPQ factors A and C.

CPQ factor N contributed chiefly to Factors A2, A3 (Dependency), A4 (Serious-mindedness), and A10 (Self Sentiment) as shown in Table 39. The similarity of these emergent factors is evidenced by the fact that A2, A4, and A10 were the only Form A factors to show significant intercorrelations in the present investigation, Table 5 A showing a correlation of -0.31 between A2 and A4, and -0.30 between A2 and A10, while A4 with A10 approached significance at 0.28.

Extraction of more factors might have led to separation of such CPQ factors as appeared amalgamated in one emergent factor in the present investigation, e.g. CPQ factors A and I which were incorporated in Factor A1.

As Adcock et al. (1971) concluded: "all the recent evidence seems to indicate that the items themselves do not define the

factors to which they are alleged to relate, but . . . the factors which do emerge are in many cases strikingly similar to the 16 PF factors as described."

#### Homogeneity of similarly-numbered items

The CPQ Handbook advocates the use of the full-length test (both A and B Forms) to provide the ten items designed to load on each CPQ factor (p. 11) and further states that items were split symmetrically between Forms A and B (p. 8). On the other hand, it also notes during discussion of the equivalence values for CPQ factors C, E, G, J, and Q3 "the placing of better items in the A form (p. 11)."

Intra-Form homogeneity of items: the present investigation found that in the Form A factors there were thirteen double items (Table 11), i.e., similarly-numbered items from Parts 1 and 2 of the Form which were originally designed to load on the same CPQ factor and which have loaded on the same Form A factor in the present investigation. In the Form B investigation there were only seven double items (Table 25). This tends to indicate greater homogeneity of similarly-numbered items in the two Parts of Form A than of those in the two Parts of Form B since, regardless of the fact that the CPQ factors may be quite different from the emergent factors involved, the items appear to be measuring closely-related personality characteristics.

Inter-Form homogeneity of items: no attempt can be made to investigate the homogeneity of similarly-numbered items across the two Forms since there are no grounds for accepting that similarly-numbered factors in Forms A and B are themselves homogeneous. Such an investigation would, of course, be possible by extracting the factors from an analysis of all items from both Forms in one matrix and finding whether similarly-numbered items from both Parts of both Forms are significantly loaded on the same emergent factor.

#### "Double" items as indicators of the nature of emergent factors

Two emergent factors listed "double" items providing the two highest loadings. Factor A11 (Defeatism) attracted items 1 52 and 2 52 from CPQ factor 0 (Complacent-versus-Self reproaching) as shown in Table 11. Factor A11 showed a reasonable match with the CPQ factor, though it lacked the element of specific self-reproach. The other emergent factor listing "double" items in the two highest



placings was B4 (Sociability) which attracted items 1 34 and 2 34 from CPQ factor J (Vigorous-versus-Internally restrained) as shown in Table 29. Factor B4, however, did not show a close resemblance to the CPQ factor despite the fact that it also attracted three other items originally designed to load on that factor.

Two emergent factors listed two "double" items from the same CPQ factor. Factor A1 (Assertiveness) attracted items 1 30 and 2 30 and 1 26 and 2 26 from CPQ factor F (Serious-versus-Happy go lucky) as shown in Table 12. These items provided three out of the four highest loadings but despite this the emergent factor resembled CPQ factor E (Submissive-versus-Dominant) more closely than CPQ factor F. The other emergent factor to do this was Factor A3 (Dependency) which attracted items 1 31 and 2 31 and 1 43 and 2 43 from CPQ factor G (Frivolous-versus-Persevering) but in lower placings as shown in Table 14. Factor A3, however, included too many elements from other CPQ factors to be closely matched with CPQ factor G.

The inclusion of "double" items, therefore, even when occupying high placings, does not appear to provide a reliable indicator that the emergent factor closely resembles the CPQ factor for which the items were originally designed.

#### Proportion of positive to negative loadings

An equal balance of positive and negative loadings is desirable since, because of the design of the present investigation, this would indicate that an equal number of right-hand and left-hand responses had been checked by the subjects. This in turn would indicate that "response sets" towards selecting the first or second alternative responses are not likely to be distorting the scores. The CPQ was designed to include an equal number of first and second alternative responses over both Forms loading on each CPQ factor (Table 10).

Form A showed an almost equal proportion: 73 positive to 71 negative loadings (Table 11). In Form B the proportion was 57 positive to 70 negative (Table 25).

However, Form A showed three factors with all loadings in only one direction (A6, A9, A12, all negative loadings) whereas Form B showed only two such factors (B3 all positive loadings, and B8 all negative loadings).

This raises the question whether a "response set" on the part of the subject is contributing unduly to the factor, especially in



view of the nature of these factors, e.g. the first alternative response was selected for all items contributing to A12 (Placidity) and B8 (Laxity). It might be argued that a subject possessing these personality characteristics would be more likely to acquiesce with the first alternative answer, thereby scoring a negative loading, rather than making the extra effort to think about the second alternative answer.

This question could be investigated by administering the questionnaire with the wording of half of the items contributing to these factors reversed so that the second alternative response must be checked instead of the first alternative response in order to contribute to the factor.

#### Inter-factor correlations

Table 5 A shows only two correlations greater than 0.30, positive or negative, among Form A factors and both of these are close to the criterion level:

-0.30 between A2 (Conformity) and A4 (Serious-mindedness, low pole)

-0.31 between A2 (Conformity) and A10 (Self Sentiment)

This appears to be a logical relationship in view of the element of impetuous individualism found in both the low pole of A4 and the high pole of A10.

Table 5 B shows six such correlations occurring among Form B factors:

0.33 between B1 (Self-control) and B5 (Tender-mindedness)

-0.37 " B1 " " " B8 (Laxity)

-0.39 " B1 " " " B11 (Passivity)

0.32 " B2 (Self-reproach) " B7 (Consociation)

-0.33 " B12 (Realism) " B3 (Confidence - low pole)

0.30 " B12 " B9 (Serious-mindedness)

The Form A factors are therefore more independent than the Form B factors and thus provide a better coverage of the total factor space as well as being more clearly defined. The lack of close correlation also minimises concomitant variation among factors.

Table 5 C reveals that there are thirteen inter-factor correlations greater than 0.30, positive or negative, among the CPQ factors. CPQ factor B (Less intelligent-versus-More intelligent), which was not included in the present investigation,

is the only CPQ factor not showing a significant correlation with at least one other CPQ factor. The CPQ factors are therefore considerably more oblique and so less independent than the emergent factors in the present investigation.

#### Summary

Form A factors were the most clearly defined, showing only two significant intercorrelations compared with six among the Form B factors, and thirteen among the CPQ factors.

Items from all CPQ factors except I showed significant loadings on four or more of the emergent factors, indicating that the items did not clearly define the CPQ factors which they are alleged to measure. This confirmed earlier findings on the related 16 PF in the New Zealand setting which reported that the items did not define the 16 PF factors for which they were designed, and also reported the related 16 PF factor I as the best defined.

However, 89 items from Form A and 85 items from Form B showed significant loadings on only one emergent factor (Table 9). Ten of the CPQ factors appeared as recognisable entities in the emergent factors.

Thus it appears that the items are measuring the personality characteristics for which the test was designed, and that the emergent factors are markedly similar to the original CPQ factors. The central problem remains, as Ngairé V. Adcock (1973) remarked of her investigations into the 16 PF, not so much the existence of the factors "but rather the scoring values to be attributed to the variables themselves."

#### Implications

It is suggested that the Form A factors may provide a more suitable reference frame for the measurement of personality dimensions among New Zealand children.

Adaptation of the CPQ would be necessary and should include selection of the items providing the top loadings on the emergent factors, discarding items which loaded on no emergent factors (15 in Form A as shown in Table 9), reversing the wording of some items to prevent distortion by affirmative or negative response sets on the part of the subject, and rearrangement to provide a symmetrical split of items between Part 1 and Part 2 of the Form.

Any such local adaptation of a test which has been widely and internationally used, and which has demonstrated its ability to assist in the prediction of school achievement and discrimination of exceptional or disadvantaged children from norm groups should not be undertaken on the basis of such little evidence as the present isolated and limited investigation has supplied.

However, in view of other supporting evidence especially on the related 16 PF in the New Zealand cultural setting, it is suggested that further research is warranted. Some suggestions are offered:

1. A comparison of individual personality profiles scored by the conventional GPQ method and then on the emergent factors, using the present data, would reveal the degree of agreement on the total personality profile.
2. The degree to which some emergent factors, especially A1, are sex-linked should be investigated and again this could be done using the present data.
3. With the cooperation of the Psychological Service, and possibly using data already gathered by the Service, the discriminatory powers of the emergent factors could be investigated.
4. Individual scores could be calculated from the present data to provide the basis for longitudinal follow-up studies to find:
  - (a) whether similar scores emerge from later tests on the same sample; and/or
  - (b) whether certain personality profiles appear to show any relationship to future academic achievement or social adjustment.
5. Replication with other groups of New Zealand school children, both representative samples and special groups, is necessary before it is possible to make any confident evaluation of the usefulness of the GPQ in investigating social and academic difficulties of primary and intermediate school children.

SOCIO-ECONOMIC INDEX FOR NEW ZEALAND BASED ON  
LEVELS OF EDUCATION AND INCOME FROM  
THE 1966 CENSUS

W.B. Elley & J.C. Irving  
NZCER

The accompanying scale of occupations is derived from an objective index of the median educational level and median income level of each of 79 occupation major groups, as presented in the 1966 Census. After calculation, the median values for income and education were converted to standardized values and combined with equal weights for each occupation group. The occupation groups were then broken down into 315 finer categories of occupation, for easier identification, and classified into six broad levels. (See Table 1) The demarcation lines between levels were set in such a way as to conform most closely to the logical classification of occupations prepared by Redmond and Davies. (NZCER, 1940) It is of interest to note that the correlation between the ratings of the 171 occupations common to both these scales is 0.90.

A fuller description of the rationale, method, and further information on the accompanying socio-economic index will be available soon.

Table 1

<u>Level</u>	<u>Occupation</u>	<u>Level</u>	<u>Occupation</u>
1	Accountant	3	Bookkeeper
2	Actor	6	Bootmaker
2	Administrator (n.e.c.)	6	Boot Repairer
2	Advertising Agent	6	Bottler
5	Agent (T.A.B.)	4	Brass Finisher
4	Aircraft Mechanic	5	Brewer
1	Aircraft Pilot	5	Brick and Tile Maker
1	Analytic Chemist	4	Bricklayer
2	Announcer	4	Builder
1	Architect	6	Builder's Labourer
3	Armed Forces Personnel	4	Building Inspector
2	Artist	5	Bus Driver
2	Auctioneer	3	Buyer
5	Baker	4	Cabinet Maker
2	Bank Manager	5	Canning Worker
3	Bank Teller	2	Car Dealer (Proprietor)
5	Barber	6	Caretaker
5	Barrman	4	Carpenter
2	Beckeeper	5	Carpet Layer
5	Blacksmith	5	Carpet Maker
2	Boarding House Proprietor	5	Carrier
4	Boat Builder	3	Cashier
4	Boilermaker	2	Caterer
4	Book Binder	6	Chainman

Level    Occupation

5    Chauffeur  
 4    Chemical Worker (n.e.c.)  
 2    Chiropractor  
 6    Cleaner (n.e.c.)  
 2    Clergyman  
 3    Clerk  
 5    Clothing Worker  
 4    Coach Builder  
 6    Coal Miner  
 2    Commercial Artist  
 3    Commercial Traveller  
 2    Company Director  
 2    Company Manager  
 2    Company Proprietor  
 3    Company Secretary  
 4    Composer  
 4    Concrete Construction Worker  
 5    Concrete Block and Pipe Maker  
 5    Cook  
 4    Cooper  
 2    Copywriter  
 5    Crane Operator  
 6    Custodian  
 2    Customs Agent  
 4    Cycle Repairman  
 5    Dairy Factory Worker  
 6    Dairyman  
 2    Deck Officer  
 5    Delivery Man  
 4    Dental Technician  
 1    Dentist  
 4    Die Maker  
 1    Doctor  
 4    Drainlayer  
 3    Draughtsman  
 5    Driver (Excavating Equipment)  
 5    Driver (Stationary Engine)  
 5    Driver (n.e.c.)  
 5    Drycleaner  
 5    Dyer  
 1    Economist  
 2    Editor  
 4    Electrician  
 4    Electronic Worker  
 4    Electroplater  
 1    Engineer (Professional)  
 5    Engine Oiler and Greaser  
 3    Export Agent  
 6    Farm Contractor  
 2    Farmer  
 6    Farm Labourer  
 2    Farm Manager  
 6    Fencer  
 4    Fertilizer Worker  
 2    Film Producer  
 3    Fireman  
 4    Fisherman  
 4    Fitter  
 6    Forestry Worker

Level    Occupation

5    Foundry Worker  
 5    Fork Lift Operator  
 5    Freezing Worker  
 4    French Polisher  
 6    Ganger  
 4    Garage Attendant  
 2    Garage Proprietor  
 6    Gardener  
 4    Gas Worker  
 4    Glazier  
 4    Goods Supervisor  
 1    Government Administrator  
 5    Grader Operator  
 5    Groom  
 6    Groundsman  
 3    Guard  
 2    Health Inspector  
 5    Hospital Orderly  
 5    Hotel Porter  
 2    Hotel Proprietor  
 6    Hunter  
 3    Import Agent  
 4    Inspector (Transport  
 4    Instrument Maker  
 2    Insurance Agent  
 2    Insurance Assessor  
 2    Interior Decorator  
 5    Iron and Steel Worker  
 6    Janitor  
 4    Jeweller  
 4    Joiner  
 5    Jockey  
 2    Journalist  
 5    Kitchenman  
 3    Laboratory Technician  
 6    Labourer (n.e.c.)  
 2    Landscape Gardener  
 5    Laundryman  
 1    Lawyer  
 6    Leather Worker (n.e.c.)  
 1    Librarian  
 5    Lift Operator  
 6    Logger  
 4    Machine Operator  
 5    Mail Contractor  
 5    Mail Sorter  
 3    Male Nurse  
 3    Manufacturers' Agent  
 4    Manufacturing Jeweller  
 2    Marine Engineer  
 2    Market Gardener  
 6    Market Garden Worker  
 5    Meat Inspector  
 4    Mechanic (n.e.c.)  
 4    Mechanical Engineer (non-Professional)  
 1    Member of Parliament  
 2    Merchant Proprietor  
 5    Messenger  
 4    Metal Worker (n.e.c.)

Level Occupation

3	Meter Reader
6	Milker
5	Milkman
5	Miller
6	Miner (n.e.c.)
6	Mineral Treater
4	Motor Assembler
4	Motor Body Builder
4	Motor Mechanic
5	Moulder
2	Music Teacher
2	Musician
4	Newsagent
2	Nurseryman
6	Office Cleaner
3	Office Machinist
2	Orchardist
6	Orchard Worker
2	Optician
2	Optometrist
6	Packer
5	Painter
4	Paint Maker
4	Panel Beater
4	Paper Mill Worker
5	Paperhanger
5	Park Caretaker
5	Pastrycook
1	Personnel Officer
4	Plasterer
4	Platelayer
4	Plumber
2	Pharmacist
3	Photographer
2	Physiotherapist
5	Plastics Worker
3	Policeman
6	Porter
5	Postman
3	Postmaster
5	Potter
5	Presser (Clothing)
4	Printer
4	Printing Machinist
5	Production Process Worker
1	Professional (n.e.c.)
4	Projectionist
3	Proof Reader
1	Psychiatrist
1	Psychologist
1	Public Relations Officer
6	Quarryman
6	Rabbitier
4	Radio & TV Station Operator
4	Radio & TV Serviceman
2	Radiographer
5	Railway Brakeman
4	Railway Engine Driver

Level Occupation

4	Railway Fireman
5	Railway Guard
4	Railway Signaller
6	Railway Surfaceman
6	Railway Worker (n.e.c.)
2	Real Estate Salesman
4	Refrigeration Engineer
2	Reporter
2	Restaurant Proprietor
4	Rigger
6	Roadman
4	Roofing Worker
5	Rubber Worker
6	Rubbish Collector
6	Saddler
4	Salesman
4	Saw Doctor
4	Sawmill Worker
4	Scaffolding Erector
1	School Inspector
1	School Teacher
1	Scientist
6	Scrub Cutter
5	Seaman
3	Secretary
4	Service Station Worker (n.e.c.)
5	Service Worker (n.e.c.)
6	Shearer
6	Shearing Shed Hand
6	Shepherd
2	Ship's Pilot
4	Shipwright
4	Shop Assistant
2	Shop Owner
5	Signwriter
1	Social Welfare Worker
5	Spinner
5	Sports Coach
4	Stationmaster
2	Stock and Share Broker
2	Stock and Station Agent
6	Stockman
6	Street Cleaner
5	Steward
5	Stoker (not Railway)
5	Sub Station Operator
4	Sugar Refinery Worker
1	Surveyor
5	Tailor
5	Taxi Driver
3	Technician (n.e.c.)
4	Telecommunications Worker (n.e.c.)
4	Telegraph Linesman
4	Telephone Exchange Operator
5	Textile Worker
4	Timber Treatment Worker
5	Tobacco Factory Worker
4	Toolmaker

Level Occupation

2	Theatre Manager
1	Town Clerk
1	Town Planner
6	Tractor Driver
3	Trade Union Secretary
4	Traffic Controller (n.e.c.)
5	Trainer (Racehorse)
5	Truck Driver
6	Tunneller
4	Turner
1	University Teacher
4	Undertaker
5	Upholsterer
2	Valuer
1	Veterinarian
5	Waiter
3	Warder

Level Occupation

2	Warehouse Agent
5	Warehouseman (Freight)
5	Waterside Worker
5	Weaver
4	Welder
4	Well Driller
5	Winchman
4	Wire Worker
4	Wood Pulp Worker
4	Woodworker (n.e.c.)
5	Wool Classer
5	Wool Machinist
5	Wool Scourer
2	Working Proprietor (on own account)
2	Writer
4	Watchmaker







# What You Do and What You Think

Print Your Name: First \_\_\_\_\_ Last \_\_\_\_\_

Your Age \_\_\_\_\_ Grade in School \_\_\_\_\_ Boy or Girl \_\_\_\_\_

Read each statement and mark an ☒ on the side that fits you better. Some questions will not have the words just the way you want them but mark every one the best you can. You may ask for help if you don't know a word. Just raise your hand and the teacher will come to your desk. Do not work long on one question. Mark it and go right on to the next one. **MARK EVERY ONE.** Most of the questions have two boxes to choose from but other questions have three boxes. Always look at **ALL** the boxes and pick just one of them for your answer.

1. When visiting a new building do you like to have someone show you around ☐ or ☐ do you like to find your own way
2. When a child laughs at you do you feel badly ☐ or ☐ do you laugh too
3. Do you think you could do well at almost anything ☐ or ☐ just a few things
4. In a game on the playground, do you stand around ☐ or ☐ run a lot
5. Does your mother think you are too lively and restless ☐ or ☐ quiet and calm
6. Do you feel nervous at school ☐ or ☐ are you happy
7. Do you work slowly ☐ or ☐ quickly
8. In your group is someone else the leader ☐ or ☐ are you the leader
9. Do you have many friends ☐ or ☐ just a few good friends
10. Do you think you smile a great deal ☐ or ☐ do not smile much

**GO RIGHT ON TO THE NEXT PAGE.**

DO NOT WRITE BELOW THIS LINE.

FACTOR		A	B	C	D	E	F	G	H	I	J	N	O	Q <sub>3</sub>	Q <sub>4</sub>
Part A <sub>1</sub> Raw Score															
Part A <sub>2</sub> Raw Score															
Form A Raw Score = (A <sub>1</sub> + A <sub>2</sub> )															
Standard Score															
PROFILE IN STENS	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	9	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	8	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	7	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	6	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	5	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	4	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	3	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	2	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•
FACTOR		A	B	C	D	E	F	G	H	I	J	N	O	Q <sub>3</sub>	Q <sub>4</sub>

11. Usually means the same as generally ☐ or seldom ☐ or always ☐
12. Do you sometimes speak angrily to your parents ☐ or ☐ is it wrong to do so
13. Does your teacher think you are good at sitting still ☐ or ☐ that you run around too much
14. When your friends argue, do you join the argument ☐ or ☐ keep quiet till they finish
15. Foot is to leg as hand is to wrist ☐ or finger ☐ or arm ☐
16. When someone is slow does it bother you ☐ or ☐ does it not bother you
17. Would you rather hunt birds ☐ or ☐ draw pictures of birds
18. Do you go to buy your own toys ☐ or ☐ does mother do it
19. The next number in 7, 5, 3, —, is 9 ☐ or 1 ☐ or 0 ☐
20. In your family are you the happy one ☐ or ☐ the one in trouble
21. Would you rather talk with your teacher ☐ or ☐ talk with a good friend
22. If two children were fighting on the playground, would you let them fight ☐ or ☐ go and tell the teacher
23. Which one of these does not belong with the others: cold, hot, wet, warm warm ☐ or cold ☐ or wet ☐
24. If people push you in a bus, do you just smile ☐ or ☐ do you get mad
25. Would you like better to have bears here now ☐ or ☐ to hear stories about bears
26. Would you rather work with books in a library ☐ or ☐ be a General in the Army
27. If Mary's uncle is my father, what relation is Mary's sister to me cousin ☐ or niece ☐ or auntie ☐
28. Do they say you shout at people when you get excited ☐ or ☐ do they think you are patient
29. Is mother's way of doing things always better ☐ or ☐ is your own new way sometimes better
30. Would you rather be a tap dancer ☐ or ☐ a soldier

GO RIGHT ON TO THE NEXT PAGE.

Do not write here.

B \_\_\_\_\_ D \_\_\_\_\_ E \_\_\_\_\_ F \_\_\_\_\_



31. Would you rather go to the movies ☐ or ☐ to a church
32. Are you doing as well as you should in your work ☐ or ☐ could you do better
33. Which story would you like better, one about killing Indians ☐ or ☐ how Indians made clothing
34. Do loud noises scare you ☐ or ☐ do you just laugh at them
35. Do you obey the rules all the time ☐ or ☐ only when someone is looking
36. Are your feelings easily hurt ☐ or ☐ not easily hurt
37. Would you rather collect stamps ☐ or ☐ play football
38. If people wanted you to do something you did not want to do, would you get angry ☐ or ☐ just go along
39. If you begin a job and it becomes hard, do you give up ☐ or ☐ keep on working
40. Do new teachers frighten you ☐ or ☐ do you usually like them
41. Would you rather ride a bicycle ☐ or ☐ listen to music
42. Do teachers scold you ☐ or ☐ think you are all right
43. When mother calls, do you wait a while ☐ or ☐ do you come right away
44. Are most children kind to you ☐ or ☐ are they sometimes unkind
45. Would you rather read a book ☐ or ☐ play ball
46. If someone has a new idea, do you say it is good ☐ or ☐ wait a while to make sure
47. If you know the answer, do you raise your hand ☐ or ☐ wait to be called on
48. Are your parents always ready to hear you talk ☐ or ☐ are they sometimes too busy
49. In a play would you rather be a speed pilot ☐ or ☐ a famous writer
50. If a trick is played on you, do you laugh ☐ or ☐ get a little angry

**GO RIGHT ON TO THE LAST PAGE.**

Do not write here.

G\_\_\_\_\_ H\_\_\_\_\_ I\_\_\_\_\_ J\_\_\_\_\_

51. Would you like to go fishing by yourself ☐ or ☐ play games with children
52. When you say, "I bet I'm right," are you, ☐ or ☐ wrong most of the time  
in the end, right most of the time
53. School life is hard ☐ or ☐ easy
54. In your school work do you often forget ☐ or ☐ do you feel sure you can remember  
things
55. If you were a wild animal, would you ☐ or ☐ a fast horse  
rather be a lion
56. Can you do most things well ☐ or ☐ can others do things better
57. Would you rather go to school ☐ or ☐ work at home
58. In dreams do animals chase you ☐ or ☐ are dreams nice
59. Are grown-ups always happy to listen to ☐ or ☐ do they get angry when you talk  
you
60. Can you easily stand up in class and talk ☐ or ☐ do you feel shy
61. Would you rather read funny books ☐ or ☐ do arithmetic
62. When a small thing upsets you, do you get ☐ or ☐ can you keep calm  
so mad you want to throw things
63. Do you like to listen to long stories ☐ or ☐ do you get tired
64. Do your plans often not work ☐ or ☐ do they work out well
65. At home would you first help wash the ☐ or ☐ listen to music or TV  
dishes
66. When you are hurried do you still put your ☐ or ☐ just leave them  
clothes away
67. Do you wish school would not be such a ☐ or ☐ is school all right as it is  
bother
68. Do people think that you make many mis- ☐ or ☐ few mistakes  
takes
69. When you read, do you find it hard to keep ☐ or ☐ can you read right on to the end  
your mind on it
70. When mother calls you in the morning, do ☐ or ☐ find it hard to wake up  
you just jump right up

**DID YOU PUT ONE MARK DOWN FOR EVERY STATEMENT? CHECK BACK AND SEE.**

Do not write here.

N\_\_\_\_\_ O\_\_\_\_\_ Q<sub>3</sub>\_\_\_\_\_ Q<sub>4</sub>\_\_\_\_\_





# What You Do and What You Think

Print Your Name: First \_\_\_\_\_ Last \_\_\_\_\_

Your Age \_\_\_\_\_ Grade in School \_\_\_\_\_ Boy or Girl \_\_\_\_\_

Read each statement and mark an ☒ on the side that fits you better. Some questions will not have the words just the way you want them but mark every one the best you can. You may ask for help if you don't know a word. Just raise your hand and the teacher will come to your desk. Do not work long on one question. Mark it and go right on to the next one. **MARK EVERY ONE.** Most of the questions have two boxes to choose from but other questions have three boxes. Always look at **ALL** the boxes and pick just one of them for your answer.

1. Do you finish your school work quickly

☐ or ☐ does it take you too long
2. When losing a game, do you sometimes give up and save your energy

☐ or ☐ always play harder
3. Can you easily persuade your friends to accept your plans

☐ or ☐ is it difficult
4. Do you think many children do better work than you

☐ or ☐ are you as good as anyone else
5. If the teacher lets another child do a job you want to do, do you feel badly

☐ or ☐ soon forget about it
6. Do grown-ups think you are naughty

☐ or ☐ well-behaved
7. Do you find other children take advantage of you

☐ or ☐ are they kind to you
8. Do you make a lot of mistakes

☐ or ☐ just a few
9. Do people like your ideas

☐ or ☐ do they not like them
10. If you got lost, would you know what to do

☐ or ☐ would you be scared

**GO RIGHT ON TO THE NEXT PAGE.**

DO NOT WRITE BELOW THIS LINE.

FACTOR		A	B	C	D	E	F	G	H	I	J	N	O	Q <sub>1</sub>	Q <sub>2</sub>
Part A <sub>1</sub> Raw Score															
Part A <sub>2</sub> Raw Score															
Form A Raw Score = (A <sub>1</sub> + A <sub>2</sub> )															
Standard Score															
PROFILE IN STENS	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
FACTOR		A	B	C	D	E	F	G	H	I	J	N	O	Q <sub>1</sub>	Q <sub>2</sub>

11. Collect is the opposite of spread ☐ or gather ☐ or save ☐
12. If it is wrong to do something do you still do it sometimes ☐ or ☐ not do it
13. Would you rather be a school teacher ☐ or ☐ a great hunter
14. Can you work where people laugh and talk ☐ or ☐ would you rather they keep still
15. Listen is to hear as look is to walk ☐ or notice ☐ or see ☐
16. Does teacher sometimes say you are careless and untidy ☐ or ☐ does she never say so
17. On a playground do you make a lot of noise ☐ or ☐ play quietly, without so much noise
18. Do you think you could learn to fly an airplane ☐ or ☐ would it be too difficult
19. The next number in 12, 9, 6, —, is 4 ☐ or 3 ☐ or 5 ☐
20. If people pester you, do you just laugh it off ☐ or ☐ do you get angry
21. Would you rather write a book ☐ or ☐ be the main actor in a play
22. Are you good at walking a fence or a log ☐ or ☐ are others better
23. Which one of these does not belong with the others: swim, run, sit, fly run ☐ or fly ☐ or sit ☐
24. In class, do you sit quietly ☐ or ☐ do you like to move about
25. When you get a new game as a present, do you like to try it first yourself ☐ or ☐ have someone show you how to play it
26. Would you rather own a small, friendly dog ☐ or ☐ a big, powerful dog
27. Tom is younger than Bill. Jim is younger than Tom. Who is the oldest Bill ☐ or Jim ☐ or Tom ☐
28. Are you disappointed often ☐ or ☐ hardly ever
29. If teacher scolded you badly, would you cry when you told mother ☐ or ☐ just laugh when you told her
30. Would you rather be the captain of a peaceful ocean liner ☐ or ☐ captain of a sub in war

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Do not write here.

B \_\_\_\_\_ D \_\_\_\_\_ E \_\_\_\_\_ F \_\_\_\_\_



31. If a dog were barking at you, would you shout, "Shut up!" ☐ or ☐ say, "He's trying to be a good dog"
32. Do you forget your troubles quickly ☐ or ☐ do you pout for a long time
33. Can you touch a big bug ☐ or ☐ would you dislike to touch one
34. Do you wish you were better looking ☐ or ☐ are you good-looking now
35. Do you usually go straight home ☐ or ☐ play along the way
36. Do you have a hard time deciding which games to play ☐ or ☐ do you make up your mind quickly
37. Would you rather go to school ☐ or ☐ go on a long trip in a car
38. If you were high up on a big rock, would you be scared ☐ or ☐ would you like looking around
39. When Christmas presents are under the tree, do you ever try to open them ☐ or ☐ do you wait
40. Do you feel afraid of things that might happen to you ☐ or ☐ are you satisfied with things as they are
41. Would you rather be an animal doctor ☐ or ☐ a piano player
42. Do you have fainting spells ☐ or ☐ do you not
43. When mother is annoyed with you, is it often her fault ☐ or ☐ do you generally feel you were wrong
44. Does your father do things with you ☐ or ☐ do you not like to bother him when he is busy
45. When you hear a sad story, do tears come to your eyes ☐ or ☐ are you not bothered
46. Do people pay enough attention to you ☐ or ☐ do you have to do things to make them notice you
47. When children ask for help in an exam do you let them do their own work ☐ or ☐ help them unless teacher is watching
48. If people ask you to do too many things, do you find a way to do them ☐ or ☐ do you get all mixed up
49. Would you rather be a space pilot ☐ or ☐ an artist
50. First thing in the morning are you ready for fun ☐ or ☐ are you still tired and sleepy

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Do not write here.			
G	H	I	J

51. Would you rather read short stories ☐ or ☐ a long book
52. Do you succeed in most things you try ☐ or ☐ do things often go wrong for you
53. If a classmate calls you a bad name, do you usually fight ☐ or ☐ pretend you do not care
54. At a loud bang, do you jump ☐ or ☐ just look around
55. Do you laugh when others make mistakes ☐ or ☐ not laugh at them
56. Would you rather be called clever ☐ or ☐ nice and kind
57. Would you rather learn a lesson in school ☐ or ☐ watch a game
58. When people talk about a place you know well, do you start telling them about it too ☐ or ☐ do you keep quiet until they finish
59. Are you good because you like to be good ☐ or ☐ because you get into trouble if you are bad
60. Are you getting along well ☐ or ☐ do you have many problems
61. Would you rather have someone else keep your room tidy ☐ or ☐ do it yourself
62. If you don't like the food, do you complain ☐ or ☐ eat it anyway
63. Do people like best those who are good ☐ or ☐ those who tell clever jokes
64. Does mother say you talk too much ☐ or ☐ are you quiet
65. Are you happy to stay with young children ☐ or ☐ won't you stay with them
66. If friends borrow your things without asking, is it all right ☐ or ☐ are you angry
67. Do you like better a teacher who is easy to get by ☐ or ☐ one who is strict
68. When a problem is too hard, do you give it up for a while and forget it ☐ or ☐ keep working on it
69. When people play a joke on you do you get all upset ☐ or ☐ take it quietly
70. If you were angry, would you go quietly to your room ☐ or ☐ would you slam the door as you went

**DID YOU PUT ONE MARK DOWN FOR EVERY STATEMENT? CHECK BACK AND SEE.**

Do not write here.

N \_\_\_\_\_ O \_\_\_\_\_ Q<sub>3</sub> \_\_\_\_\_ Q<sub>4</sub> \_\_\_\_\_





# What You Do and What You Think

Print Your Name: First \_\_\_\_\_ Last \_\_\_\_\_

Your Age \_\_\_\_\_ Grade in School \_\_\_\_\_ Boy or Girl \_\_\_\_\_

Read each statement and mark an ☐ on the side that fits you better. Some questions will not have the words just the way you want them but mark every one the best you can. You may ask for help if you don't know a word. Just raise your hand and the teacher will come to your desk. Do not work long on one question. Mark it and go right on to the next one. MARK EVERY ONE. Most of the questions have two boxes to choose from but other questions have three boxes. Always look at ALL the boxes and pick just one of them for your answer.

1. Would you like to play with mechanical toys ☐ or ☐ with friends
2. Does almost everyone like you ☐ or ☐ only some people
3. Are most of your friends' families nicer than yours ☐ or ☐ not as nice
4. Can you finish your work faster than others ☐ or ☐ do you take longer
5. Would you go and speak to a little boy or girl who is crying ☐ or ☐ send someone to his mother for help
6. Are you usually sure of yourself ☐ or ☐ do you sometimes feel uncertain
7. Would you rather be a minister in a church ☐ or ☐ a doctor in a hospital
8. Would you like to start a new club ☐ or ☐ would you rather someone else started it
9. When people tell about things you have seen, do you think you know better ☐ or ☐ do you just listen and agree with them
10. When you have started a big job, do you soon forget about it ☐ or ☐ find that you cannot forget it

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DO NOT WRITE BELOW THIS LINE.

FACTOR		A	B	C	D	E	F	G	H	I	J	N	O	Q <sub>3</sub>	Q <sub>4</sub>
Part B <sub>1</sub> Raw Score															
Part B <sub>2</sub> Raw Score															
Form B Raw Score = (B <sub>1</sub> + B <sub>2</sub> )															
Standard Score															
PROFILE IN STENS	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
FACTOR		A	B	C	D	E	F	G	H	I	J	N	O	Q <sub>3</sub>	Q <sub>4</sub>



- 11. Worried is the opposite of calm ☐ or sleepy ☐ or concerned ☐
- 12. When others say bad things about you, do you quietly object ☐ or ☐ are your feelings hurt
- 13. Do you like to cross a busy street ☐ or ☐ are you afraid to cross
- 14. Would you rather be president of a business ☐ or ☐ a jet pilot
- 15. Help is to hinder as allow is to deny ☐ or punish ☐ or forbid ☐
- 16. Do you have few difficulties ☐ or ☐ many
- 17. Would you rather listen to a teacher ☐ or ☐ talk yourself
- 18. When something of yours needs fixing, do you ask father to mend it ☐ or ☐ fix it yourself
- 19. The next number in 2, 4, 8, —, is 10 ☐ or 16 ☐ or 12 ☐
- 20. Do you ever chew your pencil ☐ or ☐ do you never feel like it
- 21. Should everyone have his own airplane ☐ or ☐ are family cars enough
- 22. Are you usually quiet in school ☐ or ☐ do you like to say what you think
- 23. Which one of these does not belong with the others: many, bad, large, few large ☐ or few ☐ or bad ☐
- 24. Do you talk back to mother ☐ or ☐ are you afraid
- 25. When you get angry do you tremble and shake ☐ or ☐ talk loud
- 26. Would you like to go to the store by yourself ☐ or ☐ have your parents go with you
- 27. I am Jane. If Jim's father is my father's son, what relation is Jim to me nephew ☐ or brother ☐ or uncle ☐
- 28. When people ask if you will do something, is it easy to decide ☐ or ☐ hard to decide
- 29. Do you wish you were so good-looking that people would turn to look ☐ or ☐ don't you like people to look
- 30. Have you ever sold things to people ☐ or ☐ would you not want to sell things

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Do not write here.  
B\_\_\_\_\_ D\_\_\_\_\_ E\_\_\_\_\_ F\_\_\_\_\_

- |  |                          |    |   |
|--|--------------------------|----|---|
| 31. In school, do you do well what is wanted                                   | <input type="checkbox"/> | or | <input type="checkbox"/> do your friends please teacher better than you do  |
| 32. When people start talking as you listen to TV or radio, does it bother you | <input type="checkbox"/> | or | <input type="checkbox"/> don't you hear them talking                        |
| 33. Do you feel badly if you get to school late                                | <input type="checkbox"/> | or | <input type="checkbox"/> is it all right if you are only a few minutes late |
| 34. If someone says, "Let's all do this," do you say, "Good, let's do it"      | <input type="checkbox"/> | or | <input type="checkbox"/> do you first ask, "Why?"                           |
| 35. Would you rather be a cowboy   | <input type="checkbox"/> | or | <input type="checkbox"/> a minister in a church                             |
| 36. Do you think that grown-ups understand you well                            | <input type="checkbox"/> | or | <input type="checkbox"/> do they hurt your feelings                         |
| 37. Would you rather go on a hike  | <input type="checkbox"/> | or | <input type="checkbox"/> read a good book                                   |
| 38. When your friends fight, do you try to settle it for them                  | <input type="checkbox"/> | or | <input type="checkbox"/> do you just leave them alone                       |
| 39. Are you sad when mother is cross with you                                  | <input type="checkbox"/> | or | <input type="checkbox"/> do you soon forget about it                        |
| 40. When with strangers, do you feel you can go up and speak to them           | <input type="checkbox"/> | or | <input type="checkbox"/> are you afraid to                                  |
| 41. To help mother, would you rather draw some pictures for her                | <input type="checkbox"/> | or | <input type="checkbox"/> clean up your room                                 |
| 42. Which story would you like better, one about a new machine                 | <input type="checkbox"/> | or | <input type="checkbox"/> a famous general                                   |
| 43. Do you help the new children at school                                     | <input type="checkbox"/> | or | <input type="checkbox"/> let the other children help them                   |
| 44. Do grown-ups talk all the time   | <input type="checkbox"/> | or | <input type="checkbox"/> often listen to you                                |
| 45. When you cannot go out, do you complain                                    | <input type="checkbox"/> | or | <input type="checkbox"/> don't you care                                     |
| 46. Would you rather have a small dog  | <input type="checkbox"/> | or | <input type="checkbox"/> a baseball set                                     |
| 47. On a playground, do you do what you want to do                             | <input type="checkbox"/> | or | <input type="checkbox"/> do what most people want                           |
| 48. Do you worry about being punished  | <input type="checkbox"/> | or | <input type="checkbox"/> does it never worry you                            |
| 49. Do you like to see beautiful scenery                                       | <input type="checkbox"/> | or | <input type="checkbox"/> watch a bulldozer                                  |
| 50. Do you worry about not getting good grades in school                       | <input type="checkbox"/> | or | <input type="checkbox"/> are you sure you will do well                      |

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G\_\_\_\_\_ H\_\_\_\_\_ I\_\_\_\_\_ J\_\_\_\_\_



51. Do you look arithmetic problems over to correct mistakes ☐ or ☐ finish up quickly
52. Are your troubles big ☐ or ☐ small
53. Would you rather tell your mother about things at school ☐ or ☐ about a visit to a farm
54. Do you think you are always polite ☐ or ☐ are you perhaps a little too noisy
55. Would you rather talk to people ☐ or ☐ show them a game you know
56. Do you feel lonely and sad often ☐ or ☐ hardly ever
57. On days when there is no school, do you just do whatever comes up ☐ or ☐ plan what you will do for the day
58. Do you get up early ☐ or ☐ like to sleep late
59. Would you rather go on a walk with a friend ☐ or ☐ go to a picnic with mother
60. If you do something wrong, do you worry about it a lot ☐ or ☐ soon forget it
61. At the end of the day, is it easy to sit still ☐ or ☐ do you move around a lot in your chair
62. Do you make your bed yourself ☐ or ☐ do you leave it for mother to make
63. Would you rather see a movie about cow-boys and Indians ☐ or ☐ about how people in another country live
64. When you start new things, do you do them fast ☐ or ☐ slowly
65. Do you think school has too much punishment ☐ or ☐ do you think school is fun
66. If people tease you do you get angry and shout ☐ or ☐ walk away and leave them
67. Do you finish all your jobs ☐ or ☐ do you sometimes leave some unfinished
68. Do you have a good time ☐ or ☐ do things go wrong
69. When you are playing, do you usually keep the rules ☐ or ☐ sometimes break them
70. If children play with your things without asking, do you shout at them ☐ or ☐ do you let them play

**DID YOU PUT ONE MARK DOWN FOR EVERY STATEMENT? CHECK BACK AND SEE.**

Do not write here.

N\_\_\_\_\_ O\_\_\_\_\_ Q<sub>3</sub>\_\_\_\_\_ Q<sub>4</sub>\_\_\_\_\_



## What You Do and What You Think

Print Your Name: First \_\_\_\_\_ Last \_\_\_\_\_

Your Age \_\_\_\_\_ Grade in School \_\_\_\_\_ Boy or Girl \_\_\_\_\_

Read each statement and mark an ☒ on the side that fits you better. Some questions will not have the words just the way you want them but mark every one the best you can. You may ask for help if you don't know a word. Just raise your hand and the teacher will come to your desk. Do not work long on one question. Mark it and go right on to the next one. MARK EVERY ONE. Most of the questions have two boxes to choose from but other questions have three boxes. Always look at ALL the boxes and pick just one of them for your answer.

1. If children don't play with you, do you feel badly ☐ or ☐ do you start another game
2. Do wonderful things happen every day ☐ or ☐ are most days rather dull
3. Does mother say you are too slow ☐ or ☐ do you do things quickly
4. When walking across a narrow bridge, do you like looking down at the water ☐ or ☐ does the height upset you
5. Can you remember people's names ☐ or ☐ do you forget them easily
6. Do you think you will do well when you grow up ☐ or ☐ just fair
7. Does the teacher ever praise you in class ☐ or ☐ not say anything about you
8. Can you always do things well ☐ or ☐ some days are you not much good at things
9. Do you like just one close friend ☐ or ☐ lots of them
10. Do you wish your mother would help you more ☐ or ☐ does she help you too much

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DO NOT WRITE BELOW THIS LINE.

FACTOR		A	B	C	D	E	F	G	H	I	J	N	O	Q <sub>3</sub>	Q <sub>4</sub>
Part B <sub>1</sub> Raw Score															
Part B <sub>2</sub> Raw Score															
Form B Raw Score = (B <sub>1</sub> + B <sub>2</sub> )															
Standard Score															
PROFILE IN STENS	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	9	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	8	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	7	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	6	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	5	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	4	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	3	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	2	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•
FACTOR		A	B	C	D	E	F	G	H	I	J	N	O	Q <sub>3</sub>	Q <sub>4</sub>



11. Shy is the opposite of **bold** ☐ or **big** ☐ or **timid** ☐
12. When you get good news, do you take it quietly ☐ or ☐ do you have to dance up and down
13. Do you think your ideas are right and good ☐ or ☐ are you not sure
14. Are you afraid in the dark ☐ or ☐ is there nothing to be afraid of
15. Walk is to run as slow is to **ride** ☐ or **snail** ☐ or **fast** ☐
16. Are you usually quiet ☐ or ☐ do you talk a lot
17. When you get angry do you want to cry and pout ☐ or ☐ to smash things on purpose
18. Would you rather learn how to play the piano ☐ or ☐ to drive a car
19. The next number in 1, 4, 7, —, is **9** ☐ or **10** ☐ or **8** ☐
20. Do people say you have a temper ☐ or ☐ are you easy to get along with
21. When mother is angry with you, do you feel all right anyway ☐ or ☐ feel like crying
22. When you have to see the doctor, is it hard to be brave ☐ or ☐ don't you care a bit
23. Which one of these does not belong with the others: some, all, often, none **all** ☐ or **none** ☐ or **often** ☐
24. Do you sometimes feel like disobeying older people ☐ or ☐ never feel that way
25. When you grow up would you rather be a lawyer in an office ☐ or ☐ fly a plane
26. If you have torn a book, would you return it to the library ☐ or ☐ try to repair it first
27. When Joe was as old as Sue is now, Ann was older than he. Who is youngest **Sue** ☐ or **Ann** ☐ or **Joe** ☐
28. When people laugh at you, do you laugh too ☐ or ☐ do you get mad at them
29. When a visitor comes to your house do you talk to him first ☐ or ☐ do you feel too shy
30. Are you happy to study in a noisy room ☐ or ☐ should your study room be quiet

GO RIGHT ON TO THE NEXT PAGE

Do not write here.

B\_\_\_\_\_ D\_\_\_\_\_ E\_\_\_\_\_ F\_\_\_\_\_

31. Do you listen to the news sometimes ☐ or ☐ always go to play when it comes on
32. Do you think your classmates sometimes laugh at you ☐ or ☐ don't they ever
33. Would you rather play checkers ☐ or ☐ baseball
34. When you have a new idea, do you tell it ☐ or ☐ keep it to yourself
35. Would you rather be a bus driver ☐ or ☐ a doctor
36. Do you tell jokes well ☐ or ☐ find it hard
37. Can you easily forget your mistakes ☐ or ☐ do they worry you
38. Would you rather go out with your parents ☐ or ☐ with your good friends
39. Do you help a lot around the house ☐ or ☐ just a little
40. After school, do you play games ☐ or ☐ do you generally not feel like it
41. Do you like to stay after school with the teacher ☐ or ☐ would you rather play
42. Are your ideas better than the other children's ☐ or ☐ generally not quite so good
43. Do you like to do new things ☐ or ☐ would you rather do those things you know best
44. Are adults sometimes difficult ☐ or ☐ are they mostly kind
45. Do you like to read about wars and battles ☐ or ☐ do they frighten you
46. Are you scared of being spanked ☐ or ☐ just a little scared
47. When your parents have visitors do you run away and play ☐ or ☐ stop to talk with them
48. Do children tease you ☐ or ☐ do they never tease you
49. Do you get upset when you quarrel with your friends ☐ or ☐ don't you mind
50. Is it hard to act as old as you are ☐ or ☐ do you feel more grown-up than your age

GO RIGHT ON TO THE LAST PAGE.

Do not write here.

G\_\_\_\_\_ H\_\_\_\_\_ I\_\_\_\_\_ J\_\_\_\_\_



51. Would you rather make something the way teacher says is best ☐ or ☐ do it the way you think best
52. If your mother is sad, do you feel sad too ☐ or ☐ try to cheer her up
53. When the class makes noise, do you sit quietly ☐ or ☐ add to the noise
54. Are you happy to see your school friends ☐ or ☐ sometimes do you not want to see people
55. When a star twinkles at you, does it seem to smile ☐ or ☐ does it seem cold and far away
56. Would you rather be an actor ☐ or ☐ a scientist
57. In school do you work because the teacher might punish you ☐ or ☐ because you like to study
58. When you get angry, do you keep silent ☐ or ☐ do you talk back
59. Do you like to keep arguing ☐ or ☐ to stop as soon as you can
60. Do you sometimes like to just sit and feel hopeless ☐ or ☐ are you always on the go
61. Would you rather do your work ☐ or ☐ try to get someone else to do it for you
62. Do you do your homework and your chores at the same time each day ☐ or ☐ at any time
63. If you were a teacher, would you let the children be noisy ☐ or ☐ would you make them be quiet
64. Can you read well ☐ or ☐ do most children read better
65. When playing do you complain a little when you do not win ☐ or ☐ do you keep quiet
66. When your school work is wrong, do you feel it is no use ☐ or ☐ do you feel you must do better
67. Do you do things you should do ☐ or ☐ things you like to do
68. Do you think you could learn to fly an airplane ☐ or ☐ would you rather be a policeman
69. If one of your friends is unkind to you, do you forgive him ☐ or ☐ feel you must get even with him
70. Do you often fight for your rights ☐ or ☐ do you keep quiet in quarrels

**DID YOU PUT ONE MARK DOWN FOR EVERY STATEMENT? CHECK BACK AND SEE.**

Do not write here.

N \_\_\_\_\_ O \_\_\_\_\_ Q<sub>3</sub> \_\_\_\_\_ Q<sub>4</sub> \_\_\_\_\_

Name: First \_\_\_\_\_ Last \_\_\_\_\_ Age \_\_\_\_\_ Grade \_\_\_\_\_ Boy ☐ Girl ☐ ★

	Page 2	Page 3	Page 4
<b>PART A<sub>1</sub></b> <input type="checkbox"/>	11 <input type="checkbox"/> or <input type="checkbox"/> or <input type="checkbox"/>	31 <input type="checkbox"/> or <input type="checkbox"/>	51 <input type="checkbox"/> or <input type="checkbox"/>
	12 <input type="checkbox"/> or <input type="checkbox"/>	32 <input type="checkbox"/> or <input type="checkbox"/>	52 <input type="checkbox"/> or <input type="checkbox"/>
<b>or</b>	13 <input type="checkbox"/> or <input type="checkbox"/>	33 <input type="checkbox"/> or <input type="checkbox"/>	53 <input type="checkbox"/> or <input type="checkbox"/>
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A	B	C	D	E	F	G	H	I	J	N	O	Q <sub>1</sub>	Q <sub>2</sub>	A	B	C	D	E	F	G	H	I	J	N	O	Q <sub>1</sub>	Q <sub>2</sub>
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	FACTOR	A	B	C	D	E	F	G	H	I	J	N	O	Q <sub>1</sub>	Q <sub>2</sub>
Combined Form A (A <sub>1</sub> + A <sub>2</sub> ) or Form B (B <sub>1</sub> + B <sub>2</sub> ) Raw Score															
Total Form A + Form B Raw Score															
Standard Score															



#### APPENDIX 4

##### INFORMATION SHEET FOR TEACHERS ADMINISTERING THE CPQ

This questionnaire, the Children's Personality Questionnaire (CPQ), is one of the two most widely used standardised tests in use by the Psychological Service in assessment of personality traits and identification of individual difficulties experienced by New Zealand primary school children. (The other test is the Junior Eysenck, at present undergoing similar study).

The questions have been developed to measure the child's rating on a 1 to 10 scale on each of 14 personality traits, e.g. from relaxed to tense, or from shy to uninhibited. These traits (Personality Factors) may also be combined differently to give scores for neuroticism, anxiety versus adjustment, and extraversion versus introversion.

However, since this questionnaire was developed and averages worked out within the American situation New Zealand children are at present virtually being measured against American averages.

It seems important that we find out first what traits are exhibited by New Zealand primary school children (which may be different from those of their American counterparts) -

THIS IS THE AIM OF THE PRESENT RESEARCH - and we will then be in a position to work out averages for New Zealand children against which children experiencing difficulties may be measured.

The research is therefore directed towards finding out what the questionnaire is actually measuring, rather than measuring any individual child's personality traits. We are testing the test, not the children to whom it is given.

We have asked for age and sex and race so that the relation between these and any marked differences in personality traits could be explored.

You may wonder why we have asked for the father's occupation to be recorded. If our findings are to be useful, it will be necessary to be able to show that they may reasonably be assumed to apply to New Zealand school children in general, not merely in Masterton. It is difficult to do this without requiring a lot of personal information, but one measure is an Index of New Zealand Occupations recently published by the N.Z.G.E.R. which rates all New Zealand male occupations on a 1 to 6 scale and gives the percentages of each within the national situation. You will

(Appendix 4 - continued)

readily see that if the percentages obtained in this sample correspond to the national percentages we have one basis for believing our sample to be representative of New Zealand primary school children as a whole.

The practical application of the results would assist the Psychological Service to help children experiencing social or scholastic difficulties by enabling more accurate assessment of their particular personality traits compared with the averages of their peer group.

We would like to express our appreciation of the permission of the Wellington Education Board and the Principals of the two schools involved, especially for the interest and helpfulness of the Principals in making it possible for this investigation to be carried out, and for the co-operation of those teachers who will be administering the questionnaire in their own classrooms. We trust that the investigation will prove a useful contribution to the work of our schools, and will ensure that the results will be made known to those who have helped to make this project possible.

# APPENDIX 5 A

## INSTRUCTIONS FOR ADMINISTRATION OF CHILDREN'S PERSONALITY QUESTIONNAIRE FOR STANDARDS 2, 3, AND 4, CONTRIBUTING SCHOOL

This Questionnaire consists of two Forms, A and B, each comprising two Parts (A<sub>1</sub> and A<sub>2</sub>, B<sub>1</sub> and B<sub>2</sub>).

Each Form should normally take not more than 30 minutes to administer, though there is no set time limit.

There should be a 10-minute break allowed between the two Parts of each Form.

There should be at least one day's break between each Form.

No marking or scoring is required to be done by the class teacher, but it would be appreciated if he/she would check that the data requested at the head of the answer sheet have been filled in.

### PROCEDURE:

1. Pass out the booklets and the separate answer sheets.

The answer sheet is the same for either Form.

Ask the children to circle A or B on the answer sheet to indicate which Form they are taking.

2. Tell the children not to mark the question booklets.

3. Ask the children to print at the top of the answer sheet:

INSTEAD OF THEIR FIRST NAME - their father's occupation

INSTEAD OF THEIR LAST NAME - whether Maori or non-Maori

Age

Grade in school (that is, Standard 2, 3, or 4)

Tick "Boy" or "Girl"

(Note that no name is given. For analysis purposes the child will be allotted an identity number.

Whether a child is entered as "Maori" or "non-Maori" is the child's own decision).

4. As soon as the children are all ready, read aloud the statement at the beginning of the question booklet: "Read each statement . . . for your answer."

5. Use the first two items of the test for examples:

Read the first statement:

(1) When visiting a new building  
do you like to have someone OR do you like to  
show you around find your own way

(Emphasise the "OR" so the children realise there are two choices).

Then say, "Think which side fits you better. Now mark the proper box on the answer sheet next to Question 1."

(Appendix 5 A - continued)

6. Now do the same with the second statement.
7. Then say, "Do you understand how to mark the answers?  
Are there any questions?" (deal fully with every question).
8. As soon as they seem to understand what to do, read out the next question and continue thus until the questionnaire is finished.
9. Announce that if a child does not understand the question, he should raise his hand. It is permissible to read the questions and alternative answers again, but no explanations should be given.
10. It is important, as soon as possible after the commencement of the questionnaire, for the teacher to move around the room to ensure that the children are marking the answer sheets correctly.
11. At the conclusion of the questionnaire, say, "Look back over your work and make sure that you have answered every question." Any unanswered question may be read again by the teacher.
12. Collect in the papers, place in the envelope provided, mark with the Standard (2, 3, or 4), the Form of the Questionnaire (A or B), the class number (or Room Number) to identify which class of children is involved, and the number of papers enclosed. Thank you.

APPENDIX 5 B

INSTRUCTIONS FOR ADMINISTRATION OF CHILDREN'S PERSONALITY  
QUESTIONNAIRE FOR FORMS 1 AND 2, INTERMEDIATE SCHOOL

This Questionnaire consists of two Forms, A and B, each comprising two Parts (A<sub>1</sub> and A<sub>2</sub>, B<sub>1</sub> and B<sub>2</sub>).

Each Form should normally take not more than 50 minutes to administer, though there is no set time limit.

There should be at least one day's break between each Form.

No marking or scoring is required to be done by the class teacher, but it would be appreciated if he/she would check that the data requested at the head of the answer sheet have been filled in.

PROCEDURE:

1. Pass out the booklets and the separate answer sheets.

The answer sheet is the same for either Form.

Ask the children to circle A or B on the answer sheet to indicate which Form they are taking.

2. Tell the children not to mark the question booklets.

3. Ask the children to print at the top of the answer sheet:

INSTEAD OF THEIR FIRST NAME - their father's occupation

INSTEAD OF THEIR LAST NAME - whether Maori or non-Maori

Age

Grade in school (that is, Form 1 or 2)

Tick "Boy" or "Girl"

(Note that no name is given. For analysis purposes the child will be allotted an identity number.

Whether a child is entered as "Maori" or "non-Maori" is the child's own decision).

4. As soon as the children are all ready, read aloud the statement at the beginning of the question booklet: "Read each statement . . . for your answer."

5. Use the first two items of the test for examples:

Read the first statement:

(1) When visiting a new building                      do you like to  
do you like to have someone                      OR                      find your own way  
show you around

(Emphasise the "OR" so the children realise there are two choices).

Then say, "Think which side fits you better. Now mark the proper box on the answer sheet next to Question 1."

6. Now do the same with the second statement.



(Appendix 5 B - continued)

7. Then say, "Do you understand how to mark the answers?  
Are there any questions?" (deal fully with every question).
  8. As soon as they seem to understand what to do, tell them to continue by themselves with the other statements, each time marking the side that fits them better.
  9. Announce that if a child finds a word he cannot read, he should raise his hand. It is permissible to tell him the word or to read the entire statement for him, but no explanations should be given.
  10. Tell the children to mark every statement and when they finish one page to follow the directions and go right on to the next page.
  11. It is important, as soon as possible after the commencement of the questionnaire, for the teacher to move around the room to ensure that the children are marking the answer sheets correctly.
  12. At the conclusion of the questionnaire, say, "Look back over your work and make sure that you have answered every question."
  13. Collect in the papers, place in the envelope provided, mark with the Form (1 or 2), the Form of the Questionnaire (A or B), the class number of Room Number to identify which class of children is involved, and the number of papers enclosed.
- Thank you.

APPENDIX 6 A - Oblique Primary Factor Loadings, Form A

see pocket inside back cover

APPENDIX 6 B - Oblique Primary Factor Loadings, Form B

see pocket inside back cover

APPENDIX 7 A

Cumulative Percent of Trace, Form A

Trace 130.0000

Characteristic Roots	Cumulative Percent of Trace
12.2401	9.4154
7.2095	14.9612
4.5952	18.4960
3.2394	20.9878
3.0192	23.1303
2.5362	25.2612
2.3001	27.0303
2.1501	28.6844
2.0669	30.2743
1.9442	31.7699
1.8855	33.2203
1.8380	34.6341
1.7832	36.0058

APPENDIX 7 B

Cumulative Percent of Trace, Form B

Trace 130.0000

Characteristic Roots	Cumulative Percent of Trace
8.2451	6.3424
6.4905	11.3351
5.1235	15.2762
2.8377	17.4591
2.6966	19.5026
2.5141	21.4365
2.3255	23.2254
2.1561	24.8839
2.0888	26.4907
1.9652	28.0024
1.9332	29.4895
1.8806	30.9361
1.8648	32.3705

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VARIABLE	1	2	3	4	5	6	7	8	9	10	11	12	13
B1 1	0.1152	0.0270	0.0579	0.2700	0.0000	0.0627	0.0392	0.0628	0.0566	0.0629	0.0661	0.1220	0.0385
B1 2	0.1531	0.0462	0.3271	0.2094	0.2312	0.0932	0.0215	0.0016	0.0145	0.2122	0.1024	0.1220	0.0385
B1 3	0.0666	0.0708	0.0675	0.2066	0.0551	0.0444	0.0519	0.0075	0.0133	0.0270	0.0369	0.0270	0.1353
B1 4	0.0034	0.0452	0.4305	0.0308	0.1634	0.0327	0.0208	0.0165	0.1262	0.0173	0.0333	0.1999	0.1253
B1 5	0.0720	0.3090	0.0361	0.0423	0.0704	0.0372	0.0721	0.0349	0.0677	0.0157	0.0978	0.1137	0.0660
B1 6	0.1056	0.1256	0.5101	0.0422	0.0174	0.0702	0.0378	0.0329	0.0665	0.0140	0.1290	0.1137	0.1758
B1 7	0.0873	0.0280	0.1429	0.0119	0.1183	0.0377	0.0330	0.0349	0.0665	0.0140	0.1290	0.1137	0.0516
B1 8	0.0179	0.2263	0.2099	0.0730	0.1003	0.0719	0.0334	0.0891	0.0766	0.0140	0.1290	0.1137	0.0660
B1 9	0.0254	0.1488	0.1554	0.0335	0.1033	0.0719	0.0334	0.0891	0.0766	0.0140	0.1290	0.1137	0.0660
B1 10	0.0268	0.0791	0.0607	0.1106	0.0738	0.0665	0.0334	0.0891	0.0766	0.0140	0.1290	0.1137	0.0660
B1 11	0.1169	0.2665	0.0138	0.0118	0.1689	0.0665	0.0334	0.0891	0.0766	0.0140	0.1290	0.1137	0.0660
B1 12	0.1952	0.0258	0.0147	0.0825	0.1727	0.3557	0.0525	0.0270	0.2956	0.1824	0.1318	0.0490	0.1306
B1 13	0.1614	0.0170	0.0748	0.0822	0.1727	0.3557	0.0525	0.0270	0.2956	0.1824	0.1318	0.0490	0.1306
B1 14	0.0493	0.2556	0.2133	0.1166	0.0961	0.0235	0.0375	0.0724	0.1108	0.1625	0.1415	0.0473	0.0173
B1 15	0.3782	0.1952	0.1108	0.0633	0.0201	0.0797	0.0375	0.0724	0.1108	0.1625	0.1415	0.0473	0.0173
B1 16	0.0561	0.0129	0.0994	0.2229	0.0340	0.1766	0.0294	0.1237	0.2330	0.0720	0.1253	0.0207	0.0500
B1 17	0.2919	0.0491	0.1009	0.2508	0.0614	0.1049	0.1806	0.1108	0.0975	0.0720	0.1253	0.0207	0.0500
B1 18	0.0437	0.0847	0.1383	0.1917	0.1053	0.0877	0.1806	0.1108	0.0975	0.0720	0.1253	0.0207	0.0500
B1 19	0.4883	0.1616	0.0796	0.0049	0.1462	0.3033	0.1245	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 20	0.1507	0.1476	0.1144	0.152	0.1494	0.3033	0.1245	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 21	0.2418	0.0049	0.0803	0.0541	0.1300	0.0662	0.1245	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 22	0.0118	0.0578	0.0541	0.1111	0.0252	0.1666	0.1245	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 23	0.0549	0.0247	0.0522	0.2700	0.0252	0.1666	0.1245	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 24	0.0782	0.2151	0.0990	0.0222	0.1466	0.0804	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 25	0.0205	0.0563	0.1316	0.0222	0.1466	0.0804	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 26	0.1305	0.0485	0.3733	0.0003	0.0795	0.0805	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 27	0.0609	0.1118	0.1870	0.0237	0.3478	0.2153	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 28	0.0090	0.3648	0.0307	0.1136	0.0639	0.1399	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 29	0.0024	0.0390	0.0307	0.0307	0.0307	0.0307	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 30	0.0222	0.0163	0.0200	0.0763	0.2297	0.0335	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 31	0.1219	0.3722	0.0200	0.2453	0.0124	0.0240	0.1296	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 32	0.0221	0.0551	0.0716	0.2204	0.3292	0.0335	0.1161	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 33	0.1294	0.2740	0.0627	0.1471	0.1900	0.0335	0.1504	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 34	0.0634	0.4349	0.0387	0.2144	0.3075	0.1119	0.0777	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 35	0.0700	0.1297	0.2036	0.0123	0.1387	0.3057	0.0889	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 36	0.0634	0.1034	0.1424	0.0832	0.1001	0.0187	0.1019	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 37	0.1858	0.2508	0.0716	0.1506	0.1072	0.0599	0.0958	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 38	0.1543	0.2228	0.0998	0.2703	0.0607	0.0480	0.0958	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 39	0.1063	0.0547	0.0392	0.1753	0.2219	0.3035	0.0139	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 40	0.1131	0.3799	0.1008	0.2423	0.2001	0.1554	0.0114	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 41	0.0612	0.0431	0.0348	0.0945	0.0695	0.0843	0.1434	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 42	0.0761	0.5781	0.0055	0.0094	0.0416	0.2098	0.0461	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 43	0.1010	0.1190	0.0589	0.0532	0.2808	0.0176	0.2341	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 44	0.0230	0.4247	0.2626	0.1806	0.2001	0.0021	0.0472	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 45	0.4596	0.2056	0.0641	0.0324	0.2949	0.1066	0.0472	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 46	0.0639	0.1893	0.0916	0.0467	0.0467	0.0636	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 47	0.0677	0.0733	0.0091	0.1405	0.0119	0.0389	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 48	0.4117	0.0225	0.2448	0.0031	0.0160	0.0374	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 49	0.0320	0.0288	0.0664	0.0862	0.0053	0.1011	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 50	0.1482	0.3853	0.1186	0.3632	0.1370	0.1064	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 51	0.1523	0.1184	0.2139	0.2814	0.1053	0.0458	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 52	0.0919	0.0474	0.0307	0.0210	0.1579	0.1203	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120	0.0120
B1 53	0.0019	0.0242	0.1649	0.0604	0.2503	0.1099	0.1944	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 54	0.0690	0.5855	0.0979	0.0626	0.2247	0.2247	0.0062	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 55	0.5363	0.0969	0.1450	0.1668	0.0058	0.0051	0.1485	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 56	0.1070	0.1072	0.0374	0.0750	0.0186	0.0060	0.0571	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 57	0.0809	0.1478	0.0305	0.0177	0.2001	0.0621	0.3194	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 58	0.1820	0.0307	0.2203	0.0241	0.0081	0.0502	0.0265	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 59	0.0061	0.0252	0.0662	0.2350	0.1914	0.0036	0.0265	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 60	0.0255	0.0612	0.0204	0.0532	0.1552	0.3228	0.1560	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 61	0.4320	0.0218	0.1415	0.0141	0.1099	0.0102	0.1560	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 62	0.1054	0.2703	0.1575	0.3738	0.0739	0.0366	0.0428	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 63	0.3936	0.0951	0.0321	0.0868	0.1341	0.2193	0.1560	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120
B1 64	0.1297	0.0581	0.0448	0.1370	0.1208	0.4300	0.0300	0.0335	0.0757	0.0266	0.0707	0.0461	0.0120

B2 1	0.0918	0.4047	0.2557	0.0207	0.0590	0.3393	0.0392	0.0379	0.0393	0.0561	0.1294	0.1594	0.1306
B2 2	0.1853	0.0304	0.0852	0.1416	0.0491	0.0364	0.1039	0.0029	0.0269	0.0567	0.0520	0.0922	0.0385
B2 3	0.0682	0.0973	0.0930	0.0852	0.0843	0.0122	0.1150	0.1146	0.0920	0.0991	0.0398	0.1077	0.1176
B2 4	0.0658	0.0665	0.0043	0.0930	0.3447	0.0048	0.1991	0.0025	0.1899	0.01995	0.0367	0.0371	0.1176
B2 5	0.0307	0.0013	0.2942	0.0246	0.0214	0.0168	0.0757	0.0795	0.1141	0.1674	0.0067	0.0371	0.1773
B2 6	0.1767	0.0643	0.5062	0.0000	0.0685	0.0456	0.0042	0.1260	0.0049	0.0510	0.0067	0.0001	0.4000
B2 7	0.0793	0.0218	0.2518	0.1761	0.0618	0.0985	0.0250	0.0958	0.0949	0.0703	0.1321	0.0024	0.0517
B2 8	0.2300	0.3123	0.3667	0.1072	0.0180	0.1774	0.0309	0.0051	0.0713	0.0620	0.1734	0.0133	0.1732
B2 9	0.0335	0.0925	0.1540	0.4026	0.2359	0.0299	0.0865	0.0214	0.2909	0.0620	0.0094	0.0142	0.0669
B2 10	0.1620	0.1547	0.1605	0.1072	0.0434	0.1147	0.2243	0.0415	0.0574	0.0620	0.1477	0.0164	0.0540
B2 11	0.0204	0.1547	0.1605	0.1072	0.0434	0.1147	0.2243	0.0415	0.0574	0.0620	0.1477	0.0164	0.0540
B2 12	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 13	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 14	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 15	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 16	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 17	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 18	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 19	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 20	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 21	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 22	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 23	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 24	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 25	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 26	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 27	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 28	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 29	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 30	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 31	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 32	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 33	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 34	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 35	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 36	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 37	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 38	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 39	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 40	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 41	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 42	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 43	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 44	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 45	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 46	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 47	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 48	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 49	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 50	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 51	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 52	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 53	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 54	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 55	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 56	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 57	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 58	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 59	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 60	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 61	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 62	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 63	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 64	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 65	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 66	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 67	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 68	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116
B2 69	0.0059	0.0136	0.0007	0.1364	0.0604	0.1616	0.0943	0.0226	0.0276	0.1170	0.1216	0.1245	0.0077
B2 70	0.0033	0.0129	0.5666	0.0030	0.0844	0.1018	0.0674	0.0121	0.0035	0.0073	0.2237	0.0027	0.0116



VARIABLE	1	2	OBLIQUE PRIMARY FACTOR LOADINGS										13
	3	4	5	6	7	8	9	10	11	12	13		
A1 1	-0.0452	0.1944	-0.0718	0.1373	0.1093	0.0668	-0.0552	0.0428	-0.0017	-0.0019	0.1246	0.0632	
A1 2	0.0016	-0.1402	0.0008	-0.0715	-0.0509	0.1901	-0.0521	0.0944	-0.0019	0.2610	0.2446	0.0632	
A1 3	-0.1058	-0.2778	0.3929	-0.0639	0.2053	0.0673	-0.3395	0.0115	-0.0001	-0.0434	0.2120	0.0632	
A1 4	0.0978	0.0651	0.1260	-0.1631	0.0337	0.1215	-0.0675	-0.0798	-0.0005	-0.3403	0.0671	0.1331	
A1 5	0.0422	0.3138	0.0562	-0.0004	-0.0165	-0.0210	-0.1094	-0.5900	-0.0555	-0.0362	-0.0671	0.1331	
A1 6	0.0542	0.1530	0.0522	-0.1908	-0.0008	0.0662	0.0407	-0.2005	-0.0426	-0.0936	-0.0671	0.1331	
A1 7	0.0340	0.4503	0.2277	-0.0040	-0.0545	0.0095	0.2326	-0.0623	0.0363	-0.1899	-0.0413	-0.0424	
A1 8	-0.0511	0.0049	-0.0906	-0.0969	-0.1562	-0.0404	-0.2107	-0.0470	-0.0116	-0.1631	-0.1400	-0.0424	
A1 9	-0.1604	-0.1107	0.1823	0.0730	0.5003	0.0461	-0.0558	0.0676	-0.0901	-0.1329	-0.0591	-0.0424	
A1 10	0.1661	0.0494	0.1231	0.0551	0.4112	0.0503	0.1295	0.0362	-0.2072	0.1004	-0.0822	-0.1198	
A1 11	0.1370	0.0817	0.0655	0.0299	0.1284	-0.0116	0.0177	0.0733	-0.0003	0.0909	-0.1172	-0.0085	
A1 12	0.1407	-0.0403	0.0595	-0.0666	-0.0295	0.0733	-0.1321	-0.1924	-0.0029	0.0787	-0.1633	-0.0319	
A1 13	-0.0003	0.2662	0.4001	0.1202	0.1155	-0.0671	0.1477	0.1563	-0.0065	-0.0959	-0.0517	-0.0368	
A1 14	-0.0754	0.0022	0.2217	0.0300	0.0733	-0.0973	0.0475	0.0697	-0.0913	0.0135	-0.0517	-0.0368	
A1 15	-0.3716	0.0785	0.1938	-0.2123	-0.0257	-0.0954	0.0341	-0.0009	-0.4463	-0.0707	0.0199	-0.0104	
A1 16	-0.0759	-0.0135	0.1728	-0.1144	0.0426	0.0021	0.0290	-0.0017	0.1128	0.0650	-0.0322	-0.0656	
A1 17	-0.0991	0.3298	-0.1200	-0.0532	0.3013	-0.1308	-0.0522	-0.1203	-0.1075	0.1995	-0.3004	-0.0360	
A1 18	0.0606	0.0014	-0.4032	0.1626	0.0235	0.0967	-0.1100	-0.0469	-0.0469	-0.1778	-0.1416	-0.0517	
A1 19	0.1924	0.0736	0.6036	0.0241	0.0419	-0.1079	-0.0011	-0.0290	-0.1052	-0.0708	-0.1274	-0.1188	
A1 20	0.1057	0.1057	0.0237	0.1106	0.0050	0.0206	-0.1064	-0.0160	-0.0001	0.1274	-0.1164	-0.1152	
A1 21	-0.3792	0.0907	0.4054	0.2213	0.0417	-0.0666	-0.0202	-0.0400	0.0033	0.0224	-0.5477	0.0371	
A1 22	0.0710	0.0090	-0.1301	-0.0036	0.0105	0.0747	-0.0130	-0.0460	-0.0833	-0.0503	-0.0605	-0.0702	
A1 23	-0.0442	0.1642	0.2066	-0.1105	0.1257	-0.0316	-0.0637	-0.5018	-0.0366	-0.0042	-0.0017	-0.1042	
A1 24	0.0449	0.0904	-0.2141	0.0566	-0.0099	-0.3556	-0.0062	0.1550	-0.0555	-0.1329	-0.1405	-0.0189	
A1 25	0.7757	-0.0343	-0.0555	-0.0444	-0.0446	-0.0656	-0.0814	0.0015	-0.1129	-0.2170	0.0164	0.1892	
A1 26	-0.0007	0.1054	-0.3274	-0.0453	-0.0068	-0.0196	0.0153	0.0025	0.0373	0.1043	0.0036	0.1369	
A1 27	-0.1010	0.3000	0.0230	-0.0022	0.0252	-0.0489	0.2603	-0.3039	-0.0414	0.0999	0.1421	0.0790	
A1 28	-0.4000	0.0435	0.0549	-0.0196	0.1080	0.0981	0.0237	0.0408	-0.1107	0.0061	0.0799	0.2262	
A1 29	0.3207	0.1629	0.0590	0.1030	-0.0079	0.1017	-0.0089	0.0519	-0.0414	-0.0112	0.0058	0.0748	
A1 30	0.0442	-0.3452	-0.2143	0.0530	-0.0059	0.0149	-0.1432	-0.2023	-0.1520	0.2047	0.1764	0.0331	
A1 31	0.0601	-0.0321	0.1942	0.3557	-0.2659	0.0560	-0.0951	-0.0631	-0.2003	-0.2275	0.0853	0.0230	
A1 32	0.5102	-0.0300	-0.1664	0.1001	0.0074	0.0074	-0.1679	-0.1892	0.0121	0.0368	0.0044	0.1274	
A1 33	-0.2321	0.1143	0.2934	-0.0720	-0.0636	0.1554	0.1068	-0.0155	0.0121	-0.1031	0.0292	0.0251	
A1 34	0.1770	0.0332	0.2363	-0.2318	-0.0631	0.0328	0.0130	-0.0557	-0.1022	-0.1045	0.1407	0.0757	
A1 35	-0.0037	0.0324	-0.0593	-0.0520	-0.4540	-0.2045	-0.1033	-0.2054	-0.1574	0.0863	0.0123	0.1763	
A1 36	0.2405	0.1124	-0.2624	-0.1815	-0.2768	-0.0440	0.1045	0.0726	-0.1279	-0.0886	0.1179	-0.0317	
A1 37	-0.0901	0.5816	0.0986	0.1121	-0.0946	0.1307	0.0203	0.0966	-0.0346	0.0320	0.0532	0.1267	
A1 38	0.0044	0.0000	0.4599	-0.0805	0.1186	0.1751	0.0545	0.0665	-0.0401	-0.0416	0.1450	0.0472	
A1 39	0.0244	0.1136	0.0717	-0.0334	-0.4934	-0.2313	0.1615	-0.2064	0.0461	-0.0178	-0.0690	0.0408	
A1 40	0.1307	0.0608	0.1036	0.4027	-0.0004	0.1085	0.0459	-0.0045	0.0742	0.0700	0.1328	0.2037	
A1 41	0.0609	-0.1115	0.0377	-0.0903	-0.0053	-0.1176	-0.0622	0.0041	-0.1746	-0.1064	-0.1136	0.2037	
A1 42	-0.0135	0.1744	-0.1136	0.1034	-0.1377	-0.0922	0.1659	0.3361	-0.0635	0.1044	-0.3402	0.0197	
A1 43	0.1904	0.0902	0.1246	0.1755	-0.1114	-0.4738	-0.1021	-0.0287	-0.0168	0.1504	-0.0491	-0.2772	
A1 44	-0.4708	-0.0008	0.0337	0.2495	-0.1078	0.0038	-0.0023	0.0070	0.0919	-0.0036	0.0190	0.1850	
A1 45	0.0215	0.2319	0.0304	-0.0126	0.1703	0.3470	0.0712	-0.1901	-0.0919	0.1007	0.1008	0.1697	
A1 46	-0.4030	0.0908	0.0133	-0.0809	-0.1424	-0.0744	0.0945	-0.0026	-0.1187	-0.6111	0.0616	0.2181	
A1 47	0.0123	0.1516	0.2637	0.0391	-0.0475	0.0409	0.1300	-0.1160	0.0977	-0.3235	-0.0298	0.3633	
A1 48	0.0459	0.4880	-0.0710	0.0053	-0.0422	0.0184	-0.2342	0.1234	0.1546	0.0600	0.1636	0.0265	
A1 49	-0.1234	0.3756	0.1020	0.1924	0.0127	0.0112	-0.2671	-0.0579	0.0022	-0.0358	0.5053	0.1525	
A1 50	-0.4055	0.0981	-0.1018	-0.0194	-0.0129	-0.0031	0.0387	-0.0195	-0.0605	-0.3304	-0.1064	0.0308	
A1 51	0.1293	0.0725	0.1066	0.0009	0.1745	-0.2116	0.5513	-0.0222	0.0716	-0.0006	0.1670	0.0434	
A1 52	0.2006	0.0391	0.2097	0.2435	0.0406	0.0516	0.0056	0.4392	0.0502	-0.0247	-0.0810	0.0318	
A1 53	0.2630	0.1347	-0.2300	-0.0337	0.0500	0.0208	0.2308	-0.1108	-0.3205	-0.0598	-0.0006	0.0318	
A1 54	0.0644	0.2576	-0.2037	0.1095	0.0037	0.1095	-0.0263	0.0630	-0.0464	0.0704	0.0423	0.1557	
A1 55	0.0473	0.0146	-0.0004	0.0627	0.0110	-0.0104	-0.3725	0.1766	0.1408	0.0703	-0.1085	0.0963	
A1 56	0.0402	0.0923	0.1914	-0.5487	0.0005	0.0750	-0.0507	0.0266	-0.1141	0.1600	-0.0767	0.0071	
A1 57	0.0057	0.3394	0.2621	-0.0278	-0.0634	-0.0228	-0.0028	-0.0720	-0.2119	-0.0006	-0.1429	0.0225	
A1 58	-0.0163	0.0224	-0.3132	-0.0385	-0.1498	0.1240	0.2656	0.1752	0.0368	0.0898	0.1596	0.0130	
A1 59	-0.0146	-0.0233	0.0808	0.0355	-0.0876	-0.0024	-0.4282	0.3359	-0.0932	-0.0347	-0.4765	0.0599	
A1 60	0.0489	0.0486	-0.3342	0.2840	0.0243	-0.1123	0.0685	-0.0131	-0.1768	0.0432	0.0579	0.0264	
A1 61	-0.0174	-0.2197	-0.3608	0.0415	-0.0060	-0.1742	-0.0038	-0.0004	0.0335	-0.1128	-0.0457	0.0586	
A1 62	0.0787	0.0870	0.3042	-0.1509	-0.2162	-0.0145	-0.0640	-0.2188	-0.0239	0.0965	0.1319	0.0909	
A1 63	-0.1839	0.5370	-0.0539	0.0373	-0.0656	-0.0648	-0.1024	-0.1271	-0.0644	-0.1206	-0.0332	0.0344	
A1 64	-0.1040	0.1796	-0.0793	-0.2672	-0.0492	-0.0459	-0.2715	-0.0168	-0.4200	-0.0012	-0.0925	0.1666	
A1 65	-0.0561	-0.1886	-0.2084	-0.0341	-0.2110	-0.4677	0.0396	-0.1024	0.0168	0.0174	-0.1847	0.1645	
A2 1	-0.0216	-0.5783	0.0008	0.0297	-0.0751	-0.0176	0.2433	0.1006	0.0470	-0.0390	0.0226	-0.1317	
A2 2	0.0844	0.0403	0.1478	-0.0065	-0.0283	0.1734	0.1676	-0.0747	0.0400	-0.0161	-0.3628	0.1569	
A2 3	-0.1009	0.0111	0.1790	-0.0629	0.2373	-0.2527	-0.0484	-0.0619	0.0221	0.0407	0.2620	0.1147	
A2 4	0.0823	0.3283	-0.0701	0.0410	-0.0719	-0.0602	-0.6130	-0.0114	-0.1506	0.2105	-0.1359	0.0250	
A2 5	0.0103	0.0169	0.2476	-0.0446	-0.2409	-0.1745	0.2375	-0.0801	-0.1012	-0.1390	-0.1520	0.0796	
A2 6	0.0777	0.4302	-0.0162	-0.1180	-0.0890	0.0688	0.1228	0.2004	0.0323	-0.0369	-0.1386	0.0456	
A2 7	-0.0020	0.0030	0.1108	-0.0650	-0.0732	-0.0883	-0.1299	0.2032	-0.0789	-0.0715	-0.0097	0.0265	
A2 8	-0.0599	0.6299	-0.0230	-0.0903	0.0989	0.1251	-0.1025	0.1075	-0.2552	-0.1827	-0.1589	0.0281	
A2 9	0.0940	-0.1228	0.0169	-0.1543	0.2440	0.1403	0.0923	0.0323	-0.0502	0.1000	-0.4092	0.1091	
A2 10	-0.1079	0.1516	-0.0100	-0.0242	0.0178	0.1133	0.1662	0.0323	-0.2068	0.0548	-0.0003	-0.0372	
A2 11	0.1103	0.0779	0.4247	-0.1563	0.0770	0.0656	-0.0320	0.3117	0.2068	-0.4154	-0.1321	0.2651	
A2 12	-0.6129	-0.0251	0.0914	-0.2671	-0.0084	0.0260	0.0568	0.0834	0.1136	-0.0585	-0.0890	0.0661	
A2 13	-0.0111	0.1040	0.1977	-0.1379	-0.1026	0.2579	0.0571	0.0544	0.0826	-0.0013	-0.0528	-0.0081	
A2 14	-0.1406	0.4333	0.0130	0.0790	-0.1683	0.0027	0.0355	0.1206	0.0756	0.2000	0.0671	-0.0077	
A2 15	-0.0598	0.4176	0.0994	0.0593	0.0489	0.0624	0.0673	0.1572	-0.1035	0.1563	0.0200	0.1594	
A2 16	0.3929	0.1223	0.3030	0.1073	0.0131	0.0330	0.1127	0.0399	-0.1029	0.2300	0.0327	-0.2136	
A2 17	0.0005	0.0377	0.1370	0.0194	-0.0512	0.1375	0.1149	0.0904	0.0247	-0.1603	-0.0168	0.0955	
A2 18	-0.0027	-0.0091	0.1140	0.1019	-0.0003	0.1109	0.0212	0.0026	0.0849	0.0434	0.0179	0.0586</	