

MAKING DECISIONS ON PEOPLE IN BUSINESS: MEASUREMENT AND METHOD

Leyla Ziyal

INTRODUCTION

Beyond Gut Feel

Our objectives in writing this article are twofold: first we aim to take decision making about people beyond "gut feel"; and second, we aim to make psychological measurement *relevant* by showing how it can address the problem-objectives of strategic people management.

The critical challenge of our time is to plan the human aspect of business. A major path towards meeting this challenge is the *continuous and multidimensional assessment of human functional capability*[1].

We hope to chart this path by outlining and exploring some key concepts about measurement and method as a first step towards taking strategic people decisions.

A Positive Pool

People-managers have to predict behaviour in many business contexts. The following are some examples: planning resourcing and succession; predicting the course and impact of change in policy or plan; predicting the effects of introducing or fine-tuning initiatives such as appraisal, motivation and stress; forecasting the stability and duration of discrepancies between expected and observed performance.

Effective behaviour in each of these contexts is determined by sets of key attributes which are *critical* for success and *specific* to the named context.

To predict behaviour reliably three tasks must be accomplished. These are:

- (1) Specify the context and define its problem-objective.
- (2) Specify the special demands of that problem-objective.
- (3) Identify the people who possess the key attributes to meet the specified special demands.

These tasks cannot be accomplished by "gut feel". If managers ask the right questions, however, and isolate their problem-objective as tasks (1) and (2) prescribe, psychological measurement will meet the challenge of task (3) to high levels of probability. It will produce a positive pool of candidates who possess the key attributes to meet the special demands of the contextual problem-objective they have named and defined.

Once a positive pool is available "gut feel" may become a valuable guide: it may refine the selection process in the light of criteria which lie outside the compass of psychological measurement.

The advantage of constructing a positive pool *first* and then mobilising "gut feel" is that a positive pool saves both time and money.

It saves time because it ensures that decision makers expend it *and* their energy to get to know and form impressions only about candidates who are likely to succeed.

It saves money because it minimises the chances of a false positive (a candidate who in reality does not possess the requisite attributes but appears to) or a false negative (one who in reality possesses the requisite attributes but who appears not to) and so prevents the occurrence of high-cost mistakes.

Overview: Asking the Right Questions

We determined that the three tasks to be accomplished before making a prediction are: specify the context; specify the problem-objective; and identify the people.

These tasks are pivoted on the key questions of “where/why”, “what”, “who” and “how”.

These are the questions we aim to frame in the remainder of this article in the following outline:

- *Measurement*
 - identify the people
 - what do we measure and how?
- *Method*
 - specify the context and define the objective
 - considerations of method.
- *Conclusions.*

MEASUREMENT

Identify the People

When managers propose person X as “having top management potential” or select person Y as best suited to meet a specific challenge, they are predicting that X and Y will show the behaviours which lead to success in response to their named problem-objective.

In so proposing (or not) X and Y managers are *inferring* future behaviour on the basis of their knowledge of X and Y in past or current contexts.

Predictions therefore are *inference statements*.

A “good prediction” must meet absolutely three key standards. These are *reliability*, *validity* and *completeness*.

Psychological measurement achieves these three standards because it informs fully about people’s psychological economy by assessing those of their attributes which we intend it to assess and producing results which are replicable on repeated assessments.

Psychological economy is a mediating concept or metaphor which evokes the use of resources, assets and liabilities by nations in their national economy.

Like national economy, psychological economy is a measure of how adaptively people use their attributes and resources to anticipate and manage the special demands which impinge upon them.

We define psychological economy as a dynamic reservoir of intellectual abilities, personality attributes and the adaptive functions served by each singly and interactively which produce the individual’s enduring and consistent behaviour patterns in given situations[1, p. 9].

Predictions about behaviour are statements about psychological economy: in proposing (or not) X and Y managers predict that X and Y will (or will not) use their personal resources adaptively to produce successful behaviours in given situations.

To propose or not is a major decision and it is for this reason that having an accurate model of psychological economy is critical to making “good predictions”.

Psychological measurement constructs such a model by identifying, specifying and explaining *asset-and-liability* interactions between attributes and predicting the impact of these interactions on behaviour in relation to named problem objectives and for given contexts.

However, before we can ascertain *how* people use their resources we need to establish *what* resources they possess.

This means that we must establish what resources, and how much, X and Y have now (performance) and what and how much their functional capability is likely to be in the future (potential).

Psychological measurement therefore does two things: it assesses and quantifies individual attributes and functional capability; and it constructs a model of individual psychological economy by identifying attribute interactions, explaining them and predicting their impact on behaviour.

What do we Measure and How?

To make accurate decisions about people we need to have reliable information about *intelligence* and *personality*: these are two key components of psychological economy which singly and interactively have a major impact on behaviour.

Intelligence is the aggregation of abilities measured by an intelligence test; *personality* is

the aggregation of enduring propensities to behave in certain person-significant ways.

Intelligence and *personality* have their own groups of attributes which develop from the most specific skills and acts to the most complex aggregated abilities and behaviours (see Table I).

Table I depicts a hierarchic organisation of attributes in four levels from the lowest level 1 to the highest level 4. This arrangement is consistent with general personality theory and research evidence[2,3] and with theory and research evidence on brain function and intellectual abilities[4].

The Table indicates that for *intelligence* perception and movement[4, p. 11] are the simplest skills at level 1 and general intelligence is the ability of the highest order at level 4.

For *personality* isolated acts[3, p. 9] at level 1 are the most specific behaviours and “dimension or type” at level 4 is the attribute of the highest order.

General intelligence and personality dimensions or type generate the most far-reaching, enduring and significant behaviours which characterise the individual.

An example of “perception and movement” is the skill to recognise letters and the skill to hold a pen. These simple skills develop into the “integrated skills” of reading and writing; reading and writing integrate with other “integrated skills” to constitute related “intellectual abilities” which in turn aggregate with other intellectual abilities and develop into “general intelligence”.

An example of an isolated act is initiating conversation with a stranger. If this isolated act is repeated over time it becomes “habitual behaviour” and if it frequently occurs with other habitual behaviours — for instance, going to parties, together they

Level	Intelligence	Personality
4	General intelligence	Dimension or type
3	Intellectual abilities	Traits
2	Integrated skills	Habitual behaviour
1	Perception and movement	Isolated acts

TABLE I.
The Aggregated Development of Intelligence and Personality Attributes

develop into a “trait” of sociability. This trait may co-exist with other traits such as responsiveness, outgoingness, liveliness, in which case they in turn aggregate and develop into the “dimension or type” of extroversion.

Although we observe and measure Table I attributes in and through behaviour they are biologically determined[5]. This means that they remain constant over the years even though environmental influences may accentuate or attenuate them.

Because of their “biological basis” Table I attributes are the key and the core of human behaviour. They are also the key and core of what we must know about people if we are to make sound strategic decisions about them in relation to our business.

To make such decisions, however, we do not need to know about specific skills or isolated acts; we can safely skip levels 1 and 2 and begin our measurement of behaviour at level 4, returning to level 3 as and when necessary, and working our way up as shown in Figure 1.

The level 3 attributes of “intellectual abilities” and “traits” form the base of Figure 1 and the level 4 attributes of “general intelligence” and “dimension or type” are superseded by style attributes for intelligence and personality at level 5.

We also see from Figure 1 that the distinction between intelligence and personality attributes gradually disappears as style attributes merge into “self-in-context” at level 6.

Style at level 5 is an attribute of *self-presentation* and is determined by

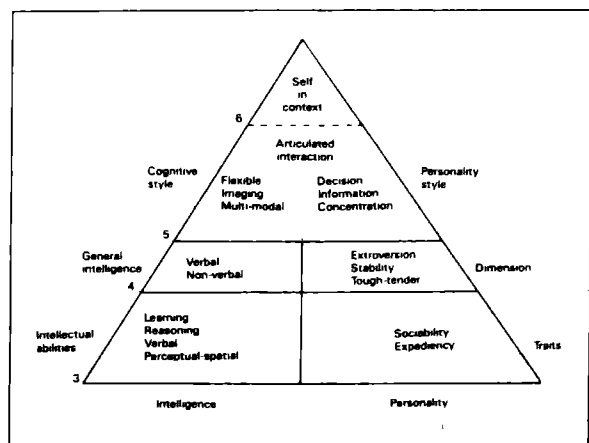


FIGURE 1.
The Hierarchic Organisation of Attributes with Some Examples

both biological givens and environmental effects.

Style, therefore, is the product of nature and nurture; it refers to the characteristic behaviours which we adopt to present ourselves to others in a way which is congruent with our perceptions, interpretations and definitions of ourselves, our environment and our experiences.

Level 6 represents the challenge we must meet and we denote it as self-in-context; it is the model of psychological economy for the individual which psychological measurement constructs to aid managerial decisions.

The assessment of level 4 attributes prepares us to analyse style because first, it specifies what efficiency is available to organise and make sense of experiences and events; and second, it indicates how these experiences and events are likely to be ordered and anchored in personal history.

If there is an inconsistency in level 4 results we “fan out” our assessment by gathering information from level 3. For example if we identify a discrepancy in general intelligence we investigate this by assessing intellectual abilities; if personality dimensions yield an unexpected pattern we measure traits to locate the contributing traits and evaluate their likely impact.

Level 4 findings set the scene for exploring cognitive and personality style and their interaction.

For cognitive style we need to know if the individual’s mode of perception is articulated or diffuse; if it is predominantly verbal, pictorial or spatial; if it is flexible or fixed; if it is multi-focused or sequential.

This analysis tells us if people perceive themselves, their experiences and their environment as differentiated and structured, or if their mode of perceiving is undifferentiated and global; if they “image” events in words, pictures or spatial relations; if their perceptual focus is flexible to produce elastic responses, or if it is fixed to produce predictable responses; if they function at several levels simultaneously or if they function sequentially by dealing with things one at a time.

For personality style we need to know how people’s personality dimensions define their approach to the environment and channel their orientation to others.

We learn how people make decisions; how they gather information; how they concentrate; how they relate to others; how they generate and sustain their own

motivation and how they motivate other people.

The interaction of intelligence and personality is paramount and critical at level 5. The impact of either one on the other can be enabling or inhibiting. For example, the dimension of *extroversion* with a significant contribution from the trait *changeability* may exacerbate the cognitive style of functioning at several levels simultaneously into *distractability*; on the other hand, the same personality composition may provide a balance for the sequential style of dealing with things one at a time.

Verbal imaging is likely to facilitate the extrovert’s interactions with people and predominantly spatial imaging is likely to enhance the introvert’s relations with things; the articulated style will enhance the extrovert’s long-range planning and concentration and the flexible style will enhance the introvert’s grasp of possibilities and adaptability.

Psychological measurement has to be *comprehensive* and *complete* because our task is to predict if a person has the articulated flexibility of intellect and personality to master the diverse special demands of today’s increasingly complex business needs.

It is for this reason that all our predictive efforts are directed at forecasting the success of the self-in-context.

Self-in-context is a composite of three social realities; the self, the context and the interaction between the two or between any significant others affected by the actions of the self.

When a person is in context before others and fails to meet fostered expectations this failure has disruptive effects upon all three realities.

For the self, failure has a damaging impact on the person’s self-definition and identification with the group which may cause a severance between the self and the world.

For the context, in whose name the person appears, the failure of the person is the failure of that context because others perceive the person as a responsible representative of that context.

For the interaction, the person’s failure may make previous positions untenable, previous definitions inapplicable and so suspend or end all dialogue.

Predictions which result in false positives or in false negatives are of equal import; the disruptive consequences of a false positive

will be experienced as soon as expectations cease to be met; those of a false negative will be felt in the apparent lack of a person to fulfil unmet expectations which persist.

The primary purpose of psychological measurement is to improve the accuracy of decisions so that these disruptive consequences do not occur and the integrity of the three social realities of self-in-context remains intact.

METHOD

Specify the Context and Define the Objective

In the previous section we analysed the process of measurement for predicting the success of the self-in-context.

Our assessment objective throughout was to forecast key behaviours. Some key behaviour examples are: planning; problem solving; concentration; adaptability; articulateness; flexibility; decision making; self and other motivation; work mode and capacity.

These and other behaviours are critical to registering success in any business regardless of type, context, or challenge.

Businesses require these key behaviours for effectiveness and success; the more complex the tasks and missions of a business, the higher it will require the level of these key behaviours to be.

These behaviours are the manifestations of key and core people attributes.

Key and core attributes are the core attributes which people must possess to *meet effectively the essential and comprehensive requirements* of any business and which are the *key to registering success* in any business context.

We measure key and core attributes to assess key behaviours and so predict the success of self-in-context.

For example measuring level 4 attributes will enable us to *infer* key behaviours such as problem-solving effectiveness, attitude to risk and consistency of motivation.

Level 5 attributes will enable us to make inferences about the mode-function of key behaviours such as how people translate motivation into motivated behaviour, how they use their repertoire of problem-solving strategies, how they orient to facts and how they relate to others.

Since the requirement for key and core

attributes is *unconditional*, their assessment objectives are context and level-related. Assessment must establish the existing level of key and core attributes and their adaptive combinations in the individual's psychological economy as required by the specific context.

For example a "works unit" context will require a different key and core attribute level and combination from the boardroom of an international bank; the catering department of a pharmaceutical company will set a different level and combination from its legal department, which again will demand a level and combination of key and core attributes different from its marketing department.

An example of an assessment objective for key and core attributes might be to: (1) predict boardroom potential in existing human capital, and (2) devise a system of prediction for continuous application which constructs for decision makers a positive pool of succession-planned candidates at any one time.

This is a "dual-task" assessment objective where each task is an objective in itself. The purpose of task 1 is to *aid strategic decision making* and the purpose of task 2 is to provide for management a *method and technology* of continuous and autonomous assessment of functional capability.

Other assessment objectives have more limited scope and address more specific issues. These objectives require the investigation of *critical attributes*.

Critical attributes are attributes which are required successfully to meet the unique special demands of only a particular objective and whose assessment is *predicated upon and additional to* the assessment of key and core attributes.

Some examples of assessment objectives for critical attributes are to: contribute to a team-building initiative by team-role typing for the construction of balanced teams; assess creativity as the specific effectiveness requirement for a particular challenge; measure stress-proneness as part of a project for diagnosing organisation stress.

"Free-floating" or survey-type assessments will not generate reliable predictions. If, however, we clearly name and define our assessment objective for psychological measurement to address we are likely to obtain results which will aid the speed and accuracy of our decisions.

Considerations of Method: Predication, Prediction and the Direction of Measurement

Predication, prediction and the direction of measurement are important considerations of method.

Predication is the “nesting in” or affirmation of one variable by another. We use this term to clarify the relationship between key and core and critical attributes.

The accuracy of prediction increases if what we must predict is predicated on what we reliably know as a result of systematic inquiry.

Measurement must produce reliable knowledge so as to generate accurate prediction. To achieve this, it must follow a planned direction.

Critical attributes are predicated upon key and core attributes. This means that we cannot reliably predict performance as a result of assessing critical attributes if we do not also assess key and core attributes.

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PREDICATION ENHANCES TIME- AND COST-EFFECTIVENESS

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The reason for this is that we can infer critical attributes from our measurement of key and core attributes, but we cannot infer key and core attributes from our measurement of critical attributes.

For example our key and core results allow us to predict the broad parameters of the team-roles best suited for people. We further refine this prediction by specifying and defining the roles in detail to increase the probability of a good match for a balanced team.

Team-roles, however, tell us nothing about the level of effectiveness and achievement we can expect from the team and its members.

We construct a builders’ team and a strategy formulators’ team by measuring the same critical attributes to role-type for each team; but role-typing will not enable us to predict if the level of effectiveness in each team is adequate to meet its particular and different special demands.

Nor will role-typing help us differentiate between the functional capabilities of the builders and the strategy formulators.

If we aim to create a balanced team which will also be high-performing we must measure *the key and core attributes of the candidates as well as role-type them.*

Predication enhances time- and cost-effectiveness because it enables a coherent collation of results. The assessment of key and core attributes generates a greater number of predictions and has wider and richer scope than the assessment of critical attributes.

Therefore a database of key and core results, which incorporates critical attribute results, is a more effective aid to decision making than a collection of single episode and unpredicated critical attribute results.

Assessment objectives may vary in type and in the problems they present; they may be comprehensive and strategic as in succession planning; they may be relatively specific and tactical as in team-typing; or they may be a combination of the two as in defining the boundaries for appraisal ratings to improve the validity of appraisal systems.

Defining the boundary for appraisal judgements is a tactical objective because it increases inter-appraiser agreement.

It is also a strategic objective because it validates the entire appraisal system and so improves the system’s effectiveness in meeting the objectives for which it was set up.

To answer these and other assessment objectives we must adopt a direction of measurement which will ensure reliable prediction. This direction is the direction of prediction (see Figure 2).

Figure 2 shows that prediction proceeds upwards from level 4 in line with the hierarchic organisation of key and core

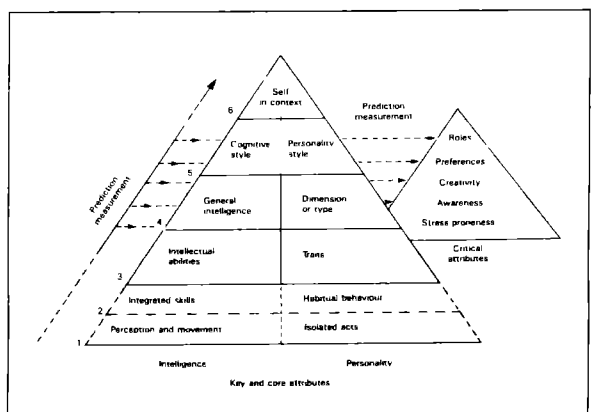


FIGURE 2.
The Method of Measurement and the Direction of Prediction for Key and Core and Critical Attributes

attributes and generates lateral pointers towards critical attributes. Measurement follows the path of prediction precisely.

This means that we cannot stand the key and core attributes triangle on its head and hope to infer lower levels or simply measure at level 5 to predict self-in-context.

This is because locating an articulated style for example, does not inform us about the level of that articulation and it does not tell us about its asset-liability interactions; we need to have this information to identify the person whose articulated style best answers our requirements.

We can only obtain this information if we measure at level 4 and refer to level 3 as appropriate.

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THE PRIMARY TASK OF MEASUREMENT IS TO AID DECISION MAKING

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Similarly, locating an extroverted style does not specify the level and interactive potential of the extroversion; we need to measure personality dimensions to ascertain the correspondence between them and style and to compare the level of extroversion with the extroversion level of others.

Measurement must follow the path of prediction when assessing critical attributes also; we must not tilt the critical attribute triangle leftwards and for example measure only creativity to predict success in meeting the creativity demands of a special objective.

This is because establishing that a person is creative tells us nothing about the level of the creative effort and the quality of its output in comparison with other people's creative effort.

The primary task of measurement is to aid decision making. It is therefore a key methodological requirement that measurement be consistent with the direction of prediction.

CONCLUSIONS

This article is in response to the key challenge of our time, and this challenge demands that management give strategic shape to the human aspect of business.

Our thesis is that psychological assessment is a first step towards meeting this challenge because it produces information which is relevant, more reliable than "gut feel" and effective as an aid to making strategic decisions about people in business.

It generates reliable predictions about the success of the individual in a named and defined context by measuring key and critical attributes to construct an accurate model of psychological economy.

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MEASUREMENT RESULTS FORM A COHERENT PREDICTIVE DATABASE

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Measurement results form a coherent predictive database and predicate other single-episode assessment results.

In this way psychological assessment provides management with a method for continuously assessing the functional capability of its human capital as an integral part of making decisions about people in business.

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Leyla Ziyal is a Chartered Consultant Psychologist, and is Principal of her own consultancy — *ā'ccent on Learning to Love Change*.
