Contents

A few words from your editor.................................................................................................3
TAMERON CHAPPELL, CHARTERED OCCUPATIONAL PSYCHOLOGIST, HARVEY NASH

The Psychometrics Forum committee - update ...............................................................4

Pioneers and landmarks in intelligence testing: 3 .............................................................6
DR. HUGH MCCREDIE, INDEPENDENT CHARTERED PSYCHOLOGIST,
TPF COMMITTEE MEMBER

Adult personality change: mission impossible?..............................................................10
DR. HUGH MCCREDIE, INDEPENDENT CHARTERED PSYCHOLOGIST
& TPF COMMITTEE MEMBER PRESENTING AT TPF 8TH MARCH EVENT
Review by Daphne van der Wielen & Natalie Ruffell
Consultants at Saville Assessment

Psychology, technology and snake oil ...........................................................................13
ALAN REDMAN, DIRECTOR, CRITERION PARTNERSHIP LTD
PRESENTING AT TPF 8TH MARCH EVENT
Review by Natalie Ruffell, Consultant at Saville Assessment
& John Martindale, Consultant Analyst at Saville Assessment

Upcoming Events

THURSDAY 22ND JUNE
Test User Occupational Personality (TUOP): Getting it Right?
Continuing our myth-busting topic this year we have 3 speakers to present and respond to our questions on how to ensure the TUOP equips us to be good practitioners.
Speakers: Carl Francis, Head of UK Operations, Psytech International / Tim Evans Director, Psysoft Ltd. / Helen Baron, Independent Consultant, Psychometric Test Developer

WEDNESDAY 20TH SEPTEMBER
The Place of Psychometrics in Team Development.
This event explores the topic of team development but looking from 2 unusual viewpoints. Roy Childs will be talking to us about The Dark Matter in Organisations which are the relational aspects of teams which are often ignored because of the challenges inherent in understanding and working with the relational aspects of teams. Alan Robertson will be talking about his VoicePrint questionnaire which he developed following from his years taking part in industrial negotiations and mediation.

TUESDAY 28TH NOVEMBER
New Frontiers in Psychometrics
The annual event hosted by Dr. Hugh McCredie with invited speakers talking about their work at the cutting edge of psychometrics. This year we have Rainer Kurts talking about The Dark Side, Nigel Grenole talking about Team Personality and James Bywater talking about what Situational Judgement Tests can add when testing personality.
The New Frontiers event is followed by our Networking Event with Mulled wine and mince pies plus the awards to the winners of The Psychometrics Forum Excellence Awards.
Welcome...

A few words from your editor...

TAMERON CHAPPELL
CHARTERED OCCUPATIONAL PSYCHOLOGIST, HARVEY NASH

Dear colleagues,

Welcome to the Summer edition of Psyche. Following from our bumper edition last time with its new look and spanning 2 events this edition is much leaner, but no less interesting.

We have the 3rd in the series of Pioneers and Landmarks in Intelligence Testing from Dr. Hugh McCredie where he reminds us of the origins of IQ tests as commissioned by The French Ministry of Education as a way to identify children with learning difficulties in order to support their education. The article appears with kind permission of The British Psychological Society as the whole series is also being published in Assessment and Development Matters.

We also have the reviews of the 8th March event where we began our theme for 2017 of psychometric myth-busting. March saw Hugh present a very comprehensive review of the various papers which investigate whether personality change is possible in adults. Mission impossible? Judge for yourself in the review. Alan Redman gave a presentation in the afternoon with an equally provocative title and he talked us through the main things to look out for when judging the usefulness of psychometrics. He also presented the summary results from a British Psychological Society survey of 280 registered test users where they report what’s most important to them when selecting a test and what tests they use most often. Bearing in mind The Goldwater Rule of the American Psychological Association

what isn’t reported in this issue is the very entertaining exercise where the audience tried to judge the personalities of Hilary Clinton and Donald Trump based on their portrayal in the media. The Goldwater Rule warns against the professional diagnosis of public personalities and so the exercise was meant to illustrate how challenging it can be to make a balanced judgement of a public figure given how skewed our exposure is through the eyes of the media.

There are also more changes to our committee line-up since the last edition. Xanthy Kallis has stepped down as chair of the committee to be replaced by Trish Guthrie and Lynne Hindmarch, we have a new manager of our blog as Jaspreet Singh takes over from Raj Chopra and we also have a new treasurer in Aida Mujan.

Welcome to those who are new members and many thanks to those who have supported the committee with their time and efforts.

I hope to see you at our upcoming events,

Kind regards,

Tameron

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@psychometricsforum.org

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

Follow us on Twitter @TPF_UK

Copy deadlines
Autumn – 1st September
Winter – 1st November

To book a place on forthcoming TPF events, please contact our Administrator Caro Leitzell on 01962 880920 or email her at admin@psychometricsforum.org

Details of membership are available on the Forum website: www.psychometricsforum.org

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THE PSYCHOMETRICS FORUM

COMMITTEE MEMBERS - RECENT CHANGES

RAJ CHOPRA

Raj has been a committee member since 2012 and as part of his contribution to the group he managed the forum’s blog – Fresh Perspectives in Psychometrics and Psychology. Raj wrote the blog entries and his content covered a wide range of topics such as Emotional Intelligence, the Dark Triad, well-being during financial crisis and delayed gratification for marshmallows. Raj has stepped-down from the committee and it is with many thanks for his continued support of the group and its members that we wish him the best and say thank-you. His blog articles are still available on our website for you to revisit.

DR. KATE HAMMOND

Kate joined the committee in 2014 and was working with Trish Guthrie to keep our website running and up-to-date. Kate has had to step-down from her duties on the committee for personal reasons. We look forward to Kate’s return to the committee when circumstances allow.

XANTHY KALLIS - OUTGOING CHAIR

Xanthy became the Chair of the Forum in 2009 and is stepping down from that role to be replaced by Lynne Hindmarch and Trish Guthrie who will share the role.

A message from Xanthy directly…

Change is in the air, both nationally and locally to the Forum…

At this great time of change at a National and Pan-European level, the Forum too is going through great change. Not quite Brexit, but moving ahead with a new look and new people at the helm. You have already been introduced to our new editor, Tameron Chappell, who has given the Psyche a brand new look. We have a new Blogging Manager, Jaspreet Singh, who will be looking after our social media and we also have a new Treasurer, Aida Mujan who is taking over in the next couple of months from Paul Popadopoulis, who has been our Treasure for almost ten years! It thus seems only natural that the time has come for a new chair to take over, in fact two! Lynne Hindmarch and Trish Guthrie, who are both known to our regular members and attendees, will be taking over as joint Chairs. Both are recognised for their efficiency, hard work and dedication to improving the Forum and what we deliver to our membership. It seems like only yesterday when I accepted the role as Chair of the Psychometrics Forum and that was 2009! How quickly those years have flown by. It has been an amazing journey and one I have thoroughly enjoyed, one that has helped me grow and develop as a person and as a leader, and especially to grow in confidence ready to move on! I have been honoured to act as Chair to the very unique and fantastic group of people that makes up The Psychometrics Forum. I have enjoyed my role as Chair very much and I will continue to support our two new chairs in the same way that they have always supported me, from a back seat (although I promise not to be a back seat driver!). I feel it is important for any current leader or head to recognise when change is needed and to take positive action towards this, as this is a healthy way to ensure the continuous development and growth of that organisation allowing space for new ideas and new blood. I am proud to have been involved in some of the major changes the Forum has been through and I feel I have been extremely fortunate to have had such an amazing team of people supporting me all the way, ensuring that these changes are successful and making the Forum what it is today. The committee past and present are an amazing bunch of people that I am proud to call friends, and I want to thank them for their support, enthusiasm and willingness to roll up their sleeves and get the job done, as Mrs May is planning on doing! In handing over to Lynne and Trish, I know that I am leaving the Chairmanship (or Chairwomenship) to two very capable ladies who will continue taking the Forum onwards and upwards. I would like to take this opportunity to wish Lynn and Trish great success in this role and I am sure they will enjoy it and find it as immensely rewarding and satisfying as I have.

TPF: COMMITTEE MEMBERS

PAGE 4 | PSYCHE NEWSLETTER | ISSUE 78 / JUNE 2017
A thank-you to Xanthy on behalf of the committee written by Nicholas Bennett...

It was my great pleasure to propose a vote of thanks to our retiring chair Xanthy, at our AGM and first meeting of the year in March at the Naval Club, Mayfair.

As Chair since 2009 Xanthy has led The Psychometrics Forum (TPF) with great aplomb, energy, vision and at certain times with much required tact and warmth. Thus, she has been Chair for eight full and eventful years, in which time TPF has grown significantly including greater membership numbers and, the establishment of our Linkedin website with over 5,500 members.

Under her watch we have developed the Psychometrics Forum website into a major focal point for psychometrics and all things personality. This has filled a major international need to bring together a broad spectrum of interested parties, who now regularly comment and post on our Linkedin Group. In addition, under her skillful guidance we have introduced Training Discounts for members, which as at March 2017 numbers 8 providers – a great resource for all. Also, we have been able to include the filming of certain, often key events, such as the presentations by Professor Robert (Bob) Hogan – now a regular visitor to this Forum. These film records will no doubt stand as a resource for future purveyors of psychometrics. Another area in which she looked to the future of our profession is in the important introduction of the Excellence in Psychometrics Award. This started as an award for outstanding Masters’ Degree dissertations on the topic of psychometrics and has now skillfully morphed into its present incarnation which recognizes the application of psychometrics by practitioners. Much hard work has gone into this initiative including the formation of a judging panel, research and marketing, plus the linking of the presentation to our New Frontiers event. There are many other subtle but important leadership qualities that Xanthy has brought to TPF but to save her further embarrassment, we thank her for her patience and genuine warmth in Chairing our group over these past many years and know that Xanthy will be there to help and assist our new Chairs as required. So a big, heartfelt thank-you to Xanthy which is well and truly deserved. Well done.

AIDA MUJAN – IN-COMING TREASURER

Aida is a Chartered Occupational Psychologist accredited by the British Psychological Society and the Health and Care Professions Council. She is also working as a BPS Assessor and Supervisor of Stage 2 Qualification in Occupational Psychology. Aida has been a member of the Psychometrics Forum for over 6 years. Aida is founder of Esteem Consulting and has worked in business management for over a decade; utilising her academic study of occupational psychology to enhance staff performance and workplace organisation.

PAUL PAPADOPOULOS – OUTGOING TREASURER

Paul will be stepping down from his role as Treasurer for the Forum but has kindly agreed to make a slow and graceful exit in order to support Aida as she takes over the role. The committee wishes to thank Paul for his contribution over the years.

JASPREET SINGH – BLOG MANAGER

Jaspreet has a Masters in Occupational Psychology and is also qualified in using a number of psychometric tools. Her experience spans a broad range of areas within occupational psychology including: organisational engagement, change and corporate social responsibility, recruitment, training, careers and coaching. This experience has been gained across public, private and third sector organisations. Jaspreet joined as a member of the forum in 2016 and was co-opted earlier this year as the new Blog Manager. She looks forward to sharing engaging and insightful blogs with members of the forum soon.

The new committee and roles:

Nicholas Bennett
Tameron Chappell – Editor of Psyche
Trish Guthrie – Co-chair
Lynne Hindmarch – Co-chair
Xanthy Kallis
Caro Leitzell – Administrator
Dr. Hugh McCredie
Aida Mujan – incoming Treasurer
Paul Papadopoulos – outgoing Treasurer
Dr. Jane Pollock – Training Co-ordinator
Jaspreet Singh – Blog Manager
Adrian Starkey – Co-ordinator of the Annual Excellence in Psychometrics Award + LinkedIn Group Manager
Andrew West

Trish Guthrie and Lynne Hindmarsh – incoming co-Chairs
In contrast to Francis Galton, whose focus was on the gifted and eminent, the French psychologist Alfred Binet (1857–1911) and his medical associate, Théodore Simon (1872–1961) were concerned with the opposite end of the intellectual spectrum. They were commissioned by the French Ministry of Education to find a way to identify children with learning difficulties so they could be supported with remedial work. In the stark language of their day they sought objective ‘psychological’ measures to differentiate those in the progressively severe categories of mental disability: ‘morons’, ‘imbeciles’ and ‘idiots’ (Binet & Simon, 1905a in Binet & Simon, 1916/2016, p. 2). These objective measures were necessary because of the unreliability of diagnoses by teachers (the ‘pedagogical method’) and doctors (the ‘medical method’), which were the custom to this point.

The Binet–Simon Scale (1905–1911)

Binet & Simon were seeking to establish a measure of ‘general intelligence’:

*we must come to an understanding of what meaning to give to that word so vague and so comprehensive, “the intelligence.”...To judge well, to comprehend well, to reason well, these are the essential activities of intelligence... We may measure the acuteness of the sensibility of subjects nothing could be easier. But we should do this, not so much to find out the state of their sensibility as to learn the exactitude of their judgment.*


Their first intelligence scale, which drew on earlier sources, e.g. Ebbinghaus (1850–1909), consisted of a series of increasingly difficult tests, to be assessed orally on a one-to-one basis by a trained tester. The testing would continue until the point was reached beyond which the child could not give a correct response. This finishing point was to be compared with the typical responses of other similarly-aged children. Perception of what was normal was based upon ‘the result of long investigations, first at the Salpêtrière [a famous Parisian teaching hospital], and afterwards in the primary schools of Paris, with both normal and subnormal children’ (Binet & Simon, 1905b in Binet & Simon, 1916/2016, p. 41).

The first task was to establish a measuring scale and, to this end, Binet & Simon produced a series of 30 tests in increasing order of difficulty. To convey an impression of the nature and extent of this scale, tests 1, 10, 20 and 30 are as follows (Binet & Simon, 1905b in Binet & Simon, 1916/2016, pp. 45–68):

**Test 1**: “Le Regard” proves that the subject not only sees but more than that he “regards” (is able to follow with his eyes a moving object). Procedure: A lighted match is slowly moved before the eyes of the subject in such a way as to provoke a movement of the head or of the eyes to follow the flame.

**Test 10**: Immediate Comparison of Two Lines of Unequal Lengths Subject is presented successively with three pieces of paper upon each of which two lines, drawn in ink, are to be compared... saying... “Which is the longer line?”

**Test 20**: Resemblances of Several Known Objects Given from Memory Tester asks what resemblance there is between paper and cardboard, between a fly and a butterfly, between a piece of wood and a piece of glass.
Test 30: Definitions of Abstract Terms
“What difference is there between esteem and affection? What difference is there between weariness and sadness?”

The developers applied their new instruments to diagnose ‘intellectual level among normal and subnormal children in institutions and in the primary schools’ (Binet & Simon, 1905c in Binet & Simon, 1916/2016, p. 91). The school tests were administered in the office of the head with the head present and the researchers had some success in establishing which were achievable by ‘normal’ children at intervals between ages three and twelve. They also defined ‘idiocy’ as being ‘without use of language’ and ‘imbecility’ as having a ‘capability for verbal naming’ but ‘incapacity of finding the difference between known objects’, equivalent to that of normal children between age two and five (p. 166). ‘Morons’ lacked the ability to understand abstract concepts (p. 180).

Binet & Simon (1908, in Binet & Simon, 1916/2016) presented their fully developed “Measuring Scale of Intelligence.” (p. 180) with graded tests for each year between ages three and 13. The results of the 1908 study were, more or less, normally distributed:

So 103 pupils are at age, have exactly the mental level that we attribute to their age; 44 are advanced; 56 are retarded. We have here a confirmation, which is greater even than we had supposed a priori Binet & Simon (1908, in Binet & Simon, 1916/2016, p. 252)

Binet (1911, in Binet & Simon, 1916/2016, p. 275) proposed corrections including the removal of repetitions and tests involving acquired knowledge, especially “tests too exclusively scholastic, as that of reading and retaining a given number of memories of what has been read, or copying a written model, or writing from dictation”. He also reported that tests for both 11 and 12 year-olds were too difficult so that the former would be used at age 12. His new data corresponded even closer to a normal distribution (p. 288). He also reported some fragmentary validation material, short-term practice effects (p. 294) and both hereditary and social effects on test performance (p. 316 et seq)

William Stern (1871–1938) was a German psychologist and philosopher. His 1912 book, translated into English (Stern, 1914), was written shortly after publication of the Binet-Simon Scale. Stern labelled the point reached by a child on that scale as the child’s ‘mental age’ and commented ‘The full significance of this final value is disclosed only when we consider it in relation to other circumstances…like chronological age’. He proposed the calculation of the ‘mental quotient’ by dividing the children’s mental age by their chronological age, adding ‘their degree of intelligence will be distributed in a somewhat symmetrical fashion. (Stern 1914, pp. 41–44, emphasis in the original). He also commented: ‘almost all who have tried out the Binet-Simon method, regardless of the nationality tested, agree that the series set for the lower years are too easy, those for the higher too difficult’ (p. 50, original emphasis). Finally, Stern attempted to relate mental quotient to the traditional classifications of intellectual ability/deficiency:

the mental quotient of the ‘not-abnormal’ children lies mostly between 0.81 and 0.90, that of the morons between 0.71 and 0.80, that of the imbeciles between 0.61 and 0.70 (Stern, 1914 p. 83)

Lewis Madison Terman (1877–1956) was an American psychologist at the Stanford Graduate School of Education. He saw the potential of the Binet-Simon Scale in addressing the situation in the USA of:

children [with a] grade of intelligence which... will never develop beyond the level which is normal to the average child of 11 or 12 years. The large majority of these belong to the moron grade... intelligence tests will bring tens of thousands of these high-grade defectives under the surveillance and protection of society...curtailing the reproduction of feeble-mindedness and in the elimination of an enormous amount of crime, pauperism, and industrial inefficiency. (Terman, 1916, p.6)

Terman modified the Binet–Simon scale, reporting that:

the scale as Binet left it was decidedly too
easy in the lower ranges, and too difficult in the upper... the average child of 5 years was caused to test at not far from 6 years, the average child of 12 years not far from 11. In the Stanford revision an effort has been made to correct this fault, along with certain other generally recognized imperfections (Terman, 1916, p. 48)... of Binet’s [1911] entire 54 tests, we have eliminated 3 and relocated 32, leaving only 19 in the positions assigned them by Binet (p. 61).

Additionally, Terman extended Binet’s (1911) scale beyond the age of 13 by establishing normative tests for 14 year olds together with three adult norms based upon ‘30 business men and 150 “migrating” unemployed men ... 150 adolescent delinquents...and 50 high-school students’ (p.54). He designated the tests achieved by the ‘Average Adult’ as representing mental ages falling between 15–17, with the more difficult tests signifying the ‘Superior Adult’. Those over 14 who could not pass the Average Adult Tests were designated ‘Inferior Adult’. An overview of this revision, the Stanford–Binet Intelligence Scales, is given in Table 1, below.

Terman validated the Stanford Revision with more than 2000 results. He used Stern’s idea of the mental quotient as the index of intelligence for children but multiplied the resultant number by 100 to avoid working in fractions and called it the ‘Intelligence Quotient’ (IQ). He explained

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Table 1: The Stanford-Binet Intelligence Scales

<table>
<thead>
<tr>
<th>Age</th>
<th>Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1. Points to parts of body. 2. Names familiar objects. 3. At least 3 objects enumerated in one picture. 4. Gives sex. 5. Gives last name. 6. Repeats 6 to 7 syllables.</td>
</tr>
<tr>
<td>4</td>
<td>1. Compares lines...2. Discrimination of forms. 3. Counts 4 pennies. 4. Copies square. 5. Comprehension, 1st degree. 6. Repeats 4 digits</td>
</tr>
<tr>
<td>5</td>
<td>1. Comparison of weights. 2. Colors. 3. Aesthetic comparison. 4. Definitions, use or better. 5. Patient or divided rectangle. 6. Three commissions</td>
</tr>
<tr>
<td>7</td>
<td>1. Fingers. 2. Pictures, description or better. 3. Repeats 5 digits. 4. Ties bow-knot. 5. Gives differences. 6. Copies diamond</td>
</tr>
<tr>
<td>9</td>
<td>1. Date. 2. Weights. 3. Makes change. 4. Repeats 4 digits backwards. 5. Three words to make one sentence. 6. Rhymes. (3 rhymes for two of three words).</td>
</tr>
<tr>
<td>10</td>
<td>1. Vocabulary, 30 words. 2. Absurdities. 3. Designs. 4. Reading and report. 5. Comprehension, 4th degree. 6. Names 60 words</td>
</tr>
<tr>
<td>AVERAGE ADULT</td>
<td>1. Vocabulary, 65 words. 2. Interpretation of fables. 3. Difference between abstract words. 4. Problem of the enclosed boxes. 5. Repeats 6 digits backwards. 6. Code,</td>
</tr>
</tbody>
</table>

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After Terman, L. (1916, pp. 56-61)
his ‘Method...for validating the inclusion of a test’:

The children of each age level were divided into three groups according to intelligence quotient, those testing below 90, those between 90 and 109, and those with an intelligence quotient of 110 or above... If a test fails to show a decidedly higher proportion of passes in the superior IQ group than in the inferior IQ group, it cannot be regarded as a satisfactory test of intelligence.

He reported a symmetrical distribution of IQs (p.66) relative stability of IQ across ages (p.68), few male/female differences (pp.70–72), social class variations (p.72–73), close correspondence with school work quality (p.73), a rank correlation of 0.48 with teacher estimates of intelligence (p. 75) and impact of coaching effects increasing with age (pp. 110–112).

Finally, Terman (196, p.79) left us with a taxonomy of less pejorative labels than that which he inherited:

<table>
<thead>
<tr>
<th>IQ</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 140</td>
<td>“Near” genius or genius</td>
</tr>
<tr>
<td>120–140</td>
<td>Very superior intelligence</td>
</tr>
<tr>
<td>110–120</td>
<td>Superior intelligence</td>
</tr>
<tr>
<td>90–110</td>
<td>Normal, or average, intelligence</td>
</tr>
<tr>
<td>80– 90</td>
<td>Dullness, rarely classifiable as feeble-mindedness</td>
</tr>
<tr>
<td>70– 80</td>
<td>Border-line deficiency, sometimes classifiable as dullness, often as feeble-mindedness.</td>
</tr>
<tr>
<td>Below 70</td>
<td>Definite feeble-mindedness</td>
</tr>
</tbody>
</table>

References


Binet, A. & Simon, Th. (1905b) Méthodes nouvelles pour le diagnostic du niveau intellectuel des anormaux, L’Année Psychologique, XII, 199–244


Terminology used

Stern’s idea of the mental quotient as the index of intelligence for children but multiplied the resultant number by 100 to avoid working in fractions and called it the ‘Intelligence Quotient’ (IQ).
Adult personality change: mission impossible?

Presentation by Dr Hugh McCredie

Review by Daphne van der Wielen and Natalie Ruffell

The first session of the Psychological Myth Busting theme of the workshop was delivered by Dr Hugh McCredie. Hugh introduced the topic for discussion as Adult Personality Change: Mission Impossible and the first thirty minutes were spent in two separate groups discussing the arguments for and against adult personality change.

Similar themes emerged from the two groups with a balance between arguments both for and against personality change. The arguments ‘for’ included both personal experience as well as research-based concepts:

- **Nurture:** The idea that we are a subject of the experiences we encounter in our lives. For example, one attendee explained how they had seen significant personality change in individuals undergoing military training.

- **Brain plasticity:** Modern research has demonstrated that the brain continues to create new neural pathways and alter existing ones to adapt to new experience.

- **‘Big 5’ Research:** Reference to research which suggests a decrease in Openness and increase in Conscientiousness in older age.

The arguments against:

- **Nature:** The idea that our personality is static on the basis of our genetic make-up.

- **Psychometric Data:** Which suggests that personality remains relatively stable when re-tested.

- **Trait Theory:** Which theorises that the core traits of personality tend to remain stable throughout one’s life.

- **‘Big 5’ Research:** Reference to research which suggests that Extraversion remains stable throughout life.

Hugh went on to clarify that, similarly to many other hot topics of psychological debate, there was no right answer. Rather, he wanted to explore the two arguments for and against the claim.

To begin, Hugh referenced an early opinion from William James (1890), recognised as the father of modern psychology, who believed that ‘by the age of 30, the character has set like plaster, and will never soften again’. This has been the prevailing view for the last 100 years but there have been some fairly recent developments on the topic.

In 2012 Martin et al published a paper titled ‘What is personality change coaching and why it is important?’ This paper concluded that personality-change coaching appears both desirable and possible in one-to-one coaching settings but upon investigation of the original source article from Spence & Grant (2005), it was the opposite conclusion that they drew from the data. Namely, that in their life-coaching controlled trial there was no strong evidence that coaching influenced personality change. An interesting paper to cite then, in an article that is suggesting otherwise. Despite this, Allan et al (2014) published a paper entitled ‘Who wants to change their personality and what do they want to change?’ The idea of personality change certainly seemed to be gaining some traction.
Neither the stability nor the plasticity supporters challenge the other’s data.

Hugh then went on to explore the actual effect sizes and the conclusions the different camps have drawn from this data. Costa and McCrea (2006), noted a very modest level of change in individuals over the age of 30, typically 0.2 to 0.5 standard deviation resulting in a maximum change of 1 Sten. Based on these outcomes they concluded that even though most adults in the course of 30 years have undergone radical changes in their life structures, most people will not have changed noticeably in their positions on any of the five dimensions of personality.

The conclusion from Spence and Grant (2005) was that current data does not allow us to make any claims about the effect of coaching on personality. Whilst Tang et al (2009) found that Cognitive Therapy increases Extraversion (0.4 SD) in this same study they also found that antidepressant drugs reduced neuroticism (0.5 SD). Jackson et al (2012) conducted a study where a group of candidates undergoing an inductive reasoning program were compared with candidates on a ‘wait list’ (control group). They found that the Openness score of the candidates undergoing the inductive reasoning program increased (0.4SD).

Hugh made us aware that we should look at these findings with a note of caution. The respondents were aware of the factors attempting to be changed and as they completed self-report questionnaires they could have been predisposed to give a positive response when re-tested. This could at best, exaggerate any differences between themselves and the control group and at worst, create an artificial difference. Hudson & Fraley (2015) controlled for this effect by splitting those who wanted to change a particular trait into two groups; an experimental group who would experience personality development interventions and a control group who would experience some neutral intervention. The outcome was that the control group achieved a 0.24 SD increase in Extraversion scores whilst the experimental group’s scores increased by 0.45 SD, producing a net increase of 0.21 SD attributable to the interventions. Similar results were reported for Conscientiousness and Neuroticism.

Hugh went on to discuss more research conducted with different findings. Martin et al (2014) claims an approximate 1.0 SD improvement in targeted NEO PI-R facets following personality coaching but again, it is important to keep in mind that the questionnaires were self-report and targeted facets were chosen by respondents. The control group in this case was a ‘wait list’ rather than a placebo so the ‘aspiration bias’ effect is unknown. Grant et al (2009) reported strong effects for an increase in resilience (0.65 SD), following coaching underpinned by a

### Summary table of the case for stability versus the case for plasticity

<table>
<thead>
<tr>
<th>The Case for Stability – Costa and McRae</th>
<th>The Case for Plasticity – Dr Brent Roberts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drew on longitudinal data – test-retest reliability over decades</td>
<td>Drew on meta-analysis looking at test-retest reliability of average 6.7 years</td>
</tr>
<tr>
<td>High Big Five test-retest correlations .60 to .80, concluded stability</td>
<td>Average Rho of .6 to .75, they concluded no unity in traits thus plasticity</td>
</tr>
<tr>
<td>They say big five factor are biologically determined called ‘Basic tendencies’.</td>
<td>Social vitality (component of Extraversion) and Openness decrease with age</td>
</tr>
<tr>
<td>‘Characteristic Adaptations’ on the other hand, arise from interaction of personality with cultural environment, which include learned skills, habits, interest, attitudes, beliefs and psychological aspects of roles and relationships.</td>
<td>Agreeableness, Conscientiousness, social dominance (the other component of Extraversion) increase with age</td>
</tr>
</tbody>
</table>

Costa & McCrea concluded that even though most adults in the course of 30 years have undergone radical changes in their life structures, most people will not have changed noticeably in their positions on any of the five dimensions of personality.
cognitive behavioural, solutions-focused framework. Again, the experimental design for this study was a ‘wait list’ control group.

It appeared from the weight of evidence that the sensible conclusion to be drawn from the research was that, taking into account methodological consideration that there did appear to be evidence for very small personality changes observed after interventions but that nothing could be said about whether these changes were maintained over time.

But then in February 2017, Roberts et al published a meta-analysis of 207 studies titled ‘A systematic review of personality trait change through intervention’. The primary focus was on clinical interventions. There were few control groups (which were mainly ‘wait list’ in style) however, it was found that change (mean SD 0.37) across all traits persisted in longitudinal follow-ups for a least a number of months after the intervention.

Hugh finished by sharing his own research and opinion. In his 2012 paper, he found modest relationships between certain Big 5 traits and competency clusters. Relationships were found between Extraversion, Stability and low Agreeableness with the competency clusters of adaptability, interpersonal and results-oriented clusters respectively. In 2014 Hugh extended the work by summarising the relationship of these factors to overall managerial success suggesting that extreme scores in the opposite direction constitute high selection risk. Hugh concluded that from a coaching perspective personality psychometrics might be best used to steer clients away from roles where their extreme scores might prove career limiting and support them in developing survival habits, skills and competencies where this was not possible. In summary, adult personality change may well be possible as a result of interventions such as cognitive therapy or drugs but the changes are so small and we are not sure how long they are maintained that it may not be worth the effort of attempting to do so.

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**References**


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**Figure 1**

**Slide summarising the evidence for adult personality change**

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**Box 1: ‘Wait list’ Research Design**

| Time 1: | Group A and Group B given personality questionnaire |
| Intervention Phase: | Group A receives intervention, Group B go onto a waiting list and receive no intervention. |
| Time 2: | Group A and Group B re-tested on personality questionnaire |
| Intervention Phase: | Group B receives intervention, Group A’s intervention was complete in previous intervention phase |
| Time 3: | Group B re-tested on personality questionnaire |

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**The case for plasticity**

Roberts & DelVecchio (2000, p. 15, k=157)
- Average test-retest interval 6.7 years
- ‘traits are quite consistent over the life course’ but the stability of trait scores after age 30 were ‘well below unity’ (Rho between .60 to .75)

**The case for stability**

- Costa and McCrae, developers of the NEO series
- Drew on longitudinal data (the same respondents at long term intervals)
- McCrae & Costa (1994, n=983) reported high Big Five test-retest correlations over decades; typically .60 to .80
- McCrae & Costa (1996) categorised the Big Five factors (Neuroticism, Extraversion, Openness, Agreeableness, Conscientiousness) as biologically-determined ‘Basic Tendencies’
- Differentiating these from ‘Characteristic Adaptations’ arising from the interaction of personality with the cultural environment.
Psychology, technology and snake oil: evidence-based practice

Alan Redman – Criterion Partnership

Review by Natalie Ruffell and John Martindale

What we know

Today’s realities are shaped by a growing digital revolution. This includes psychometrics where we are seeing an increased demand for app-based assessments and the growing intrigue around gamification. The last time we were facing a similar transition was in 2001 when paper and pencil assessments met the internet.

The focus of this session, presented by Alan Redman, director of Criterion Partnership, was how we can discern ‘good’ from ‘bad’ psychometrics, and some top tips on spotting snake oil. His proposed methodology was around evidence-based practice.

In the early days of psychometrics, it was simple to choose which assessment you wanted to work with as there was only a very limited choice. The market has since exploded and we are being bombarded with new test publishers who claim they can do it too, but better. However, rather than ‘re-inventing the wheel’, the fundamentals of a psychometric assessment have not changed – we are just seeing test providers advertise them in a slightly different way.

Due to the large volume of tests now in circulation, Alan explained that it is vital for test users to adopt an evidence-based approach when making decisions about which tests to use. This is an emphasis on using the current, best evidence in management decision-making. However, it is sometimes hard for users to understand what differentiates the various psychometric tools on the market, not helped by excessive technical jargon and marketing angles. Many providers claim that they provide the ‘most precise measure’ and that they have ‘reinvented psychometrics’.

Alan argued that psychometrics as a concept have been pretty much perfected, and the difference between tools now is mostly in the presentation, quality and cost not in their fundamental nature. Some of the things you might read in the marketing to try and convince you that their tool is the best:

- The best theory, model, factor-analytic rotation
- The most precise measure
- The most predictive validity
- The most fiendishly complex scoring criterion
- The shortest time to complete AND the most valid
- The ‘Guru Effect’ – associated big-name author
- Look! A new theory, model, technology
- We’ve reinvented psychometrics.

Smelling snake oil

While it is important to acknowledge that some marketing ideas are common across the industry, there is a distinction between these and symptoms of ‘snake oil’ i.e., tests that are not actually doing what they are supposed to be which is measuring personality. Some of the tell-tale signs include:

- Weird, fancy or elaborate names for ordinary things
• Gurus
• Mould-breaking paradigms
• ‘technology-led’
• any kind of ‘neuro’ prefix
• unnecessary complexity
• over-simplification
• shoaling at conferences (gathering around the Guru)

Don’t be a sucker
The only way test users can be sure to recognize snake oil is to use a structured, evidence-based approach to making a decision or choice.

Alan referenced the Centre for Evidence-Based Management (https://www.cebma.org/) and advised using their guidelines and advice when deciding which tests are most appropriate to use in practice:

“Evidence-based practice is about making decisions through the conscientious, explicit and judicious use of the best available evidence from multiple sources” CEBM

Following this list Alan introduced six steps practitioners should take to avoid bias and assumption when selecting psychometrics tools

• Asking – asking the right questions
• Acquiring – systematically gathering information

• Appraising – critically evaluating the information
• Aggregating – pulling the evidence together
• Applying – using the information to inform decisions
• Assessing – evaluating the evidence of decisions

Some useful questions to start with are “Does it look right?”, “Do people trust it?”, “Does it match the job demands?”, “Does it agree with other measures of the same thing?” “Does it predict other things?” and “Are the consequences of using it positive?”

Alan presented the table below as an overview of what types of validity to look for, and how best to find them.

There are plenty of sources from which to gather this information, and Alan advised that the focus should be on Research, Practitioners, Experts, Providers, Peers and colleagues and Online. It is vital to look for evidence before you start to use a test, to look for more than one type of evidence before it and to look for more evidence whilst it is being used.

What’s going on out there?
In the final section of his presentation Alan presented the findings from a 2016 BPS international survey of 280 people on the PTC register for occupational
tests. Findings confirmed that personality questionnaires were by far the most popular method of assessment (84%) followed by assessment centres (57.6%) and then CV’s (57.3%).

The most important qualities of a test were reliability (91.8%), validity (91.7%), whether it was useful for a feedback discussion or interview (78.5%) and the availability of appropriate norms (73.9%).

When choosing a test, the majority of practitioners rely on their own experience or familiarity (80.5%) followed by academic literature (58.5%) and information in the test manual (50.9%). Finally, the most popular instruments were shown to be the MBTI (45.2%), the OPQ (31.5%), and the HPI (28.7%).

Ultimately when using psychometrics, practitioners should check the tools against the different forms of validity. However, evidence-based practice requires a fresh approach to validity, and Alan emphasised that validity is not a property of the test itself, but a property of the test’s use.

More details of the findings can be accessed on the Prezi presentation at https://prezi.com/2emxfvuhonrt/psychometrics-forum-psychology-technology-and-snake-oil/?utm_campaign=share&utm_medium=copy

Alan concluded by re-iterating five pieces of advice for identifying Snake Oil psychometrics:

- Look for multiple forms of evidence
- Look both before and during use
- Beware of excessive ‘faith validity’
- Avoid chasing bandwagons and finally...
- Don’t trust lists of tips!

validity is not a property of a test itself, it is a property of the test’s use.