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Psyche

The newsletter of The Psychometrics Forum

Visit our website at **www.psychometricsforum.org**

You will find information about forthcoming events, speakers, the origins of the group and much more.

Want to add something to the website? Contact our Administrator – **Caro Leitzell: admin@leitzell.com**

Also keep up to date with developments by signing up to **The Psychometrics Forum Affiliates Group** on LinkedIn

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A few words from your Editor

Adrian Starkey – Chartered Occupational Psychologist
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Dear Reader

Many thanks to all who have contributed to make this edition something of a 'bumper' issue for Psyche in which we hear from publishers, practitioners and thought leaders in the field of Psychometrics. Whilst compiling the content I was taken by the range of contributors and breadth of subjects represented. Also, for the first time in my editorship, I was pleasantly surprised to be oversubscribed with potential contributions. Whilst this is a good problem to have I would like to apologise to the authors of those pieces that did not make it into this edition.

This is also the first time out in our new livery. As a committee we decided to seek professional help and have been very lucky to secure the services of Georgia Styring who has professional design and layout skills far exceeding my own! I hope that you like the facelift and would be happy to receive any comments and feedback from readers.

Shortly before publication The Psychometric Forum also reached another landmark by exceeding the 2000 associate members of our LinkedIn site. This has literally become something of a global enterprise and I would encourage all of you to follow the informative and sometimes passionate debates that take place on this on-line forum.

For those who may not yet have booked you are reminded that the next forum event takes place on Wednesday 15th February when we will hear from internationally renowned Professors Beverly Alimo-Metcalfe and Professor Adrian Furnham on the subject of "Leadership – Engaging and Derailing Traits". This will be followed by our AGM. Please contact our administrator Caro as regards any last minute availability:

MEMBERSHIP ADMINISTRATOR

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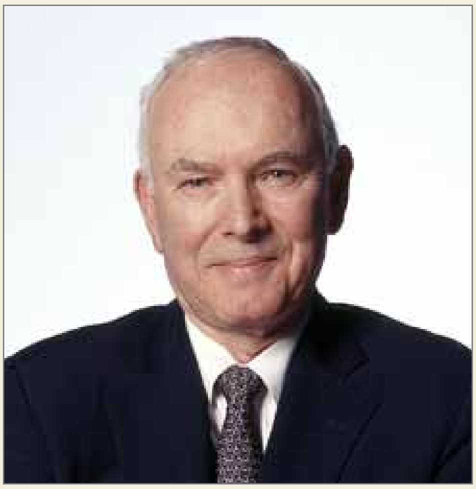
One final reminder – The copy deadline for the Spring edition is 16th March.

Personality, Leadership & Organisational Effectiveness



Bob Hogan

Summary by Harpal Dhatt – TPF Committee Member & Glow at Work Chief Executive

Personality, leadership and organisational effectiveness was the topic presented by Professor Robert Hogan. This meeting took place at the prestigious venue of the Caledonian Club in central London, attracting many high profile guests and speakers in the psychometrics field.

It was a pleasure to have the opportunity to be in the presence of Hogan for the second time in two years. He first presented to the Forum in January 2010 and asked to come back for a second time in June 2011, to talk to the Forum in more depth on the subject of leadership.

Hogan is an international leading authority on personality assessment. You cannot help but be drawn to him when he is speaking on the subject of personality, his passion shines through as well as his unconventional personality. What comes through is his very strong commitment to the scientific approach when talking about Leadership.

This second time I was able to comprehend further, Hogan's thinking on how we can measure human behaviour from his explanation of sociology, anthropology, and evolutionary psychology. I liked how he presented a broad perspective of people through his intellectual knowledge and experience.

He introduced his presentation using American humour, by saying: "My goal is to sell some ideas. Ideas have consequences...I am a recovering academic."

He began by focusing on personality he has found that personality theory matters. He says people are the most dangerous forces in our environment, they can help or hinder organisational effectiveness. From his research he has developed an operating manual for understanding people at work.

When I first met Hogan in January 2010 I remember him being controversial and saying "there are no traits." I was slightly puzzled as I had been informed differently when completing my level B training in 2006. From Hogan's perspective he says trait theory is not a theory, it is a British position on personality. The model defines traits as neuro-psychic entities and behaviour patterns. Traits are essential for predicting what people are going to do. Prediction is not an explanation.

He presented us with an alternative model...

Trait theory like psychoanalysis is an intra-psychic model. Everything is internal. Interpersonal theories focus on what is going on between people. Social skills become crucial and the ability to figure out what people are expecting and to deliver this. From an interpersonal model everything that happens in public is important. Sociology, anthropology and evolutionary psychology tell us that people live in groups, every group has a religion. In society to get along with others means you need to comply. If you get ahead other people will hate you. He identified a tension between trying to get along and ahead.

For Hogan the goal of assessment is to predict individual differences in ability to get along, get ahead and find meaning in work.

He has found reputation is easy to study: "it is the you that we know". The Five Factor Model of personality is the structure of reputation. In his opinion assessment should focus on reputation and how other people see you. Prediction is not explanation he repeatedly says. We need to use identity to explain.

Reputation is key: "People are always watching and keeping score."

For Freud self awareness was all about identity, discovering the inner you. Robert thinks it is necessary to understand how other people perceive you. He use's assessment to create strategic self-awareness.

"Thatcher, Voltaire, Reagan were all successful, however incapable of introspection. Really successful people are not introspective."

If your career is not going well, he says we will tell you about your reputation, which will pay off in the real world. We present the 3 perspectives; the bright side you at your best, the dark side you just being yourself and, your inner core values. We can assess them and help people to identify what drives them.

Personality assessment is not an exact science, it provides essential information about performance potential. The longer someone is in the job the more personality predicts than IQ.

The second part of the presentation focused on Leadership and, how to improve engagement, he presents us with the idea that leadership is the most important problem in organisations today. He shares the historical lessons of leadership with us:

"In the 20th century, 167 million people were killed for political reasons, 30 million people were killed by invading armies, 137 million people were killed by their own government. So it really matters who's in charge. I mean, if you get the wrong people in charge, they'll kill you."

Leadership really matters and he says the academic field has failed on:

1. The way they define leadership, 2. Paying attention to the followers of leaders, 3. Not paying attention to ROI.

From his experience the people who get to the top of an organisation, are good at political skills and not necessarily leadership skills. He shares the dark egotistical side of people in leadership positions, watch out when they say 'I' a lot, narcism can take over the country.

He shares an alternative way of viewing leadership "as a resource for the group rather than a privilege for the individual." This raises an interesting point in terms of how leaders are typically more highly rewarded than the members of the group. As a leader doing so communicates that "I" am more important than other people.

"Good management is all about creating engagement. And it's very simple. How a manager treats his or her staff drives their level of engagement. When engagement is high, you get good business results. You get low turnover, low absenteeism, high productivity, and high customer satisfaction ratings. Those all mean dollars (and pounds to us.) When engagement is low, you get high turnover, high absenteeism, low productivity and low customer satisfaction ratings. So, good managers make more money for you, bad managers drive unnecessary costs."

Engagement predicts every important business outcome. Management needs to pay attention to engagement in the same way they pay attention to profits. Could this be a potential KPI for organisations to consider to increase organisational effectiveness?

Human beings are complex, we are all similar yet different, we like to think of ourselves as individuals. For managers I will leave you with a simple Robert Hogan strategy to increase engagement: "how do you motivate a team? One player at a time. How? By building a relationship one player at a time." (Auberge) So overall, another excellent session from one of the most influential psychologists of our age.

For more information on Hogan assessments go to http://www.hoganassessments.com/.They specialise in predicting performance and improving organisational effectiveness.

Do Psychometrics Work in Real-world Organisations?

Dr. Max Blumberg – Research Fellow University of London and Founder of the Blumberg Partnership

Max Blumberg, PhD, CPsych, AFBPsS
Research Fellow, University of London and Founder of the Blumberg Partnership
max.blumberg@blumbergpartnershipcom

This question is regularly posed in various forms on LinkedIn psychology and HR groups, and inevitably generates a lot of debate. I'd like to discuss it here with particular emphasis on psychometric tests and competency frameworks. I want also to include a reference to the significance of the phrase 'real-world'.

The term "real world" reflects the perception of some business and HR professionals that while psychometric tests and competency frameworks may be effective in the controlled environments in which they are created and developed, they may be less effective in their 'real-world' organisations. Could there be any truth to their concerns?

To answer this, we need to delve more deeply into the meaning of the term "effective" in this context. Without getting overly academic, psychometric practitioners usually consider a measurement instrument or framework to be "effective" if it has sufficiently high construct validity in that it accurately measures the construct it claims to measure such as *ability*, *personality* or *competency* according to the (hopefully) explicit theory on which the instrument is based. This can be seen by the relative emphasis on construct validity as opposed to predictive validity in many Level A and B training courses.

Contrast this with business and HR professionals for whom the term *effective* usually refers to *predictive* (or *concurrent*) *validity*; that is, the extent to which organisational investments in instruments and frameworks predict desirable employee outcomes such as job performance, retention, and engagement. And herein lies the rub: just because an instrument accurately measures the construct it purports to measure (e.g. ability or personality), this construct validity does not mean that the instrument has high predictive validity. It will therefore not necessarily deliver metrics that accurately predict employee outcomes and which can be used as useful inputs to design selection, development, and engagement programmes specifically designed to maximise performance and retention of high potentials. No, to establish the concurrent validity of psychometric tests, competency frameworks, or 360˚ degree surveys in given roles at a particular organisation requires that these instruments be given to a sample of employees in similar roles and organisations: this will establish the extent to which scores correlate with desired employee outcomes in the 'real world'. Establishing predictive validity requires even more work and is perhaps a topic for another day.

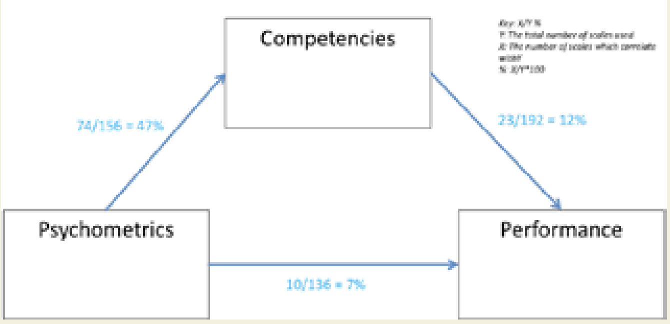
As an illustration of this, we recently examined trait and learnable competencies data for 250 management employees in the same role at a well-known global blue chip brand, together with their job performance scores (Fig 1). We modelled them as:

- **Psychometric scores:** Fixed characteristics unlikely to change over time and therefore potentially useful for selection if they correlated with performance
- **Competencies**: Learnable behaviours as assessed by the company's competency framework, 360˚ survey and development programme assessors. Useful for developing high performance.
- **Employee Performance**: We were fortunate to obtain financial performance data for each manager which means these scales were reasonably objective. Ultimately, the reason for investing in psychometrics and competencies for selection and development is to achieve high performance here.

We found the following relationships in the data:

- **Psychometric scores and Competencies**: As can be seen, only 47% of psychometric test scales correlated with learnable competencies. Effect sizes were small, typically less than 0.20 meaning that they would not be helpful for selecting job candidates likely to exhibit the competencies valued by the organisation. One psychometric test, however, did have a large correlation with performance; unfortunately this correlation was negative meaning that the higher the job candidates' test scores, the lower their competency scores – hardly what the company intended when it bought this test.
- **Psychometric scores and Employee Performance**: Only 7% of the psychometric test scales correlated with employee performance and again effect sizes were typically less than 0.20 – meaning that the psychometric tests were not useful for selection. Again, one test shared a negative relationship with performance: this means that if high scores were used for candidate selection, it is likely to select low performers.
- **Competencies and Employee Performance**: Only 12% of the learnable competency scales correlated with performance – and again, effect sizes were small meaning that investing in these competencies to drive development programmes was not worthwhile. And once more, some of these competencies had negative correlations with performance, meaning that developing them might actually decrease employee performance.

Fig. 1: Percentage of Scales Correlated to Management Outcomes in a One Organization



So, to go back to the original question: Do psychometrics work in real-world organisations? One could hardly blame the HR Director of the above organisation for being somewhat sceptical. This scenario is not unusual and is typical of the results we find when auditing the effectiveness of companies' investments in psychometric tests and competency frameworks.

But does it have to be this way? I believe that the answer to this is no, and that metrics can not only work, but can significantly improve performance in the 'real world'.

All that is needed is some upfront analysis to obtain data such as I have outlined above – as that is what is needed to determine whether performance is being properly measured as well as which scales are and are not useful (so that poor scales can be removed and if necessary replaced with better predictors/correlates). Typically, we see employee performance improvements of 20% to 40% by simply following this process.

So the answer to the original question is ultimately a qualified "yes" – psychometric tests and competency frameworks do work provided that systematic rigour is used in selecting instruments for 'real world' applications.

How to get value from psychometric tests and competency frameworks

- Psychometrics cannot predict high performance if you don't know what good looks like. The first step in procuring tests and competency frameworks is therefore to ensure that "high performance" is clearly defined and measurable in relation to your roles.
- Before investing in psychometric tests and competency frameworks that potentially will have a negative effect on your workforces' performance, ensure you get an independent analytics firm's objective evaluation of each instrument's concurrent and/or predictive capabilities in respect of employee populations similar to your own. If the vendor you're considering purchasing from cannot provide independent evidence, request a discount or get expert advice of your own before purchasing anything.
- If your workforces are larger than around 250 employees, you should certainly get expert advice to ensure that a proposed instrument does indeed correlate with or predict performance in your own organisation before making a purchase.
- If you need professional help interpreting quantitative evidence provided by vendors, get it from an independent analyst – never from a statistician working for the vendor trying to sell you the instrument.

The Psychometrics Forum Event – 21st September 2011

Using the Emotional Intelligence Tool EQi in Global Team Coaching

Dr. Steve Langhorn & Geetu Bharwaney

Summary by Zorica Patel – Lecturer at Westminster Business School

This was yet another insightful event delivered by The Psychometric Forum on the 21st September 2011.

As a long standing, active member of this Forum, I am always eagerly awaiting each event (organised five times a year) as I find them intellectually stimulating and an excellent platform for networking with like-minded people. The main aim of this Forum is a further enhancement of our skills in the use and interpretation of various psychometric instruments.

In the afternoon session on this sunny September day, we welcomed Dr Steve Langhorn, Director of the Rentokil Initial Global Academy. He claimed that his company runs the biggest Emotional Intelligence-based programme in the world as part of their Leadership Development Programme, using the Emotional Intelligence tool EQi in global team coaching. In this presentation, he was accompanied with Geetu Bharwany, Founding Director of Ei World.

They made it clear with their first slide that they actively encourage questions and dialogue and, indeed, we had a healthy debate throughout. In an interactive group environment, we managed to successfully explore different ways in which individual and team assessments of Emotional Intelligence (EI) are being used in business contexts. This aided an identification of how EI assessments could be utilised to offer an insight into team functions and appropriate coaching of the team.

At the beginning, all participants were briefly introduced to the concept of Emotional Intelligence (EI), seen as an array of emotional, personal and social competencies and skills that determine how well we understand and express ourselves, understand and relate with others and cope with daily demands, challenges and pressures.

The presenters took us on a historical journey of EI construct, from Darwin 1872 times, to EI concept defined by Thorndike in 1920, as “the ability to perceive one’s own and others’ internal states, motives and behaviours, and to act toward them optimally on the basis of that information”, as well as Leuner 1966 article on EI and emancipation. They confirmed that Goleman’s 1995 book on EI brought this concept to popular attention.

They offered an insight into the case study of Whitbread’s team development where large General Manager and Deputy General Manager population across restaurant business were included in training intervention with a view of looking into which EI characteristics were associated with financial performance, customer service delivery and team retention. It all commenced at the top with the Board attending 1- day Ei sessions, which were cascaded to 600 managers using ten internal ‘coaches’. However, the final outcome was that, unfortunately, it was not embedded in the HR and L&D community.

The participants also learnt about the Rentokil-Initial experience with a full 10 day comprehensive programme for sales managers. The EI Foundation module incorporated understanding of Ei, its importance to Rentokil, ways of developing their own Ei capabilities, receiving and reflecting on results and devising a personal plan for developing their EI. Initial results demonstrated direct correlations between top performers and EI. They seemed to be high in problem solving, optimism, stress tolerance, interpersonal relationship and social responsibility.

This was interspersed with various examples of team profiles, by looking into strengths, challenges and team leadership qualities of individuals, to aid our better understanding of the main issues. We learnt that team profiles could be used for summarising team functioning, pre and post team development comparisons, team leader functioning contrasted with team functioning and rigorous statistical methods of team analysis to create competency maps.

They informed us of the scope of their work with various teams in 25 countries, such as: executive, sales and service teams, management committees, sport teams, partners in professional services firms, public sector civil servants, high potential leaders in functional teams, as well as front line sales and service managers. They pointed out that they used different Emotional Intelligence tools: Self Report (EQ-I, Trait Ei and ECR), Ability test (MSCEIT), 360 Degree Feedback (EQ-360 and ESCI), Genos Ei, and Team Emotional Intelligence (GEI).

However, the key part of their presentation was focused on the EQi that consists of 133 brief items with the 5-point response set (*True* to *Not True of Me*), 5 composite scale scores (*tapping 5 major areas*), 15 subscale scores (*tapping 15 EI competencies*) and 4 validity indicators (*with a correction factor*).

Five composite scales with their associated subscales are:

Intrapersonal (Self-Regard, Emotional Self-Awareness, Assertiveness, Independence and Self-Actualisation)

Interpersonal (Empathy, Social Responsibility and Interpersonal Relationship)

Stress Management (Stress Tolerance, Impulse Control)

Adaptability (Reality-Testing, Flexibility and Problem-Solving)

General Mood (Optimism and Happiness)

The presenters fully described the applications of this tool in the workplace for EQ profiling of occupations and star performers, recruitment and selection, group training, team development, individual coaching and succession planning. They emphasised its utility value in distinguishing the individuals who are effective, high performing and resilient and as a simple framework for personal and professional growth.

It was captivating to learn about the organisational implications of utilising this tool effectively.
It seems that it gives actual data on how people are functioning so it could be used skilfully in helping team members be even more effective. Also, it could be used to support recruitment/change management activities to achieve better matches between team members and demands of the role. It provides an evidence-basis for all team development which can also be customised to suit individual and group EI.

The presenters concluded with a future outlook on EI assessment and left us pondering if there will be an increasing interest in EI with increasing levels of expertise in using EI assessment effectively.

Their final word was that ‘furthering links between individual Ei and team performance is the key’. Only time will tell.

The Psychometrics Forum Event – 21st September 2011

Building, Leading and Coaching a High Performing Team

Mark Gilroy – TMSDI & Sue Boyle (associate)

Summary by Tameron Chappell – Business Psychologist at athinka

The very informative session covered:

- understanding high performance at work
- how TMS measures motivation in the workplace
- how work preferences differ across different industries and countries
- a Team Coaching case study presented by Sue.

The Team Management Profile and the other suite of complementary titles available from TMSDI were created by Margerison and McCann. Margerison was an Occupational Psychologist and McCann was a chemical engineer. Both had extensive experience of working with high performing (HP) teams and began their partnership in the 70s. They were originally interested in the tasks that individuals performed within HP teams and the language that was used when team members talked about their work.

The Types of Work Model with 8 + 1 factors emerged from their research with HP teams. All of the Types of Work needed to be covered in a HP team but they were not necessarily equal in how much of each task needed to be done. They found consistency in the language used when people talked about the work they did and this is reflected in the plain language used to describe the factors:

Advising – Gathering and sharing information.

Innovating – Idea generation, challenging the status quo.

Promoting – Selling ideas to people and getting buy-in from stakeholders.

Developing – looking at an idea with an analytical twist. Deciding which option will be viable.

Organising – Action planning.

Producing – Focusing on deliverables and consistency of outputs.

Inspecting – Checking and auditing, focussing on detail with an element of control.

Maintaining – Longer term activity to do with the values and ethos of the people in the team. Makes sure systems are in place to uphold those values.

***Linking** – Slightly different in that it's not a task or activity but everyone in the team is responsible for co-operative working within the team itself.

Team members reported that they were more likely to perform certain tasks over others and Margerison and McCann wanted to know if this could be predicted. They used a Jungian-based preference scale to look at this. The RIDO scale is work-specific rather then a more holistic 'life' view that is taken by the MBTI, but some of the factors are more closely correlated than others.

The RIDO scale again reflects the common sense language used throughout all of the TMSDI products and documentation:

R – Relationships and refers to where you get your energy from with the scale spanning Extrovert to Introvert

I – Information which ranges from Practical to Creative and is how you like to analyse information

D – Decisions is about how you make decisions and whether you base them on Analytical evidence or internal Beliefs which are more subjective

O – Organisation is how you like to organise yourself and others and that ranges from Structured to Flexible.

Individuals receive a personalised report that gives them a spread of preferences across each scale so they can see the zone within which they are comfortable operating. They are also given feedback on which of the 8 +1 factors they prefer to engage in. The Team Management Wheel is the combination of both the RIDO preferences and the 8 + 1 work factors. The terminology reflects the task descriptions of the work factors and incorporates the active language used by people to describe themselves in those roles.

Individuals are assigned a *major role* and 2 *related roles* within the Team Management Wheel so again this adheres to the idea of a spread of preferences rather than pigeon-holing someone into one thing or another. In their personalised report they are also given a percentage score for each of the 8 major roles so that they can get a full understanding of where their preferences lie.

There was a discussion about how the MBTI and the RIDO scale overlapped and whether any particular patterns emerged. The documentation and research available from TMSDI is extensive in this respect but in brief they reported that 50% of people come out as having the same preferences and the other 50% differ on 1 or more of the scales. Sue reported that her experience with working with clients using the scale was that the focus of the RIDO on workplace scenarios could often lead to 'lightbulb' moments for people as they realised that their working preferences were quite different from their out-of-work preferences and indeed her personal scores followed this pattern too.

The questionnaire itself consists of 60 items that can be completed on paper or electronically and is available in 12+ languages including American English, and International English with plans to expand further. There is also an extensive research database which is based on 20 years worth of completed questionnaires and is made available to all accredited users of the tool. It can be used for comparison and benchmarking purposes and can be searched by language and by profession.

Accreditation training is one-off and entitles you to lifelong use of the profile as well as access to a wide range of support materials and networking opportunities offered by TMSDI staff.

The Impact of Individual Resilience

Philipa Riley, Senior Consultant – Product Development, A&DC

Resilience can be described as 'an individual's capacity to adapt positively to pressure, setbacks, challenges and change in order to achieve peak performance.'

So how might individual resilience be important for the effective performance of organisations?

Imagine the situation: an organisational crisis has taken place and there is a requirement for job cuts, which will lead to significant changes to the organisational structure.

Some employees are crushed by these events; they become stressed and ineffective, spending significant amounts of their day talking to their colleagues about how terrible the situation is. They view the situation as something that has been 'done to them.' Other employees can see the bigger picture, they realise that there is little point in worrying about what *might* happen, as this will not change the outcome. They may even see the experience as a positive challenge; a potential opportunity from which they can personally learn and grow.

It would be bad enough that some employees' negativity spreads to others in the organisation, but what if these individuals were also speaking to customers? And once the redundancies have been made, how willing would this group be to adapt to the changed ways of working? This is likely to have a significant impact on the organisation's ability to adapt to change effectively.

In a seminal study by Maddi and Kobasa (1984), resilience (or hardiness, as it is sometimes called) was shown to act as a buffer against stress. The research looked at the reactions of a group of employees during what has been described as "the largest upheaval in corporate history" – the deregulation of the previously federally regulated AT&T in the USA. The study found that resilience, as characterised by attitudes of 'commitment,' 'control' and 'challenge,' distinguished between those who thrived during the period and those who succumbed to stress-related illness and behaviours (such as heart attacks, depression/anxiety disorders and alcohol/drug abuse).

Research also shows that resilience moderates the relationship between stress and job performance (Westman, 1990) and has been directly related to job performance in a variety of different contexts (eg Bartone, 1993; Maddi, Harvey, Khoshaba, Fazel & Resurreccion, 2009; Maddi & Hess, 1992). Resilience has also been shown to be a predictor of key attitudinal variables, including organisational commitment, job satisfaction and workplace happiness (Youssef & Luthans, 2007).

What is Individual Resilience?

There is no consensus on the definition of individual resilience, although typical descriptions focus on a positive set of behavioural or psychological responses to a given set of negative events. There is also some debate in the literature as to whether resilience is a learned behaviour or an ongoing developmental process, whether it is multi- or uni-dimensional and the number and nature of the constructs of which it is comprised.

In response to some perceived gaps in the models and tools currently available to measure individual resilience, **a&dc** has conducted research to establish a comprehensive and occupationally-specific model of resilience. In this model, resilience is presented as a process, a set of skills that can be developed. The model is therefore *not* concerned with labelling people as 'resilient' or 'non resilient.'

The eight components of resilience as identified in the research are detailed below:

1. **Self Belief**. The extent to which an individual has confidence in their ability to address problems and obstacles that they encounter.
2. **Optimism**. The extent to which an individual believes that they will experience good outcomes in life and the way in which they explain setbacks that they experience.
3. **Purposeful Direction**. The extent to which an individual has clear goals that they are committed to achieving.
4. **Adaptability**. The extent to which an individual is willing to adapt their behaviour and approach in response to changing circumstances.
5. **Ingenuity**. The extent to which an individual perceives they are capable of finding solutions to problems that they encounter.
6. **Challenge Orientation**. The extent to which an individual enjoys experiences which challenge them and perceives stretching situations as opportunities to learn and develop.
7. **Emotion Regulation**. The extent to which an individual is able to remain calm and in control of their emotions in stressful situations.
8. **Support Seeking**. The extent to which an individual is willing to ask others for help and support when dealing with difficult situations.

How to Build and Develop Resilience

At **a&dc**, we view resilience as a skill that can be learned. Enhancing resilience will not only assist individuals in coping with pressure, setbacks, challenges and changes at work, but it becomes a 'life skill' that will enhance general wellbeing and the ability to cope with a range of challenging life events.

To learn more about ***a&dc's Resilience Questionnaire***™ please visit www.adc.uk.com/resilience or contact us on **+44 (0)1483 860898** for more information.

Combined Summary by Dr. Hugh McCredie – TPF Vice Chair

The Psychometrics Forum Event – 23rd November 2011

Assessing Entrepreneurial Potential

Dr. Tomas Chamorro-Premuzic

Ethnic differences in cognitive ability test performance

Dr. Steve Woods

Getting bang for your buck: enhancing the predictive validity of personality assessment by setting thresholds

Dr. Alan Bourne

New Frontiers in Psychometrics 2011

What follows are my personal impressions of the varied contributions to what was, in effect, our fourth annual round-up of research and development in the psychometrics domain:

Dr Tomas Chamorro-Premuzic Reader at Goldsmiths, University of London reported research into 'entrepreneurship' and the development of a psychometric, META (Measure of Entrepreneurial Tendencies and Activities), to assess entrepreneurial potential. The work was mainly conducted by Tomas and his associate Gorkan Ahmetogulu.

The Goldsmiths researchers identified four facets of entrepreneurship (Awareness, Opportunism, Creativity and Vision) which could be combined to yield a Total META score. The online questionnaire also collected demographic data, notably identifying self-employed business owners and four entrepreneurial outcomes: (1) annual gross income, (2) number of income sources, (3) number of employees managed and (4) number of start-ups initiated. There were further, general personality items.

Correlational studies revealed that Total META scores were associated with Big Five Openness, Holland's Enterprising and Artistic scales but not with mental ability. However, META predicted entrepreneurial outcomes to a much greater extent than any of these alternatives.

Conscious of the public association of entrepreneurs and psychopaths Tomas and his colleagues discovered a positive link (*r* 0.23) with primary psychopathy (arrogance, callousness, manipulativeness, lying) but a negative one (*r* –0.21) with secondary psychopathy (impulsivity, boredom proneness, irresponsibility, lack of long-term goals). Primary psychopathy correlated (*r* 0.20) with entrepreneurial success and was substantially accounted for by META responses (*r* 0.39).

Thomas suggested that the four facets of entrepreneurship can be coached. He also gave convincing reasons for the importance of entrepreneurship as a contributor to economic recovery.

Dr Steve Woods of Aston Business School suggested that very little research had taken place on ethnic differences in cognitive ability test performance since a robust, one standard deviation, difference between black and white test takers was revealed 10 years ago. That finding was important to test users since it had the potential to yield an unacceptable level of rejection amongst minority group employment candidates.

Steve identified research which attributed the difference to both the properties of tests and the process in which they were being used. He also reported an alternative explanation that ethnic differences were real, underlying and enduring together with a further possibility that, although real, the differences were based on variations in education and opportunity.

More recent research on the narrowing of black/white cognitive test differentials in the USA, led Steve and his colleagues to undertake a new meta-analysis of published (exclusively US) data on a decade by decade basis. Between the 1970s and 1990s, the Aston researchers identified a significant linear downward trend in black/white test score differences which was most marked amongst those who had continued their education and/or had been successful in obtaining employment. Steve concluded that the 'Most likely mechanism [for the narrowing of differences] is society-level changes in equality and opportunity that have served to improve access to education and employment'.

Dr Alan Bourne of Talent Q demonstrated how the predictive validity of personality assessment could be improved by setting 'tipping points' or thresholds instead of simply looking for the highest (or lowest) scores possible. Alan's research featured the Talent Q Dimensions personality assessment developed by the late Roger Holdsworth who had also inspired the investigation. Roger's widow, Marina Barbanova was amongst those attending.

The rationale for the Talent Q approach was that performing below a given threshold level in a key area of competency is believed to reduce overall performance, whilst performing at or above the threshold across a number of competency areas is seen as vital to achieve higher levels of overall performance. Arguably, the same logic can be applied to the personality factors which underpin the requisite competencies.

A best fit role profile is created which highlights 'risk areas' as a candidate's score falls progressively into the zone towards the end of a scale seen to be unhelpful for performance. For instance, a score of sten 6 or above on the Analytical scale might constitute a good fit for a particular role. Any score in this range would constitute a 100% fit for this scale. As scores fall away from the sten 6 threshold level towards sten 1, the percentage fit decreases proportionately for that scale. The fit levels of each scale in the role profile are then summed to give an overall 'role fit' percentage, weighted according to an estimate of the relative importance of each behavioural dimension. This overall fit percentage for the role is then correlated with the job performance outcomes in each dataset.

For comparison, multiple regression was carried out with those scales which had yielded significant linear correlations with performance outcomes. Across three small samples (n 47–60) role-profiling achieved significantly better correlations than linear multiple regression. The weighted average was r 0.48 for the former and R 0.35 for the latter.

As Alan suggested, the findings have significant implications for theory relating to personality as applied to assessment. They illustrate that more is not always better beyond certain threshold levels and provide some evidence to indicate that the relationship between personality variables may be better explained by a threshold model rather than a simple linear correlation approach.

Dr Steve Blinkhorn set out to explain Item Response Theory (IRT) with reference to examples of real IRT data. All of us, as psychometrics users, would like the comfort of knowing that what we are measuring are the true underlying aspects of cognitive ability and personality but IRT is not easy to comprehend and we are mainly in the hands of those who design our psychometrics. For this reason, I have asked Rob Bailey of OPP, to give his impressions of Steve's session.

Hard Times – or what the Dickens is Item Response Theory (IRT) for?

Dr. Steve Blinkhorn

Summary by Rob Bailey, Principal Consultant, R&D, OPP Ltd

The Psychometrics Forum was pleased to welcome Steve Blinkhorn, who drew on his deep knowledge of Item Response Theory to give the Forum both an introduction to the topic and a challenge over the legitimate uses of this technology. Although IRT sounds like it has amazing possibilities for psychometric assessment (for example in Computer Adaptive Testing), is it really suitable?

Steve started with an explanation of what IRT is, how to interpret item response curves, and prompted us to consider how it is similar to Factor Analysis; on the latter point, Steve emphasised that both IRT and Factor Analysis share an underlying assumption – that what they measure are the outputs of underlying traits. As this is a summary, rather than an attempt to cover the whole presentation again, I won't to try to explain further any of the technical nor theoretical underpinnings of IRT. If you are interested, please see IRT references and tutorials on the following website recommended by Steve.

www.creative-wisdom.com/computer/sas

Impressively, Steve had constructed a computer program to show us the item response curves of several sets of data (e.g. from FIRO-B) and talked us through how to interpret these data.

After introducing us to IRT, Steve then challenged us to consider that IRT may not truly deliver what some would have us believe. IRT has often been promoted as a way to:

- increase the accuracy of psychometric tests
- decrease the time taken for candidates to take psychometric tests
- enable adaptive testing, so that (in support of the above aims) candidates are presented the questions most suited to them (this might be on their strength of personality or on their ability to solve aptitude test questions)
- enable banks of items, therefore protecting tests from being cracked then having their score-keys shared with other candidates.

Particularly with reference to ability tests, Steve pointed out that one assumption of IRT as applied to Computer Adaptive Testing is that each item is independent of all others; or in other words, that completing one question will not help you to solve another one. Steve pointed out that this assumption will often not be true. If a high performing candidate is only shown hard questions (because the computer has correctly ascertained that this is their approximate level of capability), they may not be given a chance to practise on some of the easier questions first. By being a high calibre performer, they may miss out training on how to approach the questions; this unfortunate situation might even be compounded by this candidate feeling demoralised ("These questions are all really hard!"). In this instance the independence of items is not an assumption that could be supported.

Steve also challenged us to think about whether or not what we measure is a true reflection of the underlying aspects (traits) that cause it. As there are multiple traits and other factors that can lead to successful performance, how can we be sure that we are measuring the right traits, or the right behaviours (or other manifestations of the traits)? Steve prompted us to think about this by proposing a new game or sport to be included in the Olympics, then to consider firstly what measures of success there are in this sport (i.e. how to win) and then all of the factors that could lead to success in the sport. How could we be sure of what we were measuring?

To help us pay appropriate attention to a technically challenging presentation, Steve sneaked several Dickens characters into his presentation. As a group, we didn't perform highly on this particular test: Boffin, Bamber and others sailed over the heads of many of us.

Do Managers Need to be Open-minded

Dr. Hugh McCredie – TPF Vice Chair

Earlier articles in this series on the Big Five personality factors suggested that it is helpful for managers to be extraverted, emotionally stable, moderately conscientious and independent-minded, although not necessarily disagreeable. We now turn to the fifth and potentially the most problematic factor, openness.

What is openness?

Woods and Hampson's (2005) single item Big Five openness measure, based mainly on the International Personality Item Pool (IPIP, 2001), has a strong cognitive content and reads:

High scoring description – Someone who spends time reflecting on things, has an active imagination and likes to think up new ways of doing things but may lack pragmatism

Low scoring description – Someone who is a practical person who is not interested in abstract ideas, prefers work that is routine and has few artistic interests.

In contrast, other measures appear to lean towards the aesthetic. For instance, the low scoring pole of Cattell's 16PF5 Global 'tough poise' factor has a 'reasonable' level of equivalence with the openness dimension of the dedicated Big Five measure NEO PI-R (McCredie, 2009). Eysenck, also, linked 'toughmindedness' with the third dimension of his personality model and found associations between that factor and the production of testosterone, the principal male sex hormone (Eysenck, 1967). There is reasonable convergence between the principal narrowband component in both 16PF5 and its predecessor 16PF Form A. This is labelled 'tenderminded' in the earlier and 'sensitivity' in the later. The difference in average male/female scores for this narrowband factor is greater than for any of the other 16 scales.

Are managers open-minded?

Bartam (1992) and McCredie (2010) reported personality profiles of senior British managers; candidates in the first instance and those selected in the second. Both used 16PF Form A. Bartram's 1776 managerial candidates had a mean tough poise (i.e. closed-minded) score at the 46th percentile, whilst my 446 appointed managers were at the 74th percentile; operations directors were higher still. I believe that the chief cause of the difference was that Bartram's sample included substantially more female managers than mine. Inferred scores of 17 high profile, all-male, CEOs (Petersen et al., 2003) were around the 55th percentile. On the basis of this evidence, we cannot claim that mangers in general are particularly open-minded.

Does openness predict overall managerial performance?

Neither the landmark meta-analysis by Barrick et al. (2001) nor the more selective one by Hurtz and Donovan (2000) found a link between openness and performance, for management or for occupations in general. Griffin & Hesketh (2004) suggested that the factor, as measured by NEO PI-R, encapsulated two sub-factors: openness to *external* experience embracing 'actions', 'ideas' and 'values', which might contribute to performance, and openness to *internal* experience comprising 'fantasy', 'feelings' and 'aesthetics', which may be a distraction. This appears to reflect the differing biases mentioned above but does not deny that all of the measures share significant common variance.

In my study (McCredie, 2010), I did not discover any correlation between openness (low toughmindedness) and ratings of overall effectiveness although I reported a small but significant link with seniority as measured by job size. Surprisingly, this was mainly reflecting moderately higher narrowband tendermindedness, associated with aesthetics, in respect of which the sample as a whole was noticeably low. Those with the smallest job sizes were mainly functional directors in SMEs characterised by traditional technologies and slim trading margins. Their more senior colleagues were managing directors of such businesses, higher levels of management and top functional specialists.

Do managers need to be open-minded?

Because of the varying scope or bias of different openness measures, this is a more difficult question to answer that similar ones posed for the other Big Five factors. As a tentative managerial generality, I suggest that Bartram's finding of the 16PF Form A openness equivalent mean for managers - around the general population median - makes sense. From this base, it seems likely that moderately higher means can be expected as more women join the managerial population.

There may be more tolerance of closedmindedness in managing traditional or circumscribed operations with established routines. However in more uncertain environments, and at supra-operational levels, such closedmindedness may become problematic.

In selecting managers, I would be unconcerned with those scoring within the inter-quartile range. For those scoring below the 25th percentile I would consider whether the role had a particular requirement for novel or complex solutions. For those scoring above the 75th percentile, I would explore how far the demands of the role put practical commonsense and established methods at a premium.

Of all the Big Five factors, openness would benefit from further criterion-referenced managerial research using dedicated Big Five measures (e.g. NEO PI-R) incorporating a comprehensive range of narrowband scales.

Barrick, M. R., Mount, M. K. & Judge, T. A. (2001) Personality and performance at the beginning of the new millennium: What do we know and where do we go next?', *International Journal of Selection and Assessment*, 9 (1/2), 9–30.

Bartram, D. (1992) The personality of UK managers: 16PF norms for short-listed applicants, *Journal of Occupational and Organizational Psychology*, 65, 159–72.

Eysenck, H.J. (1967) *The biological basis of personality*, Springfield Illinois: Charles C. Thomas.

Griffin, B. and Hesketh, B. (2004) Why openness to experience is not a good predictor of job performance, *International Journal of Selection and Assessment*, 12, pp. 243–252

Hurtz, G. M. & Donovan, J. J. (2000) Personality and job performance: The Big Five revisited, *Journal of Applied Psychology*, 85, 869–879.

IPAT (1986) Administrator's manual for the 16PF, Champaign, IL: IPAT

International Personality Item Pool. (2001). *A scientific collaboratory for the development of advanced measures of personality traits and other individual differences*. Retrieved March 25, 2001, from Oregon Research Institute website: http://ipip.ori.org

McCredie, H (2009) Thanks for the Big Five: Now we can talk to each other, *Assessment & Development Matters*, 1, 1

McCredie, H. (2010) *Selecting and developing better managers*, London: Lulu Enterprises

NEO Personality Inventory (1985, 1992). Oxford: Hogrefe

Peterson, R. S., Smith, D. B., Martorana, P.V. & Owens, P. D. The impact of chief executive officer personality on top management team dynamics: One mechanism by which leadership affects organizational performance, *Journal of Applied Psychology*, 88(5), 795–808

16PF Form A (1978) Oxford: OPP.

Woods, S. A. & Hampson , S. E. (2005) Measuring the Big Five with Single Items using a Bipolar Response Scale, *European Journal of Personality*, 19: 373–390