INTRODUCTION

The June User Group meeting was well attended (almost a record attendance!) which was not surprising given the amount of interest generated by the introduction of the 16PF5. Judging from the nature of the presentations and discussions, the 16PF5 has received a mixed reception and will no doubt provide us with months (probably years) of debate.

The articles included in this edition include a summary of that User Group Meeting. Also included is a review of the latest work regarding Belbin's team roles and Ken Rawling continues his series describing the second order factors – this issue he looks at independence.

Submission Date

The submission date for the next issue of the next newsletter is 30th September.

Many thanks for the articles which you have submitted for this issue.

MEETINGS

Wednesday 21st September

Profile Interpretation – Form A vs 16PF5

Venue: IARC – LONDON
Time: 10.00 am – 4.00 pm

Friday 4th November

Can Personality Change?

Venue: IARC – LONDON
Time: 10.00 am – 4.00 pm

The following dates have been confirmed for next year's User Group Meetings.

Monday 30th January
Tuesday 28th March
Wednesday 7th June
Thursday 21st September
Friday 6th November
The last 16PF User Group was dedicated to issues surrounding the introduction of the 16PF5. A number of speakers contributed, presenting a range of opinions. It would be difficult to do justice to the range and complexity of the issues presented. However, below I have attempted to summarise the main themes arising from the meeting.

The Need for Change

There is little doubt that there is a need to update every psychometric questionnaire periodically. Apart from issues of presentation and candidate acceptability there is also a requirement to re-examine questionnaires at the item level. The meanings of individual questions will change over time, and therefore there is a need to update the items of questionnaires to reflect the contemporary attitudes and opinions of society. Hence, it was generally agreed that an update was both inevitable and unavoidable if the 16PF was to maintain its standing in the current psychometric market.

The Criteria for Reviewing Items

The primary criteria for reviewing the questionnaire was to increase the internal consistency of the 16PF scales and reduce the statistical overlap between the sixteen scales. Hence, items were chosen that correlate more highly with their own scales, whilst ensuring that the correlation of any item with scales other than its own is as low as possible. The objectives of this analysis have mainly been fulfilled with the 16PF5 demonstrating higher internal consistency coefficients (alphas) and lower average correlations between the 16PF scales.

The most curious issue regarding the use of 'alpha' as a criterion for constructing the questionnaire is not that high internal consistency has been achieved, but that it was chosen as a desired characteristic of the 16PF scales. Traditionally, the distributions of the 16PF have argued that low alpha was desirable as it suggested that the 16PF scales had a wide breadth of meaning. This argument no longer seems to be in favour and high alpha is now being upheld as a positive characteristic, indicating a narrower measurement capable of more precise definition. This change of emphasis has prompted a debate about the pros and cons of high internal consistency. Also many people believe that the shift in emphasis has not been accompanied by sufficient explanation by IPAT/ASE regarding the reasoning behind the contrasting approach to scale construction.

Correlations between Form A and 16PF5

An examination of the correlations between Form A and 16PF5 demonstrates a wide variation in the degree of overlap between the two forms. Analysis based on a sample of 100 6th form students revealed the following correlations between the two forms.

<table>
<thead>
<tr>
<th>Scale</th>
<th>R</th>
<th>Scale</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.59</td>
<td>M</td>
<td>0.21</td>
</tr>
<tr>
<td>C</td>
<td>0.57</td>
<td>N</td>
<td>0.19</td>
</tr>
<tr>
<td>E</td>
<td>0.55</td>
<td>O</td>
<td>0.60</td>
</tr>
<tr>
<td>F</td>
<td>0.80</td>
<td>Q_1</td>
<td>0.15</td>
</tr>
<tr>
<td>G</td>
<td>0.46</td>
<td>Q_2</td>
<td>0.51</td>
</tr>
<tr>
<td>H</td>
<td>0.85</td>
<td>Q_3</td>
<td>0.32</td>
</tr>
<tr>
<td>I</td>
<td>0.71</td>
<td>Q_4</td>
<td>0.60</td>
</tr>
<tr>
<td>L</td>
<td>0.15</td>
<td></td>
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</tr>
</tbody>
</table>

Also the size of significance of these correlations has become a matter of debate. During workshops conducted by ASE to introduce the 16PF5 correlations of 0.5 and above were quoted as indicating similarity between the two forms.

By applying this criteria, 5 of the new 16PF5 dimensions would be viewed as 'different'. More recently Barrett and Palriel (1994) have stated that "a generally acceptable minimum bound for scale comparability computed using correlation coefficients is about 0.71". Given this criterion, only 3 of the 16PF5 scales may be considered comparable to those in the 16PF (Form A).

Clearly, the available evidence so far indicates that there is some divergence between the two questionnaires. However, as more data and research is accumulated, the degree and meaningfulness of this divergence will become clearer. ASE have acknowledged that the nature of some scales has indeed changed and this has lead to changes in the interpretation of those scales.

Interpretive Differences in the Scales

A number of factors have been identified as being qualitatively different meanings. Factors G, L, M, N and Q1, those factors with low correlations with Form A were given particular attention. In general, the new interpretive guidelines focuses the user on the original 'core' meaning of each factor and puts less emphasis on the more tangential interpretations accompanying some of the Form A factors. In general it can be said that the 16PF5 factors have narrower, more specific interpretations than Form A.

Skewed Norms

An additional concern which is beginning to emerge amongst 16PF5 Users is the nature and shape of the factor distributions. An examination of the published norm tables indicate that the skewed shape of the distributions make it impossible to score a sten of 10 on a range of dimensions (C, E, F, H, N, O, Q3, Q4). For men and women of all ages (British Population) is only possible to achieve a STEN of between 3 and 8 inclusive, on factor H. Hence, the results of the British Standardisation suggests that the nature of the items do not provide enough variance to produce a balanced normal distribution on a British Sample. Consequently the interpretive power of the questionnaire is reduced through its inability to provide a full range of STEN scores. In fairness this could well be true in other personality measures, but may be hidden by the practice of "smoothing" the curve when creating norms.

Conclusions/Implications

Any new questionnaire coming on to the market is, quite rightly, subject to a level of critical analysis. The launch of the new 16PF is no exception, and considering the traditions accompanying the 16PF, it is likely that its introduction will be accompanied by more rigorous analysis than most.

The fact that the 16PF5 has been designed, and is being marketed, as an evolution of the 16PF Form A means that it has much to prove. Not only does it need to establish itself as a credible psychometric instrument, but it also needs to demonstrate a clear link with its predecessors. Most informed observers would agree that the 16PF5 is a robust, solid, reliable questionnaire. However, the debate of whether it is equivalent, or even similar, to the Form A will continue apace. The available evidence produced to date does cast some doubts about the equivalence of two forms. This is an important point as it is only through demonstrating this link can there be a clear justification for 16PF5 Users to continue using the enormous amount background of evidence and research built up through the use of the 16PF. These are difficult times for the 16PF; caught between the unquestionable need to update whilst needing to retain a strong link with its past.

Unpublished paper available from Pytech International Ltd (Tel: 0462 482833).

Andrew Kipp
Recently Adrian Furnham et al. (5) undertook a psychometric assessment of the original 56-item version of the Team–Role Self–Perception Inventory (TRSPI), and a more recent 70-item version (which embraces the Specialist as an additional team role) built into Belbin's Interplace system. The experimenters' conclusion was that "Neither the internal reliability nor the factor structure of either inventories (original and revised) give confidence that they could have predictive or construct validity."

In commenting upon Furnham et al's paper, Belbin (3) emphasised that the TRSPI as part of Interplace is an instrument for use in conjunction with a set of discriminating observers who may be able to "offset suspect self-reporting". He also asserted that "while personality differences may underlie team roles, other factors, including personal values and learned behaviour, also contribute in a significant way to their emergence."

Amongst the factors affecting the performance of an individual in a team role are relationships with superiors, peers and subordinates. Belbin's latest book (1) includes a valuable chapter—"Interpersonal Chemistry in the Workplace"—exploring these relationships, which in practice take place within the context of an organisational culture. As Roger Mottram points out, an individual's team role strengths may be more or less appropriate for a given culture, with consequences for the person's performance.

A recent paper by Victor Dulewicz (4) reports that the self-ratings from a well-designed personality questionnaire (the OPO) can produce data that are related to a boss's ratings of actual job performance. Further work utilising the 16PF as well as the OPO is in progress. The relationships between team roles and boss's ratings of performance on twelve managerial competences, have been examined, the preliminary results on the 16PF providing strong support for the validity of four of the roles, some support for three others, but none for the Monitor Evaluator role. Bearing in mind that this role has in part been defined in terms of results from the CTA and the PPO, the outcome is perhaps not surprising.

Dulewicz and Belbin both stress that personality questionnaires are a valuable aid in selection but should not be used in isolation. The 16PF clearly played an important part in the original identification of team roles by Belbin, but other instruments and the observations of observers were equally indispensable. Now the advent of FUPS poses the question of the future form of some of the team role equations if they are to remain viable.

References


The equations described in this article relate to Form A of the 16PF and not the 16PF5. There are separate equations for males and females for this factor, as there are for tough poise. The most recent equations are:

Males: \( .53E - .14G + .34H + .23L - .14N - .17O + .24Q_1 + .11Q_4 \)

Females: \( .48E - .13G + .34H + .19M + .37Q_1 + .13Q_2 - .209 \)

Correlations between the primary factors which contribute to independence are shown in the table below:

<table>
<thead>
<tr>
<th></th>
<th>E</th>
<th>G</th>
<th>H</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>Q₁</th>
<th>Q₂</th>
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<tbody>
<tr>
<td>E</td>
<td>- .42</td>
<td>.48</td>
<td>.37</td>
<td>-.65</td>
<td>.14</td>
<td>.52</td>
<td>.07</td>
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<td>E</td>
<td>- .41</td>
<td>.14</td>
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<td>.65</td>
<td>.34</td>
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<td></td>
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<tr>
<td>G</td>
<td>.08</td>
<td>-.38</td>
<td>.38</td>
<td>-.29</td>
<td>-.56</td>
<td>-.63</td>
<td></td>
<td></td>
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<tr>
<td>H</td>
<td>-.16</td>
<td>-.37</td>
<td>-.40</td>
<td>.03</td>
<td>-.35</td>
<td>.04</td>
<td>.18</td>
<td>-.41</td>
<td></td>
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<tr>
<td>L</td>
<td>-.16</td>
<td>.58</td>
<td>.40</td>
<td>.26</td>
<td>.14</td>
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<tr>
<td>M</td>
<td>.43</td>
<td>.46</td>
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<td>N</td>
<td>.08</td>
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(Reproduced from Table 10.2 of the 16PF Handbook; upper figure – males; lower figure in bold – females).

The primary factors which receive the highest weightings are the same for males and females: E+ (assertiveness), H+ (social confidence) and Q₁+ (radicalism). Factor G– (expediency) and Q₂+ (self-sufficiency) make a more modest contribution. L+ (suspiciousness), N– (forthrightness) and O– (self-confidence) are also associated with high independence in males; these factors are absent from the female equation, but M+ (imagination) is included.

The essential features of independence are assertiveness, independent-mindedness and a tendency to question and challenge the status quo. People who score high on this second-order factor are determined to put their point of view across, and are not backward in coming forward. They like to do things their own way, and to get their own way. Whether or not they are successful in achieving their aims will depend on their particular combination of primary traits within the independence factor, and on other factors such as A (reserved/outgoing), and, at the second order level, superego/control. They may be something of a law unto themselves.

People who score low on independence are described as subdued. They tend to give way to other people (E–), and they are likely to be socially inhibited (H–), and more concerned about upholding established traditions and beliefs (Q₁–) and obeying the rules (G+).

They also tend to be group dependent (Q₂–). Men who score low on this factor tend to be shrewd and circumspect (N+), trusting (L–), and insecure (O+), while women with low scores tend to be practical and realistic (M–).

The weighting given to Factor H in the independence equation is difficult to understand, since H has low correlations with the other two primaries which make the main contribution to the female equation, and with one of the main contributors (Q₁) to the male equation. It is tempting to regard E+ and Q₁+ as the 'core' of independence; the independent-mindedness associated with these two factors may be boosted by social confidence and boldness (H+), but these extraneous characteristics seem incidental to the main concept. It is also interesting to note that a high independence score requires a combination of H+ and Q₁+ —ie high social confidence combined with high self-sufficiency — which runs counter to the direction of the reported correlation between these two factors, and to the direction in which they are combined in the introversion/extraversion formula.

It is important not to confuse independence with superego/control, the last of the five second-order factors in current use. Factor G, the main contributor to the control equation, receives a negative loading in the independence equation — so it is not surprising that Cattell reports correlations in the region of -.40 to -.45 between independence and control — but there is a clear conceptual distinction between these two factors. Independence reflects the extent to which a person seeks to promote their ideas and overcome opposition, whereas control is concerned with the extent to which they refer to internal or external standards of behaviour.

Independence, like tough poise, depends on several primary stents, so once again it is essential to refer back to the primaries in interpreting a person's score. The (actual) examples below show the amount of variation which can occur within high independence profiles.

<table>
<thead>
<tr>
<th></th>
<th>E</th>
<th>G</th>
<th>H</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>Q₁</th>
<th>Q₂</th>
<th>Independence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard</td>
<td>10</td>
<td>5</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>10.66</td>
<td></td>
</tr>
<tr>
<td>Greg</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>10</td>
<td>8</td>
<td>9.37</td>
</tr>
</tbody>
</table>

Richard and Greg have very high scores, but their independence seems to have different origins. Richard (who was a chief executive in a financial services company) was dominant, aggressive, and self-assured to an exceptional degree, and these traits are reflected in his primary stents. Greg is more radical and iconoclastic, but he his less venturesome in social situations, and much less self-assured. His independence is primarily cognitive, whereas Richard's has more to do with social behaviour.

British managers tend to obtain above-average independence scores in comparison with the general population. The mean score for independence in a sample of 220 male and female line managers was 7.8, and managers who were considered to be poor performers tended to obtain lower scores than their more successful colleagues (Rawling, 1992).

Rawling K B (1992) Follow-up studies of management selection in two commercial organisations (Unpublished reports).