

**Introduction
to the Theory
of the
MORRISBY
PROFILE**



Morrisby Profile

Introduction to the Theory

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Theory of the Morrisby Profile

The Morrisby Profile is in many ways unlike the majority of selection tests on the market today.

In the first place, it assumes selectors are interested in personal qualities, abilities and general intelligence, and covers all three of these areas.

In the second place, it offers a profile interpretation of each candidate, allowing a balanced picture to be drawn of his or her strengths and weaknesses, both as measured against other people and as against the individual's own standard.

Finally, it allows for the complex effects that different skills, aptitudes and qualities may have on one another.

Those interested in a full discussion of the theory of the Morrisby Battery are referred to J. R. Morrisby's "Theory of the Differential Test Battery", published by EITS (1989). In these pages, it is not possible to do full justice to all the theoretical ramifications of its construction.

However, the fundamental strength of the battery lies in the stress it places on differentials rather than on merely summative scores. In other words, the belief that "more" of any quality must necessarily be better than "less" of any quality has no place in the Morrisby Profile. Just as a high jumper does not need "more" weight or five and a half "more" legs to be a better high jumper, a successful applicant for a job as a journalist is not necessarily going to be more successful than another if she has higher mechanical ability than her competitor.

What matters, in assessing a candidate's or a client's profile, is not the "amount" of ability revealed by each test, but the way each ability relates to the others. If two candidates have the same high score on the numerical ability test, but one of them scores lower on verbal ability while the other scores even more highly on verbal ability, then the first candidate, whose own personal "best" score is in numerical ability, is going to be better suited, all other factors being equal, to a "numbers-based", commercial career, than the second candidate, whose greater gifts lie in the verbal field.

Although this gifted candidate scores highly on the numerical test, the fact that it is not his preferred ability suggests that, although he is fundamentally capable of following a career in that field, he would only be really happy and successful if his verbal gifts were considered and brought into play.

The battery is designed for use in selection, and has been standardised using scale scores from 1 to 20 so that it is possible to measure a candidate's score against the score for the population or work group he or she represents. Thus it is perfectly possible to take each score on each test of the battery and see how "well" a candidate has done in relation to his or her peers.

Nevertheless, this, although an inevitable part of the selection process, would be a very partial and shortsighted use of the powerful capacity of the Morrisby Profile. Such a summative, "adding-up" approach, assuming each test to be of equal value, giving some kind of overall final score at the end of the adding up process, ignores the real value of the Morrisby Profile.

Instead, although the battery has been normed so that candidates' scores may be properly placed in the context of their population, the strength of the Morrisby Profile lies in its ability to interpret the profile of the individual from the differentials that are apparent between groups of scores. For example, irrespective of the actual scores attained on the Shapes Test and the Mechanical Ability Test, the relationship between those scores can be interpreted to show whether the individual prefers a detailed, step by step work style or takes a more holistic, overall view.

Similarly, and again, irrespective of the actual scores, the differential between Speed Tests 1 and 2 will show whether a candidate has a flexible, tenacious or inflexible approach to work. Yet again, the differential between the Compound Series Test, which measures abstract reasoning, and the average of the three scores of the General Ability Tests, indicates whether the candidate prefers to learn by understanding from first principles, or through the acquisition of procedures and knowledge. For a further, more detailed discussion of the differentials, readers are referred to the section on Interpretation in the Morrisby Profile Manual.

Obviously, the actual level of the scores is relevant in determining whether or not a candidate could realistically function in the projected environment, but the differentials are of prime importance. A "flat" profile of 15 scale scores right down the line - in other words, high scores on all measures - may indicate a poorer candidate, for the selector's purposes, than the one whose clear preferences and interests are signalled by the existence of marked differentials in the ability scores.

An enormous amount of time would be saved and many psychometricians made redundant if one test could do the job of a whole battery. Unfortunately, no such test has yet been devised. There are two arguments for preferring several tests to one; first, that one test cannot measure many different aspects of a person, and secondly, that several tests can act as "confirmatory" tests for each other.

There is probably little merit in the second argument; if one test really does measure verbal ability, for instance, there seems little point in double checking it with a second verbal test. However, the assumption that there are many different aspects to ability, each requiring a different form of test, is fundamental to the Morrisby Profile .

If no relationship existed between these different aspects, it would be relatively easy to devise a battery of tests which would give nearly perfect prediction. A test which correlated highly with, say, numerical ability would clearly not correlate at all with verbal ability if no relationship between verbal and numerical ability existed. Unfortunately, such relationships do exist, possibly because of some underlying relationship with an abstraction such as "academic ability", or a good memory, or the ability to manipulate symbols rather than objects.

Traditionally, test batteries have been so constructed that, at least ideally, each component test correlated positively and equally with the criterion; the 'ideal measure' of the quality under discussion. Provided that each test intercorrelated with none of the others, such a battery of ten tests could give virtually perfect prediction. Because the traditional battery assumes that each aspect of ability is separate from each of the others and bears no relationship to any of them, scores on each test can be simply added together and a measure of ability produced.

The basic assumption of such a battery is that each test correlates positively with the aspect of ability which it measures, and has no significant relationship, positive or negative, with any other aspect of ability.

However, it does seem that, in constructing a battery of tests to measure various aspects of ability, it is necessary to accept the fact of intercorrelations between those tests. In practice, it is very unusual for intercorrelations between tests to fall below the level of the criterion correlations. This means that a battery of tests constructed along traditional lines would need to contain an enormous number of tests if it were to approach maximum predictive value.

The inevitable intercorrelations would greatly lower the efficiency of the battery, because it could not be assumed that each test was measuring a particular ability and nothing else.

Where there are such inter-correlations, even an infinite number of tests in a traditional battery would not allow perfect prediction to take place.

However, the assumption that an effective test must correlate positively with the criterion, and with no other test in its battery, is fallacious. In practice, we are all aware of high negative correlations between predictors and criteria - stereotypes such as the absent-minded professor suggest how often we assume that practical competence and scientific or artistic genius have a negative relationship.

The Morrisby Profile allows for the relationship between aspects of ability, both positive and negative, and this is what gives it its differential nature. Many of the tests inter-correlate, either positively or negatively, because most aspects of ability bear a positive or negative relationship to one another. This is not a disadvantage, as it would be in a traditionally conceived battery, because instead of contributing equally towards a final "ability" score, the separate tests and sub-groups of tests allow a profile of the candidate to be built up from the differences between scores on pairs or subgroups of the tests.

Although the Morrisby Profile also allows for a traditional assessment to be made on the basis of absolute levels of scores, it permits much subtler distinctions to be made than the traditional battery can generate. Unlike a traditional test battery, the separate tests of the Morrisby Profile do not each measure some abstraction called "ability". Instead, each measures some specific aspect of ability, and none of them measures each and every ability.

This allows the battery much greater flexibility. The separate parts of the battery can be used to measure a desired, correlated quality in the normal manner. In addition, the very low correlations of some tests with criteria they were not designed to measure, coupled with positive correlations between other tests and the same criteria, allow differentials to be established between the test scores. This allows the use of profiling in the interpretation of results. When interpreting test scores, it is important to examine the relationship between the various abilities, and to be interested in both the differences (or differentials) between two test scores and their average level.

Thus, for instance, a scale score of 15 for verbal ability and 9 for numerical ability does not indicate an "average ability level" of 12, as it would in a traditional battery. The difference of 6 scale scores between the preferred verbal ability and numeracy is in itself of interest, and to ignore the high verbal score and the implications of the preference would be to miss the real strength of the Morrisby Profile.

The importance of a differential, rather than a merely summative approach may be seen in the following example.

Suppose engineering potential is measured by the Perceptual test, and verbal facility is not. If there is a difference between the perceptual and verbal scores which is highly in favour of the Perceptual Test, that indicates success in the engineering field much more strongly, all other things being equal, than the high perceptual measure alone. If this seems counter-intuitive, consider these two candidates:

	Perceptual Test	Verbal Test
Candidate 1	16	20
Candidate 2	16	12

The theory of the Morrisby Profile predicts that Candidate 1 would be a poorer engineer than Candidate 2, because of the high correlation between Perceptual ability and engineering, and because of the low correlation between verbal ability and engineering. It is, if you like, as unlikely that a high verbal score would make a good engineer as it is likely that a high perceptual score would predict one. All other things being equal, the candidate whose preferred ability is the perceptual would be the wiser choice.

Much has been written recently about the "ipsative" debate; or the controversial use of ranked scores derived from ipsative tests. An ipsative test is one which seeks, by means of forced choice questions assessing different dimensions, to establish a candidate's preferences.

For example, a candidate may be asked to make a choice between listening to a symphony orchestra and going to a party. The answer may indicate a preference for social over cultural activities, but cannot actually measure sociability - or cultural level - against the rest of the population she represents. She may enjoy both activities almost equally, whereas another very unsociable candidate giving the same answer may loathe the very thought of classical music, but, as their actual response is the same, any ranking done on a basis of those answers would assume equal levels of sociability.

The usefulness of the ipsative approach lies in its ability to generate a profile of an individual in her or his own terms; to allow an assessor to see the candidate's preferences without allowing them to be clouded by comparison with others. This is a particularly useful approach in the context of vocational guidance and counselling, when clients expect to be taken on their own terms without feeling that "their" strongest quality is a poor diluted trait in comparison with their neighbour's. It has its uses too in selection, in allowing an assessor to see where a particular candidate's relative strengths and weaknesses lie.

However, the ipsative approach does not allow two candidates to be fairly compared, for all the foregoing reasons. To do that, a normative approach must be employed; that is, one should be able to relate each candidate's score on each test to standardized norms showing what the scores really mean in comparison with scores gained by other candidates.

In practice, both the ipsative and the normative approaches are important in selection and in guidance, and the Morrisby Profile allows both to be utilised.

The differential nature of the battery permits full use of the ipsative approach, so that the shape of the candidate's profile is examined rather than the sum of his scores. However, it is also fully normed so that the scale score on each test allows selectors to place the candidate in context when ranked with other contenders.

The Morrisby Profile is a particularly flexible, powerful instrument, combining high predictive power with wide applicability. It can be used on all adult occupational groups, assuming the existence of basic literacy levels, although the Compound Series Test can be used alone on non-readers.

However, it is important that an instrument capable of such fine discrimination is properly and efficiently used. Poor administration, sloppy interpretation or inadequate feedback will rob any test of most of its utility, and it is essential that both the principles and practice of the Morrisby Profile are fully understood by intending practitioners. It is strongly recommended that newly trained users of the battery familiarise themselves fully with the information contained in the Manual, and that they continue to update and refresh their administration and interpretation techniques.