

**THE MBTI AND
THE FIVE FACTOR MODEL**

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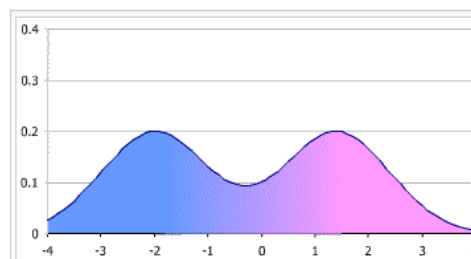
“I’d rather fight than switch!” Such is the stance of many of us when we become invested in, comfortable with, familiar with, in love with, a tool that works for us. There are just too many items on the “To Do” list to justify learning a new tool when the current tool works, or appears to work, satisfactorily.

Such was the dilemma facing Paul Costa and Jeff McCrae, directors of the Baltimore Longitudinal Study on Aging. Charged with describing the normal development of adult personality over the lifespan, Costa and McCrae were using, among other instruments, the Myers-Briggs Type Indicator (MBTI) when they heard about a supposedly better tool — the Five-Factor Model (FFM), or the Big Five. Their first reaction was to discount the FFM, but repeated arguments from credible researchers led them to take a closer look. The result was, in essence, a white paper of their own: “Reinterpreting the Myers-Briggs Type Indicator from the Perspective of the Five-Factor Model of Personality,” which was published in *Journal of Personality* in 1989. Because Costa and McCrae were charged by the federal government with doing responsible research, they didn’t feel that they could take lightly the issue of switching tests in midstream. Their paper was an explanation of the reasons for their switch. This paper summarizes the main points of these two eminent researchers plus adds a few thoughts of our own.

A PROBLEM WITH “TYPES”

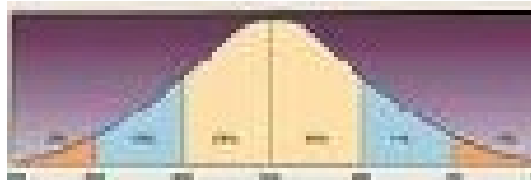
The 16 types of the MBTI (ESTJ, ESTP, and so forth) do not correlate with other measures, resulting in a serious lack of construct and concurrent validity. If they held water, each type would show strong relationships with other measures of similar constructs. Nor do they predict performance in specific jobs/tasks.

The main reason for the failure of “type theory” has to do with its assumption that trait scores are bimodally distributed. They are not. Bimodality means that you score high or low, with next to no one in the middle range:



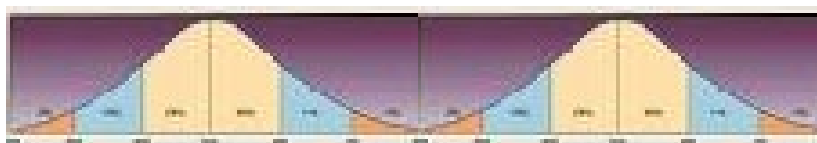
If traits were bimodally distributed, then few people would have a balance of the two extremes for each trait. In other words, few people would show a balance of solitude and society (or trust and skepticism, or spontaneity and methodicalness, and so forth), with the vast majority showing a preference for one or the other.

In truth, personality trait scores are normally distributed, resulting in the so-called “bell curve”:



In other words, about a third of the population scores close to average, with one third scoring in the high zone, and another third scoring in the low zone. These folks scoring in the middle third show a balance of the two extremes. For example, I am an “ambivert” who scores in the middle range of the extraversion scale. I clearly exhibit a balance of introversion (reading, writing, thinking, research, walking) and extraversion (teaching, facilitating, dinner parties, meetings). And I definitely get uncomfortable when I’ve had too much of either.

So, how do MBTI researchers claim “bimodality”? They do it with an unpermitted statistical trick. Understanding this trick requires understanding that the MBTI questions are “forced choice” (a.k.a. “either/or”). Which is true of you: solitary or social? Both can’t be true, just one. No shades of gray. This kind of forced choice is ill-advised in personality assessment, as people are more complex than such forced choices describe. While some people are clearly better described by one term or the other, others are not. Using this statistical trick, MBTI researchers have counted the number of times that persons selected one term and then the number of times they selected the other term. For example, if there are 45 questions that measure extraversion, each a forced choice like social/solitary, they counted the number of times the introverted term was chosen and the number of times the extraverted term was chosen. So, if a person chose the extraverted term 35 times out of 45, then by the nature of the scale they would have chosen the introverted preference 10 times. The MBTI researchers look at the number of times the extraverted response is chosen by each of 1,000 persons, and find that they are normally distributed. Then, they count the introverted responses of the same 1,000 persons, and find that, behold, they are also normally distributed. They then place these two bell curves side-by-side and, voila, they have a bimodal distribution:



The problem is that these two distributions are in fact only one distribution, not two. What they should be counting is the DIFFERENCE scores. For example, if I answer 35 questions in the extraverted manner, and 10 in the introverted manner, my difference score would be $35 - 10$, or 25. If you look at these difference scores for each of 1,000 people, you would find that they are normally distributed; they would not show a bimodal distribution. Therefore, traits can't be split into two extreme categories.

Here's another problem with "type theory" — assigning everyone to a four-letter type. Let us assume for the moment that we have MBTI scores in standard score form. In other words, for E/I, S/N, T/F, and J/P we have difference scores, or even Likert scale scores, on the same 0-100 scale as the Big Five, with an average of 50 and a standard deviation of 10. With this arrangement, we know that roughly 1/3 of the population will score below 45, 1/3 above 55, and about 1/3 between 45 and 55. In order to assign a type, we can only use scores above 55 or below 45 — mid-range scores show a balance and no preference for either extreme, right? So, to be assigned a type of, say, ESFP, your scores would have to reflect these characteristics:

E/I would have to be above 55 in the direction of E,
S/N would have to be above 55 in the direction of S,
T/F would have to be below 45 in the direction of F, and
J/P would have to be below 45 in the direction of P.

Now, the probabilities of any one person having these four scores in those prescribed ranges are:

1 in 3 will be above 55 in E/I. The same will be above 55 for S/N. Hence, the number of people who are both above 55 in E and above 55 in S would be $1/3$ times $1/3$, or $1/9$ (1 in 9).

Following this logic, the number of people above 55 in E, above 55 in S, below 45 in F, and below 45 in P would be: $1/3 \times 1/3 \times 1/3 \times 1/3$, or $1/81$ (1 in 81).

$1/81$ is equivalent to 1.2% of the population. So, 1.2% of the population would be predicted to fall in any one of the 16 types. By talking of only 16 types, we are describing only 19.2% (i.e., $16 \times 1.2\%$) of the population, or 1 in 5. In essence then, MBTI type theory is relevant to roughly 20% of the population.

What do we do with the other 80% of the population? Surely, type theory needs modification. In using the Big Five (or FFM), no such arbitrary placing of people in buckets/categories is permitted, preferring instead to regard people as the more interesting, complex, mysterious, wonderful creatures that they are. By losing a little crispness afforded by categorizing people, we gain accuracy by seeing them as relative to others somewhere on a continuum. Rather than saying "Tom is an extravert," a manner that puts him clearly in one bucket or category, we say "Tom is more extraverted than Lupi," a manner that describes his behavior relative to others.

THE LACK OF MEANINGFUL NORMS

In order for an instrument to be used in selection, one must have norms that permit comparing individuals to a reference group. Such tests are called “normative.” The Five Factor Model is a normative test and uses the Likert scale. In contrast, “ipsative” tests, such as the MBTI, compare the qualities within an individual to each other (e.g., X is more extraverted than s/he is introverted, or X has a stronger preference for extraversion than s/he does for creativity so extraversion is his/her more dominant trait). Ipsative scales should not be used for selection.

MBTI “PRIMARIES” AREN'T

The MBTI model uses the Extravert/Introvert and Judger/Perceiver preferences to indicate one's primary trait — the trait by which most people know and recognize them. The following formula is used by MBTI to select an individual's primary trait:

If the person is an E, then their primary trait is the inner function (S/N or T/F) pointed to by their J/P preference. Hence, for an ESFP, the primary would be S, as S/N are the two preferences for the Perceiving preference.

If the person is an I, then their primary is the opposite of their J/P preference, based on the theoretical view that Introverts “hide” their primary function. Hence, the primary function for an ISFP would be F, as F/T are the two preferences for J, which is the opposite of the P preference.

However, in a research tradition dating back to the time of Gordon Allport in the 1930s, personality psychologists have operated on the assumption that a person's most extreme trait (i.e., the score farthest from the mean) is one's primary, or dominant, trait. For example, with the average for each trait being 50, an 81 on the “Extraversion” scale would make Extraversion the dominant trait in comparison to a 30 on the “Accommodation” scale, as 81 is 11 points farther from the mean of 50. In a large data set, Costa and McCrae investigated whether or not the above MBTI two-step formula based on E/I and J/P preferences in fact could predict the most extreme score for each individual. It couldn't. In fact, it was a crap shoot, showing no consistent preferences for extreme scores. Conclusion: the MBTI primary does not identify one's dominant function.

J/P LACKS CONSTRUCT VALIDITY

In a series of comparative studies, J/P scores have been related to “Need for Structure and Order.” However, the MBTI model describes the J/P dimension as dealing with the temperament for making speedy decisions, related to the contrary forces of “drive to closure” (a.k.a. decisiveness) versus “drive to keeping matters open” (as in procrastination). In other words, the J/P dimension does not measure what it says it does. The “Need for Structure and Order” is not the same as the speed at which decisions are made.

In terms of the FFM, the MBTI J/P dimension actually measures “Organization” (C2) and “Methodicalness” (C5) whereas speedy decision making in the FFM is related to high “Extraversion” (E+) and low “Consolidation” (C-) (i.e., energy and spontaneity = speedy decisions.)

ORIGINAL VALIDITY STUDIES WON'T REPLICATE

The original validity studies for the MBTI were done in the pre-computer era. Factor analyses done back in those times were full of errors. Attempts to replicate these original studies in order to validate the model (remember, being replicable is the “must” for scientific demonstrations of proof) do not support the original model. While E/I and S/N found moderate confirmation using high speed computers, J/P found less support, and T/F fell apart completely. T/F appears to be a co-mingling of Big Five traits N (Neuroticism, Need for Stability, Emotional Stability) and A (Accommodation).

“N” NOT A PART OF THE MBTI MODEL

“N” (Neuroticism, Need for Stability, Emotional Stability, and so forth) is the single most heavily researched trait in the personality literature. However, it is not directly measured anywhere in the MBTI. One argument against including N in a personality measure is that all personality measures used in the workplace should have positive meanings; this view contends that a low N is positive and that a high N is not. That is just not the case. Higher N is associated with excellent customer service, valuable pangs of conscience, and people sensitivity, not to speak of the emotional intensity required to play interior line in the NFL! And, while low N is often positive, rigidly low N is associated with antisocial/psychopathic behavior.

SUMMING UP

In essence, it may appear that the MBTI has evolved into the FFM, but that is not the case. While the MBTI was based on Jungian theory, the FFM is empirically derived. They are two completely independent research traditions. However, the results of the two models are so close that one appears to lead into the other. This is a credit to the MBTI: that a theory-derived model could be so close to the empirical one.

Today, most personality researchers regard the FFM as the standard nomenclature for describing the structure of personality. While the MBTI is close to the FFM in many ways, the MBTI model is flawed and these flaws are fixed in the Big Five/FFM. Here is a final comparison of the two:

<i>Five-Factor Model (FFM)</i>	<i>MBTI Model</i>
An empirical model	A model based upon <i>theory</i>
<i>Five</i> dimensions of personality	<i>Four</i> dimensions of personality
<i>A normal distribution</i> of scores	<i>A bimodal distribution</i> of scores
An emphasis on individual personality <i>traits</i>	An emphasis on personality <i>types</i>
Preferences indicated by <i>strength of score</i>	Preference indicated based upon <i>Extravert/Introvert & Judger/Perceiver preferences</i>
A model that applies to <i>all people</i> , regardless of their personality, country of origin or culture	A model that applies to <i>less than 20%</i> of the population

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ABOUT PARADIGM PERSONALITY LABS

Paradigm is a leader in applying the Five-Factor Model of Personality to work and educational settings. Dr. Pierce Howard and Jane Mitchell Howard are the authors of the *WorkPlace Big Five Profile™ 4.0* and the *SchoolPlace Big Five Profile 4.0™*; our primary assessments.

Please visit our website at www.paradigmpersonality.com for more information. If you are interested in a complimentary tryout of the *WorkPlace Big Five Profile™ 4.0*, contact Ruchi Shah (rshah@paradigmpersonality.com) for more details.