



THE MAGICAL NUMBER 5

TOWARDS A THEORY OF EVERYTHING?

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INTRODUCTION

Developing the skills of managers is a major aim of organisations and as an industry accounts for over £1Billion of expenditure per annum in the UK alone. This development takes all forms from one-to-one counselling by managers, counsellors and psychologists through to in-depth navel gazing sessions perched on the top of mountains egged on by ex-army officers. All have their place and all have their supporters. There are some sizeable and highly successful organisations that have developed by providing this kind of service to organisations and many "gurus" espousing their own methodologies and concepts.

However, it is the proliferation of these various methodologies that seem to cause most frustration and debate. At a recent professional dinner, a fellow diner, a Chemist by trade, made the point that the thing he found most frustrating about personnel was that in spite of the millions spent and the thousands of studies, the profession still has not developed a cohesive language or body of knowledge. There don't even seem to be any universally accepted underlying principles.

Help does appear to be at hand. While it is unlikely that we are going to discover laws as immutable as Bernoulli, Ohm or even Heisenberg in the near future, there are developments which may provide the sort of underpinning which my Chemist colleague (and I expect many others) are seeking. Personality theorists in particular have been working hard to provide a common language to explain individual differences. Since Personnel involves itself with the different ways in which people behave, this would seem a good place to start.

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Since the first personality tests were developed, different theories have formed the basis for specific personality tests. Typically, psychometric models of personality have identified a number of core **personality traits**, with the number of traits identified by any particular theory varying from two to sixteen, and in a few cases even more. Many such models were created as psychologists became interested in different types and combinations of personality traits - they were searching for a model that would capture the essential elements of human personality. To date, measuring scales have been developed for an enormous number of different traits: the list which follows is only a selection of them.

**Table 1: Personality Factors**

Activity	Agitation	Aggression
Anxiety	Agreeableness	Conformity
Autonomy	Compliance	Control
Boldness	Conscientiousness	Dogmatism
Conscience	Curiosity	Dominance
Creativity	Extroversion	Energy
Culture	Impulsivity	Femininity
Dominance	Independence	Insecurity
Fear	Inhibition	Monotony avoidance
Hostility	Intelligence	Neuroticism
Imagination	Objectivity	Self-discipline
Psychopathy	Pathemia	Social adaptability
Radicalism	Responsibility	Stability
Socialisation	Self-sufficiency	Surgency
Tension	Sensitivity	Suspiciousness
Warmth	Shrewdness	Tough poise

When looking at the proliferation of traits that have been measured using psychometric techniques, it is difficult to see how much of it can make sense. Eventually however a general model was developed which described five major factors and which could be used to cut through the morass of different traits. These factors do seem to have emerged consistently from the research data although different theorists tend to apply their own names and even to shade the meaning to suit their application. (*Facet*, the first BIG 5 system built for the UK was based on work done at the University of Edinburgh by Chris Brand.) The *Facet* structure is shown in Table 2. In general they are referred to as the BIG 5 FACTORS. Table 3 shows how the BIG 5 relate to other well-known models of personality.



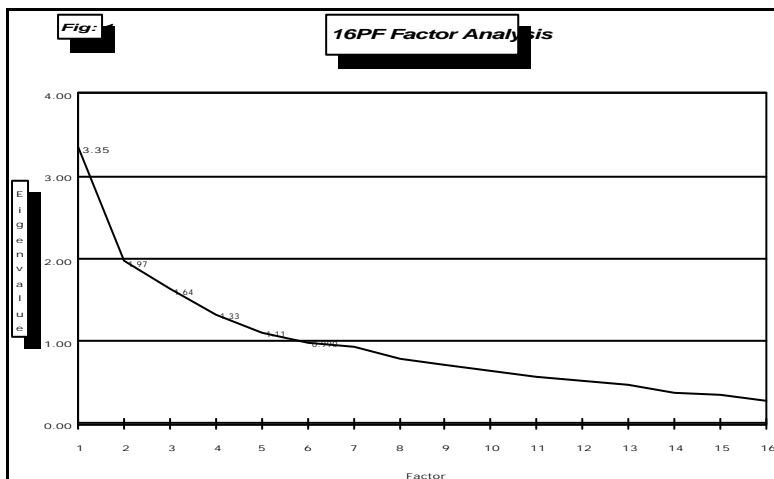
TABLE 2 - FACET STRUCTURE

	WILL <hr/> INDEPENDENCE SELF-SUFFICIENCY AUTONOMY RIGIDITY DECISIVENESS	
ENERGY <hr/> EXTRAVERSION PHYSICAL ENERGY ACTIVITY LIVELINESS INVOLVEMENT	EMOTIONALITY <hr/> CONCENTRATION CONFIDENCE OBJECTIVITY MOOD SWINGS PERSEVERANCE	CONTROL <hr/> SELF-CONTROL CONSCIENTIOUSNESS CONVENTIONALITY CONFORMITY CONSCIENCE
	AFFECTION <hr/> SENSITIVITY TRUST HELPFULNESS OPENNESS COMPASSION	



Table 3 Comparison With Other Models		BIG 5 DIMENSIONS				
Brand	Will	Energy	Affection	Conscience	Neuroticism	
Facet	Will	Energy	Affection	Control	Emotionality	
16PF	Independence	Exvia	Pathemia	Control	Anxiety	
Comrey	(-) Empathy	Social Extraversion	Empathy	Orderliness	Instability	
EPPS	Autonomy	Exhibition	Nurturance	Order		
EPQ		Extraversion	Tender Minded	Conservatism	Neuroticism	
CPI	Independent Thought	Social Extraversion	Sensitivity	Conventionality		
G-ZTS	Masculinity	Social Activity	(-) Paranoid	Restraint	Emot Instability	
MBTI	T<-> F	E<->I	S<->N	P<-> J		
OPQ	Vigorous	Extraversion	Abstract	Methodical	Emot'lyStable	
NOTE: (-) Indicates a Negative Relationship						

That these models represent versions of the five factors is very well documented. McCrae & Costa demonstrated it for the MBTI¹; Stanton et al for the OPQ² and the 16PF has been analysed by almost everybody. Just to prove it however, Fig 1 shows an analysis we completed recently based on data provided by British managers.



This analysis was based on a group of 188 British Managers collected over a period of approximately 3 years. The sample is approx. 70% male. "Little Jiffy", (Eigenvalue > 1.00) again provides 5 clear factors which account for 60% of the variance. Table 4 shows these factors.

¹ McCrae R.R and Costa P.T. Jr "Reinterpreting the Myers-Briggs Type Indicator from the perspective of the Five-Factor Model of Personality", Journal of Personality, 57:1, March 1989

²Stanton N A, Matthews G, Graham N C and Brimelow C, "The OPQ and the Big Five", J. Managerial Psychology, Vol. 6, No 1, 1991 pp25:27



Table 4: FACTOR ANALYSIS OF 16 PF		
Factor 1 <i>"EMOTIONALITY"</i>	Q4 0.78 O 0.74 H -0.65 C -0.76	TENSE APPREHENSIVE SHY EMOTIONAL
Factor 2 <i>"ENERGY"</i>	A 0.79 F 0.60 Q2 -0.66	WARM ENTHUSED GROUP
Factor 3 <i>"WILL"</i>	E 0.79 Q1 0.66 L 0.49	DOMINANT LIBERAL SUSPICIOUS
Factor 4 <i>"CONTROL"</i>	G 0.63 Q3 0.60 N 0.48	CONSCIENTIOUS CONTROLLED CALCULATING
Factor 5 <i>"AFFECTION"</i>	M 0.38 I 0.87	IMAGINATIVE TENDER



INTERRELATIONSHIPS BETWEEN THE 5:

The factors produced above are orthogonal (Varimax Rotation) but most interpretations of the **Big 5** tend to produce some, albeit small, intercorrelations between the factors. Tables 5-8 for the MBTI, TMI, RPQ and *Facet* correlations are shown below.

	Ene	Aff	Con	Emo
Will	.25	-.25	.09	-.18
Energy		.03	.01	-.30
Affection			.11	-.10
Control				.01

	Confid	Struct	T-M	Conform
Extrav	.54	-.05	.26	-.52
Confid		.17	-.12	-.27
Structure			-.19	.39
T Minded				-.18

	T-F	S-N	J-P
E-I	-.07	-.11	-.06
T-F		.09	.23
S-N			.38

Most trait models treat all the factors as roughly equal. However, the high proportion of the variance accounted for by Emotionality leads some (e.g. Brand) to suggest a more complex interactive model. Brand's model

	PC	AB	SF
E-I	-.34	-.22	-.13
PC		.32	.32
AB			.32

(operationalised in *Facet*) is shown in Fig 2. The main advantage, which this approach confers, is that Emotionality is viewed as an interpreting factor on a different plane from the others and its main function is to affect the interpretation of the picture portrayed by the other four factors.

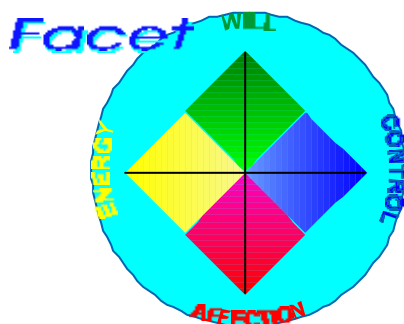


Fig. 2

As can be seen Will and Affection tend to pull in opposite directions as do Energy and Control. Readers familiar with Osgood's work³ on Semantic Differentials will recognise his elements of Potency (Will vs. Affection) and Surgency (Energy vs. Control). Emotionality however has a complex effect on the observed behaviour, tending to blur the picture by introducing emotional responses into an otherwise stable and reliable picture. The higher the level of Emotionality, the more difficult it is to be certain how a person will react and the more

³OSGOOD,C.E. (1952) "The nature and measurement of meaning" **Psychological Bulletin** 49 197-237

likely it is that negative aspects of behaviour will be seen.⁴ The 3 dimensional effect of Emotionality is shown in Figure 2a.

Fig: 2a



For all this work to have a value to organisations however it must be applied to real management development problems. Much work is done using information from well-developed tests such as Facet, the 16PF, OPQ or the MBTI. However there is also a great amount of work done using other instruments which do not pretend to be well developed psychometrically but which rely for their success on an intuitive *feel*. These are often developed by non-psychologists but in the end they look and feel very like traditional personality questionnaires. Do these fit the **BIG 5** and how? I propose to look at four aspects where

personality theory is used and to demonstrate links to **BIG 5** theory. These are: Learning Styles, Team Roles, Career Choice and Leadership Theory. In addition I will demonstrate how the same model has emerged from market analysis studies in organisation strategy work.

⁴ People familiar with Brand's work will recognise that this cone represents only one half of his theory. The full model, includes Intelligence or "g" as a complement to Neuroticism to produce his "Double Cone". The positive aspects of "g" counter the generally negative effects of Neuroticism. However, in most management development programmes "g" is ignored.



1. LEARNING STYLES:

One of the more recent and seductive applications of personality theory (although it wasn't billed as such) was the development of the idea of Learning Styles. This approach combined basic laboratory learning theory and personality theory to suggest that people learn things in different ways and the differences between them are stable and predictable i.e. they are related to their personality.

The first approach to be labelled as such was that developed by Kolb⁵ based on the MBTI. He suggested that there were four basic types of people when it came to the way in which they learned: CONVERGER, DIVERGER, ASSIMILATOR AND ACCOMODATOR. He identifies the group to which a person belongs by means of a self-description questionnaire using adjectives. There can be little doubt that this is a personality test although it isn't designated as such.

More recently, Honey and Mumford⁶ took the Kolb approach and modified it subtly. They accepted Kolb's ideas about the way learning experiences should be structured and presented but they were unhappy with the names he gave his styles and the way in which the types were identified. They came up with ACTIVIST, THEORIST, PRAGMATIST, REFLECTOR. They claim that their approach, while supporting the four basic styles, is more practical because of the terminology and the method used to classify people.

They also claimed to prefer the idea of using "*recognisable statements of managerial behaviour*" (Honey & Mumford Op cit. p4) rather than adjectival descriptors. The same argument has been used by personality test developers and has a certain intuitive appeal but it still produces a personality test, which should be subject to the same tests of psychometric integrity. Indeed it is slightly disconcerting to be told that Honey and Mumford's main concern was " *not to produce something, which is academically respectable.*" (Honey & Mumford Op cit. p5) ***Why not?*** Particularly when there actually appears to be considerable help and guidance freely available from people such as Margerison & Lewis⁷. This gap between scientific credibility and "practical guidance" is further stretched by the averral that Honey and Mumford prefer to concentrate on "*observable behaviour*". How is this done via a self-report questionnaire even when it is used as a basis for discussion?

But why do respected people like Honey and Mumford go to such lengths to disassociate themselves from academic respectability? Perhaps this is partly

⁵ KOLB D A "*Learning Style and Learning Style Inventory*" **Experiential Learning** Prentice Hall 1984

⁶ HONEY P and MUMFORD A, "**The Manual of Learning Styles**", Peter Honey 1986

⁷ MARGERISON C and LEWIS R "*Management Educators and Their Clients*" **Advances in Management Education**. Edited by J Beck and T Cox Wiley 1981

explained by their own data. Table 9 shows that the correlations between the four Learning styles are very large.



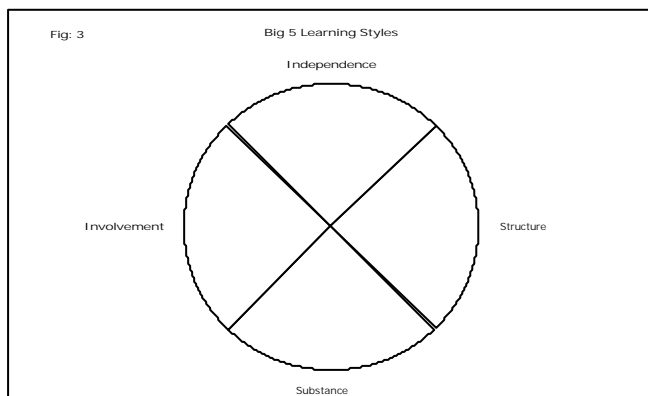
Table 9 Learning Styles Correlations			
	Reflector	Theorist	Prag'tist
Activist	-0.013	0.097	0.299
Reflector		0.71	0.42
Theorist			0.54
<i>"The Manual of Learning Styles" p75</i>			

Such results would be interpreted in psychometric terms as indicating a considerable overlap between the styles: the researcher would normally be sent home to rewrite the items. Honey & Mumford however interpret this as showing that the Reflector:Theorist (0.71) is the most likely style and the Activist:Reflector (-0.013) the least likely. No wonder they disclaim academic respectability!

However if we do look at the research which is available on learning styles, the concept does seem to fit the **BIG 5** at least partly. Margerison and Lewis tested it against the Myers Briggs Type Indicator from which it was originally derived (MBTI - see Table 1) and found that the Activist and Pragmatist linked to Extraversion whereas the Theorist and Reflector were more Introverted. An in depth examination of the descriptions of the Learning Styles would link Activist to Energy, Theorist to Control, Pragmatist to (low) Affection and Reflector to (low) Will.

Perhaps some judicious rewriting of the items could produce much clearer, more independent scales and the parallel would emerge much more clearly. (The quoted scale reliabilities are so high as to suggest considerable redundancy in the items anyway and many items are heavily skewed meaning that everyone gives the same answer so they are not discriminating; - there are good grounds for a re-write!).

However, a detailed analysis of the content of the learning styles shows that they do reflect underlying differences in the way that people handle information. C+ prefers more structure, W+ likes a level of independence, A+ likes complexity and theory and E+ needs a high level of involvement and participation. Using this logic it is possible to produce a generic "Learning Styles" model which fits the **BIG 5** well. This is shown in Fig 3.



Effect of Emotionality

What is missing is any obvious link between the four learning styles and Emotionality. It is unlikely to have emerged from any work that used the MBTI as it doesn't measure Emotionality directly. However there is considerable information from more traditional sources about the likely effect of Emotionality on learning. For example Emotional people are known to "Condition well and



*extinguish poorly*⁸ indicating that they tend to learn things quickly and remember them for a long time or, as Brand put it, "*remember everything and forget nothing*". However they are also easily distracted and can get things out of proportion so trainers need to be very careful that such people are kept on track. Similarly they tend to remember things in a less organised and sequential way⁹ and have an underlying lack of confidence which can cause problems learning new processes. They tend to stick to what they know. Does this make up a new learning pattern or does it just modify the way that the other four styles work?

Evidence suggests that the concept of Learning styles is well founded in academic research and that the models so far developed relate, to varying degrees, to personality styles as described by the **BIG 5** model. Some research seems to be called for so that the concept of learning styles can be supported by reliable theory and psychometrically adequate instrumentation. Perhaps this is where **BIG 5** can add value to a process which many people find intuitively helpful. By clarifying the four basic styles and by then overlaying the subtle effects of Emotionality, management development could become much more tailored to the needs of the individual.

⁸ Brand C.R., "*Personality dimensions: An overview of Modern Trait Psychology*", J. Nicholson & Halla Beloff, Psychology Survey No5, BPS, 1984

⁹Brand C.R., Op Cit.



2: TEAM BUILDING

One of the most powerful applications of personality theory to have developed in recent years is that of team building. The basic concept is simple:- people are different and yet they have to work together. If team members can get a better understanding of these differences and the effect they will have at work, they will be more supportive, tolerant and/or effective. That the concept works is undoubted: - one group of high street retailers arranges such a programme for all the top managers of each new store it opens, before the opening.

The most commonly used approaches are personality tests, games, group exercises and special *Team Role* questionnaires. Of these, one of the most commonly used is the model developed by Meredith Belbin in 1981¹⁰. Belbin's model suggests a number

Chairman - effective co-ordinator	Company Worker - practical organiser	Shaper - outgoing and Dominant
Plant - creative but introverted	Resource Investigator: salesman, external face	Monitor Evaluator - Analyst
Team Worker - helpful, uncompetitive	Completer - Detailed, follows through	Mgt Independent - independent operator
Note: <i>The specific names given to these roles can vary and not all implementations include all the roles.</i>		

of different "roles" which are taken by members of a team. They are shown in Table 10.

This approach offers many attractions not the least of which is the logical sound of the roles themselves. People are deemed to have a primary role

towards which they will naturally swing but they will also have secondary roles, which they will be able to undertake. Thus, individual team members may find themselves cast in more than one role. Implicit in the Belbin model is that well-balanced teams will have representatives from a variety of the roles rather than having the team made up of people who are all the same.

Another attraction is that the roles can be derived in a number of ways. Belbin has his own questionnaire, which measures the roles directly but both the OPQ and the 16PF allow the calculation of the roles from personality profiles. Some roles require some measure of ability (usually a Watson Glaser score). This approach is obviously useful since the rest of the personality data can be used for other purposes but it does require longer to complete (typically 35-45 minutes for these types of test).

However, there appears to be a gap between the very useful, quick approach developed by a "practical" management theorist such as Belbin and the more time consuming and detailed approaches developed by classical psychologists. There is again an apparent disdain for "academic" rigour in favour of simple practicality. Belbin's book doesn't even quote any of the normal psychometric data for his

¹⁰ Belbin, Meredith R *Management Teams*, Heinemann, 1981

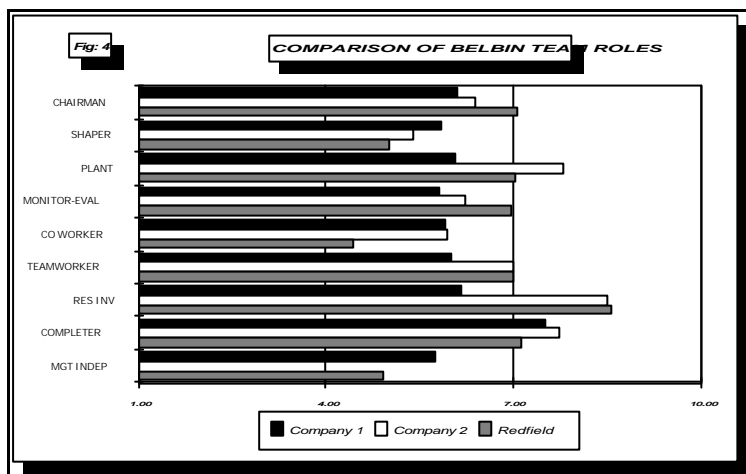


questionnaire. When asked directly the Belbin line is that they don't feel that sort of information is required or relevant. Given that test publishers are constantly trying to prove how reliable and valid their instruments are (in fact it is incumbent upon them to do so) this is a yawning philosophical gulf.

.. the mix of roles found in any team will vary depending on who does the scoring!

Perhaps Belbin is wise not to enter too deeply into such a debate. A company sent two 16PF profiles to two different external consultants to have an "Expert System" interpretation carried out. Not only did the reports differ in style and content (to be expected) but, more worryingly, the *Belbin Team Roles* turned out to be completely different. The results of these calculations are shown in

Figure 4 along with Redfield's own scoring of the same data.



When these anomalies were checked, it appears that this is not uncommon since there are a number of different scoring algorithms for deriving *Belbin Team Roles* from 16PF data. It seems that the mix of roles found in any team will vary depending on who does the scoring!

To see how psychometrically robust the concepts are, we analysed data for a group of

188 British managers with the Team Roles calculated from 16PF scores. Table 11 shows the correlation matrix. The significant ones are not highlighted or starred since it is obvious that many are very large (with this sample anything over .28 is significant at 0.05%).

	CHAIRMAN	RES INV	SHAPE	COY WORK	COMP	TEAM WORK	MGT INDEP	MON	PLANT
CHAIRMAN	1.00	0.50	-0.60	0.74	0.11	0.35	-0.19	0.00	-0.22
RES INV		1.00	-0.39	0.04	-0.41	0.42	0.10	-0.26	-0.10
SHAPER			1.00	-0.39	0.24	-0.15	0.00	-0.34	-0.20
COY WORK				1.00	0.33	0.51	-0.66	0.26	-0.51
COMPLETER					1.00	-0.03	-0.26	0.02	-0.07
TEAMWORKER						1.00	-0.76	0.00	-0.66
MGT INDEP							1.00	-0.16	0.74
MONITOR								1.00	0.07



These high correlations suggest that the Team Roles are probably subject to considerable redundancy. In fact factor analysis of this correlation matrix indicates that there are, at most, three common factors which account for the Belbin Roles.

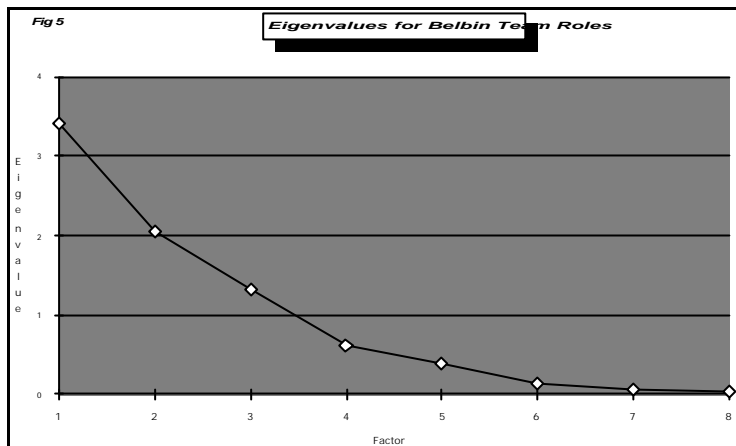


Figure 5 shows the eigenvalues for this data.

There is little support for all nine roles emerging as independent factors.¹¹ In fact three seems quite an acceptable solution based on the scree and the eigenvalues. Table 12 shows the relationship between the three orthogonal factors extracted above and the Team roles. To see how the Belbin model relates to **FIG 5**, we

compared manager's *Facet* scores with the (16PF derived) *Belbin Team Roles*. The results appear in Table 13

Team Role	Fac 1	Fac 2	Fac 3
PLANT	0.92		
MGTINDEP	0.90		
TEAMWORK	-0.87		
CHAIRMAN		0.91	
COYWORK	-0.58	0.68	0.36
SHAPER.	-0.84		
COMPLETE			0.87
RESINV.	0.46	-0.75	

On this basis the *Belbin Team Roles* seem to relate to **FIG 5** in a very logical way. However, the considerable overlap between the Belbin scales would suggest that the split of roles found by Belbin doesn't seem to be supported by the existing data. It would appear that another approach to Team Building may be more useful.

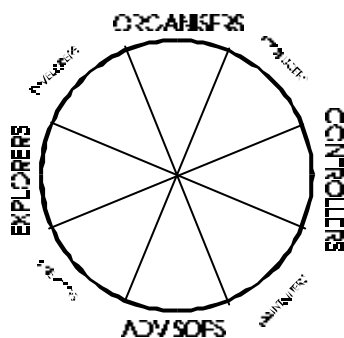
	Will	Energy	Affect'n	Control	Emot
CHAIRMAN			0.26	0.29	-0.20
RES INV	0.20	0.41			-0.37
SHAPER			-0.29		0.26
CO WORKER	-0.23		0.27	0.46	
COMPLETER				0.26	0.30
TEAMWORK		0.23	0.30	0.23	
MGT INDEP	0.23		-0.20	-0.43	
MONITOR	-0.24	-0.47		0.29	
PLANT		-0.32		-0.31	

¹¹Full details of this analysis are being prepared by Redfield Consulting for publication



The Team Management Index (TMI)

Figure 6: Team Management Index



Another approach to team typing is provided by the TMI from Margerison and McCann¹². This is based on the Jungian model and therefore can be expected to have a much closer relationship to **BIG 5** than Belbin. In fact the technical manual for the TMI shows this quite clearly, while also demonstrating sound psychometric principles. The relationship to **BIG 5** is obvious although the axes have been rotated 90 degrees. Examining the content of the type descriptions demonstrates the Jungian roots and the **BIG 5** links. However, like all Jungian based processes, it is still prone to the comprehensive criticisms made by McCrae & Costa¹³. Specifically that

there is no psychological or psychometric justification for type theory over trait theory and, perhaps more importantly, that the Jungian derived models all ignore Emotionality. Given that this has been demonstrated to account for more than 25% of variation between individuals, this would seem to be a dangerous omission. Figure 6 shows the layout of the TMI, although users will be more used to a more complex version.

Apart from the concerns expressed so succinctly by McCrae and Costa, there are a number of other interesting ways in which the TMI differs from traditional personality theory. They describe a concept of a "journey around the wheel" wherein people are expected to alter their personality (or type) as a result of life experiences. This does seem to run counter to the idea that personality is "stable and relatively enduring" and consistent from one situation to another. These concepts underpin much of modern trait psychology and almost all assessment centre theory. In fact, without this, assessment centre design would be futile.

¹² Margerison C and McCann R, "*Team Management Index*", TMS UK Ltd., 1990

¹³ Op cit.





3. CAREER CHOICE

The relationship between personality and Career Choice has been of interest to psychologists for many years. However, the work of Holland (the six factor VPI) and Strong and Campbell have tended to influence much of the thinking in this field. It is not easy to see direct relationships between these models and **BIG 5**. There are links demonstrated by the MBTI but they seem a little tenuous and do not form a logical, overarching theory.

However, some evidence has emerged from data collected by Redfield in the course of research into Schein's Career Anchors¹⁴ model. Schein suggests that there are five concepts or "Anchors" which underpin people's career decisions. They are: Managerial, Technical, Security-Oriented, Autonomy-Oriented and Entrepreneurial. Using a questionnaire designed to address these areas, we sought to understand the motivations of British managers. The questionnaire is in no way validated and is well short of having the sort of psychometric integrity, which would be required of a stand-alone instrument. This analysis proved illuminating. No attempt has been made yet to rationalise the item bank, but it is clear that much work needs to be done in this area. Initial factor analysis yields 19 factors with an eigenvalue > 1.00. However many of these are doublets created by spuriously high correlations between two or three items which are, to all intents and purposes, identical. Much item writing and trialling still needs to be done. However, in the hands of the authors, it has proved useful for discussion purposes.

We have recently analysed data from approximately 150 managers, for many of whom we also had parallel *Facet* data. The raw correlations with *Facet* certainly suggest that there is a strong and predictable relationship. Table 15 shows these relationships clearly. There may be some link to the Career Anchors idea but much more research is required. It is possible to think of Will linking to Autonomy, Energy to Entrepreneurship, Control to Managerial and Emotionality to Security. However, the Technical anchor is less obvious unless it is low Affection. However, there may be a closer link with Driver's "Career Concepts". Driver¹⁵ suggests that people tend to fall into one of four groups according to the way in which their career develops. These he describes as:

¹⁴ Schein, E "The Individual, the organization and the career; a conceptual scheme", **J. Applied Behavioural Science**, 7 401-426

¹⁵ Driver, M.J. "Careers: A Review of Personal and Organizational Research", in **International Review of Industrial and Organizational Psychology**, 1988 C L Cooper and I Robertson eds.



Table 14 Driver's Career Concepts

- 1. **Steady State** *a choice is made once and involves a lifetime commitment*
- 2. **Linear** *career activity continues throughout life as one moves up an occupational ladder*
- 3. **Spiral:** *career choice evolves through a series of occupations (7-10 year duration) where each new choice builds upon the past and develops new skills*
- 4. **Transitory** *career choice is almost continuous - fields, organisations, jobs change over 1-4 year intervals with variety the dominant force*

These Career Concepts do seem to have a logical link to the Big 5. The decisiveness and commitment typical of W+ would seem to link to **Steady State**. The slower, more conservative but responsible C+ would fit a **Linear** career concept. The variety and inconsistency typical of E+ would suggest the **Transitory** Career model while the more experiential, deep thinking aspects of A+ would link to the **Spiral** Concept. However

there does not appear to be any direct link to Emotionality, apart, possibly from a stress reduction viewpoint. Perhaps this adds support to Brand's view that Emotionality should not be viewed as a factor just like any other.

Figure 7 **Facet**

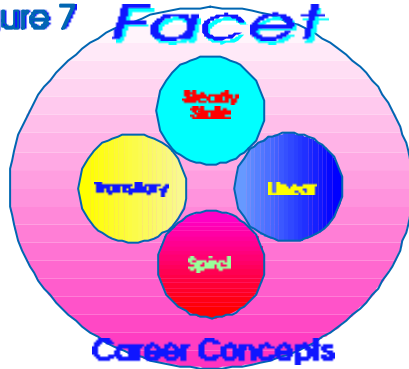


Figure 7

It would make sense that it provides an overlay, varying the intensity and consistency with which the other Career Concepts are felt. The hypothesised relationship between this model and the **Big 5** is seen in Fig 7.



Table 15: Big 5 Factor	Expressed Career Interest
<p style="text-align: center;">Will <i>(Steady State)</i></p>	<ul style="list-style-type: none"> • Control over others • Control over performance • Taking Decisions • Influencing others • Striving against odds and winning • Dreaming and Creating something • Thinking up new ideas • Leading people • A challenge • Creating something of my own
<p style="text-align: center;">Energy <i>(Transitory)</i></p>	<ul style="list-style-type: none"> • Leadership • Close relationships • Variety of challenges • Persuading and convincing • Entrepreneurial activities • Management in my own area • Meeting new people • Public recognition • Prestigious companies
<p style="text-align: center;">Affection <i>(Spiral)</i></p>	<ul style="list-style-type: none"> • To be of service to others • A sense of companionship • A worthwhile cause • To be of value to society • A sense of Team membership • Helping others • Contribution to the community
<p style="text-align: center;">Control <i>(Linear)</i></p>	<ul style="list-style-type: none"> • Status and respect • Work which requires precision and care • A system or schedule • Orderly workplace • Supervising/leading people • Social status • Team membership
<p style="text-align: center;">Emotionality</p>	<ul style="list-style-type: none"> • To be able to spend without worrying • To work with people I like • To be an expert in my field • Ample possessions



4. LEADERSHIP THEORY

The concept of different people having differing styles of Leadership goes back a long way. Many people, over many studies have developed their own views of what constitutes a Leader. In 1966 Bowers and Seashore¹⁶ looked at all of the various theories which were being proposed and concluded that there were in fact four Leadership types which emerged consistently (note the similarity to Norman's findings about personality, developed at about the same time). However, the most famous of these "four factor" models is surely that developed by Hersey & Blanchard: - their "Situational Leadership Model"¹⁷

This model is really very simple. It states that there are four different ways in which leaders can respond and the best leaders adapt their approach to the people they are dealing with. They also elaborate their model by bringing into the equation some measure of the maturity or "independence" of the people who are being led. This model has been used as the cornerstone of many management development programmes. It has great intuitive value and it seems easy to see how it would be applied. Unfortunately, in one of the few objective studies of the efficacy of the model, Blank, Weitzel and Green¹⁸ found little evidence to support this idea of the maturity of the target group being an important factor. If this is true then we are left with the basic four factor model, without the added complexity. How does this model fit **BIG 5**?

The four Leadership styles identified by Hersey and Blanchard (and roughly paralleled by Bowers and Seashore), are as follows:

¹⁶ BOWERS D G & SEASHORE S E "Predicting Organisational Effectiveness with a Four Factor Theory of Leadership" **Administrative Science Quarterly** 1966 11(2) 238-263

¹⁷ HERSEY P & BLANCHARD K, "Life Cycle Theory of Leadership", **Training and Development Journal**, 1962, 2, 6-34

¹⁸BLANK W, WEITZEL J R and GREEN S G "A Test of the Situational Leadership Theory" **Personnel Psychology** 1990, 43 pp579-597



Fig 8: Situational Leadership Model

<p>DELEGATOR: delegates broad responsibilities and expects subordinates to handle the details. Expect employees to find and correct their own errors. Emphasises <i>results</i>, not effort. Allows risk taking.</p>	<p>WILL</p>	<p>DIRECTOR: Provides detailed instructions, Sets specific goals and objectives, Checks frequently on progress. Enforces rules</p>
<p>ENERGY</p>		<p>CONTROL</p>
<p>FACILITATOR: Involves people in decisions. Makes people feel at home. Hold frequent meetings. Helps and supports subordinates. Listens to problems without criticising or judging.</p>	<p>AFFECTION</p>	<p>COACH: Represents management in a convincing manner. Sells employees on their own ability. Praises for good work. Provides feedback on progress.</p>

The relationship to **BIG 5** is clear although it appears to use the diagonals rather than the main axes of the model. Yet again, when looking at aspects of management development, personality factors materialise. Again however, Emotionality does not seem to have emerged. This may not be too surprising. Given the concept of Emotionality as an interpreting Factor rather than an element in its own right, it is likely that its effect would be to make some managers more confident, more stable and more able to bend and flex their style to suit the situation rather than according to mood and feeling. However, the relationship may not be truly linear. It is clear that very low levels of emotionality can lead to confidence bordering on complacency and the person just can't be bothered adjusting their behaviour, even though they would be able to do it very well. Such unemotional and unresponsive people can be viewed as unmotivated and lacking drive. (see *Facet* User Manual 1991 p13)

Here then we have yet another case where an understanding of the **BIG 5** can add value to management development programmes. There is considerable overlap between it and the Situational Leadership model, particularly in the simplified form which would

appear to stand up to examination. However, understanding the element of Emotionality can add significantly to the person's ability to use these new found management concepts and thereby develop managerial skills.





5. ENVIRONMENTAL MANAGEMENT

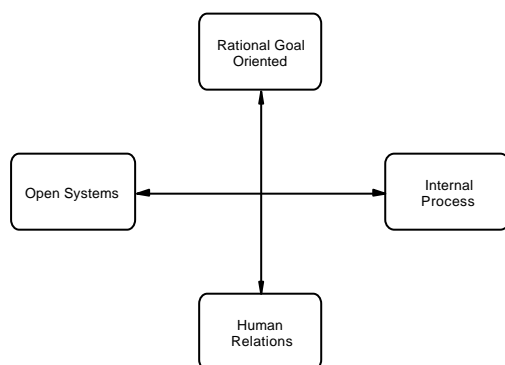
Like people, teams, departments, divisions, organisations and even marketplaces have their own styles. It is known that

- organisations are more successful where their style is in sympathy with the expectations of their customers.
- people are more motivated when they share the values of the organisation

If we redefine organisations to include divisions, departments and teams the customers can be viewed in the broader sense meaning people who use the outputs of the division, department or team. How can we classify customers?

Market Classification Model

Quinn and Rohrbaugh¹⁹ devised a simple four way classification system (the Competing Values Model) for organisations. They described organisations in the following way:



They suggested that these different types of organisations operated in very different ways, that they had different objectives, approached them through different means and as a result presented very different climates to their employees and images to their customers. Looked at from a different perspective, these markets also expected different things from their suppliers. The Quinn model has been expanded by other theorists (e.g. Gattorna and Chorn) and with each further expansion the link

between the unit (division/department/team etc.) and the individuals within it has become clearer. The full model is shown in the following tables.

If we are to develop careers in the way, which will maximise motivation, then it is very important that we understand the type of customers the person is dealing with.

¹⁹ **Quinn, R.E. & Rohrbaugh, J (1981)** "A Competing Values Approach to Organizational Effectiveness", *Public Productivity Review*, **5**, 122-140



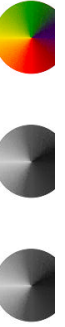
Market Classification Model

Goal Oriented	
Description:	Demanding
Means:	Plans, Goals
Ends:	Productivity
Service Style:	Committed
Reaction to Threat:	Resist
Reaction to Change:	Must fit Belief Structure
Values:	Leadership, Influence, Decisiveness
Mission:	Power, Authority
Decision Processes:	Centralised, Goal Oriented
Org Structure:	Personal Authority
Pace:	Top Priority
Demanded Image:	<i>The Big Name</i>

Open Systems	
Description:	Changing
Means:	Innovate
Ends:	Org Growth
Service Style:	Innovative
Reaction to Threat:	New Alternatives
Reaction to Change:	Positive
Values:	Creativity, Novelty, Excitement
Mission:	Innovation
Decision Processes:	Impulsive, Interactive
Org Structure:	Work Groups, Interactive
Pace:	Urgent
Demanded Image:	<i>The First</i>

Internal Processes:	
Description:	Conservative
Means:	Info Mgt
Ends:	Stability
Service Style:	Professional
Reaction to Threat:	Manage & Control
Reaction to Change:	Mistrusting
Values:	Application, Reason, Stability, Advantage
Mission:	Lines of authority,
Decision Processes:	Hierarchical, Experienced
Org Structure:	Planned
Pace:	
Demanded Image:	<i>The Professionals</i>

Human Relations	
Description:	Forgiving
Means:	Cohesion, morale
Ends:	HR Development
Service Style:	Considerate
Reaction to threat:	Reconcile
Reaction to Change:	Always consider others
Values:	Teamwork, Co- operation, Empathy
Mission	Synergy
Decision processes:	Consensus, Discussion
Org Structure:	Project Teams,
Pace:	Considerate
Demanded Image:	<i>Caring</i>

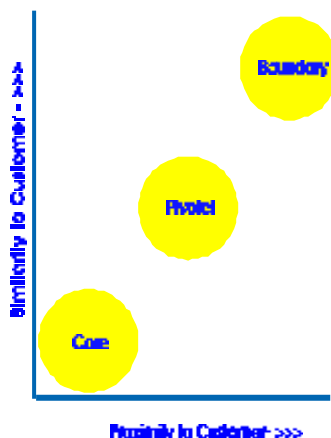


Boundary Role Management:

The next important aspect is to discover where in the organisation the person is. Some organisations may deal with customers who expect a very aggressive, entrepreneurial style. However, not all the people in the group need to reflect this style, it is sufficient that the customer forms the right impression. This is done via people who occupy the "boundaries" of the company and who are responsible for the external image and client management. These people include sales, marketing, customer service, purchase, supply and distribution among others. Getting this group right is referred to as "**Boundary Role Management**" and is critical for an organisation.

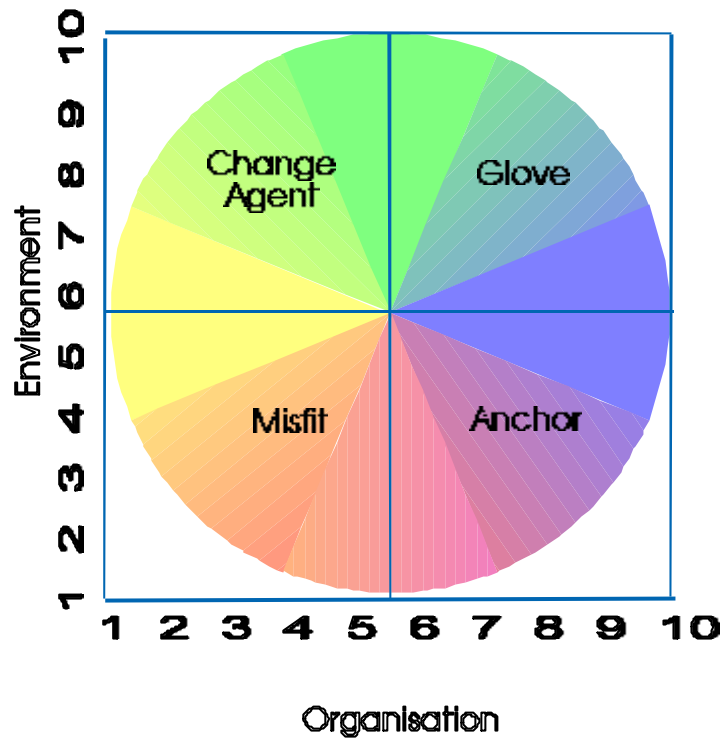
Boundary roles have a two-way focus. To the customers they are the external faces of the company, to the company they are the filters through which external information is passed. Boundary roles require people who are able to understand alternative views and opinions depending on their audience. There is great emphasis on interpersonal skills, communications and impact. The closer the person is to that boundary, the more important it is that a boundary role is adopted. There are three general types of roles to consider seen in Figure 9.

Figure 9: Boundary Role Management



1. **Boundary** roles which are close to the interface. It is very important that these roles are seen to reflect the organisation appropriately.
2. **Pivotal** roles which face inwards and outwards almost equally. Here there is great emphasis on flexibility and political sensitivity
3. **Core** roles which are rarely in contact with the boundaries and therefore there is much greater tolerance of mismatches.

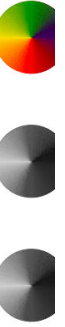
Using this concept we can determine, for any individual or group, the "fit" between them and the organisation on the one hand and the environment on the other. This is shown in the following diagram.



This gives rise to four simple classifications, some of which are more likely to occur than other. They are:

1. **Anchor** - probably most common due to current selection and promotion practices. Confirms and reinforces the existing culture and style.
2. **Change Agent** - usually appears as a result of someone having a hunch that they will be "good for us". Change agents by definition do not "fit" easily since they are not like the existing group. They tend to have a "make or break" existence.
3. **Glove** - This type is only likely if the market and the organisation are already closely matched. Then someone who matches one will match the other. The further apart the organisation and market are the less likely a Glove will appear
4. **Misfit** - An organisation is quite unlikely to have many since a natural process of selection will tend to weed them out. People who don't fit, don't stay.

The five-factor model can provide description of individuals, organisations and environments using a common typology.



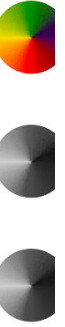
6. OTHER MODELS

It doesn't take much imagination to see how many other models also fit the **BIG 5**. For example, Wilson Learning's "Social Styles" concept describes people as Analytical, Driving, Expressive and Amiable while the "Integro Model" also uses a four factor approach. Even the most widely used Ipsative test around, the PPA (aka Cleaver, Best, ACID, McQuaig, PPS etc.) purports a four factor structure even if it seems very unstable. (Again no Emotionality!). However the **BIG 5** do provide some basic guidelines for evaluating suggested approaches. Clearly a minimum of four factors would seem to be required but even then users should remember that all of the differences due to Emotionality will be ignored. Models with fewer than 4 scales are certainly missing something, either by ignoring it or by blurring two or more concepts together.

Should we look to much more complex models? There are two guiding considerations. First, can the added complexity be developed reliably? That is, do the additional factors have sufficiently robust psychometric properties to prove that they exist as (relatively) independent entities? Secondly, can people actually use the additional information? Miller²⁰ suggested in a seminal article, that people have difficulty assimilating more than about seven aspects of an object. This has been confirmed time and time again in perception work as diverse as Assessment Centre Design and Market Research. If you try to use too many elements, (factors, criteria, dimensions) raters have difficulty in differentiating between them. This in turn leads to pronounced "halo" where judgements are generalised into a generally "good" or "bad", "favour" or "disfavour".

If however it is essential that more than five factors are produced, (and let us remember that the 16PF has 16 and the OPQ 30 factors; - both have been shown to reduce to the **BIG 5** under analysis), then there may be ways of breaking Energy down in to Enthusiasm, Sociability and Adaptability; Control into Discipline and Responsibility and so on for Will, Affection and Emotionality.

²⁰MILLER G A "The magical number seven, plus or minus two: some limits to our capacity for processing information", **Psychological Review**, 1956, 63, p81-97



7. CONCLUSION

The consensus among modern personality theorists is that about 5 factors (excluding Intelligence) are required to successfully cover the range of human individual differences. These fundamental five have become known through the literature as the **BIG 5** and most established personality questionnaires can be shown to break down into these factors. However, apart from *Facet* and the RPQ in the UK and the NEO-PI in the US there seem to be few instruments available to measure the **BIG 5** directly.

Similarly, many of the widely used management development tools can be shown to share the same structure although most ignore the concept of Emotionality. However, the processes (usually questionnaires) used to develop the profiles in many programmes are often woefully inadequate in psychometric terms. How much more powerful would such programmes be if the profiles derived were reliable and consistent?

An understanding of the **BIG 5** factors can provide a very solid basis for almost any form of management development programme. By sharing a common language people can understand themselves, their role within a team, their preferred management style (including their ability to adapt this style if they wanted to), and their fit within organisations and even industries without resorting to the confusion of multiple models and languages. This fragmentation of psychology into so many models has done little to enhance the reputation of psychologists. "*They can't even agree amongst themselves*" would be a just cry.

The **BIG 5** model provides a reliable, well-researched structure that can be used in all aspects of management development. Although there is plenty of room for more work, particularly on the effect of Emotionality on observable behaviour (Emotionality is the one factor which it is almost impossible to estimate from external judgements- see Powell & Stewart ²¹), it does seem that there is, already in place, a cohesive body of knowledge which Personnel professionals can use and build upon. My Chemist friend may be able to relax and ease his frustration!

²¹ POWELL G E & STEWART R A "*The Relationship of Personality to Antisocial and Neurotic Behaviours as Observed by Teachers*", **Personality and Individual Differences**, Vol. 4 pp 97-100, 1983