

PDA (Personal Development Analysis)

An Overview of the Research

Introduction

For over 15 years, the PDA Assessment® has been helping people gain deeper insight into themselves and others. It has proven to be an easy-to-use, low-cost tool for anyone in pursuit of greater self-knowledge and personal development. Much has been written about the theory and history behind this tool – by its developer and publisher, PDA International, as well as by its distributors. Readers and users know that the theoretical model arose out of a publication by Dr. William Moulton Marston in 1928, which was subsequently consolidated into a tool to aid in personnel selection and management. In this report, we will describe the relationship between that research and contemporary personality theory.

The question at the heart of this study is: How do the PDA Assessment® and the model upon which it is based relate to current theories on personality? The purpose of this report is to place the PDA Assessment® in both a historical and modern context in order to prove the validity of its theoretical model in comparison with other personality theories, discussing the advantages and limitations of both the model and the tool. This report will also help guide users in correctly understanding, applying and interpreting the model and the tool.

The findings of this study indicate that, while the PDA Assessment® has much in common with a good deal of the research currently being conducted on personality, it is clearly different in its methodology and purpose from the tools used in clinical psychology to assess emotional and mental health. Furthermore, this study confirmed the conclusions drawn by numerous other research projects: that although more than 80 years have passed since Marston published his theories, they are still valid in the area of interpersonal behaviour. What Marston brought to the table was a theory of how people relate to each other – not a description of their primary traits.

This is absolutely appropriate to the general aims of the PDA Assessment®. The PDA Assessment® is not designed to provide clinical information on one's psyche. It is designed to be self-administered and self-interpreted, as the subjects under evaluation – and no one else – are considered to be experts on themselves. Based on the literature that was reviewed in this study, the tool demonstrates considerable construct validity for such purposes.

Relevant Facts and Research on Personality Theory – Past and Present

Dr. Marston was interested in the physiology of the brain and how its physical properties were related to human emotions and behaviour. He attempted to validate his hypotheses through interviews with clinical psychologists and by directly observing patients' behaviour. He carried out this work at a time in which psychology was still in its infancy, when two types of research prevailed: 1) laboratory research based on physiological measurements and 2) clinical research based on the direct observation of human subjects.

His objective was to unite the two methods of research through the creation of a theoretical bridge, which he called "Motor Consciousness." Marston used this phrase to refer to a state of consciousness that alerts people as to whether they are reacting pleasantly or unpleasantly to a stimulus, as well as their attempts to understand, explain or control this.

It is unknown whether Marston shared his theories with the other psychologists of his day who were working and developing theories in the field of personality research; however, many of his suppositions are in line with theirs. During the Thirties, Gordon Allport (1937) emphasized – just as Marston did – that behaviour is aimed at a goal. Allport wrote that in order for an individual to adapt successfully, his or her traits must remain flexible; thus the influence of those traits can be changed or eliminated according to the specific demands of the moment. Marston also explained the interaction between four "primary emotions," how each person distributes energy according to the situation and how individuals move toward the goal of successfully responding to situations.

Marston describes human emotion as a reaction to other people, situations and events in one's environment. H.A. Murray (1938) wrote that a person and that person's environment must be considered jointly. He defined two types of "environments": consensus reality and personal reality. Consensus reality is shared with others, while personal reality is one's own story, which he or she uses as the basis for interpreting new experiences.

Marston's theory integrates both of these, suggesting how people's personal reality – the internal experience of their feelings and emotions – is reflected in the environment they share with others. This same principle is also employed in the field of Psychoanalysis, where it is known as "projection."

As the United States was preparing for World War II, it faced the challenge of staffing an immense machine of war, and to this end, psychological research was focused on analyzing positions in order to assign the best person to each one. Thus new psychometric tools and methods were being used to analyze behaviours and gain insight into personalities, competencies and abilities. Raymond Cattell was widely acclaimed for his innovative work in identifying Personality Factors, a study that served as the basis for developing the tool known today as "16PF."

Complex statistical analysis enabled developing new personality tests, which required considerable training to administer, score and interpret, among these, the Minnesota Multiphasic Personality Inventory (MMPI, Starke R. Hathaway and J.C. McKinley, 1943) and the California Psychological Inventory (CPI, Harrison Gough, 1956). At that time, personality testing and evaluation was conducted exclusively by well-trained professionals attempting to classify personality characteristics or by researchers attempting to predict specific behaviors. However, such attempts to predict behavior based on personality tests generated deceptive results. By the late Sixties, psychologists had begun to criticize and seriously question personality testing. They felt that it lacked construct validity (with too many unproven theories,

poorly-defined dimensions and even passing fads influencing the direction of research at the time) and that it was plagued with measurement irregularities, such as the response bias and deceptive results in self-evaluation questionnaires.

During the Seventies and Eighties, many psychologists lost interest in personality theory, and researchers focused their attention on cognitive processes and understanding how individuals formulated their concept of "self". Research topics came and went, and very few personality studies added any new knowledge. Nevertheless, the observations made during the Thirties continued to be considered as very relevant, and the foundations laid by Dr. Marston continued to hold true.

In the late Eighties, several researchers working with lists of words, along with the Marston Model, managed to identify five measurements – general personality dimensions – that were common to most of them. Thus the "BFQ" (Big Five Questionnaire) model was born (R.R. McCrae & O.P. John, 1992), reawakening interest in personality theory and guiding subsequent research.

During the Nineties, further efforts were made to arrive at a fuller understanding of emotions, motivation and the sense of self. Researchers were beginning to understand that in order to predict behaviour, they needed to better define the behaviour they wanted to predict and develop more precise measurement tools in order to explain the relationship between the prediction and the results. They realised that there were no shortcuts and that each study should be based on the previous one, as the cumulative information would enable significant advances and more extensive knowledge.

Along with a renewed interest in measuring and understanding personality has come a renewed respect for the inherent difficulty of obtaining meaningful results. Researchers have become increasingly aware of the complexity of the interactive forces (between the person and the environment) that are responsible for any behaviour (Pervin, 1990).

Currently, there is a high demand for personality measurement tools that enable an easy, rapid response to the problems of Human Resources. In satisfying this demand, it is essential to know just what a self-evaluation tool can offer and what it can reveal about people, so that its use can be limited exclusively to that for which it was designed and which it does well. It is also necessary to understand the theories behind the PDA Assessment® and their validity today.

The following sections describe the current school of thought regarding personality, relating some of the findings to the PDA Assessment®. This information is designed to underscore the fact that the PDA Assessment® is aligned with current thinking regarding personality and to demonstrate how to use the tool according to current needs by relating it to a broad base of knowledge on personality.

The Nature of Personality Traits

Recently, debates have arisen between those psychologists who believe that personality traits are simply a convenient way of labeling human behaviour and those who claim that they are actual internal characteristics that distinguish one individual from another. No one is arguing the fact that people vary in countless aspects or that it would be useful if we could crack the code that would allow us to find some coherence and predictability in human behaviour.

One way of resolving the debate is to think of personality traits as existing on two different levels (Meehl, 1986). Those behaviours that can be observed and labeled are identified as surface traits. By taking reliable measurements of these, observers can reach a considerable consensus on what they are and the degree to which they are present. Surface traits describe behaviour.

On the other hand, those internal characteristics that presumably guide behaviour are identified as source traits. These can only be inferred through the behaviours that are observed or reported. They are used to explain or provide a basis for one's behaviour. There is much less agreement on the explanations for behaviour, as the causes are theoretical and cannot be demonstrated. Advocates of such explanations accept them on faith and based on the evidence they have observed.

Some are satisfied with their apparent validity: "it makes sense to me." Popular wisdom, myth, anecdotal evidence and knowledge acquired through personal experience all fall into this category. However, skeptics seek accumulated evidence based on scientific principles. They want to see the elements of a theory validated – i.e. Construct Validity – and to discover whether the predictions based on that theory are manifested and enacted in real life.

When personality testing is focused on surface traits, it suffices to reach a consensus on what these traits mean and how to measure them appropriately. However, when personality testing is focused on source traits, significant research must be performed and a great deal of information must be gathered to support the measurements, and even then, there may not be sufficient valid evidence to justify them.

The PDA Assessment® is designed to measure surface traits – those behaviours that are easily observable and reportable. Each dimension of behaviour – Risk, Extroversion, Patience, Rules and Self-Control – is reliably measured because we can demonstrate what the elements in each scale contribute to the total score for that scale. Marston focused his attention on neurological emotions – the relationship between reactions and physical behaviour. His theory on the interaction between personality and environment is used to explain one's emotional experience, which is always changing, rather than his or her permanent predisposition. Therefore, it is vital to avoid referring to surface traits as Risky, Extroverted, Patient, By-the-Rules or Self-Controlled, as if they were source traits. This means that the user must consider Risk, Extroversion, Patience, Rules and Self-Control tendencies not as deep, internal

predispositions, but rather as semantic labels for patterns of behaviour that change from one situation to the next. People can use the PDA Assessment® as a tool for gaining insight into themselves or for gaining insight into others, and it becomes even more valuable when used to compare different situations. However, it is as a means of describing behaviour – not explaining the causes of such behavior – that the tool provides valid information.

How Can We Know Whether or Not the Traits Exist?

The presence of a personality trait can be inferred by noting that the same behaviour occurs repeatedly over time in different situations. We can also observe a trait related to a specific situation when we observe that certain behaviours occur consistently whenever that situation arises.

If the behaviour is different in different situations, we know that we are dealing with a trait related to a specific situation. If the behaviour is similar regardless of the situation, then we know that we are dealing with a general trait, which is uncommon. We often make the mistake of attributing a generalised trait to someone when we say: "You always do that!" And the person, perhaps recognising the situational nature of the behaviour, replies, "No, I don't!".

When examining the validity of a tool designed to measure behavioural traits, at a minimum, we look for evidence that yields similar results in different situations. Thus we can demonstrate its test-retest reliability. When doing this, we must make sure that we are measuring the same situation repeatedly.

As we have already mentioned, traits that are demonstrated consistently throughout a variety of situations are rare. Most psychologists who conduct personality research now accept the fact that traits and situations are interactive.

Human beings are inherently adaptable. In fact, inflexibility is considered abnormal, as the survival of the species depends largely on the ability to adapt. Therefore, we learn to understand and interpret the signs that indicate how we should act in a given situation and we develop a repertoire of behaviours from which we apply those that are most appropriate in each situation.

This is why we invite people to describe themselves from various perspectives when completing the PDA Form. In this way, we arrive at an understanding of the variety of behaviours the person deploys in different environments. One of the two sections of the PDA Form gives insight into how different aspects of people's personality are expressed in various situations (Role Profile), while the other gives insight into their natural tendencies and behaviours (Natural Profile).

It is also apparent that most people learn to recognise the types of environments in which they feel most comfortable. As much as possible, they will try to put themselves in these situations

and avoid those in which they feel less comfortable. People will also try to modify an environment that is uncomfortable for them, whether actively (by trying to change it) or passively (by avoiding the elements they dislike), with the goal of transforming that environment as much as possible into one in which they can function successfully.

This is why individuals with a high degree of self-knowledge and awareness will notice that they exhibit certain behaviours more often than others, as they have had the chance to find opportunities to do so. In fact, an underlying supposition of the Marston Model is that individuals interact dynamically with their environment, responding to favorable or unfavorable conditions in a way that reflects their personal power in relation to those conditions.

Since not all situations are uniformly favorable, people can be expected to change their behaviour; nevertheless, whenever possible, they will gravitate toward the most favorable circumstances. Due to the fact that day-to-day situations do not always present themselves in the same way, individuals are forced to face situations that demand a greater or lesser level of energy depending on whether the overall situation is favorable to them or not. Therefore, the possibility that behaviours may vary from one type of situation to another is acknowledged in the results of the PDA Assessment® in keeping with the dynamic nature of the characteristics in the Marston Model.

With so much variability, how can we be sure that the characteristic traits exist? After all, each person comes into the world with different genes, which to a certain degree determine his or her personality style. We know that no two people experience things the same way – not even identical twins raised together. As such, an infinite combination of biological and social factors work together to make each person unique. Nevertheless, our observations confirm that we are more similar to some people than we are to others. We also learn that certain characteristics we are born with shape our reactions to our environment in a predictable way.

For example, people who seem to have been constantly alert and active since they were born will experience the world differently from those who are more tranquil and passive. Certain combinations of genetic and environmental factors tend to present themselves simultaneously and some of these appear together so often (and separately from other combinations) that they form groups of behaviours or surface traits that we can identify as being relatively distinctive.

Various psychologists have presented hypotheses on surface traits to explain the evolution of one's personality traits throughout his or her lifetime and attribute certain behaviours to the motives or needs of each stage. These hypothetical models are designed to generate a research program that could help determine if causal explanations are precise for most of the people to whom they are applied. This is not the purpose of the PDA Assessment®. However, the surface traits it measures are categorised in useful, descriptive groups of behaviours that generally occur together.

Evidence that Behavioural Patterns Last a Lifetime

Many people think of personality traits not only as groups of behaviours, but also as lasting predispositions that first become evident in childhood and later distinguish and characterise people throughout their lifetime. Although this supposition is appealing to those who wish to find order and predictability in human behavior, it also sets certain limitations on what we can expect people to change. In this section, we examine the evidence of the continuity of personality traits, along with current theories on behaviour modification.

As was to be expected, longitudinal research indicated that the correlation or similarity between the results of a personality test conducted at one time during a person's life and the results of one conducted at another time in his or her life decreases as the amount of time between them increases. In other words, a personality test performed today may be different from one performed ten years ago, but may be relatively similar to one performed only one year ago. In an attempt to explain these results, psychologists suggest that they are not due to fundamental changes in the person's personality, but rather because most people learn to adapt to different environments and assume different roles over time. In other words, the source traits remain fairly consistent, while the surface traits can evolve as new behaviours are acquired and old ones are modified or discarded.

Some studies analysing the changes that occur over time in groups of individuals have led us to the conclusion that certain patterns appear at certain stages of a person's life. For example, during the years in which they are raising their children, the women in traditional families tend to repress their more assertive and competitive tendencies, developing greater levels of tolerance and patience, while during the same period, the men repress their tolerance and patience and express greater levels of assertiveness and competitiveness.

Some researchers have studied and analysed the changes that occur in individuals' personalities over the course of their lives and have discovered that there are significant differences. In two studies performed by Caspi and Bem (1992), it was determined that personality profile tests performed between early and late adolescence coincided by approximately 50%, while personality profile tests performed in late adolescence and those performed in adulthood only coincided by about 25%. Thus it can be inferred that another characteristic of people is their tendency to change a lot or very little during a given stage of their lives.

Furthermore, there is evidence indicating that individuals vary as to how they adapt to changes in their environment. The way in which they adapt may even become the most consistent feature or trait of their personality. For example, how a person manages the transition between elementary school and junior high school may reveal more about how that person will manage the transition from college to full-time work than the results of a personality test taken in college.

It can also be inferred that the behaviour of the person measured during times of transition and change does not necessarily predict that person's behaviour during a time of stability.

If most people learn to adapt to various roles and environments, it should come as no surprise that they tend to behave more similarly in well-defined situations in which the behavioural requirements are specific and the expectations are clear. Differences in personality usually have a lesser impact on the behaviours exhibited in such situations, as the group of people's ability to adapt leads them toward a particular set of behaviours. It is in those situations that permit a wide variety of responses that individual differences in personality become more apparent.

However, this evidence should not lead us to the conclusion that human personality characteristics are highly variable because, in fact, they are not. Certain source traits are quite consistent and persistent throughout one's lifetime, such as timidity, aggressiveness, extroversion and physical attractiveness.

Given that the PDA Assessment® does not measure source traits, but rather surface traits, and given that emotionally healthy adults can adapt their behaviour, it is to be expected that the individual patterns measured by the PDA® may change to a certain degree as a result of learning and in order to adapt to a variety of situations throughout one's life.

How Easily Can Individuals Change Their Personality?

There are various forces of human nature that work to inhibit change, as survival largely depends on stability, for example, a constant body temperature, a consistent blood sugar level, etc. One thing that works to inhibit change is the fact that people become active agents in the development of their personalities by selecting or constructing environments that are comfortable for them and that enable them to reach their goals. As individuals mature, they become more and more actively involved in this pursuit as they choose friends, partners and workmates who are similar to them, thus promoting a continuity of expression of their own personalities. People are also selectively more open and accepting of that information which confirms their concept of self than of that which does not (Prescott Lecky, 1945).

So how does behaviour change? Contrary to the prevailing popular wisdom, there is some evidence that people do not change their personalities at times of crisis in their lives. It is during times of crisis that people are more likely to go back and repeat behavioural strategies they have successfully used in the face of other crises or problems in the past. Experts admit that they do not have a consistent theory to explain changes in personality (Caspi and Bem, 1992). Therefore, we can only apply what we know about the human capacity for change to conclude – at least for now – that those individuals who have the ability to adapt to different roles and relationships do so. This means that they can find a wide variety of behaviours within their behavioural repertoire in order to choose the most appropriate one in a given situation or even to replace an inappropriate behaviour in the event that they choose one.

One's source traits, especially those that are inherited, tend to be relatively immutable. However, one's surface traits – which are the group of behavioural characteristics measured by the PDA Assessment® – permit a certain degree of modification, whether by a) selecting an environment that does not inhibit change, or even out of fear or self-defense or b) by selecting a behaviour from within a more suitable repertoire of behaviours for that situation.

It is important to bear in mind that the needs, values and source traits of the personality – which are not measured by the PDA Assessment® – can come into play in any situation that warrants the person making an effort to change.

The Marston Model in Relation to Other Personality Models

Part of the confusion around the interpretation of the source traits and the surface traits in the Marston Model may be due to the fact that we forget that the theory was initially developed to explain human emotions. Emotions are an important part of personality theory, but there is much more to it than that. Most would define Personality as the set of response patterns that are persistent and lasting across a variety of situations. Those response patterns are made up of tendencies, motivations, attitudes and beliefs, all combined and somehow integrated into a concept of self (Rorer, 1992). On the other hand, Emotions are defined as a complex state involving bodily changes, mental stimulation, strong feelings and generally an impulse toward a behaviour (Smith & Lazaro, 1992). By nature, emotions are transient.

In the day-to-day application of the Marston theory through the PDA Assessment®, both in the selection and development of personnel, users tend to view it more as a measurement of personality aspects than of emotions. Nevertheless, it is important to remember the basic purpose for which the theory was developed and even to acknowledge that the PDA tool in its current form includes information from the Self-Control axis, which provides a description that has more to do with the display of emotions than with personality traits.

The PDA Assessment® also uses words that are commonly employed in personality testing, as several of the 86 words in the PDA Form are included in a basic list of words used to study the personality prototypes measured by the "Big Five" (John, 1992).

The word lists have already had a long history as tools for determining and measuring personality traits. The first contributions were made by German and Dutch psychologists, along with US researchers, beginning with Allport and Odbert (1936). Using a dictionary of common words, Allport, Odbert and the researchers following their model identified thousands of words that could describe a personality. These words were methodically reviewed and streamlined, using various criteria to determine which ones to keep and which ones to discard in order to validly and objectively measure differences in personality. For example, Cattell (1943), creator of the 16PF questionnaire, used Allport and Odbert's list in his factor analytical work on the dimensions of personality.

Other more recent work has progressed along various lines of research. One set of studies compared the results of personality questionnaires using phrases or descriptive statements with the results obtained from lists of words in order to determine whether or not the same dimensions were revealed or observed. Notable similarities were detected in several of these studies. Even so, word lists continue to be the most popular measurement tool due to the belief that individual words are easier to understand and interpret, as they reflect fewer shades of meaning.

Another series of studies compares self-evaluation tools with tests scored by others. The results are mixed, but some researchers have obtained comparable dimensions for each approach. In fact, nearly every category of personality research employs most if not all of the personality dimensions of the "Big Five," regardless of how the information is collected.

Lastly, some researchers have analysed the content of narratives and notes, comparing self descriptions with descriptions made by others. In general, the "BFQ" personality prototypes were also found in this way of describing people.

Comparison of the PDA Assessment® with Other Tools Based on the Marston Model

Based on the personality theories expounded by Marston in his books "Emotions of Normal People" (1929) and "Integrative Psychology" (1931), Walter V. Clarke was the first to perform an in-depth study on the advantages of this methodology in the identification of personality traits. Clarke's studies served as the basis for the tool known as the Activity Vector Analysis (AVA, 1942).

From its first trials, the tool demonstrated enormous value for the quantity and quality of descriptive information it provided on personality traits; however, the operational and mathematical processes carried out by the test administrator from the time the subject completed the form until interpretable results were obtained made this tool extremely slow, complex and difficult to administer. The work was done "by hand", and took the administrator nearly two hours from the time the individual finished completing the form to obtain the results. Due to these characteristics, the tool was limited to specific uses and could only be administered by expert psychologists.

In the late Sixties, Dr. John Geier from the University of Minnesota performed studies on the fundamentals of the Marston/Clarke tool, making various modifications with the goal of simplifying the mathematical processes carried out between the completion of the form and the acquisition of the results. The tool known today as DiSC came about as a result of his studies.

The tools known as “DiSC”

Geier’s modifications affected not only the Form, but also the instructions and other key aspects of the tool, which ceased to be of a free-response type. Although the results of the tool were still described in terms of the four primary axes established by Marston and the time between the completion and interpretation of the form had been reduced, the truth is that a lot of extremely valuable information for interpreting personality surface traits had been lost.

How are the axes of the PDA Assessment® related to those of the DiSC tool? Obviously, since both tools are based on Marston’s research, they share the four primary axes; however, it is important to mention that the modifications made by Geier removed a significant amount of valuable information that is obtained through use of the pure, original model employed in the PDA Assessment®.

- **Risk (PDA) • Dominance (DiSC)** Both of these measure the Proactive response to an environment perceived as antagonistic or unfavorable: people’s tendency to manage situations and the degree to which they are willing to face and assume risks in situations.
- **Extroversion (PDA) • Influence (DiSC)** Both of these measure the Proactive response to an environment perceived as favorable: people’s tendency to gravitate toward and interact with other people in situations.
- **Patience (PDA) • Stability (DiSC)** Both of these measure the Passive response to an environment perceived as favorable: people’s tendency to respond patiently and calmly in situations.
- **Adherence to Rules (PDA) • Compliance (DiSC)** Both of these measure the Passive response to an environment perceived as antagonistic or unfavorable: people’s tendency to submit and adhere to rules and procedures in situations.
- **Self-Control (PDA) • Not Measured (DiSC)** The DiSC tool does not measure this axis, which represents people’s rational, careful reflection and consideration of the consequences of their actions.

Below, we describe some of the indicators measured by the PDA Assessment® that are not included in the DiSC tool due to the reductions made by Geier:

1. **Axis Intensity:** The DiSC tool does not measure the intensity of the axes. The original free response form proposed by Marston and Clarke not only enabled measuring the five primary tendencies, but also the corresponding intensity of each one. Thus the original tool not only permitted measuring behavioural tendencies, but also their strength. For example, it is not the same to describe the intensity of a given trait within a normal range (direct and competitive) as describing its intensity in a more extreme range (to describe that by exhibiting extremely direct

and competitive behaviours, the individual may be described by others as “authoritarian or arrogant”).

2. Self-Mastery (or Self-Control) Vector: The simplified DiSC tool only measures four tendencies, while the original tool measured a fifth axis. This is the axis related to Emotional Intelligence, indicating how well individuals manage to control their feelings and emotions. This axis is enlightening not only when interpreted independently, but also when considered in combination with the other four axes in the model.

3. Energy & Activity Level: This measures individuals' level of available energy. Although this is an indicator in its own right, its main function is to compare the level of energy individuals have with the level of energy they are applying or using, making it a highly valuable tool for measuring the level of satisfaction – or conversely, demotivation and stress – their current job may provide.

4. Profile Intensity: This indicator defines the overall intensity of the profile of the people completing the PDA Form. It reflects how faithful they are to their tendencies and how marked, characteristic and evident their style is. Furthermore, this indicator is understood as being one of the three that aid in measuring people's flexibility or rigidity.

5. Energy Balance: The Energy Balance indicator works along the “Demotivation – Motivation – Stress” axis. It is important to bear in mind that it reflects individuals' energy balance at the time of completing the PDA Form. This indicator is circumstantial and must be considered when evaluating their current work situation. It expresses individuals' perception of their power versus the effort required by the positions they currently hold, allowing us to determine whether they feel that their energy is being well-utilised, under-utilised or overtaxed.

6. Profile Modification: This reflects people's capacity to modify their innate behavioural tendencies and adjust to the behavioural traits that are required for performing successfully in their current situation. It can be deduced that the more aspects of their natural style people modify, the more flexible and adaptable they are, and conversely, the fewer aspects they modify, the less flexible they are.

Subsequent research included additional indicators in the PDA Assessment®, such as the “Form Time” and “Consistency Indicator.” These new indicators help the analyst ensure the quality and validity of the information in each particular assessment when interpreting it.

As a result of the work done by John Geier, we can now distinguish two different groups of measurement tools based on Marston's theories:

The "complete" or "pure" tools, including the PDA Assessment®, which are labeled as such because they are fully based on Marston's studies 2. The tools known as "DiSC," which are based on the simplifications made by Geier.

Today, all of these are modern, systematised, effective, proven tools, developed by companies and researchers using Marston's or Geier's studies as their basis. Even so, we can conclude that the tools known as DiSC, even if they are based on the Marston Model, represent a simplification or reduction of the original model.

Comparison with Other Tools and the Dimensions They Measure

The tools measuring similar dimensions to those measured by the PDA Assessment® that can be compared to it are the following:

The BFQ or "Big Five" (John, 1992)

How are the axes of the PDA Assessment® related to the personality dimensions in the "Big Five" tool? Obviously, both tools evaluate five dimensions.

- **Conscientiousness:** this evaluates independence, order, precision, perseverance, adherence to rules and fulfillment of commitments.

This first factor evaluated by the "BFQ" tool can be compared to the Adherence to Rules and Procedures Axis, as it describes the tendency to observe rules, regulations and procedures and to avoid unfavorable situations. However, after closer examination, it is apparent that the scales do not attempt to measure exactly the same thing. This factor of the "Big Five" is often described as "being work-oriented," "taking charge" or "being reliable." To some degree, it has to do with honesty and integrity.

- **Openness:** this includes elements of one's intellectual aspects, creativity and cultural interests.

This factor evaluated by the "BFQ" can be compared to the Patience Axis in the PDA Assessment®, as it describes the tendency to be receptive, open and willing to listen to others' interests. However, after closer examination, it is apparent that the scales do not attempt to measure exactly the same thing. This factor in the "BFQ" is more related to the intellect and is often described as an orientation toward cultural and social interests, more than toward particular people.

- **Extraversion:** this evaluates social skills, activeness, enthusiasm, assertiveness and self-confidence.

This factor evaluated by the "BFQ" can be compared to the Extroversion Axis in the PDA Assessment®; however, after studying the items included in the list of this factor, we can see that there are also many things related to the Risk Axis, so it's evident that Risk and Extroversion are not clearly separate in the general personality categories.

Although they are individually distinguishable, they overlap significantly. In fact, there is a significant link between Risk and Extroversion in the PDA Assessment®, as both are "Proactive" tendencies; however, in keeping with Marston's theory (which will be discussed in further detail in the following section), they are considered as two differentiated expressions of Energy.

- **Amiability:** this measures the tendency to be supportive and sociable, the degree of cooperation and sensitivity toward other people and their needs. Various personality tests call it Social Adaptability, Sympathy, Influence and Fulfillment.

This factor evaluated by the "BFQ" can be compared to what is known as the "Amiability Line" in the PDA Assessment®. This line combines a low level of Risk and a high level of Extroversion and describes the tendency to be helpful, friendly, pleasant and accessible – a tendency to exhibit a certain amount of appeal, to inspire affection in initial contacts with people and to participate socially in situations viewed as favorable and non-threatening.

Extroversion and Amiability are among the most universally recognised characteristics that distinguish one person from another.

- **Emotional Instability:** this evaluates the tendency toward uneasiness, manifested by mood swings, anxiety, discontent and irritability.

This factor evaluated by the "Big Five" can be compared to the Self-Control Axis in the PDA Assessment®. The Self-Control Axis is a measurement of people's rational, careful reflection and consideration of the consequences of their actions. People with greater self-control will be more likely to show restraint, reflecting before they act, and less likely to demonstrate irritability, anxiety or discontent in their behaviour.

In conclusion, we can state that the PDA Assessment® has much in common with the basis of the personality measurements as defined in the BFQ prototypes. The findings of this study lend credibility to the hypothesis that the PDA Assessment® measures the important aspects of human behaviour in which people may differ.

Furthermore, the PDA Assessment® contains some characteristics that are not found in the BFQ model, such as the separation of the proactive tendencies of Risk and Extroversion and the combination of elements in Amiability. It also provides unipolar scales and intensities in the axes, giving added value to the aspects of each dimension that is measured. This fact places the PDA Assessment® clearly outside the realm of those tools intended for measuring healthy or unhealthy personality aspects, as the PDA Assessment® is clearly different in its method and purpose from the tools used in clinical settings.

16PF (Cattell's research model)

- Risk and Extroversion are comparable to "Social Boldness," the extroversion scale in the 16PF.
- Patience is comparable to "Warmth" or the scale of feelings.
- The Rules axis can be compared to the "Rule-Consciousness" scale.

It should be kept in mind that a considerable amount of clinical training is required in order to interpret the profile derived from the 16PF questionnaire. Furthermore, some of the labels in the scale do not easily lend themselves to use in a business setting. All of these factors can limit its application in the market.

Myers-Briggs Type Indicator®

The personality aspects measured in the MBTI differ substantially from those measured in the PDA Assessment®.

- The MBTI measures thought and patterns of behaviour, while the PDA Assessment® is primarily focused on measuring behaviour.
- The MBTI explains human behaviour in a different way – for example, by describing how people are oriented toward the world and how they receive information.

In certain aspects, there is no overlap between the two tools.

The MBTI and the PDA Assessment® often compete in the marketplace for those people who are interested in knowing and learning more about themselves and others. Nevertheless, their theoretical bases and origins are actually quite different; they have been designed for different purposes and adopt different approaches in representing behavioural patterns.

Therefore, we have come to the conclusion that it would be impractical to make any direct comparisons between the scales used in the two instruments.

The Two Principles of the Marston Theory

Long before social psychologists and personality psychologists came to agree on the fact that individuals and their environments have a complex relationship and that behaviour cannot be understood without understanding the situation in which it occurs, Dr. William M. Marston developed a theory on how individuals respond to the characteristics of their environment. He defined environments by their "favorability." Favorable environments provide support and satisfaction, making people feel comfortable. Unfavorable environments are antagonistic,

making people feel uncomfortable and challenged. In both cases, people tend to respond emotionally, whether positively or negatively. This is the First Principle.

Individuals' behavioural response to each situation depends on the relative amount of energy they invest in response to the support or antagonism in the environment. For example, if they see themselves as more powerful than the environmental forces, they will adopt a more proactive attitude and act on the environment in order to achieve a goal. Conversely, if they see themselves as less powerful than the environmental forces, they will respond reactively and give in to those forces. This is the Second Principle.

These two principles interact to create four responses driven by emotion:

- The Risk (or Dominant) response means acting proactively in an environment perceived as unfavorable.
- The Extroversion (or Influence) response means acting proactively in an environment perceived as favorable.
- The Patient (or Steadiness) response means passively adapting to an environment perceived as favorable.
- The Compliance (or Conscientiousness) response means passively adapting to an environment perceived as unfavorable.

What We Have Learned Since 1928 that Supports or Refutes these Suppositions

The second principle, which defines how individuals perceive their Energy in relation to their environment, has been more recently labeled the "Locus of Control" and is currently one of the top ten topics under study in personality psychology and social psychology. An internal "Locus of Control" is people's perception that they are more powerful than the environmental forces, while an external "Locus of Control" is the perception that the environmental forces are more powerful than they are.

Recognising that the Locus of Control may vary in different situations, researchers have attempted to map the variety of situations in which individuals will maintain either an internal or an external Locus of Control. Instruments have been developed to help determine how different perceptions of the Locus of Control influence or affect people's behaviour. While this line of research has extended far beyond the principles applied in Marston's model, it illustrates just how much this idea interests and influences today's psychologists.

Another more contemporary line of research known as "Belief in a Just or Unjust World" has been developed out of an interest in "distributive justice". Psychologists wanted to determine the circumstances under which individuals perceive their situations to be fair in comparison with (a) another person's situation or (b) the situation they feel they deserve. Their goal is to determine the existence of reliable individual differences in measurements of perceived fairness, and if these differences do exist, to correlate the findings in order to better understand human motivation.

Although this trend is not directly related to Marston's concept of antagonistic or supportive environments, it does propose an interesting line of research relating positive or negative perceptions of the environment to the "Locus of Control" – i.e. relating Marston's First and Second Principles to each other. Most studies reveal a closer relationship between these two concepts (Belief in a Just World and Locus of Control) than Marston's model would suggest. Marston assumes that the perception of the environment (favorable or unfavorable) and the perception of personal power (proactive or reactive) are completely independent of each other.

However, Just World and Locus of Control research demonstrates that when individuals perceive the world as unfair, they tend to view the environment as more powerful than they are. Conversely, when individuals view the world as fair, they tend to regard themselves as more powerful than their environment. Thus, a belief in a "Just World" provides an explanation as to why certain individuals perceive themselves as either more or less powerful than their environments, which, in turn, obviously conditions their responses. Perceiving the world as fair is not the same thing as "favorability", but rather a particular type of favorability. Therefore, while it does pose an interesting question, it does not refute Marston's assumption that the two principles operate independently in explaining emotional responses and behaviour.

Stronger confirmation of Marston's theory is found in research aimed at understanding interpersonal relationships – an area of social psychology and personality psychology. Wiggins (1991) analysed how people describe their interpersonal relationships not only in English, but in other languages as well, and reports that results can generally be represented by a two-dimensional circumplex model. Wiggins' circumplex model is a graphic representation of relationships between concepts, which maps out individual items or words in relation to the dimensions explaining them, just as a geographical map positions objects in relation to coordinates. Two important comparisons can be made between the work of Wiggins and his associates and that of Marston.

The Circumplex Model

Marston also conceived of emotional response as a continuous occurrence, likening it to movement around a colored wheel where each color blends into the next. We label colors as blue, red, orange, etc., but there are an infinite number of possible hues and combinations. Similarly, the four dimensions of behaviour in Marston's model are labeled as Dominance, Influence, Steadiness and Conscientiousness (known as Risk, Extroversion, Patience and Rules in the PDA Assessment®), but infinite shades and combinations of these can occur along the spectrum of human behaviour. Wiggins also uses the wheel as a theoretical depiction of the interrelationship between various characteristics of personality, postulating that it can represent the two bipolar dimensions.

The Content Model

Wiggins concluded that most measurements of interpersonal behaviour can be defined in terms of two dimensions, which he labels Dominance-Submission and Solidarity-Conflict or Affiliation-Hostility. In Marston's model, the Dominance-Submission dimension is represented in these same terms as a "bipolar dimension." These two "nodes," as he calls them, represent individuals' tendency to respond "proactively" by acting on the environment as opposed to their tendency to respond "reactively" by adjusting to it. The dimensions in Marston's and Wiggins' models are identical in meaning.

Wiggins' second dimension is also labeled similarly to Marston's. His Affiliation-Hostility dimension is comparable to Marston's "alliance" and "antagonism" (favorable or unfavorable) – in fact, this is the same terminology he used to explain his theory in his early work. In the research reviewed by Wiggins, White (1980) attempted to determine whether there were concepts that could describe interpersonal relationships in a universal manner across various languages. He found two and concluded: "These dimensions represent a universal conceptual scheme produced by the interaction of innate psycholinguistic structures and fundamental conditions of human social life, for example, the potential for concord or discord in the goals and actions of multiple actors (solidarity/conflict) and for the asymmetrical influence of one actor upon another (dominance/submission)".

In other words, regardless of the language they speak, human beings naturally describe their relationships with each other in ways that emphasise the importance of acceptance or antagonism, as well as the various levels of power, in relation to the perceived forces in their environment. More than 80 years after Marston published his theories, a series of studies have confirmed that they are still valid today in the area of interpersonal behaviour.

Conclusions

Marston provided a theory that helps us understand how people relate to each other, rather than who they are deep down as individuals. This is appropriate to the purposes for which the PDA Assessment® was developed and for which it is used.

The PDA Assessment® was not designed to provide clinical information on people's psyches. Users do not need formal training in psychology in order to utilise it. By providing results in layman's terms to those who complete the form, it helps them better understand themselves and others – or more aptly put – to understand themselves in relation to others and in relation to their environment.

Furthermore, the four dimensions of behaviour defined by the Marston Model are closely related to current personality theories.

All of this evidence supports the validity of the PDA Assessment®.

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