

## The Effect of the Enneagram on Measurement of the MBTI® Dimensions

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This study suggests that Enneagram Three Introverts are significantly more likely to be misreported as Extraverts than non-Threes. Analysis shows this result is due to bias present in some but not all MBTI® items that measure Extraversion/Introversion.

## Abstract

A sample of 500 adults (102 or 20% male, 398 or 80% female) took the MBTI® Form G individually or in small groups. The participants range in age from about 20 to 80 years with a variety of educational backgrounds. The majority are middle class and Caucasian. The results of the MBTI® were verified through self-validation during one-on-one discussions with a certified MBTI® administrator. These participants were also given an oral explanation of the Enneagram in order to determine their Enneagram designation. Individual MBTI® questions were analyzed to determine if Enneagram type affected the way a participant answered the questions. Assuming that the self-validation process correctly identified “true” type, the results indicate a clear and significant relationship between an Enneagram type and misreporting of an MBTI® preference. This study focuses on one example of such misreporting bias and attempts to identify specific MBTI® items responsible.

Within-type variation in responses to individual MBTI® items may be random or systematic. Random variation is present in all surveys. Various systematic differences have been noted, discussed, studied, and analyzed since the MBTI® was developed. Many research articles have addressed this topic, and various tools have been designed to assist in understanding such differences, most notably the Step II and the Expanded Analysis Report (EAR). Using the Enneagram to understand systematic MBTI® type differences has

been suggested by several, but with little supporting data. Included among these approaches to using the Enneagram with the MBTI® is a model of the relationship between the MBTI® and the Enneagram presented in the *Journal of Psychological Type* in a nontechnical application article by Wyman (1998a).

In addition, there has been some previous study of a statistical correlation between the MBTI® and the Enneagram (Flautt 1998; Flautt & Richards, 1997b; Wagner, 1992), with some mention of the different roles the two systems play (Conway, 1996; Flautt, 1998; Wyman, 1997a & b, 1998a & b). In the present study, 10 years of accumulated data have been statistically analyzed, and the results demonstrate that there is a relationship between the MBTI® and the Enneagram. Although Flautt and Richards found some correlation between certain MBTI® types and Enneagram types, there was no direct 1:1 correlation. Nonetheless, the implications of the relationship of the two systems are many and varied. Many exciting revelations about the workings of human behavior may be found using these two typing systems together. In fact, a special electronic journal called *The Enneagram and the MBTI®* serves as a forum in which the relationship between the two personality systems can be explored in depth and in detail (<http://tap3x.net/EMBTI/journal.html>).

A detailed description of the Enneagram is beyond the scope of this article. For greater detail, consult articles and a book by Wyman listed with the references (Wyman, 2001b), as

well as works by various Enneagram experts, such as Palmer (1998) and Riso (1990). In short, the Enneagram is a system of nine types, each having a distinct set of characteristics, which appear to be most active in psychological defense. The Enneagram portion of personality dominates during periods of stress, providing coping skills to protect the true self, which is profiled by the MBTI® (Myers, McCaulley, Quenk & Hammer, 1998). The MBTI® is more cognitive and rational. It answers behavior and world-view questions, particularly those related to perception and judgment. The Enneagram is more unconscious and addresses motivational questions particularly dealing with psychological defense.

Sometimes the characteristics of a person's Enneagram type and MBTI® type are compatible, allowing for a sense of internal congruence. For instance, all other things being equal, a person with a preference for Extraversion should feel more comfortable being an Enneagram Three than someone with a preference for Introversion (Table 1). The qualities of Extraversion (Myers, 1992) and Three (Table 2) are quite compatible. As a working hypothesis, we suggest that among verified Extraverts, the MBTI® preference score for Extraversion might be expected to be *higher* for Threes than for other Enneagram types. Similar reasoning might suggest that among verified Introverts, the MBTI® preference score for Introversion might be *lower* for Threes than for other Enneagram types that could lead to Three Introverts to be misclassified as Extraverts. When a person is both Extraverted and a Three, the Extraversion score would be expected

to be higher, because there is little within that person pulling the score towards Introversion. However, if a person is a Three with a preference for Introversion, an internal conflict exists. The Introversion part of personality looks inward for energy whereas the Three looks outward for a sense of self and the adrenalin high associated with achievement (Wyman, 2001b). When taking the MBTI®, a person often references various aspects of his or her life to answer the questions. When a stressful situation is referenced, perhaps work or a difficult relationship, it is possible that the Enneagram defense will override the MBTI® answer to the question (Wyman, 2001b). If a person is living a highly stressful life, the Enneagram defense may be so completely in charge that it answers the majority of the MBTI® questions.

In analyzing the data for this study, we specifically hypothesized that the traits of the Enneagram Three would influence the Extraversion/Introversion score (indicated type) of participants who are Enneagram Three type. The purpose of this study was to see whether the data were consistent with our working hypothesis. If the data were found to be consistent, we would then attempt to identify specific MBTI® items where the measurement of the E-I dimension was affected and discuss the ramifications. Next, we provide a statistical model that formalizes the manner in which the influence of the Enneagram Three type on scores of the E-I dimension is expected to occur. Although it is not important whether a score is high or low in determining type, the effect of the Enneagram on a score becomes important when it changes the type designation such as

from Introversion to Extraversion. The model is consistent with both latent trait/item response theory (IRT) as well as latent class (LC) models.

### Statistical Model for Detecting Item-Specific Bias

For simplicity of exposition and without loss of generality we will limit our discussion to MBTI® items associated with the E-I dimension that have only two response categories – an Extraverted response and an Introverted response. Let  $Y_k$  denote the response to the  $k$ th E-I item. The standard “true score” model for measuring  $F$  (as used in IRT as well as LC modeling) can be expressed as:

$$\text{Logit}(Y_k) = \alpha_k + \beta_k F + \varepsilon_k \quad (1)$$

Where  $\text{logit}(Y_k)$  represents the log-odds in favor of an E-response from the  $k$ th item, and  $\beta_k$  is the log-odds ratio that yields the item weight for the  $k$ th item,  $\alpha_k$  is a measure of the item “difficulty” (the higher the value for  $\alpha_k$ , the more likely the average respondent would be to choose the Extraverted response), and  $\varepsilon_k$  is the “measurement error” term representing all variation in item responses other than that caused by  $F$ .

$F$  is an unobservable (latent ‘true score’) variable for the E-I dimension.  $F$  may contain only two levels (1 = “true” Extravert, -1 = “true” Introvert) as consistent with the latent class (LC) model, or it may be viewed as continuous as consistent with item response theory (IRT). For a discussion about the relationship between LC and IRT see Magidson, 1997.

Regardless whether F is treated as dichotomous or continuous, the critical assumption required to avoid bias in the estimate of  $\beta_k$  is that the conditional expectation of the error does *not* depend upon F. Formally,

$$E(\varepsilon_k | F) = 0 \quad (1A)$$

which means that the measurement of F must not be confounded with extraneous nuisance factors. As an example of a potential nuisance factor, assume the existence of a second latent variable G. For concreteness, we might think of G representing Gregariousness. Since G is not explicitly included in (1), we include it as part of the error term as follows:

$$\varepsilon_k = \lambda_k G + u_k \quad (2)$$

where  $\lambda_k$  is a parameter measuring the strength of the relationship between item k and G, and  $u_k$  denotes the uniqueness associated with the kth item. Under the structure assumed in (1)-(2) above, it follows that to the extent to which the relationship between G and F causes assumption 1A to be violated, a bias occurs in the estimate for  $\beta_k$  which affects the measurement of F. The result of the item bias is that the gregarious Introvert will be more likely than the nongregarious Introvert to have an inflated E-preference score due to high measurement error and thus be more likely to be misreported as an Extravert. According to our working hypothesis, the implications of this model are that Introverted Threes might be expected to be misreported as Extraverts more frequently than non-Threes.

The concept of item bias is not new to the MBTI®. Myers expended considerable efforts in testing potential items for demographic biases, and used only those items that were free from such biases. For example, for a T-F item to be free of a gender bias, the probability of selecting the T response must be the same for "T" males and "T" females. Similarly, the probabilities must be the same for "F" males and "F" females. Myers used the selection ratio in testing for such biases. More recently, the IRT model was used in the development of Form M of the MBTI® to eliminate items that showed differential item responses with respect to demographic subgroups (Harvey & Hammer, 1999).

Despite the long history of such techniques being used with the MBTI®, we believe that the research reported here is the first application of testing for the occurrence of item bias associated with non-demographic variables.

## **Method**

### **Participants**

Over a 10-year period, 500 predominantly Caucasian adults (20% male, 80% female) were given the MBTI® (Form G) and the results self-validated in one-on-one interviews. The participants included in this study were generally entering therapy, ministry, or wanted guidance in spiritual growth, accounting for a type sample (MBTI® and Enneagram) inconsistent with that found in a random sample of the population. There were considerably more females than males, more Intuitives than Sensing types, more Feeling



than Thinking types, and more Introverts than Extraverts. There is also an uneven representation of Enneagram types, with Twos not appearing in this sample at all.

### Procedure

The results were self-validated on an individual basis using the guidelines outlined in the MBTI® manual (Myers, McCaulley, Quenk, & Hammer, 1998). The self-validating sessions were generally from 1½ to 2 hours long. When validating the Extraversion-Introversion dimension, an emphasis was placed on energy source as the defining point of the dimension (Quenk, Hammer, & Majors, 2001). Subsequently, each participant generally spent between 1¼ to 1½ hours in an individual session learning about the Enneagram and its nine types in order to discern Enneagram type in the oral tradition, as recommended by Palmer (1998). The MBTI® and Enneagram sessions were generally a week apart.

No Enneagram instrument was used in this process, because it is our opinion that the results of the instruments currently available are influenced by MBTI® traits and characteristics. To the best of our knowledge, no currently available Enneagram scoring system is expressly designed to account for the influence of one's MBTI® type on the pattern of responses. As an example, a frequently appearing question in many Enneagram instruments refers to a desire to keep options open. While the intent is to identify an Enneagram Seven, a non-Seven who is a Perceiving type might be mistakenly classified as a Seven.

## Data Analysis And Results

The measurement of any given MBTI® dimension is imperfect and can be expected to be wrong as much as 25% of the time (Myers & McCaulley, 1985; Myers, McCaulley, Quenk & Hammer, 1998). If the error term assumption 1A holds true, this kind of misreporting is totally random. On the other hand, if assumption 1A is violated, a systematic bias exists in the measurement of type. Our working hypothesis of this study is that there is an MBTI® systematic bias associated with Enneagram type. In the foregoing, we assume that our self-validation process identifies “true” MBTI® Type and accurate Enneagram Type. Of the 500 respondents included in this study, the modal Enneagram type was the Three, consisting of 110 (22%). In order to maximize the power of finding such biases, we thus focused on hypotheses associated with Threes.

The standard SRTT profile shows the 110 Threes compared to all 500 respondents. Threes are significantly more likely than non-Threes to be Intuitive, but do not differ significantly in any of the other MBTI® dimensions. In particular, regarding E-I, Wagner (1992) asserted that two-thirds of Threes can be expected to be Extraverted. Our results do not support this assertion, although compared to the general population our sample appears skewed toward Introverts (56% of our sample self-validated as Introverts).

To check for bias, we examined the scores of all 281 participants who self-validated as Introverts and those who self-validated as Extraverts separately. Among the verified

Introverts, Threes were significantly more likely to be misreported by the MBTI® preference score (as Extravert) than nonThrees. Among Introverted Threes, 18 of the 68 (28%) were misreported as Extraverts. It is easy to see how this could possibly account for the inaccuracy of about 25% reported by Myers and McCaulley (1985) and inaccuracies ranging from 15% to 32% reported by others (Myers, McCaulley, Quenk & Hammer, 1998). However, among Introverted nonThrees, only 19 of 213 (9%) were misreported as Extraverts.

Looking more closely at specific questions that determine the E-I score, we find that not all questions contribute to this misreporting bias. Based on our N = 281 Introverts, we performed 20 separate chi-squared tests, one for each of the 20 dichotomous E-I items in Form G of the MBTI®. For each test, the null hypothesis is that the probability of choosing the introverted response is the same for Threes as for non-Threes. For 10 of the 20 items, the null hypothesis was rejected at the .05 level. For one additional item, the null hypothesis would be rejected at the .10 level (which corresponds to a 1-tailed p-value of .05). For all of these items, Threes were found to be significantly less likely than nonThrees to choose the introverted response.

The 10 items for which the null hypothesis is rejected at the .05 level are listed below, ranked in order of the p-value. The additional item that provides a marginal p-value was item #40 (not used on Form M).

72. (Not used on Form M)  $p=.0001$

Would you say you

(A) get more enthusiastic about things than the average person or

(B) get less excited about things than the average person?

3. (Form M: #3)  $p=.002$

Are you usually

(A) a "good mixer" or

(B) rather quiet and reserved?

79. (Form M: #81)  $p=.003$

Are you

(A) easy to get to know, or

(B) hard to get to know?

26. (Not used on Form M)  $p=.003$

Do you usually

(A) show your feelings freely, or

(B) keep your feelings to yourself?

19. (Not used on Form M)  $p=.01$

Do you

(A) talk easily to almost anyone for as long as you have to, or

(B) find a lot to say only to certain people or under certain conditions?

23. (Form M #23)  $p=.02$

Can the new people you meet tell what you are interested in

(A) right away, or

(B) only after they really get to know you?

55. (Not used on Form M)  $p=.03$

Which word in appeals to you more?

(A) Speak

(B) Write

77. (Not used on Form M)  $p=.04$

When something new starts to be the fashion, are you usually

(A) one of the first to try it, or

(B) not much interested?

37. (Form M #38)  $p=.04$

Which word appeals to you more?

(A) Reserved

(B) Talkative

10. (Form M #10)  $p=.05$

In a large group, do you more often

(A) introduce others, or

(B) get introduced?

### Discussion

Simply by looking at the Three descriptors in Table 2, it is easy to see how it is possible that the Enneagram Three part of personality could influence the answers to the above questions, causing a verified Introvert to select the Extraverted response. However, through the process of self-validation, the Introverted Three can readily differentiate between the Three's outward focus and adrenalin rush and the Extravert's finding energy externally. Subsequent to the initial rush, Introverted Threes report a significant energy drain after extraverting for extended periods, express a profound discomfort under those circumstances, and long for alone time.

During the one-on-one interviews, Introverted Threes related to, and described in detail, the internal conflict they felt between their preference for Introversion and the Three defense (refer to Table 1). Some referred to having a mask or alter ego that was deceptively outgoing that felt false and “not real.” Most noted the amount of energy it took to maintain the false front.

In looking at E-I in relation to Three, it is interesting to note that only two questions in the “word pair” section of the test seems to be significantly affected by Enneagram type. This may indicate that an accurate response is more likely to be expressed without situational influences that may trigger the Enneagram defense (Wyman, 2001b). The one-on-one interviews seem to support this position.

Although, as stated, there is no direct 1:1 correlation of specific MBTI® and Enneagram types, Flautt and Richards’ (1997a & b) work shows that there is a high correlation for certain Enneagram types and specific MBTI® types. For instance, there is an affinity between an ISTJ and an Enneagram One. The challenge, then, of developing a correct classification for an Enneagram One who is not an ISTJ (or for a non-One who happens to be ISTJ) is to avoid items that contain a bias associated with the Enneagram One. While our current sample size does not permit a thorough analysis for each affinity, it seems reasonable to believe that the bias caused by Enneagram type may affect certain MBTI® classifications more than others.

## Summary, Implications And Conclusions

In this study, we examined the possibility that some misreporting of MBTI® type may be explained by differential item bias associated with one's Enneagram type. We found strong evidence that Threes who are Introverts are more likely than non-Three Introverts to be misreported as Extraverts. Certainly there is a need for more detailed analysis of this collection of data to determine which MBTI® dimensions are affected by misreporting biases associated with a respondent's Enneagram type. There also needs to be a larger sampling of other Enneagram types as well as a sampling that would be more representative of the population at large.

Other implications of our research include the following:

- The misreporting bias we identify here for the MBTI® may well be even more serious for the measurement of Enneagram type where the items used are similar to many of the MBTI® items. Because highly significant correlations have been found between the two typologies (Flautt, 1998), and the MBTI® part of personality is more strongly responsive to behavioral questions than the Enneagram part (Wyman, 2001b), there is reason to believe that Enneagram instruments will tend to measure the Enneagram type that is most highly correlated with the MBTI® type of the respondent (e.g., non-Ones may tend to be misclassified as Ones if they have a preference for ISTJ). Therefore, we question the validity of the many current Enneagram

instruments because a valid Enneagram instrument would need to account for MBTI® type variations in responses and separate out such confounds.

- It is possible that the Enneagram effects might be quite congruent with out-of-pattern facet scores used in MBTI® Step II (Kummerow & Quenk, 2003; Wyman, 2001a), and hence might be useful in the further explanation of such in terms of Enneagram theory as well as the development of additional kinds of patterns.
- It is hoped that this initial exploration of the relationship between the Enneagram and MBTI® scores will effectively demonstrate the need for facilitated self-validation of indicated scores. We suggest that, as long as the MBTI® contains such item bias, no understanding of MBTI® type is complete without consideration of the Enneagram defense part of personality. In order to filter out Enneagram influence, the interviewer must be able to determine Enneagram type and to ask questions that the Enneagram part of personality cannot answer or affect. The clear need is to be able to determine both Enneagram and MBTI® types simultaneously.

In conclusion, we also wish to emphasize that the validity of the results of this research, and any future research of this kind, hinges on the validity of the self-validation procedures used.



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## MBTI®

### Introvert

Private  
Quiet  
Reserved  
Inner focus  
Works behind the scenes  
Listener

## Enneagram

### Three

Performer  
External focus  
Talker  
Not private  
Needs people for identity  
“Works” people

**Table 1**

From *Three Keys to Self-Understanding*, Wyman, 2001

## Enneagram Three

Achievement oriented; ambitious  
Action oriented  
Adaptable  
Appearance is important; image conscious  
Assertive  
Attention seeking  
Can compromise values  
Charming  
Competitive  
Disconnected from feelings  
Do; busy; overactive  
Efficient  
End justifies the means  
Energetic  
Enthusiastic  
Failure is not an option  
Fears rejection  
Future oriented; visionary  
Goals  
Good communicator

Hates criticism  
Inspirational  
Manipulates  
Motivational  
No private life  
Organized  
Positive  
Professionalism  
Self-confident  
Self-deception  
Talks  
Team leader  
The impossible just takes a little longer

## Table 2

From *Three Keys to Self-Understanding*, Wyman, 2001b.

## Biographies

Pat Wyman, LPC (INFJ) has a Masters in Education, Counseling from the University of Missouri St. Louis, is qualified for the Myers-Briggs Type Indicator® (MBTI®), is an Inner-Child Therapist in private practice, and a certified hypnotherapist. She is trained in the Enneagram, imaging, and Neurolinguistic Programming. Pat has also served as consultant to various business and ministry groups and has presented workshops for corporate teams, small companies, ministry groups, and retreats. She has presented workshops at the International Enneagram Conference and a variety of MBTI® regional and international conferences, including the MBTI® Clinical Conference. She has published articles in the *Enneagram Monthly*, *Dream Network Journal*, *Bulletin of*

*Psychological Type*, and the *Journal of Psychological Type*. She is an adjunct faculty member of Rockhaven Ecozoic Center and a former faculty member of the Center for Application of Psychological Type (CAPT). Her book, *Three Keys to Self-Understanding: An Innovative and Effective Combination of the Myers-Briggs Type Indicator®*, the *Enneagram* and *Inner-Child Healing*, is available through CAPT.

Jay Magidson, Ph.D. (INTJ) is founder and president of Statistical Innovations, a Boston consulting, training, and software development firm specializing in segmentation modeling. He has been involved in Type research for over 10 years and has coauthored an article on Type with the late Mary McCaulley. Widely published in professional journals, his expertise includes both study design and advanced statistical modeling based on log-linear, latent class, and other advanced statistical models. He has taught Statistics at Tufts and Boston University, and for more than 20 years he has conducted workshops with various colleagues on statistical modeling at "Statistical Modeling Week."