

PSYCHE

The Newsletter of the
Psychometrics Forum



Professor Dr Sigmund Freud's consulting room in Vienna

This picture was taken in the Freud Museum in Vienna. A quick survey of some key works refreshed the memory of concepts that have influenced literature, art, and our language – free association, the interpretation of dreams, infant sexuality, repression and the unconscious. Certainly one of the greatest thinkers of the 20th century.

Carl Jung was one of his disciples – until they broke in 1912. Jung went on to develop his theory of extraversion and introversion. [Hugh McCredie](#) tells us more...

Do managers need to be extraverted?

What is extraversion?

The concept of extraversion is nearly 100 years old having been introduced by the Swiss psychologist C. G. Jung in 1910¹. The word literally means outward (extra) turning (vertere). In Jung's model extraverts were fundamentally motivated towards engaging with the outside world whilst introverts were primarily concerned with defending themselves from the demands of that world. In the middle years of the 20th Century two developments occurred in the wake of Jung's theorising. Firstly, the German-born British Psychologist, Hans Eysenck established that the degree to which a person exhibited extraversion was hard-wired into the brain². Secondly, both Eysenck³ and the US mother and daughter team Katherine Briggs and Isabel Briggs-Myers developed instruments for measuring extraversion by questionnaire; the latter being the ubiquitous Myers-Briggs Type Indicator (MBTI)⁴.

In 1990 Lewis Goldberg published 'An alternative description of personality: The Big Five Factor Structure'⁵, a robust model of the broad traits which encapsulated the totality of human personality. The first among these factors was what Goldberg initially labelled surgency but which was subsequently aligned with extraversion. The factors comprising Goldberg's model underpinned the development of the NEO Personality Inventory⁶, now arguably the gold standard amongst modern commercially distributed personality measures. Contemporaneously, Murray Barrick and Michael Mount⁷ demonstrated how the constituent scales of a wide range of existing personality questionnaires could be assigned to one or other of the Big Five factors.

Of extraverts and extraversion, the authors of NEO wrote:

Extraverts are, of course, sociable, but sociability is only one of the traits that comprises the domain of Extraversion. In addition to liking people and preferring large groups and gatherings, extraverts are also assertive, active and talkative. They like excitement and stimulation and tend to be cheerful in disposition and they are upbeat, energetic and optimistic. Salespeople represent the prototypic extraverts in our culture, and the Extraversion scale is strongly correlated with interest in enterprising occupations⁸

What suggests that managers need to be extraverted?

Amongst the most compelling evidence that the world in which managers operate is an extraverted one comes from the classic four-week diary study of 160 UK managers undertaken by Rosemary Stewart⁹. Stewart discovered that the average manager:

- spent 50 per cent of available time in discussion
- recorded 13 diary entries per day
- experienced 12 fleeting contacts per day

- enjoyed only one period of at least half an hour alone each day.

This average profile generally applied to four of the five subgroups on whom Stewart reported, the only exception was the technical specialist manager group who spent only a third of their day in discussion and most of the rest on paperwork.

All of the above characteristics suggest the busy, varied, fragmented, breadth milieu so amenable to the extravert, in strong contrast to the depth world of the introvert clamouring for personal space and freedom from interruption. I comment thus as one who occupies the space between the clear extravert or the clear introvert. The sheer variety of managerial life and the extent of interpersonal contact had me running for cover on many occasions over my 30 year managerial career.

Are managers extraverted?

One of the most definitive UK studies of the managerial personality dates from the 1990s and was by Dave Bartram¹⁰, chief editor of the British Psychological Society's ongoing review of ability, aptitude and personality instruments. Bartram reported on the mean profiles of 1796 shortlisted candidates for UK management appointments. The measure which he used was 16PF Form A¹¹, one of the most respected instruments in its time. He discovered that the average manager scored around the 85th percentile for extraversion compared to the general population.

Over a 17 year period, overlapping Bartram's study, I accumulated personality profiles of 445, mainly male, senior managers for a diverse UK-based industrial organisation¹². Most of these executives were the general managers of medium-sized businesses and their immediate subordinates who were heads of the sales, operations and finance functions. As with Bartram, the measure used was 16PF Form A but, on this occasion, the managers were all selected rather than short-listed candidates. The mean extraversion score was almost identical to that of Bartram. Additionally, it was noticed that only one per cent of the entire sample were clear introverts

Extraversion is a broad multi-faceted concept and many personality questionnaires include measures of these narrower traits. With 16PF Form A, the five main facets are:

Enthusiastic, spontaneous, heedless, expressive, cheerful
Bold, venturesome, uninhibited, can take stress
Group-oriented, a "joiner" and sound follower, listens to others
Forthright, unpretentious, open, genuine, artless
Warm, outgoing, kindly, easygoing, participating, likes people

Both Bartram's managers and my own scored around the 70th percentile for all of the scales except Bold where the mean score was around the 85th percentile.

In addition to these older, larger scale UK studies there was an interesting Anglo-US study of high profile CEOs published in 2003¹³. In this

study, the researchers used a systematic process to infer the personality of the executives from published sources such as biographies and interview transcripts. The mean extraversion score for the sample equated to a point around the 90th percentile. The highest-scored CEO, Lee Iacocca of Chrysler, emerged around the 95th percentile and the lowest, Ron Millar of Disney, around the median of the general population.

It appears therefore that the managerial milieu is a clear comfort zone for the extraverted personality but a potential source of discomfort for the introverted individual.

Does extraversion predict managerial performance?

The 1990s yielded a number of, mainly US, meta-analyses aiming to discover how far a variety of individual characteristics and selection processes actually predicted job performance. Meta-analysis involves a pooling of data from a number of published studies. A few of such meta-analyses, reported around the turn of the century, explored how far personality traits, including extraversion, predicted managerial performance. Of the latter, Murray Barrick¹⁴ and his colleagues found that extraversion was a valid, if modest, predictor of managerial performance as did Gregory Hertz and John Donovan¹⁵.

When I correlated the extraversion scores for my senior management sample with the level of job-size attained in the organisation, as measured by the Hay system, I found the same modest degree of association as had the US researchers¹². With this sample, if not the others, the degree of prediction was undoubtedly suppressed because the promotion process to their level of seniority would have sifted out the non-extraverts. Of the constituent facets of extraversion, only Warm was found to correlate with success. Good managers like people.

Do managers need to be extraverts?

Insofar as there is a single right answer to any broad question, it would be yes, managers need to be extraverts and if they are not it will hurt them if they try. Other things being equal, people in the upper quartile of the extravert measure (75th percentile or higher) should enjoy the work and be successful. Those in the lower quartile (25th percentile or lower) are unlikely to feel at home in management. The danger to the individual is burnout and to the organisation that such managers may not be in the right place when needed but creating 'personal space' in their offices, cars or in aeroplanes. Managers in the inter-quartile range (between the 25th to 75th percentiles), and those who are assessing such candidates, need to look at the facets of extraversion to ensure that there are no lower quartile scores that are likely to be problematic. Whilst in the middle band of the broad extraversion factor, I was 10th percentile on Group-orientation. However, my role did not involve a lot of teamwork or participation in many regular meetings, so I got by.

It is an inconvenient truth that other things are rarely equal and there are, amongst individuals' personal characteristics, some of the remaining Big

Five factors and the important issue of intellectual ability which also need to be considered in predicting success as a manager; but that's for another day.

Notes

- ¹ Colman, AM (Ed) (2001) *A Dictionary of Psychology*, Oxford: Oxford University Press
- ² See for example Eysenck, H. J. (1967) *The biological basis of personality*, Springfield, Illinois: Charles C Thomas, p. 265
- ³ *Eysenck Personality Scales, Adult* (1952, 1964, 1975, 1991), London: Hodder & Stoughton
- ⁴ *Myers-Briggs Type Indicator*[®] (1962, 1977, 1985, 1998) Oxford: OPP
- ⁵ Goldberg 1990 An alternative description of personality: The Big Five Factor Structure, *Journal of personality and social psychology*, 59: 1216-1229
- ⁶ *NEO Personality Inventory* (1985, 1992), Oxford: Hogrefe
- ⁷ Barrick, M. R. & Mount, M. K. (1991) The big five personality dimensions & job performance: A meta-analysis, *Personnel Psychology*, 44, 1-26.
- ⁸ Costa, P.T., McCrae, R. R. and Holland, J. L. (1984) Personality and vocational interests in an adult sample, *Journal of Applied Psychology*, 69: 390-400
- ⁹ Stewart, R. (1967, 1988) *Managers and their jobs*, London: Macmillan, p. 104
- ¹⁰ Bartram, D. (1992) The personality of UK managers: 16PF norms for short-listed applicants, *Journal of Occupational and Organizational Psychology*, 65, 159-72.
- ¹¹ *16PF Form A* (1978) Oxford: OPP
- ¹² McCredie, H. (2004) *The essence and varieties of management competence*, Unpublished PhD thesis. University of Manchester, Manchester, England.
- ¹³ Peterson, R. S., Smith, D. B., Martorana, P. V. And Owens, P. D. (2003) The impact of chief executive officer personality on top management team dynamics: One mechanism by which leadership affects organisational performance, *Journal of Applied Psychology*, 88, 5: 795-808
- ¹⁴ 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, ½: 9-30.
- ¹⁵ Hurtz, G. M. & Donovan, J. J. (2000) Personality and job performance: The Big Five revisited *Journal of Applied Psychology*, 85: 869-879.

Hugh McCredie

NEW CHAIRMAN

In the next edition of *psyche*,
Xanthy Kallis, our new chairman
will set out her plans for the future

COPY FOR THE JUNE EDITION OF *PSYCHE* SHOULD BE
WITH THE EDITOR BY 30TH MAY

Introvert Arms Revisited: On the advantages of losing one's temper

I hadn't been to the Introvert Arms for some time. Pressures of work, you see. When I did, nothing much had changed apart from the new landlord.

You will recall that this is where (others) exhibit all their introvert behaviour. On this occasion Wayne, the landlord, was doing Sudoku. The landlady was trying to complete yesterday's crossword in the Daily Telegraph. Dave was doing Scrabble in the Daily Mail. Bob was talking about his collections of stamps and rare coins. Two people were playing chess in a corner, a masochist was scanning the Financial Times trying to determine what had happened to his shares, and I was having a deep conversation with my dog as to why she was spurning Mini Cheddars (that she loved until last week), in favour of bacon fries. She loves going to the pub and receiving all the adoration that her breed inspires. Would that I were an Airedale!

Anyway, who should interrupt my conversation than Angus and Hubert, the psychometricians manqué. I groaned inwardly, and my Airedale groaned outwardly, showing her beautiful Hollywood teeth in the process. Her lip curled in greeting; she has a low opinion of these two. She's so insightful; she can judge character at fifty paces.

Angus started it all of course. He usually does. This time he produced a newspaper cutting saying that managers who lose their tempers are more likely to reach the top. (Just what I've always said, having been on the receiving end of these idiots a time or two. But remember the rubbish about it being essential to have high interpersonal skills to reach the top? Do high interpersonal skills equate with losing one's temper? Exactly!)

Readers will know that Angus loses his temper over nothing. Hubert is a loser yet never seems to lose his temper. He'd come third in a duel. Angus was strutting his stuff; saying something to the effect that a good dose of temper never hurt anyone. He's always spouting rubbish like that.

"It's because I'm high on 16PF Factor E," he said.

"That's Dominance," said Hubert. "Challenging behaviour."

"So what if it is?"

"The point is that you don't have to be aggressive. Just assertive.

There is a difference."

"Assertiveness is for wimps who are too frightened to be aggressive."

"Aren't we getting away from the point?" I said. "This cutting says that top managers get to the top partly by losing their tempers and intimidating others."

"Well, said Angus, "it's not just that. They are more intelligent than others. That's why they're at the top."

I couldn't take that. "So," I said, with as much venom as I could muster, "they're the most intelligent, are they?"

"Of course."

"Then tell me why some of the brightest people on the planet have got us into the worst financial mess since the Bank of England was formed in 1694. And the same in the USA and the rest of Europe.

"Sheer greed," said Hubert.

"And," I added for good measure, "If IQ were the most important factor in the selection of top people, we wouldn't be bothering about personality assessments. We'd just give 'em the toughest test of mental ability we could find."

Silence.

Then Hubert spoke up. "Angus has only read half the story," he said. "If he'd bothered to read the whole piece he would have read that only those who could express their frustration tactfully and constructively had an advantage."

Good old Hubert. "Tell me more," I said.

"Well," said Hubert, "scientists at Harvard assessed the personalities and coping tactics of over 800 people and how they had progressed over the past 44 years."

This seemed like useful stuff. "What then?" I said.

Hubert, now much encouraged, went on: "Well it said that those who tended to repress their frustrations were three times more likely to admit they had hit a glass ceiling in their careers. And they had more disappointing personal lives."

Angus looked chastened.

"The researcher said that people are encouraged to practice 'positive thinking', but they found that approach to be self defeating."

Now Angus looked encouraged. "Just what I always said about positive thinking. Rubbish."

This all sparked off a memory of something I'd read. "There was a previous bit of research in which more than half the people surveyed said an angry outburst produced a positive outcome. A confrontation helped them to identify their own faults."

Angus perked up at this. I think each of us had scored a point here.

Molly growled and showed her gleaming teeth again. I gave her some bacon fries before she lost her temper.

*David Roberts,
Editor*

Big Five

Equivalences

Hugh McCredie – NEO AND MBTI

Recently I came across a paper by the authors of NEO PI (McCrae & Costa, 1989) that compared continuous scores for the four dimensions of MBTI with that instrument. Accordingly, I have added these findings to the table which I reported in the previous edition of *Psyche* and which was presented to last October's meeting of the Forum.

NEO PI-R	16PF5	r NEO¹	OPQ32	r NEO¹	MBTI	r NEO²
Neuroticism	Anxiety	.75	Emotional stability	-.67	No equivalent	
Extraversion	Extraversion	.65	Extraversion	.59	Extraversion Men Women	.34 .38
Openness	Tough-minded	-.56	Openness	.58	Intuition Men Women	.61 .41
Agreeableness	Independence	-.42	Agreeableness	.64	Feeling Men Women	.25 .46
Conscientiousness	Self-control	.66	Conscientiousness	.68	Judging Men Women	.34 .55

¹ NEO PI-R; ² NEO PI

As will be noticed, the MBTI factors do not map so readily onto NEO's Big Five as do the five factor solutions of 16PF5 and OPQ. It will be recalled that I defined equivalence with the 0.45 correlation threshold for construct validity employed in BPS test reviews. Notwithstanding these numbers, there is clearly some correspondence between MBTI dimensions and four of the Big Five traits. MBTI does not set out to measure Neuroticism/Anxiety.

At the end of her presentation last October, Anne Herrmann of OPP reported on a UK comparison of the MBTI dimensions with the 16PF5 Global Scales. OPP found $r .73$ between the two extraversion scales and $r .63$ between 16PF5 Global Self-Control and MBTI Judging.

When attending Forum meetings, MBTI users should find it interesting to consider behavioural predictions reported for other psychometrics but they will need to bear in mind that correspondence between the personality factors is far from absolute.

Reference

McCrae, R. R. and Costa, P. T (1989) Re-interpreting the Myers-Briggs Type Indicator from the perspective of the Five-Factor model of personality, *Journal of Personality*, 57, 1, pp. 17-40

Hugh McCredie

[More Industrial Thoughts From 1915](#)
[\(Just Keeping You Up To Date\)](#)

In the December 2008 edition of Psyche, I included some comments from a book called The Library of Factory Management published in 1915 in the USA, and promised to let you have more of the same. Here it is.

Whilst these comments have no direct connection with psychometrics, all our readers will have industrial or commercial experience, and they show insights into moral and practical problems that are refreshing. (It also saves me writing loads of new stuff.) Many might be considered obvious: but in our cost-cutting pursuit of profit, common sense attitudes and solutions struggle to survive.

Here are just a few. (I warn you, I have 5 volumes of this stuff, enough to fill all the Psyche Newsletters I am ever likely to produce. So just be nice to me. If you're good, this could be the last one.)

I should explain that senior managers in top industrial companies of the day wrote these chapters. One hopes that their wisdom was put into practice in their own plants, and not just advocated for the benefit of everyone else.

A photograph shows a group of bowler-hatted job applicants standing outside factory gates with a foreman pointing at one of them. Underneath is the caption:

The old method of hiring men was to make a quick choice from the gang at the door. In the well-organised employment department, complete records on each applicant, employee and ex-employee, are maintained; comfortable waiting rooms are provided for applicants, and different entrances supplied for men, women, and office employees.

No comment necessary from me.

In an early chapter on Employment Policies, the writer advocates a thorough audit, or management inventory, to study 'outside levers upon the enterprise.'

Many industrial establishments today may be likened to a sailboat on a mountain lake. Everything on the boat may be trim. But the managers of the business do not seem aware of the effect of wind dropping onto the lake from the top of surrounding mountains. Until the squall strikes their sails, too few managers have any conception of what the forces are like that are in action around them. Not only will the audit plan afford a review of those outside

factors, but it will enable managers to organize, so that time spent studying external trends will be less than time now spent in studying material costs, methods and markets.

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It is becoming clearer and clearer that for employers to fight labor organisations as organisations is foolish. The helpful thing to do is to admit all that is good in the policies and methods of organized labor and oppose only those that one believes to be wrong. That way, the real issue lies.

§

Individual enterprises and whole industries often adopt un-business-like attitudes towards the government and legislation. It has been proved more than once that for the manager and his auditor of conditions to take their bearings in this field, will pay profits to the concern in goodwill and relief from friction. Industries have allowed conditions to grow up which have brought labor legislation on their heads. When laws were advocated and public opinion was forcing them to passage, the business often blindly and bluntly showed fight instead of getting the facts, admitting a sound principle, and helping legislators work out a business-like bill. There are methods and rules of sportsmanship in business that an unbiased study of an organization will develop.

In concluding his chapter on the management audit, the writer wisely states that such an audit is necessary because those in control begin with the 'site, construction and equipment', rather than 'building the business as an organization.'

He goes on:

Confused by increasing industrial and political unrest, managers responsible for making the business pay its way, have not known where to take hold of the problem of human relationship. [The following] principles for dealing with the human side of business are appearing:

- 1. The necessity of giving the utmost opportunity to everyone in the organization through ...mobility of labor, work analysis, and good engineering and accounting.*
- 2. The establishment of wise payment plans based on the belief that the wage system must be fundamentally modified. To my mind, no one thing will do more to allay unrest than the certainty that capital and management are not profiting from the business beyond a fixed maximum.*

Bankers, please note.

*David Roberts
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