MYERS BRIGGS/ PERSONALITY PATTERN INVENTORY Research

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catalyzer = promoter PR
energizer = Rebel Rb
achiever = workaholic WK
harmonizer = Reactor Rc
dreamer = dreamer = Dr
persister - persister Pe

Project: Determine if there is an algorithm that will demonstrate a predictable personality description from the output of either of two different personality survey instruments (Myers-Briggs Type Indicator (TM) and the Personality Pattern Inventory (TM)).

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I. Overview -

A rough concept for this project was sketched in the fall of 1988 with actual definition and work beginning in April 1989 with completion in January 1990. The original concept was to find a "model" (algorithm) that would, with predictable accuracy, allow the translation of "profiles" (ideograms) of the Myers-Briggs Type Indicator (TM)[1] to corollary metrics of the Personality Pattern Inventory[2]. (Hereafter, the Myers-Briggs will be referred to by MB, and the Personality Pattern Inventory as PPI.)

"Profiles" are cryptic alphabetic codes or descriptive adjectives which are used to denote a human personality type. That is, for general discussion purposes, the spectrum of human behavior is condensed into a limited number of categories and each of these categories is given an identifying label to aid in communication (e.g., "workaholic" is a label used by the PPI).

The initial hypothesis was - that there is an algorithm which would relate the "Phase" profile of the PPI to the profile of the MB. No proof could be found to support this hypothesis - however, an algorithm was found that relates the "Base" profile of the PPI to the profile of the MB. Reflective thought tells one that rejection of the initial hypothesis is logical and should be of no surprise. The PPI instrument is very sophisticated in that it contains sub-test to categorize not only the Base (basic or native) personality type description, but also contains sub-test to discriminate the current operational mode of the persona (Phase). (Please see Section III, subsection B for a discussion of "base" and "phase" theory as used by the PPI.) MB contains sub-test only related to basic personality; specifically, MB has no capability of discriminating the current operational mode. Consideration of the fact that no single tool should be the basis of a staffing decision and that many managers have been exposed to the MB, it was judged worthwhile to proceed with the definition of an algorithm that demonstrated the analog between the Base metric of the PPI and ideograms (four metrics of the MB combined) of the MB. Details about data gathering, analysis, procedures and outcomes will be dealt with in considerable detail in the main body of this paper. The balance of this Overview will present a synopsis of the major findings and conclusions.

Before demonstrating any of the results of this project a brief explanation is required to enable the reader to interpret the results. Firstly, the data output by the two test should be described. The MB utilizes four bipolar scales denoted as follows:

Scale 1	Extraversion	<---->	Introversion
Scale 2	Sensing	<---->	iNtuition
Scale 3	Thinking	<---->	Feeling
Scale 4	Judging	<---->	Perceiving

Table 1 MB Scales[3]

These four scales are described as dealing with:

Scale 1 - "Where you like to focus your attention"

Scale 2 - "How you prefer to take in information"

Scale 3 - "How you like to make decisions"

Scale 4 - "The lifestyle you prefer"

These descriptions are from MB results reporting forms. The test results are coded into a four (4) letter representation that is characterized as "type" by MB. For example, a hypothetical result might be ESTJ. The reporting schema of this instrument results in 16 possible types being reported. Please note, that although there are 16 types possible, all of these types are considered in one dimension only. That is the MB purports to report basic personality type. From the results reporting form _ "Your reported type shows which you prefer the most and probably use most often."

The PPI, in contrast to the MB, utilizes two dimensions: 1) the "Base" which is a measure of native and characteristic personality; and 2) "Phase" which is a measure of the current operational mode of personality. For communication purposes, each of these two dimensions is categorized by six (6) descriptive labels (Persister, Workaholic, Reactor, Rebel, Dreamer and Promoter). The combination of Base and Phase results in 36 possible descriptions. These 36 descriptions <u>are not</u> comparable to the MB 16 "types". Comparison can be made only between the six (6) Base descriptions of the PPI and the 16 "types" of the MB. Equally important as providing the reader with a description of reporting methods used by these two instruments is the fact that the results of both of these tests are nominal data (i.e., dimensionless).

Neither of these two instruments attempts to place personality on a linear scale. To do so would imply that one personality type had greater magnitude than another. However, this same fairness precludes any numerical scale comparison or test between the two instruments. This lack of comparable scale required a new symbol to be employed that would allow the mapping of the 6 Base descriptions to the 16 Types of the MB. The "*" was selected. This symbol is used to represent <u>indifference</u> and not universality, that is, it is not portamento. The decision to utilize this indifference mark resulted from review of the occurrence (frequency) of the four MB scale identifiers by each of the six (6) PPI descriptions.

Review of the frequency of occurrence of the MB identifiers by each of the PPI descriptions permitted the specification of five patterns that could be used to predict the MB Type from the PPI Base description. These five patterns are:

PPI Descriptor	Pattern
Persister & Workaholic	**TJ
Promoter	*NT*
Reactor	E*FJ
Rebel	EN*P
Dreamer	I*TP

Table 2 - PPI Descriptor Patterns

From 300 cases collected (a "case" is a record of data on an individual who has taken both the MB and the PPI), 253 were found to be useable. (The principal reason that 47 cases were not used is that incomplete data was submitted.) A computer program was written that would take the Base descriptor for each of these 253 selected cases and generate the indicated pattern. These predicted patterns were then compared to actual MB Types and scores accumulated. The results of the comparison of scores will be presented for the total of all cases and then within each of the PPI descriptors.

The MB utilizes four (4) scales, therefore the maximum score, 100%, would be correct prediction of 1012 characters (4 * 253 = 1012). Over the entire sample the following results were obtained using the patterns defined previously.

Correct Characters	No. Cases	Percent of Total
4 Characters	131	51.78%
3 Characters	92	27.27%
2 Characters	29	5.73%
1 Character	1	0.10%
Total		84.88%

Table 3 - Overall Prediction Score

Before detailing the results within each of the PPI descriptors, a potential challenge should be dealt with. That question is - What did the use of the indifference symbol (*) contribute to these high results. It the table above were recast to exclude counting of the indifference

symbol (hereafter referred to as IDS) the total characters to be predicted would be reduced to 614. Recalculated, excluding the IDS contribution, the score of correct characters would be 75.08% (461/614). These high scores plus Pearson Chi-Square test of the complete results table preclude random chance from being the source of accuracy. In other words, while given that these five (5) patterns leave a lot to be desired, these patterns do have predictive capability that is a significant improvement over random chance selection.

Within each of the six (6) Base descriptors the following results are obtained:

Persister & Workaholic	89.57% correct
Promoter	91.67% "
Reactor	76.37% "
Rebel	91.67% "
Dreamer	85.00% "

The contribution of the IDS within each of these descriptors was in ratio to the results determined for the total of all descriptors above. One will note that Persister & Workaholic are combined. This was due to similarity of patterns of occurrence that were used to define the prediction patterns. The writer believes that this similarity is due to the lack of some metric in the data collection process. That is, the data collection included PPI Base and Phase, MB all four scales, age, sex, race and years of schooling. However, none of these variables proved substantial enough to discriminate Persister from Workaholics. This lack of discrimination could arise from two sources: 1) there is some variable for which data was not collected; or 2) there is not a clear distinction in the MB of these two personality types.

Conclusions: there is more than a random chance relation between the outcome of the MB and the PPI. The inverse of this previous statement is that - the MB is predictive of basic personality and does not have capability of discerning current operating mode of the persona. This is also supported by the lack of distinguishing patterns between the PPI Phase and the MB and that the MB does not contain any sub-test related to current mode.

Can these results be projected to the general population - No. The sample was drawn from a limited portion of the general population, in other words it was not a random sample. These results can be projected onto the populations of interest to the sponsor of this project (Dr. Terry McGuire). Such projection would also be accurate for any other population that had similar characteristics as the population in this study: frequency of occurrence of PPI base descriptors as follows - Dreamer (1.98%), Persister (42.69%), Promoter (2.37%), Rebel (4.74%), Reactor (35.97%) and Workaholic (12.25%).

It would have been desirable to have actual clinical evaluations to serve as an unbiased standard for both the MB and the PPI - cost and practicality precluded this procedure.

In summation, if only one instrument is feasible, than the PPI is preferable to the MB due to its ability to describe current operating mode; if more than one test is feasible, than the combination of the PPI and the MB would be useful as the "patterns" could be used to establish a control for use in identification of "poor testers" or other deviations.

II. Purpose of Study -

In the fall of 1988 a discussion was held between Dr. Terry McGuire and Dr. Taibi Kahler regarding the subject of comparison of the Myers-Briggs Type Indicator (TM) [1] (hereafter referred to as MB) and the Personality Pattern Inventory (TM) [2] (hereafter referred to as PPI). The thrust of this conversation was - is there an algorithm that would relate the results of individual PPIs to the results of the MB when conducted with the same individual. In other words, was there a method of translating the results of one instrument to the results of the other. A simplistic statement would be - is there a correlation between the two instruments? This discussion resulted in a subsequent formal project definition and specification of data sources in April of 1989.

The formal project definition that was specified was:

> Determine if there is an algorithm that will demonstrate a predictable personality description from the output of either of two different personality survey instruments (Myers-Briggs Type Indicator (TM) and the Personality Pattern Inventory (TM)).

The working rule adopted was to determine an algorithm that would, with acceptable accuracy, project the results of the PPI to the results of the MB. This rule was selected as it would be less work to determine six (6) patterns than it would be to determine 16 patterns (the PPI generates six (6) labels where the MB generates 16 "types"). Also, there was greater likelihood that six (6) patterns derived from 253 cases would have better chances of statistical test support than 16 patterns from 253 cases would.

What value would the results of this study be? At a minimum, it was expected that there would be some indication as to which of the two instruments would be of greater benefit if only one instrument could be used; and, in the case where two instruments could be employed, a determination of in what way the two results were related. Relation of the two instruments would be useful in cases where the subject was a "poor tester" or there were other deviations (such as personal interview results in contradiction to test results).

All of the above resulted in a schema of rules to be tested and procedures to accomplish these tests. Following sections will detail these rules and procedures; however, the immediate next section will address a description of the two instruments so as to prepare the reader for the following sections.

III. Description of the Myers-Briggs Type Indicator and the Personality Pattern Inventory -

A. Myers-Briggs -

This personality survey instrument was copyrighted by Isabel Briggs Myers in 1976 and is currently distributed by Consulting Psychologists Press, Inc. of Palo Alto, CA. It is characterized by the utilization of four bipolar "scales". These scales are described on the "Report Form for the Myers-Briggs Type Indicator(TM)" as being:

Scale 1	Extraversion	<---->	Introversion
Scale 2	Sensing	<---->	iNtuition
Scale 3	Thinking	<---->	Feeling
Scale 4	Judging	<---->	Perceiving

Table 1 MB Scales[3]

Exposition of these eight (8) alphabetic identified poles is contained on the form mentioned above. These definitions are:

E You prefer to focus on the outer world of people and things.

I You prefer to focus on the inner world of thoughts, feelings, or impressions.

S You focus on the present reality and on the information brought by your senses.

N You focus on possibilities and relationships and look toward the future.

T You base your judgments on logic and objective analysis; tend to be more task oriented.

F You base your judgments on personal values; tend to be more person oriented.

J You like a planned and organized approach to life; tend to want things settled and decided.

P You like an adaptable, flexible, and spontaneous approach to life; like to stay open to new experience.

After this instrument has been administered answer scores are accumulated for each of the two (2) poles within each of the four (4) scales. The pole with the higher numerical score in each of the scales is designated as the characteristic type for that particular scale (in cases of tie scores there are instructions to use the following characteristics as defaults: I, N, T or J). Scoring of the MB does contain a sex differential in the third metric (scale). Combination of the four (4) letter indicators is called "type" by MB. The number scores are termed "preference scores"; and per the Report Form, are meant to show the consistency of preference of one pole over the other. This description also contains an italic statement warning that the "preference scores" do not measure abilities or development.

Short descriptive statements of each of the 16 possible letter combinations is also contained on this Report Form. The subject is instructed to read the statement that matches their letter combination - but the instructions continue, that if the subject disagrees with the description the subject should review descriptions for other letter combinations and try to find a description that is agreeable. The instructions continue with statements that all of the preferences are used by most people at various times. Reported type is stated to be the type that is preferred by the subject most often and "probably used the most often".

There are at least three (3) different formats of the MB available: a self-scoring, an instructor scoring, and a machine scoring version. By observation it was determined that each of these three (3) versions uses different numerical scales.

In summation the MB is basic in its approach both in terms of the limitation to 16 "types" and (from an informed source, Dr. Taibi Kahler) due to the limited number of sub-tests included. This instrument appears to be designed to attempt description of "basic" or inherent personality. Determination of this is based upon statements on the Report Form and information supplied by Dr. Kahler with regards to the scope of the included sub-tests.

B. Personality Pattern Inventory -

Dr. Kahler, Kahler Communications, Inc., Little Rock, AR, development of the PPI began in 1972 with an initial instrument titled "Kahler Transactional Analysis Script Checklist" (TASP). The advent of Ware's (1978) theory of personality adaptations coupled with the continuing development and enhancement of Kahler's theory of Process Therapy (1978) motivated Kahler to revisit investigations of 1972, perform additional research and to publish a new instrument. The resulting personality survey instrument was the PPI. (Please see Appendix B for a complete discussion of the development of the PPI.) The basis, in theory, of this test is the Process Communication Model. This theory combines psychoanalytic and Transactional Analysis concepts (called by some "integrative TA"). The PPI is characterized by the output of two descriptive classifications. One classification is named the "Base" and is intended to identify the basic (native) personality type. The second

classification, "Phase", is focused on current operational mode. The theory is that each individual has a basic, inherent style of personality (Base) in conjunction with a current development style (Phase). In practise this theory results in a Base Persister being found to be operating as a Phase Rebel. Both the Base and the Phase encompass the full spectrum of human behavior from mal-adaptive to "normal". Phase behaviors are superseded by Base behaviors in times of severe and intense distress. Phase style is responsive to development (maturity), significant life events, stress (long term), etc. A brief sketch of each of the descriptors follows:

Reactor - has a predominant use of feelings in contrast to thinking. Focus is on people/things versus ideas/principals. Might be described as compassionate, sensitive and warm. Tends to be a good nurturer, attentive to needs of others, most sympathetic of all types. Can express feelings and has strong need to find corresponding feelings in others. Very sensitive to indifference. World engagement is direct and active. Harmony is very important, to the point of avoiding conflict. If psychological needs are not met will typically overadapt, and display lack of assertiveness. Upset in personal relationships will cause an internalization of blame and may result in depression. In distress makes mistakes and assumes role of victim.

Workaholic - needs recognition for thinking abilities, accomplishments, hard work, responsibility and attention to detail. Is likely to give conditional attention to others. Has preference for intellectual matters versus emotional interactions. Organization and scheduling very important. Can initiate conversations but prefers one on one intercourse or to be active in a solitary mode. Logic is strength - feelings may be perceived as weakness. Demonstrates love by working hard and providing. In distress will over-control, verbally attack, and reject others "who can't think".

Persister - can be recognized by strong orientation to convictions. Important for others to accept same beliefs or to admire and respect belief system held by the subject. Needs to act out beliefs and to impact growth of others. Similar to the Workaholic in orientation to thinking in contrast to feeling. Also prefers one on one conversations or solitary tasks. Under stress will tend to preach, lecture and be righteous. Events going wrong will tend to evoke anger. Very sensitive to negative feedback.

Rebel - spontaneous, creative, and playful. Tends to dress in manners associated to the groups identified with. Attention getting, is stimulated by energy and gravitates to high activity tasks. Needs contact, and/or frequent interaction with others who are "fun" or spontaneous. Tends to wait for others to begin conversations. Likely to not answer questions directly or to make evasive statements. In the case of events "going wrong" tends to blame, be negative and complaining.

Promoter - charming, take-charge, action oriented person. Street-wise. Will find exciting tasks and energetic people. Searches for drama and excitement. Prefers to dress fairly flashily ("I've made it" look). Is hedonistic and lives for the present. Strong fear of abandonment. In distress, manipulates others.

Dreamer - needs time alone for self-reflection. Inactive, and will demonstrate this trait over emotions or thought. Is outreaching but does not hold back when approached. Is a responder rather than initiator. Tends to be taciturn. In distress, withdraws as a victim.

The combination of Base and Phase provides a two dimensional mapping of basic and operational mode characteristics. This instrument has particular value in situations of "long term" engagement or employment due to its ability to track and predict behavior associated with Phase classifications and changes to be expected from Phase development.

This paper is not intended to be a Transactional Analysis or Process Communication Model (PCM) primer; however, in Appendix C is a discussion of the theoretical foundation of PCM and Appendix D contains greater detail about each of the PCM types and phases.

PPI also includes in its printed output "confidence" scores for Base and Phase, interaction score, and, where appropriate, brief statements

regarding reasonableness of the outcomes. This instrument's results, unlike the MB, are presented to the subject in the form of a multi-page printed interpretation. Given the wide variation available in descriptions of Base and Phase combinations (36 possible) it is likely reasonable that this test is not self-scoring (specifically, answer sheets are of a "mark sense" type, meaning that these sheets can be read by a machine). While it may be of greater convenience to be able to score at the test site, the enhanced ability of the PPI is an argument in favor of the necessity of scoring at a central office.

The PPI, in summation, is an instrument of more modern theory than the MB. This implementation, alone, is not reason enough to recommend the PPI. However, application with/to many thousand subjects has demonstrated specific capabilities of the instrument in situations of career management and development over a long term (please note that no definition of "long term" is provided - this definition is under development in the form of a current analysis related to subjects that have been tested multiple times over a seven (7) year period; results of this study will be reported when complete). PPI has also proven to be useful in cases where there has occurred an apparent behavior change. The MB has to be questioned in that it is logically naive to use statements such as made by MB on its Report Form: "does not indicate development", "characteristics demonstrated most of the time", and...look and find the type that you think you are [paraphrased by the author]. PPI, with its two dimensional measurement (Base and Phase), its usefulness in career management and behavior change, and logical attractiveness of the recognition of basic personality and development of operational mode (Phase) can easily be "the instrument of choice" when compared to the MB.

IV. Sample Description -

A. Data Gathering -

Dr. Kahler established the criteria that all of the cases to be used would be from populations coherent with the population of interest of Dr. McGuire. Some 100 cases were supplied by Dr. McGuire and the balance, 200 cases, were supplied by Dr. Kahler. Achievement of Dr. Kahler's criteria is exhibited by the high consistency of occurrence by "types" demonstrated below:

Base Type	% of Total
Dreamer	1.98%
Persister	42.69%
Promoter	2.37%
Rebel	4.74%
Reactor	35.97%
Workaholic	12.25%
Total	100%

Table 4 Base Type Distribution of Sample

If specific information about the sources of these cases is required, please contact Dr. Kahler (this is due to the requirement that confidentiality be respected - it is felt that the reader will understand this requirement and appreciate its application).

Of the 300 cases submitted, 253 were found to be useful. That is, 253 case had complete data submitted: PPI Base, Phase, and Base and Phase Confidence scores, MB four scales (alphabetic and numerical), age, sex, race and years of schooling. The primary concern was that the individual subjects had taken both the PPI and the MB tests within close proximity (date) to one another.

The raw data was submitted to Kahler Communications, Inc., who provided case control and coordination with respect to results of both test being submitted simultaneously. Upon receipt and control functions exercised, the data was forwarded to Stansbury Ltd. for analysis. Stansbury Ltd. encrypted the data and performed limited analysis to determine occurrence of all of the six (6) Base types in the sample. Data gathering was continued until a minimal representation of all six (6) of the Base types were represented in the sample ("stop and go" sampling is

a typical description of this procedure as per Sampling for Modern Auditors published by The Institute of Internal Auditors, Inc., 1977).

B. Data Encryption -

The raw data received was put in a form suitable for analysis by statistical software (SYSTAT trademark and copyright owned by SYSTAT, Inc., Evanston, IL). Following is the schema of this encryption:

Field #	Description
1	Case number (as assigned by Stansbury Ltd.)
2	Base type PE Persister WK Workaholic RC Reactor RB Rebel DR Dreamer PR Promoter
3	Phase type (same code as above)
4	MB Metric 1 score (-E or +I)
5	MB Metric 2 score (-S or +N)
6	MB Metric 3 score (-T or +F)
7	MB Metric 4 score (-J or +P)
8	Base Confidence score
9	Phase Confidence score
10	Age
11	Sex 0 - Female 1 - Male
12	Race 0 - White 1 - Black 2 - Other
13	Schooling (years of)
14	Actual MB 4 letter type
15	Predicted MB 4 letter type

Please see Appendix F for a display of the raw data used.

The reader should be aware that many other encryption methods were used up until the point that statistical tests proved that these other methods of encryption provided no additional benefit. The above schema represents the final coding utilized.

C. Sample Characteristics -

The following charts and tables will detail the characteristics of the sample submitted for each of the 14 data fields.

Chart 1
Base Types

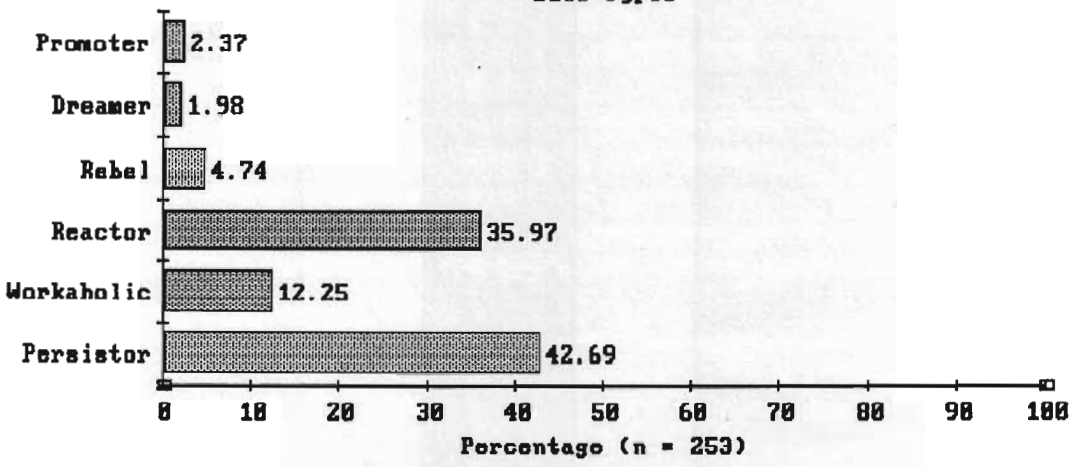
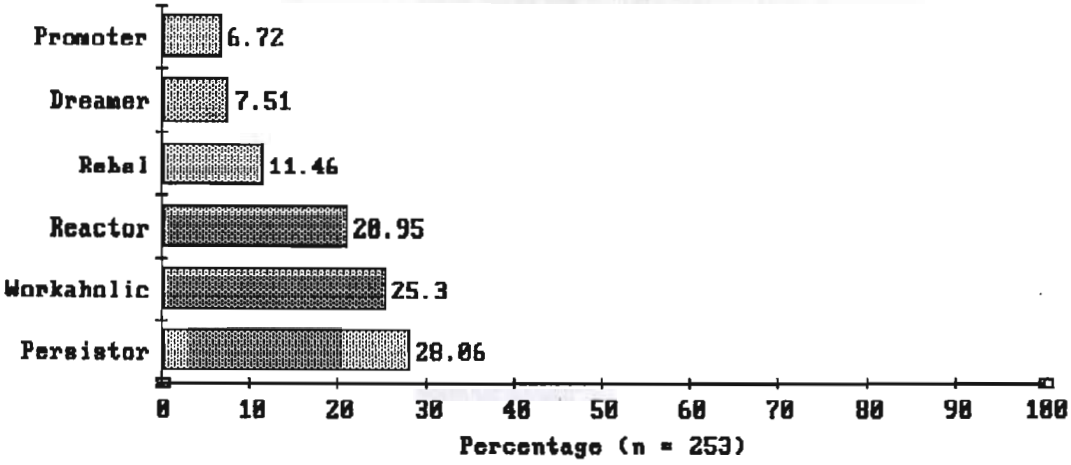


Chart 2
Phase Types



	Min	Max	Mean	SD
MB1	-26.0	28.0	-1.427	13.078
MB2	-33.0	25.0	-1.747	13.592
MB3	-32.0	21.0	-4.273	12.803
MB4	-28.0	30.0	-4.897	14.108

Table 5 MB Four Scales

Legend:

MB1	- = E	+ = I
MB2	- = S	+ = N
MB3	- = T	+ = F
MB4	- = J	+ = P

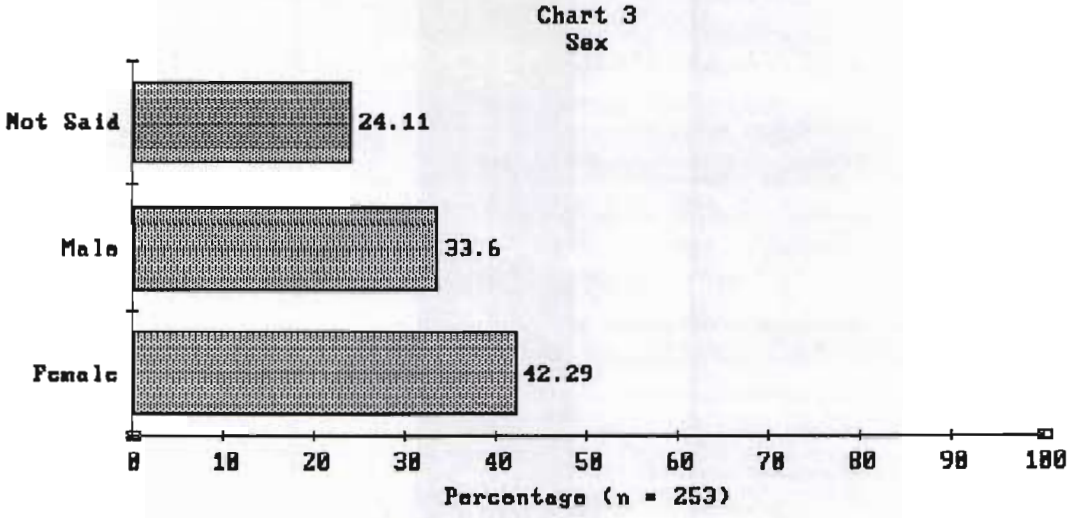
	Min	Max	Mean	SD
BC	2.0	99.0	68.0	27.692
PC	12.0	91.0	53.826	14.722

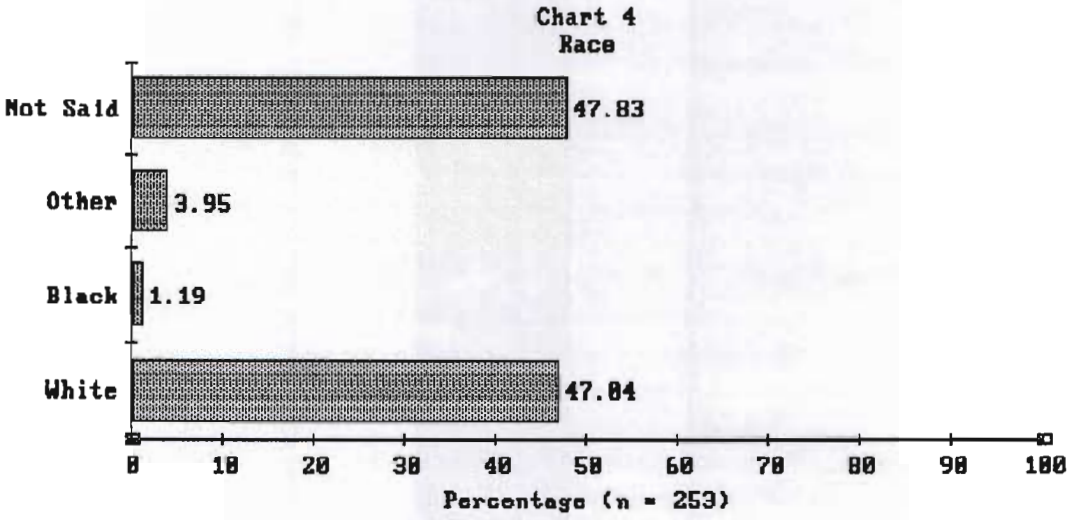
Table 6 Base & Phase Confidence Scores

Legend:
BC - Base Confidence
PC - Phase Confidence

	Min	Max	Mean	SD
Age	17.0	66.0	53.826	14.722

Table 7 Age





	Min	Max	Mean	SD
Years of School	12.0	20.0	15.331	2.30

Table 8 Years of School

Chart 5
MB Type Distribution

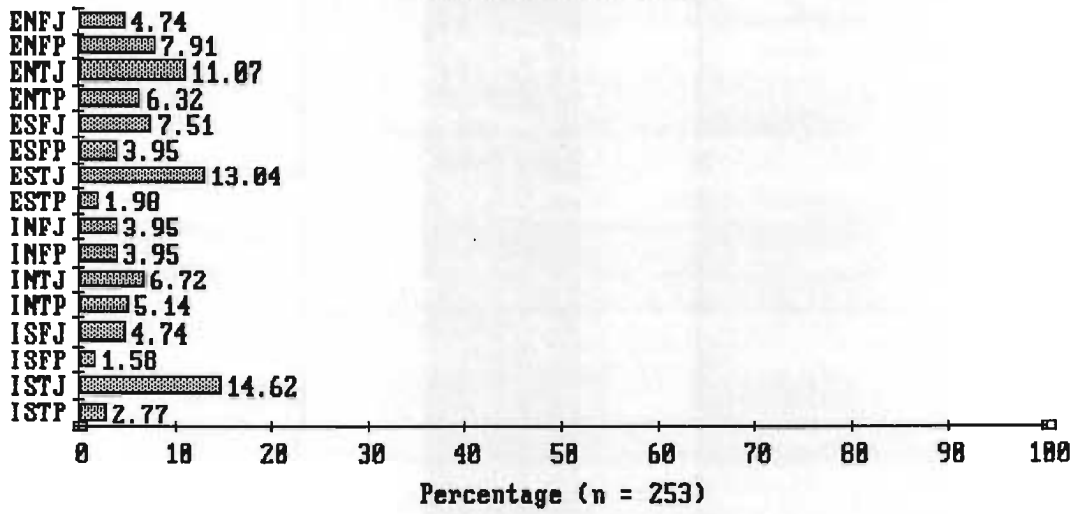
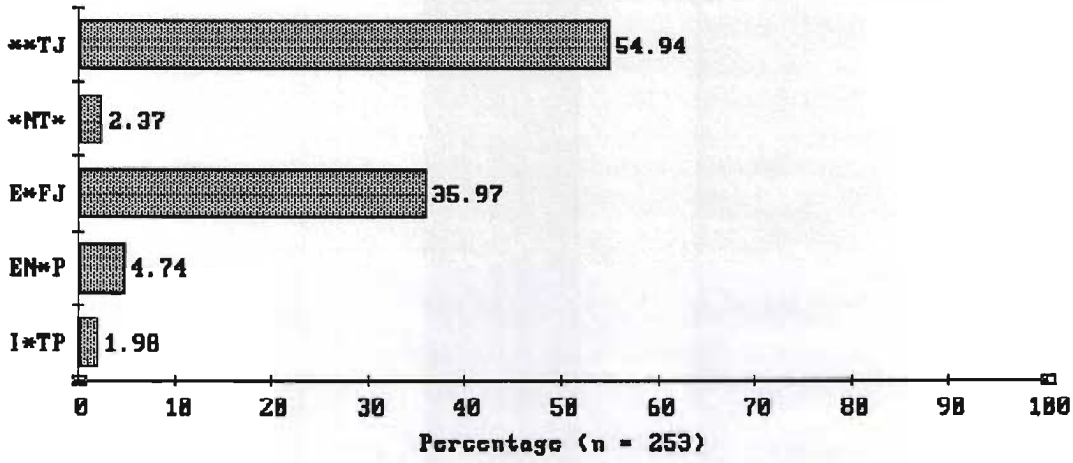


Chart 6
Predicted Symbol Patterns



No comments will be offered other than these are the characteristics of the sample used in the analysis underpinning this report.

V. Procedures -

A. Development of Patterns -

Early work with the nominal data of the PPI and the MB raised immediate questions as to the best approach to use in mapping the six (6) Base types of the PPI to the 16 types of the MB. There were patterns apparent - but these patterns were too thin (statistically) to place confidence in. After some thought it became clear the application of some primary elements of symbolic logic might provide a solution. This proved to be a fortunate route to pursue. The advantage in this strategy lay with the imprecision and ambiguity of language. That is, the author could not, with high confidence, read a PPI statement or description and say that it was equivalent to another statement or description contained in the MB. Elimination of ambiguity became the immediate goal.

Specific application of symbology proved not to be difficult. There were, for each PPI type, clear patterns of MB responses. Some of these patterns were strong; meaning that a significant frequency greater than 60% was obtained. Others of these patterns were "weak", that is, close to 50/50. It was the weak patterns that required a symbological representation. Put another way, these weak patterns represented indifference. A PPI type could have characteristics in one or more MB metrics as well as ambiguities in others. This ambiguity was interpreted to represent "no importance" of preference. For example, a Base type Persister has equal probability of E or I, or S or N in the first two MB metrics. The solution adopted to this apparent ambivalence was to substitute a symbol "*" to indicate indifference (hereafter referred to as IDS).

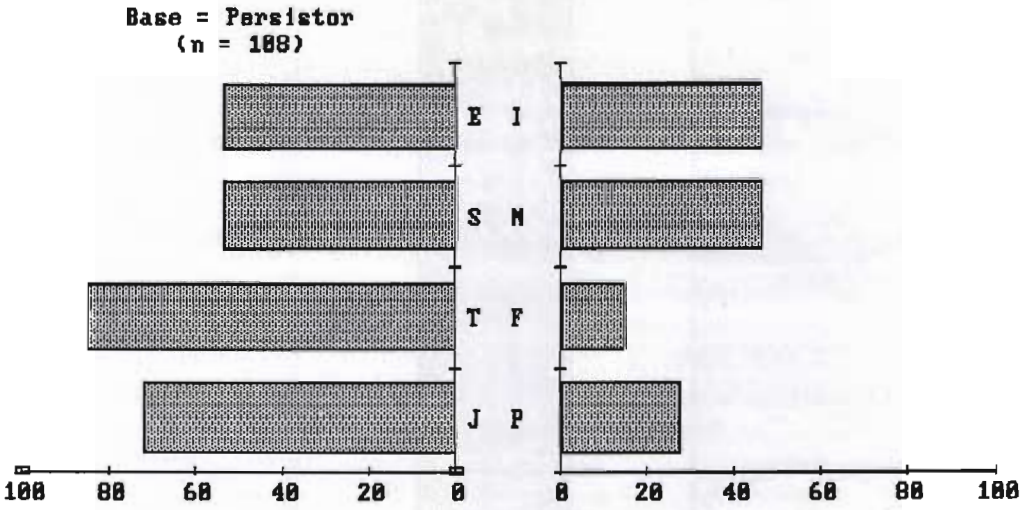
Is this a trivial solution?...the author believes not based on the high scores obtained and the very moderate contribution to the high scores by the IDS (9.8 percentage points). Put another way, if the IDS is excluded from scoring the correctly predicted metrics would still amount to 75.08% correct. This is far to high to ignore, and is obviously not inflated significantly by the use of the IDS.

Following are charts and tables included to provide evidence of the logic supporting pattern choices and the use of the IDS.

Percent Responses by Type

	Base				Phase			
	E / I	S / N	T / F	J / P	E / I	S / N	T / F	J / P
Persister (108)	53.70	53.70	85.19	72.22	64.79	50.70	53.52	57.75
	46.30	46.30	14.81	27.78	35.21	49.30	46.48	42.25
Workaholic (31)	51.61	61.29	90.32	74.19	56.25	51.56	84.38	79.69
	48.39	38.71	9.68	25.81	43.75	48.44	15.63	20.31
Reactor (91)	65.54	50.55	24.18	68.13	47.17	50.94	49.06	71.70
	38.46	49.45	75.82	31.87	52.83	49.06	50.94	28.30
Rebel (12)	75.00	16.67	50.00	8.33	62.07	44.83	55.17	55.17
	25.00	83.33	50.00	91.67	37.93	55.17	44.83	44.83
Dreamer (5)	20.00	40.00	80.00	20.00	31.58	57.89	57.89	57.89
	80.00	60.00	20.00	80.00	68.42	42.11	42.11	42.11
Promoter (6)	50.00	16.67	83.33	50.00	70.59	47.06	70.59	64.71
	50.00	83.33	16.67	50.00	29.41	52.94	29.41	35.29

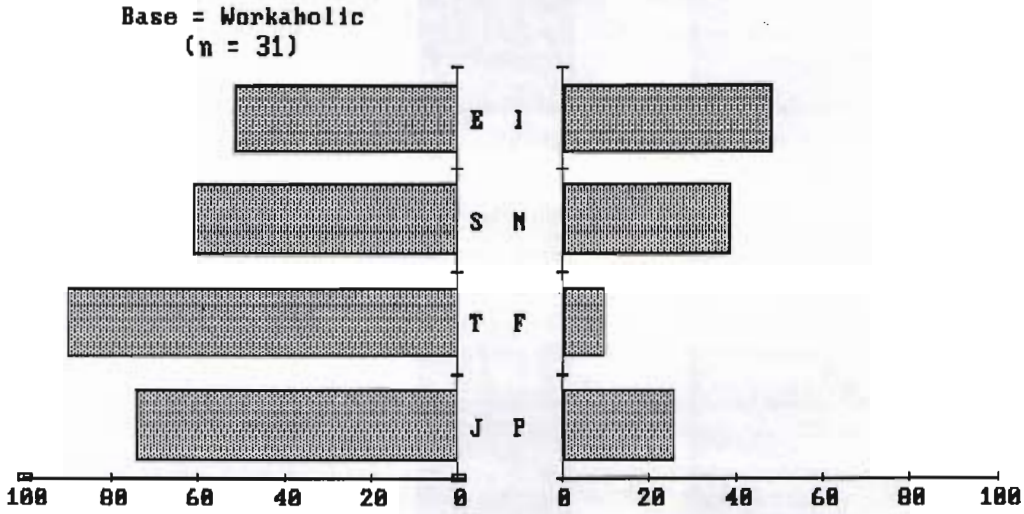
The above display of percent of responses by PPI and MB types was the basis of the determination of the "patterns" to be used for predictive purposes. Following are charts that will display the basis of the patterns graphically.



E/I	53.70	46.30
S/N	53.70	46.30
T/F	85.19	14.81
J/P	72.22	27.78

Table 9 Persister MB Scale Distribution

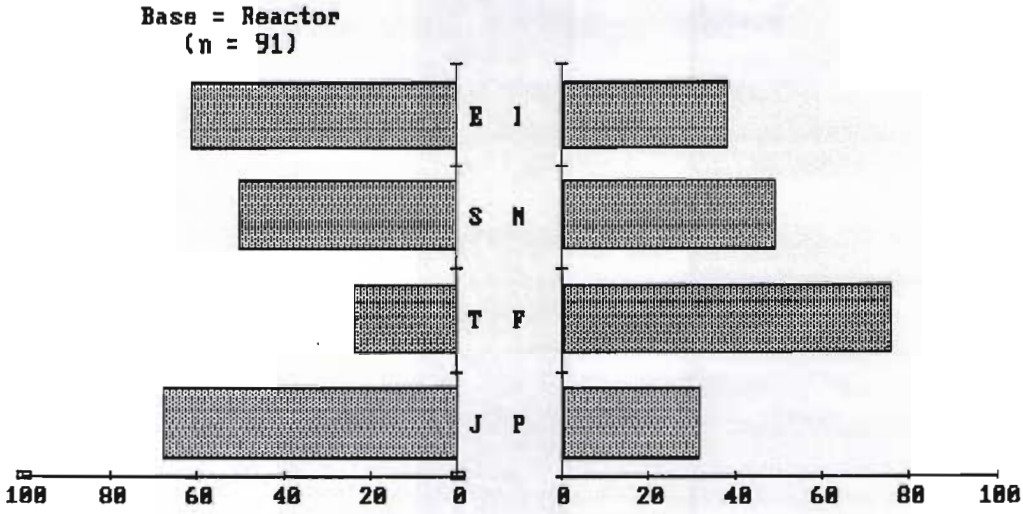
The first and second metric were obviously weak while the third and fourth were significant. Based on this evidence the pattern "**TJ" was selected for Persister.



E/I	51.61	48.39
S/N	61.29	38.71
T/F	90.32	9.68
J/P	74.19	25.81

Table 10 Workaholic MB Scale Distribution

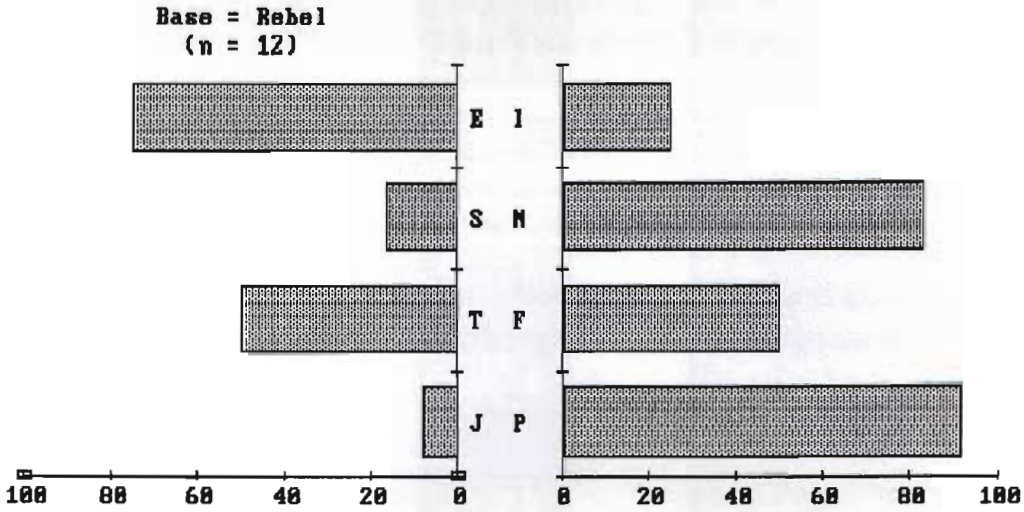
There is great similarity between the Workaholic and the Persister. It is believed that there is: 1) some datum that was not collected that would discriminate these two (2) types with better definition; or, 2) the MB is ambiguous in results between these two types. Certain determination was outside the scope of this study, so the pattern "**TJ" was used for Workaholics also.



E/I	61.54	38.46
S/N	50.55	49.45
T/F	24.18	75.82
J/P	68.13	31.87

Table 11 Reactor MB Scale Distribution

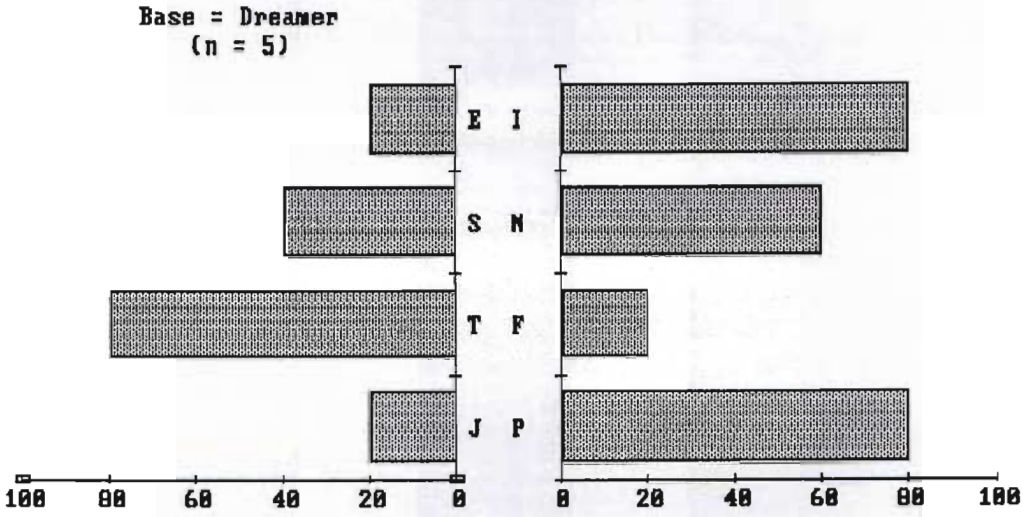
There was question in regards the first metric in that it was almost as weak as the second metric of the Workaholic type. The decision was made to not use the IDS for the first metric, and to use IDS for the second metric. The resulting pattern was "E*FJ". This decision resulted in the Reactor type predictions being the lowest in correct scores, 76.37%. As the data base of paired test grows this pattern will likely be re-thought.



E/I	75.00	25.00
S/N	16.67	83.33
T/F	50.00	50.00
J/P	8.33	91.67

Table 12 Rebel MB Scale Distribution

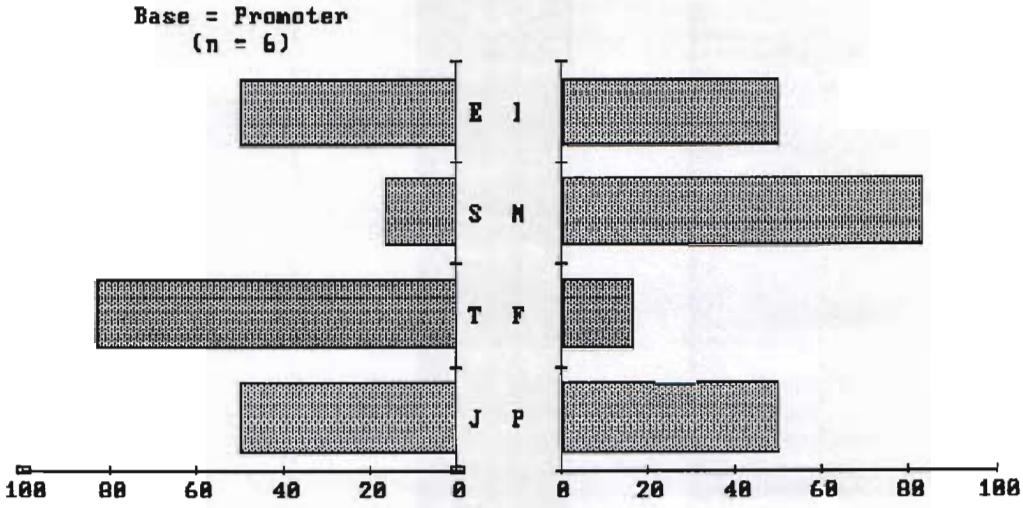
There were clear choices in the case of the Rebel type. The chosen pattern was "EN*P".



E/I	20.00	80.00
S/N	40.00	60.00
T/F	80.00	20.00
J/P	20.00	80.00

Table 13 Dreamer MB Scale Distribution

Dreamers also provided clear choices - the pattern selected being "I*TP".

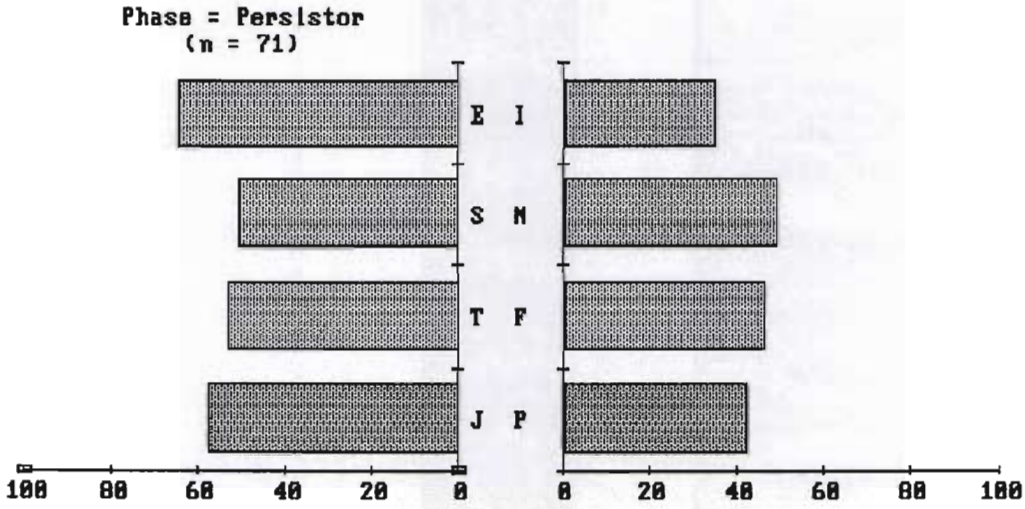


E/I	50.00	50.00
S/N	16.67	83.33
T/F	83.33	16.67
J/P	50.00	50.00

Table 14 Promoter MB Scale Distribution

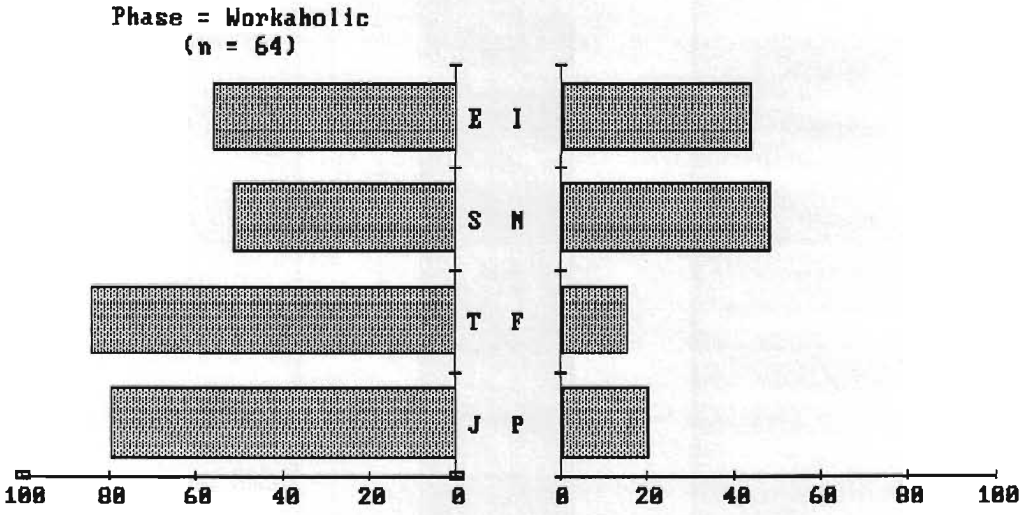
The Promoter type also presented a clear pattern, "*NT*".

The following charts will demonstrate the lack of strong patterns in the Phase scores. Allowing for sampling error, there appeared to be "flip-flopping" between 60% and 40%. There is strong indication that a serial correlation pattern was working. This was not surprising as the MB contains no Phase tools. These charts are presented only to assure the reader that <u>all</u> evidence was examined and tested before being discarded.



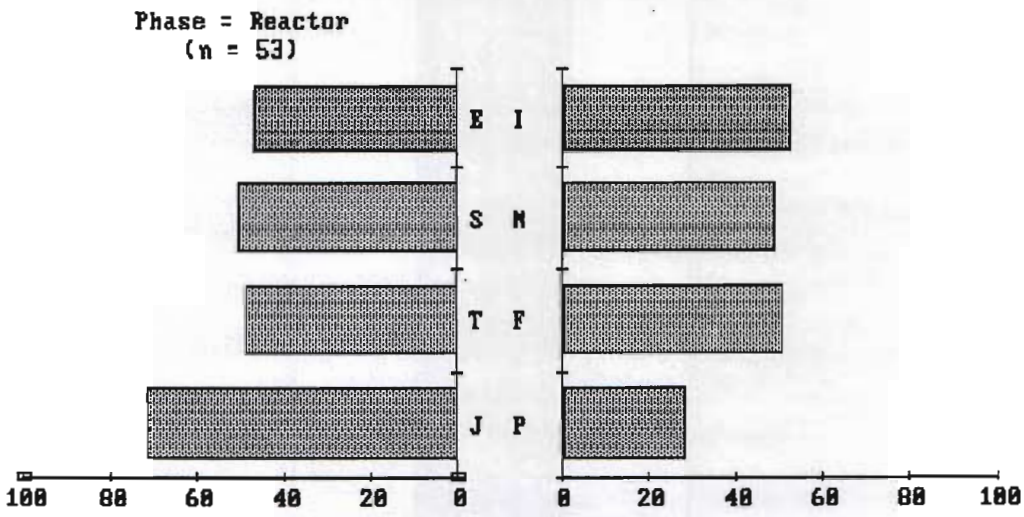
E/I	64.79	35.21
S/N	50.70	49.30
T/F	53.52	46.48
J/P	57.75	42.25

Table 15 Persister MB Scale Distribution



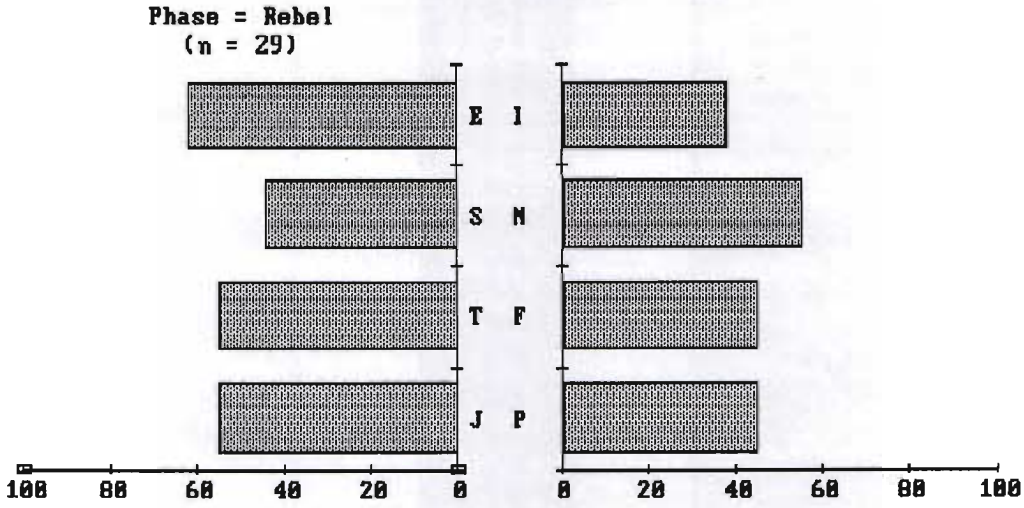
E/I	56.25	43.75
S/N	51.56	48.44
T/F	84.38	15.63
J/P	79.69	20.31

Table 16 Workaholic MB Scale Distribution



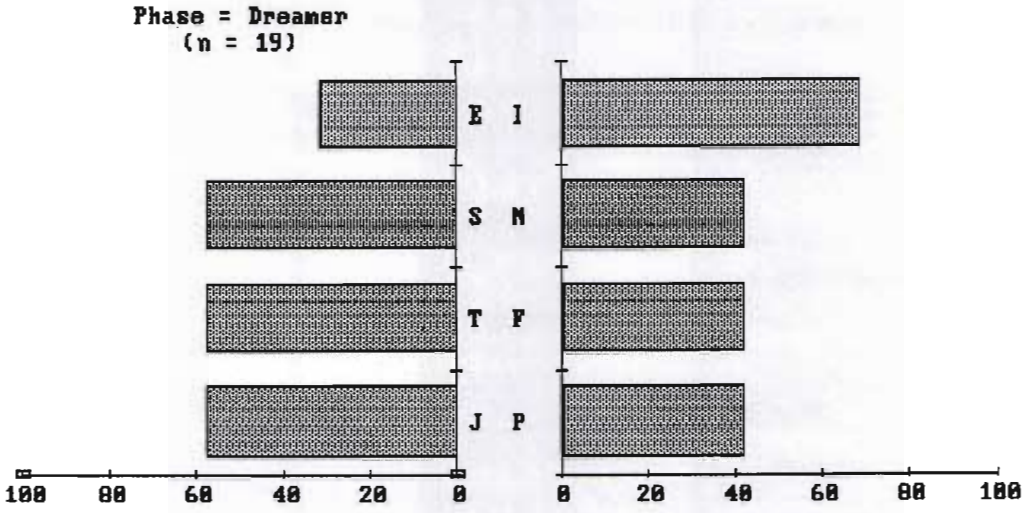
E/I	47.17	52.83
S/N	50.94	49.06
T/F	49.06	50.94
J/P	71.70	28.30

Table 17 Reactor MB Scale Distribution



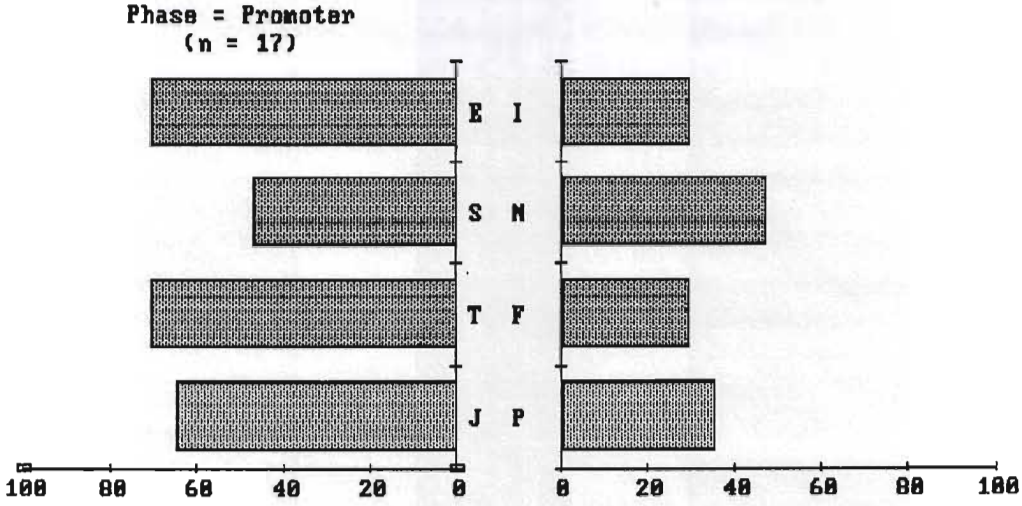
E/I	62.07	37.93
S/N	44.83	55.17
T/F	55.17	44.83
J/P	55.17	44.83

Table 18 Rebel MB Scale Distribution



E/I	31.58	68.42
S/N	57.89	42.11
T/F	57.89	42.11
J/P	57.89	42.11

Table 19 Dreamer MB Scale Distribution



E/I	70.59	29.41
S/N	47.06	52.94
T/F	70.59	29.41
J/P	64.71	35.29

Table 20 Promoter MB Scale Distribution

B. Results of Test of Patterns -

To test the accuracy of prediction when using the selected patterns a computer program was written which program would look at the original encrypted data file and append indicated patterns based upon the character code appearing in the PPI Base field. These appended patterns were then cross tabulated against actual MB ideograms and correct number of characters calculated. As there are 4 characters in each of the MB ideograms, the total possible correct answers was 1012 (253 x 4 = 1012). Below are the results achieved:

Correct Characters	No. Cases	Percent of Total
4 Characters	131	51.78%
3 Characters	92	27.27%
2 Characters	29	5.73%
1 Character	1	0.10%
Total		84.88%

Table 21 Overall Prediction Scores

These scores being inverse to what would have been the results if random chance was the explanation as well as a Pearson Chi-Square score of 177.430 (60 DF) indicate that random chance can not explain the high degree of accuracy. It must be pointed out that the Chi-Square test generated a warning of more than one-fifth of fitted cells being sparse. This warning had to result as six (6) PPI types were being mapped to 16 MB types. Hence Runs test, and Rank test were also performed - both of these tests indicated that the results were <u>not</u> due to random chance.

The results obtained by each of the PPI descriptors follows:

Persister & Workaholic	89.57%	correct
Promoter	91.67%	"
Reactor	76.37%	"
Rebel	91.67%	"
Dreamer	85.00%	"

And following the actual score matrix:

Percent Correct by Patterns & MB Types

	**TJ	*NT*	E*FJ	EN*P	I*TP
ENFJ	75.0	-	100.0	-	-
ENFP	50.0	-	75.0	100.0	-
ENTJ	100.0	-	75.0	-	-
ENTP	75.0	100.0	50.0	100.0	-
ESFJ	75.0	-	100.0	-	-
ESFP	50.0	-	75.0	100.0	50.0
ESTJ	100.0	75.0	75.0	-	-
ESTP	75.0	-	-	-	-
INFJ	75.0	75.0	75.0	-	-
INFP	50.0	-	50.0	75.0	-
INTJ	100.0	100.0	50.0	50.0	75.0
INTP	75.0	100.0	-	75.0	100.0
ISFJ	75.0	-	75.0	-	-
ISFP	-	-	50.0	-	-
ISTJ	100.0	-	50.0	-	-
ISTP	75.0	-	25.0	-	100.0
Total	89.57%	91.67%	76.37%	91.67%	85.0%

(- means no occurrence and no prediction)

C: Test of IDS Contribution -

The contribution to correct scores by the IDS was checked and found to be less than 10% (84.88% vs 75.08%). This result justified the use of the IDS as a logic tool, and rejected arguments that might be raised that it was used as a "crutch". It is believed that the use of the IDS resolved a mapping problem that could only weakly be addressed by traditional methods. In fact, if traditional methods were utilized this study might not have been able to be completed with less than 1,000 paired tests. It is believed that the use of symbolic logic may well prove useful in the validity testing of many psychological instruments, particularly where the distinction between the instruments under test lies in language or descriptions.

VI. Conclusions -

There is a significant relationship between the PPI and the MB as proved by the prediction accuracy derived from using PPI Base types to forecast MB ideograms. This is a logical result as both test were developed by recognized psychologists who utilized proven sub-test within their respective instruments to identify basic personality.

Use of a Phase dimension by the PPI distinguishes it from the MB very dramatically. The MB predates Ware's work and does not incorporate "integrative TA". In a current stress environment this shortcoming of the MB would appear to disabilitating. PPI with its ability to track and diagnose current operation mode would seem to have the edge over the MB in "real world" environments.

This study relates to a portion of the general population only; therefore, its results can be projected only on samples and populations that have similar characteristics as the study sample. Below is the distribution by type which may be used to determine application of this study:

Base Type	Percent of Total
Dreamer	1.98%
Persister	42.69%
Promoter	2.37%
Rebel	4.74%
Reactor	35.97%
Workaholic	12.25%

An ideal test situation would have been to have a third scale to serve as a standard - this third scale would be derived from clinical evaluations of the subjects. Cost and practicality precluded this procedure. The lack of this "standard" is theoretically unappealing, but is believed not to lessen the value of these results significantly.

In the circumstances where only one instrument can be utilized, it is felt that the preceding evidence supports the use of the PPI. If two instruments can be used, than, because of the relationship that can be supported, it is advised that the PPI and the MB would be suitable choices. In fact, there would be significant benefit gained from the use of these two instruments; particularly in the case of a "bad tester" or other deviations (such as variance between personal interviews and test results).

This study can not answer all questions, nor does it attempt to do so. It does demonstrate that there is a predictable relationship between the PPI and the MB. As this was the objective, one would have to judge the study as successful. There is no doubt that there is considerable work yet to be performed. Some of this work is underway now.

VII. Notes and References -

1 - MBTI and Myers-Briggs Type Indicator are trademarks of Consulting Psychologists Press, Inc.

2 - PPI and Personality Pattern Inventory are trademarks of Kahler Communications, Inc.

3 - Description of MB "scales" is taken from the MB Report Form.

4 - Ware, P. (1983). New theory: Personality adaptations. Transactional Analysis Journal, 13(1), 11-19.

Other References:

Berne, E. (1961). Transactional Analysis in Psychotherapy. New York: Grove Press, Inc.

Brown, Michael and Kahler, Taibi, NoTations: A Guide to Transactional Analysis Literature, Huron Valley Institute Press, April 1977.

Falkowski, W. and Munn, K., "Interrater Agreement on Driver Questionnaire Items", Transactional Analysis Journal, January, 1989, 19:1, pp. 42-44.

Hazell, Joseph W., "Drivers as Mediators of Stress Response", Transactional Analysis Journal, October, 1989, 19:4, pp. 212 - 223.

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Kahler, T. (1982). Personality Pattern Inventory Validation Procedures. Little Rock: Kahler Communications, Inc.

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Williams, J., Watson, J., Walters, P., & Williams, J. (1983). Construct validity of ego states. Transactional Analysis Journal,13, 1, 43-49.

Mlinarcik, John, Alcoholic Personality Types Revisited *a la* Kahler's Process Communication Theory.

VIII. Appendix -

Appendix A - The PCM Model

The Process Communication Model (PCM) (Kahler, 1982) is a theoretical model of personality types which utilizes the Personality Pattern Inventory (PPI), a survey device, to test PCM concepts. PCM emphasizes a viewpoint that pictures individuals as complex, but integrated entities, but also recognizes a developmental process, which is termed Phase development.

Six (6) basic personality types and phases are postulated by PCM: Reactor, Workaholic, Persister, Rebel, Promoter, and Dreamer. An individual may be in one basic type and phase and will still have the potential for developing the other five phases. The model predicts that, as higher percentages of phase development occur in the person, their ability to interact effectively with different types of people will improve.

A unique feature of this model is the identification of an individual's striving for a particular psychological need(s). Specific psychological need(s) are correlated significantly with each of the six Personality Types. Additionally, these same psychological need(s) in their negative behavioral forms are also correlated significantly to these same six Personality Types.

Under normal distresses, behaviors were related to the negative psychological need(s) of the Phase. Under sever distresses, behaviors were significantly related to the negative psychological need(s) of the Base.

A warranted conclusion is that there exists an "absolute value" with regard to these identified psychological needs. That if the person is not able to meet the need(s) positively, he/she will strive to meet the same need(s) negatively.

This means that the Process Communication Model and the PPI provide valuable predictive capacities.

Additional information regarding PCM can be obtained from Kahler Communications, Inc.

Appendix B - Development of the PPI

The PPI was developed as follows: three expert judges (two Phd clinical psychologists and one Master's level psychiatric nurse) interviewed 100 people. All six (6) personality types of PCM were included in the sample. All three judges agreed on 97 assessments, yielding an inter-judge reliability static significant at 0.001. An additional number of people were assessed and selected by the judges independently so that a minimum of 30 persons were available for each classification of personality type, yielding a total sample of 180 identified "assessed" people. Two hundred and thirteen items were administered to 112 randomly selected subjects. Cluster analysis of these data indicated six distinct categories - the six (6) personality types indicated by PCM.

Two hundred and four of these items were administered to the original 180 identified Personality Types. Only items with a correlation of greater than 0.60 (significant at 0.01) were accepted for inclusion in the final Personality Pattern Inventory (form "Model" and form "Management").

The PPI has a modified forced choice format which serves to control for social desirability. The items are of equal desirability; however, the person cannot apply them equally but must indicate a ranking of choices.

A paper titled Personality Pattern Inventory Validation Procedures is available from Dr. Kahler.

Appendix C - Theoretical Foundation of PCM

(The following is a superior exposition taken from a graduate thesis prepared by Bonnie Shcolnik to the Fielding Institute, titled The Process Communication Model Concept of Developmental Processes: The Effect of Phase Development in Husbands on Marital Satisfaction of Wives. The following is copyrighted by Bonnie Shcolnik.)

PCM builds on the conceptual elements of the life script theory, an outgrowth of TA principles developed by Eric Berne, M.D. (1961, 1964, 1972, 1974). For the purposes of this study, it is assumed that the reader has a basic familiarity with TA theory and only part of the theory directly relating to PCM will be discussed. For a detailed account of life script theory, the reader is referred to Berne (1972).

According to PCM typology, each personality type has a corresponding life script which is comprised of several elements, such as ego states, injunctions, and counterscript messages. The life script, as introduced by Berne (1972), is defined as "an ongoing program, developed in early childhood under parental influence, which directs the individual's behavior in the most important aspects of [their] life." The script and counterscript messages are transmitted to the child's ego states from the ego states of [their] parents.

Berne (1972) considered the construct of ego state to be the fundamental construct within TA theory. TA theory describes personality in terms of the relative strength of the ego states. Berne (1961) defined the ego states as: Parent, Adult, and Child. (It is customary to capitalize ego states. In TA literature, when not capitalized, these terms refer to people, not states.) To quote Berne:

> An ego state may be described phenomenologically as a coherent system of feelings related to a given subject, and operationally as a set of coherent behavior patterns; or pragmatically as a system of feelings which motivates a related set of behavior patterns.

Berne's definition is the basis for all later elaborations of the ego state construct within the TA framework (McCormick, 1977).

Injunctions, which Berne (1972) noted to be the most important part of the script, are messages transmitted from the structural Child ego state of the parents to the Child ego state of the child. Injunctions are always expressed as inhibitions and may literally be reduced to "don't" message[s].

The counterscript message is a message transmitted from the Parent ego state of the parent to the Parent ego state of the child, and consists of "how to be okay" statements, direct or implied. Kahler's (1977) contribution to counterscript theory is his concept of Drivers. He postulated that, of all the hundreds of possible counterscript messages, there are only five categories or groups of observable behaviors; the Be

Perfect, Be Strong, Please, Try Hard, and Hurry Up Drivers. Although the concept of script is Berne's, Kahler hypothesized that Drivers form the Script process (i.e., Never, Always, et cetera) and that script injunctions form the content (i.e., intensity or second and third degree miscommunication). Kahler (1977) is also known for his contribution of the miniscript concept; that all persons have a particular order or rank of Drivers and that they will express Drivers, repetitively and consistently, in their sentence patterns. These sentence patterns are repeated hundreds of times each day, thus reinforcing their script repetitively. One important implication for this, in reference to PCM theory, is that peoples scripts change as a function of their phase. For example, when a Reactor is in a phase other than Reactor phase,[they] will not, under normal stress, exhibit the characteristics associated with [their] basic type. [They] will exhibit characteristics associated with [their] present phase. PCM postulates that it is the person's present phase and the percentages of phases developed that will determine the person's pattern of functioning rather than [their] basic type.

Appendix D - PCM Personality Chart

Reactor

Character Strengths - expressive, compassionate, sensitive, warm, tender, entertaining, colorful, outgoing, in touch with feelings, imaginative, charming, fun, alive, sexual.

Character Weaknesses - fears rejection, immature, excitable, emotionally unstable, irresponsible, dependent, tendency to be confused, dramatic, seductive, attention-getting, difficulty with ageing and appearance, tends to have an "all or none" response to life.

Psychological Needs - recognition for self, unconditional strokes, strong sensory needs, environment is important (her nest), need for friends and being with people, actively goes after goal of friendship, active socially.

Injunctions - don't grow up, don't think, don't be important, don't feel what you feel (feel sad, not angry).

Channel-Personality Part - Nurturative channel, Comforter part, avoid Directive and Director part.

Contact Areas - Emotions, Thinking, Behavior.

Script - "After"

3 Degrees of Miscommunication - Overadapter, Drooper, Despairer.

Primary Driver - Please (for you)

Phases of Development - Rebel, Workaholic (Persister), Dreamer.

Failure Mechanism - Makes mistakes. Warning signs: lacks assertiveness, laughs at self, immaturity (acts stupid).

Favorite Games - Harried, Stupid, Kick Me.

Favorite Rackets (Feelings) - guilt, worry, sadness, depression, confusion, fear and inadequacy.

Workaholic

Character Strengths - responsible, logical, organized, exact, orderly, thorough, punctual, bright, conscientious, dutiful, tidy, and thrifty.

Character Weaknesses - perfectionistic, rigid, overly inhibited, tense, obsessed, sexual inhibition, construction of affect.

Psychological Needs - recognition for thinking, abilities, accomplishments, how hard they work, how responsible they are, what a good detail person they are, actively works toward goals, withdrawing socially, functional environment.

Injunctions - don't be a child, don't feel (joy, sex), don't be close, don't enjoy.

Channel-Personality Part - Requestive channel, computer part, avoid Directive and Director part.

Contact Areas - Thinking, Emotions (feelings), Behavior.

Script - "Until"

3 Degrees of Miscommunication - Overadapter, Attacker, Despairer.

Primary Driver - Be perfect (for you)

Phases of Development - Rebel, Reactor, Dreamer.

Failure Mechanism - Over-controlling. Warning signs: attacking, frustrated with difference of thinking, issues around money and order.

Favorite Games - Uproar, harried, blemish.

Favorite Rackets (Feelings) - anger, triumph, guilt.

Persister

Character Strengths - dedicated, observant, conscientious, perceptive, sensitive about confrontation, cautious, clear on limits for self and others, accurate thinking.

Character Weaknesses - rigidity of thought, grandiosity, projection, hypersensitive, jealous, suspicious, envious, critical, pompous, overly religious, politically zealousness.

Psychological Needs - conviction needs are strong or for others to believe as they do, or to admire and respect them for belief system, their opinions listened to, and recognition for accomplishments, actively works toward goals, withdrawing socially, environment reflecting values.

Injunctions - don't be a child, don't feel (joy, sex), don't be close, don't enjoy, don't belong, don't trust.

Channel-Personality Part - Requestive channel. Computer part, avoid Directive and Director part.

Contact Areas - Thinking, Emotions (feelings), behavior.

Script - "Until"

3 Degrees of Miscommunication - Overdoer, Attacker, Despairer.

Primary Driver - Be perfect (for me).

Phases of Development - Rebel, Reactor, Dreamer.

Failure Mechanism - Pushing beliefs and/or crusading. Warning signs: overly sensitive to negative feedback, overly suspicious, righteous.

Favorite Games - Cornering (of others), Uproar, Now I've got you, Get rid of...

Favorite Rackets (Feelings) - triumph, righteousness, fear, guilt, jealousy, anger, rejection, hurt, depression.

Dreamer

Character Strengths - sensitive, imaginative, creative, can be alone, intuitive, sense of humor, reflective, directable.

Character Weaknesses - passive-withdrawing, waits for others to come to them, seclusive, shy, avoidance of intimacy, oversensitve, inability to express strong feelings, avoidance, apathetic, eccentric.

Psychological Needs - time alone for self-reflection, no expectations to interact with people, withdraws socially, requires direction and time structure, passive in response to goals, environment stark, functional.

Injunctions - don't make it, don't belong, don't be close, don't enjoy, don't grow up, don't feel (joy, sex, love), don't think, don't be sane (or well).

Channel-Personality Part - Directive channel. Director part, avoid Laissez Faire, Nurturative, and Emoter parts.

Contact Areas - Behavior (in-actions or passive behavior), Thinking, Emotions (feelings).

Script - "Never".

3 Degrees of Miscommunication - Overadapter, Drooper, Despairer.

Primary Driver - Be strong (for you).

Phases of Development - Persister (Workaholic), Rebel, Reactor.

Failure Mechanism - Passive waiting. Warning signs: sustained withdrawal, recurring illnesses, projects started and not finished.

Favorite Games - Cornering (of self), Kick me, Ain't it awful, Look how hard I try, Greenhouse.

Favorite Rackets (Feelings) - hurt, depression, embarrassment, fear, inadequacy, shyness, confusion.

Rebel

Character Strengths - loyal, playful, creative, tenacious, caring in their own way, spontaneous.

Character Weaknesses - aggressive passivity, resentful, overdependent, obstructive, pouting, angry, stubborn, blaming, over-adaptive, procrastination, tends to be passive socially but will react, does not move toward goals on their own, problems with concentration.

Psychological Needs - frequent interaction with others, wants attention, needs to be active, wants their creativity to be appreciated, needs contact with fun/spontaneous people, reacts and draws energy from group, environment with fabrics, textures, mechanical devices, loud music, games, bright lights.

Injunctions - don't grow up, don't make it, don't enjoy, don't be close, don't think, don't feel (joy, sex, love).

Channel-Personality Part - Emotive channel. Emoter part, avoid Directive and Director part.

Contact Areas - Behavior (reactions), Emotions (feelings), Thinking.

Script - "Always".

3 Degrees of Miscommunication - Overadapter, Blamer, Despairer.

Primary Driver - Try hard (for you).

Phases of Development - Reactor, Workaholic (Persister), Dreamer.

Failure Mechanism - Blaming. Warning signs: negative, complains, "yes, buts", blames.

Favorite Games - If it weren't for you, Yes...but, See what you made me do, Debtor.

Favorite Rackets (feelings) - boredom, anger, blamefulness, lust, vengefulness, jealousy.

Promoter

Character Strengths - resourceful, adaptive, high-energy level, clever, doer, gets things done, fun, charming, knows how to make contact.

Character Weaknesses - selfish, callous, tough, irresponsible, impulsive, low frustration tolerance, problems with rules and regulations, can force, hit, con, manipulate, to get what they want.

Psychological Needs - exciting things to do, energetic people to be around, high needs for "incident", searches for excitement and drama, passive involving, waits to find out what is happening and then moves to situation, environment plush.

Injunctions - don't make it, don't be close, don't be a child, don't feel (scared or sad), don't think (in terms of future), don't grow up.

Channel-Personality Part - Directive channel. Director part, avoid Requestive and Computer parts.

Contact Areas - Behavior (active aggressive), Emotions (feelings), Thinking.

Script = "Always".

3 Degrees of Miscommunication - Overdoer, Attacker, Despairer.

Primary Driver - Be strong (for me).

Phases of Development - Rebel, Reactor, Persister (Workaholic).

Failure Mechanism - Manipulating. Warning signs: set up arguments, cons, makes "fools of", ignores or breaks rules.

Favorite Games - Debtor, If I love you - no sex, If it weren't for you, See what you made me do, Lets you and him fight.

Favorite Rackets - vengefulness, frustrating, blamefulness, blamelessness, triumphant.

Appendix D - Selected Test Statistics

TABLE OF Base (ROWS) BY Phase (COLUMNS)

FREQUENCIES

	DR	PE	PR	RB	RC	WK	TOTAL
DR	5	0	0	0	0	0	5
PE	3	28	8	6	19	44	108
PR	1	0	4	1	0	0	6
RB	1	3	1	7	0	0	12
RC	5	27	4	11	30	14	91
WK	4	13	0	4	4	6	31
TOTAL	19	71	17	29	53	64	253

WARNING: MORE THAN ONE-FIFTH OF FITTED CELLS ARE SPARSE (FREQUENCY < 5)
SIGNIFICANCE TESTS ARE SUSPECT

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	163.112	25	.000
LIKELIHOOD RATIO CHI-SQUARE	106.652	25	.000
MCNEMAR SYMMETRY CHI-SQUARE	65.807	25	.000

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	.8029	
CRAMER V	.3591	
CONTINGENCY	.6261	
GOODMAN-KRUSKAL GAMMA	-.1536	.07867
KENDALL TAU-B	-.1154	.05908
STUART TAU-C	-.1007	.05131
COHEN KAPPA	.1066	.03834
SPEARMAN RHO	-.1367	.06750
SOMERS D (COLUMN DEPENDENT)	-.1253	.06430
LAMBDA (COLUMN DEPENDENT)	.1758	.06068
UNCERTAINTY (COLUMN DEPENDENT)	.1273	.02286

TABLE OF Base (ROWS) BY 1st MB metric (COLUMNS)

FREQUENCIES

	E	I	TOTAL
DR	1	4	5
PE	58	50	108
PR	3	3	6
RB	9	3	12
RC	56	35	91
WK	16	15	31
TOTAL	143	110	253

WARNING: MORE THAN ONE-FIFTH OF FITTED CELLS ARE SPARSE (FREQUENCY < 5)
SIGNIFICANCE TESTS ARE SUSPECT

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	6.070	5	.299
LIKELIHOOD RATIO CHI-SQUARE	6.266	5	.281

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	.1549	
CRAMER V	.1549	
CONTINGENCY	.1531	
GOODMAN-KRUSKAL GAMMA	-.0929	.10269
KENDALL TAU-B	-.0536	.05928
STUART TAU-C	-.0615	.06805
SPEARMAN RHO	-.0575	.06344
SOMERS D (COLUMN DEPENDENT)	-.0459	.05079
LAMBDA (COLUMN DEPENDENT)	.0273	.02005
UNCERTAINTY (COLUMN DEPENDENT)	.0181	.01397

TABLE OF Base (ROWS) BY 1st MB metric (COLUMNS)

ROW PERCENTS

	E	I	TOTAL
DR	20.00	80.00	100.00
PE	53.70	46.30	100.00
PR	50.00	50.00	100.00
RB	75.00	25.00	100.00
RC	61.54	38.46	100.00
WK	51.61	48.39	100.00
TOTAL	56.52	43.48	100.00

TABLE OF Base (ROWS) BY 2nd MB metric (COLUMNS)

FREQUENCIES

	N	S	TOTAL
DR	3	2	5
PE	50	58	108
PR	5	1	6
RB	10	2	12
RC	45	46	91
WK	12	19	31
TOTAL	125	128	253

WARNING: MORE THAN ONE-FIFTH OF FITTED CELLS ARE SPARSE (FREQUENCY < 5)
SIGNIFICANCE TESTS ARE SUSPECT

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	10.350	5	.066
LIKELIHOOD RATIO CHI-SQUARE	11.097	5	.049

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	.2023	
CRAMER V	.2023	
CONTINGENCY	.1982	
GOODMAN-KRUSKAL GAMMA	.0432	.10100
KENDALL TAU-B	.0251	.05873
STUART TAU-C	.0291	.06803
SPEARMAN RHO	.0269	.06272
SOMERS D (COLUMN DEPENDENT)	.0217	.05069
LAMBDA (COLUMN DEPENDENT)	.1040	.03632
UNCERTAINTY (COLUMN DEPENDENT)	.0316	.01779

TABLE OF Base (ROWS) BY 2nd MB metric (COLUMNS)

ROW PERCENTS

	N	S	TOTAL
DR	60.00	40.00	100.00
PE	46.30	53.70	100.00
PR	83.33	16.67	100.00
RB	83.33	16.67	100.00
RC	49.45	50.55	100.00
WK	38.71	61.29	100.00
TOTAL	49.41	50.59	100.00

TABLE OF Base (ROWS) BY 3rd MB metric (COLUMNS)

FREQUENCIES

	F	T	TOTAL
DR	1	4	5
PE	16	92	108
PR	1	5	6
RB	6	6	12
RC	69	22	91
WK	3	28	31
TOTAL	96	157	253

WARNING: MORE THAN ONE-FIFTH OF FITTED CELLS ARE SPARSE (FREQUENCY < 5)
SIGNIFICANCE TESTS ARE SUSPECT

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	93.088	5	.000
LIKELIHOOD RATIO CHI-SQUARE	97.848	5	.000

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	.6066	
CRAMER V	.6066	
CONTINGENCY	.5186	
GOODMAN-KRUSKAL GAMMA	-.4283	.08027
KENDALL TAU-B	-.2847	.05778
STUART TAU-C	-.3199	.06381
SPEARMAN RHO	-.3054	.05786
SOMERS D (COLUMN DEPENDENT)	-.2387	.05028
LAMBDA (COLUMN DEPENDENT)	.4896	.07099
UNCERTAINTY (COLUMN DEPENDENT)	.2913	.05221

TABLE OF Base (ROWS) BY 3rd MB metric (COLUMNS)

ROW PERCENTS

	F	T	TOTAL
DR	20.00	80.00	100.00
PE	14.81	85.19	100.00
PR	16.67	83.33	100.00
RB	50.00	50.00	100.00
RC	75.82	24.18	100.00
WK	9.68	90.32	100.00
TOTAL	37.94	62.06	100.00

TABLE OF Base (ROWS) BY 4th MB metric (COLUMNS)

FREQUENCIES

	J	P	TOTAL
DR	1	4	5
PE	78	30	108
PR	3	3	6
RB	1	11	12
RC	62	29	91
WK	23	8	31
TOTAL	168	85	253

WARNING: MORE THAN ONE-FIFTH OF FITTED CELLS ARE SPARSE (FREQUENCY < 5)
SIGNIFICANCE TESTS ARE SUSPECT

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	26.292	5	.000
LIKELIHOOD RATIO CHI-SQUARE	25.853	5	.000

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	.3224	
CRAMER V	.3224	
CONTINGENCY	.3068	
GOODMAN-KRUSKAL GAMMA	-.0465	.10213
KENDALL TAU-B	-.0264	.05788
STUART TAU-C	-.0289	.06337
SPEARMAN RHO	-.0283	.06167
SOMERS D (COLUMN DEPENDENT)	-.0215	.04718
LAMBDA (COLUMN DEPENDENT)	.1529	.04464
UNCERTAINTY (COLUMN DEPENDENT)	.0800	.02933

TABLE OF Base (ROWS) BY 4th MB metric (COLUMNS)

ROW PERCENTS

	J	P	TOTAL
DR	20.00	80.00	100.00
PE	72.22	27.78	100.00
PR	50.00	50.00	100.00
RB	8.33	91.67	100.00
RC	68.13	31.87	100.00
WK	74.19	25.81	100.00
TOTAL	66.40	33.60	100.00

TABLE OF Phase (ROWS) BY 1st MB metric (COLUMNS)

FREQUENCIES

	E	I	TOTAL
DR	6	13	19
PE	46	25	71
PR	12	5	17
RB	18	11	29
RC	25	28	53
WK	36	28	64
TOTAL	143	110	253

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	10.405	5	.065
LIKELIHOOD RATIO CHI-SQUARE	10.478	5	.063

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	.2028	
CRAMER V	.2028	
CONTINGENCY	.1987	
GOODMAN-KRUSKAL GAMMA	.0220	.09079
KENDALL TAU-B	.0138	.05708
STUART TAU-C	.0172	.07113
SPEARMAN RHO	.0155	.06345
SOMERS D (COLUMN DEPENDENT)	.0109	.04503
LAMBDA (COLUMN DEPENDENT)	.0909	.07355
UNCERTAINTY (COLUMN DEPENDENT)	.0302	.01841

TABLE OF Phase (ROWS) BY 1st MB metric (COLUMNS)

ROW PERCENTS

	E	I	TOTAL
DR	31.58	68.42	100.00
PE	64.79	35.21	100.00
PR	70.59	29.41	100.00
RB	62.07	37.93	100.00
RC	47.17	52.83	100.00
WK	56.25	43.75	100.00
TOTAL	56.52	43.48	100.00

TABLE OF Phase (ROWS) BY 2nd MB metric (COLUMNS)

FREQUENCIES

	N	S	TOTAL
DR	8	11	19
PE	35	36	71
PR	9	8	17
RB	16	13	29
RC	26	27	53
WK	31	33	64
TOTAL	125	128	253

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	.903	5	.970
LIKELIHOOD RATIO CHI-SQUARE	.905	5	.970

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	.0597	
CRAMER V	.0597	
CONTINGENCY	.0596	
GOODMAN-KRUSKAL GAMMA	-.0123	.08954
KENDALL TAU-B	-.0077	.05630
STUART TAU-C	-.0097	.07077
SPEARMAN RHO	-.0086	.06283
SOMERS D (COLUMN DEPENDENT)	-.0061	.04479
LAMBDA (COLUMN DEPENDENT)	.0320	.05338
UNCERTAINTY (COLUMN DEPENDENT)	.0026	.00541

TABLE OF Phase (ROWS) BY 2nd MB metric (COLUMNS)

ROW PERCENTS

	N	S	TOTAL
DR	42.11	57.89	100.00
PE	49.30	50.70	100.00
PR	52.94	47.06	100.00
RB	55.17	44.83	100.00
RC	49.06	50.94	100.00
WK	48.44	51.56	100.00
TOTAL	49.41	50.59	100.00

TABLE OF Phase (ROWS) BY 3rd MB metric (COLUMNS)

FREQUENCIES

	F	T	TOTAL
DR	8	11	19
PE	33	38	71
PR	5	12	17
RB	13	16	29
RC	27	26	53
WK	10	54	64
TOTAL	96	157	253

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	20.788	5	.001
LIKELIHOOD RATIO CHI-SQUARE	22.522	5	.000

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	.2866	
CRAMER V	.2866	
CONTINGENCY	.2756	
GOODMAN-KRUSKAL GAMMA	.2619	.08365
KENDALL TAU-B	.1639	.05340
STUART TAU-C	.2000	.06520
SPEARMAN RHO	.1831	.05875
SOMERS D (COLUMN DEPENDENT)	.1266	.04150
LAMBDA (COLUMN DEPENDENT)	.0104	.07544
UNCERTAINTY (COLUMN DEPENDENT)	.0671	.02632

TABLE OF Phase (ROWS) BY 3rd MB metric (COLUMNS)

ROW PERCENTS

	F	T	TOTAL
DR	42.11	57.89	100.00
PE	46.48	53.52	100.00
PR	29.41	70.59	100.00
RB	44.83	55.17	100.00
RC	50.94	49.06	100.00
WK	15.63	84.38	100.00
TOTAL	37.94	62.06	100.00

TABLE OF Phase (ROWS) BY 4th MB metric (COLUMNS)

FREQUENCIES

	J	P	TOTAL
DR	11	8	19
PE	41	30	71
PR	11	6	17
RB	16	13	29
RC	38	15	53
WK	51	13	64
TOTAL	168	85	253

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	10.392	5	.065
LIKELIHOOD RATIO CHI-SQUARE	10.692	5	.058

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	.2027	
CRAMER V	.2027	
CONTINGENCY	.1986	
GOODMAN-KRUSKAL GAMMA	-.2725	.08733
KENDALL TAU-B	-.1642	.05385
STUART TAU-C	-.1950	.06431
SPEARMAN RHO	-.1834	.06004
SOMERS D (COLUMN DEPENDENT)	-.1234	.04078
LAMBDA (COLUMN DEPENDENT)	.0000	.00000
UNCERTAINTY (COLUMN DEPENDENT)	.0331	.01971

TABLE OF Phase (ROWS) BY 4th MB metric (COLUMNS)

ROW PERCENTS

	J	P	TOTAL
DR	57.89	42.11	100.00
PE	57.75	42.25	100.00
PR	64.71	35.29	100.00
RB	55.17	44.83	100.00
RC	71.70	28.30	100.00
WK	79.69	20.31	100.00
TOTAL	66.40	33.60	100.00

Appendix E - Sample Data

```
001 WK PE -15 +16 -04 -10 92 27 . 0 0 . ENTJ **TJ
002 RC RB -07 +17 +00 +16 71 70 . 0 0 . ENFP E*FJ
003 WK PE +07 -14 -17 -17 61 58 . 1 . . ISTJ **TJ
053 RC WK -04 +15 +14 -18 89 33 30 0 0 16 ENFJ E*FJ
054 PE PR -04 +07 -11 -20 99 43 34 0 0 16 ENTJ **TJ
055 PE RB -15 -07 -15 -10 99 42 26 0 0 12 ESTJ **TJ
056 WK WK -10 +19 -04 +12 23 59 60 1 0 18 ENTP **TJ
057 RC PE -16 -13 -01 -06 89 55 39 0 0 16 ESTJ E*FJ
058 RC RB -20 -01 +00 +03 89 60 27 0 0 16 ESFP E*FJ
059 RC PE -05 +11 +08 -05 89 63 41 0 0 18 ENFJ E*FJ
061 PE WK -04 +01 -10 -05 99 53 32 0 0 16 ENTJ **TJ
062 WK PE +03 -20 -31 -25 96 50 27 0 1 16 ISTJ **TJ
064 RC RC -15 -01 +01 -21 37 56 29 0 0 16 ESFJ E*FJ
065 RC RB -05 -12 +00 -13 89 38 46 0 0 18 ESFJ E*FJ
066 WK WK +14 +07 -11 -16 19 61 34 0 1 18 INTJ **TJ
067 WK RB -11 +21 -11 -18 79 55 52 0 0 16 ENTJ **TJ
068 WK PE -17 +00 -13 -05 63 60 . 0 . . ENTJ **TJ
069 RC PR -18 +15 +05 +00 89 20 . 0 . . ENFP E*FJ
070 RC PE -24 -11 +18 -05 89 83 . 0 . . ESFJ E*FJ
071 RC DR +08 +08 +04 -07 89 45 . 0 . . INFJ E*FJ
072 PE RC +15 -04 -14 -28 99 78 . 1 . . ISTJ **TJ
073 RC WK +13 -01 -01 +14 86 52 48 0 0 12 ISTP E*FJ
074 PE WK +22 -25 -23 -26 66 63 56 1 0 12 ISTJ **TJ
075 RC RC +16 -08 +18 +18 35 49 40 0 0 12 ISFP E*FJ
076 RC WK +08 +06 -01 -13 65 58 20 1 3 12 INTJ E*FJ
077 RC PE -26 +06 +18 +15 89 80 30 1 0 16 ENFP E*FJ
078 RC RC +04 -01 +02 -04 32 65 58 0 0 18 ISFJ E*FJ
079 RC PE -14 -31 -07 -15 79 65 61 0 0 12 ESTJ E*FJ
080 RC DR -14 -19 +10 -18 87 32 20 0 0 15 ESFJ E*FJ
081 PE RC +16 +06 +06 -13 72 58 66 1 0 18 INFJ **TJ
082 PE WK +03 +17 -09 -04 70 70 28 0 0 18 INTJ **TJ
083 PE PR +21 -27 -05 -26 99 25 51 0 0 18 ISTJ **TJ
084 RC PE +05 -04 +07 -05 69 70 64 0 0 12 ISFJ E*FJ
085 PE WK +02 -07 -02 -24 99 72 17 0 0 12 ISTJ **TJ
086 WK WK -12 -10 -07 -12 08 44 24 1 0 16 ESTJ **TJ
088 RC WK -16 -14 +21 +03 89 70 43 0 0 20 ESFP E*FJ
089 PE PE -20 -13 +09 +01 37 48 48 1 0 17 ESFP **TJ
090 RC PE +01 +06 +15 -16 89 53 25 1 0 12 INFJ E*FJ
091 RC PE -07 -15 +08 -07 75 78 24 0 0 12 ESFJ E*FJ
092 RC PR +18 -17 +03 -17 87 15 60 0 0 18 ISFJ E*FJ
093 RC PE -02 +08 +07 -06 89 58 18 0 3 12 ENFJ E*FJ
094 RC RC -02 +13 +07 -08 35 51 22 1 0 12 ENFJ E*FJ
095 RC RC -11 +18 +16 -08 38 56 22 0 0 16 ENFJ E*FJ
096 RC RB -05 +04 +18 +12 89 35 44 0 0 12 ENFP E*FJ
097 RC DR -01 -24 -01 -13 89 33 34 1 0 20 ESTJ E*FJ
098 RC PE +17 -16 +18 +16 75 80 26 0 0 17 ISFP E*FJ
099 PE PR -10 +15 +10 +30 96 33 20 0 . 13 ENFP **TJ
101 RC PE -01 -10 +09 -04 89 33 33 0 . 14 ESFJ E*FJ
102 RC RB -13 -09 +00 -12 83 23 42 0 . 20 ESFJ E*FJ
103 RC RC +03 +07 +00 -02 38 67 30 0 . 19 INFJ E*FJ
104 PE PE +08 +19 +11 +12 40 56 . 1 . 18 INFP **TJ
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```
105 PE WK -15 +04 -07 -15 99 63 51 1 . 20 ENTJ **TJ
106 PE PR -11 +01 -28 -18 99 52 27 1 0 20 ENTJ **TJ
107 WK RC -12 +19 -10 +04 56 60 . 0 . 16 ENTP **TJ
108 PE WK +05 -06 -08 -15 99 53 . . . . ISTJ **TJ
109 PE WK -05 +15 -17 -22 88 70 . . . . ENTJ **TJ
110 PE WK +12 +06 -15 -07 90 67 . . . . INTJ **TJ
111 PE WK -12 -16 -08 -10 82 60 . . . . ESTJ **TJ
112 WK PE +01 -03 -21 -18 82 63 42 1 . 18 ISTJ **TJ
113 WK PE +02 -07 -29 -19 93 52 . . . . ISTJ **TJ
114 PE RC -12 +02 -20 -21 99 36 . . . . ENTJ **TJ
116 WK WK -01 -11 -16 -28 23 77 36 0 . 16 ESTJ **TJ
117 RC RC -12 +15 +16 +09 35 91 42 0 . 16 ENFP E*FJ
118 PE PE +01 +07 -26 -14 24 80 40 1 . 18 INTJ **TJ
120 PE PR +19 -15 -22 -02 59 69 35 0 . 16 ISTJ **TJ
121 PE WK -19 +13 -14 -22 86 67 . 1 . 16 ENTJ **TJ
122 PE RB -11 -05 -21 -16 99 51 39 1 . 16 ESTJ **TJ
123 PE WK -08 -05 -13 -03 99 67 30 0 . 13 ESTJ **TJ
124 PE PE +20 -11 -16 -04 42 56 . . . . ISTJ **TJ
125 PE WK +26 -21 -19 -28 96 62 46 1 . 16 ISTJ **TJ
126 WK PE +20 +21 -08 -17 96 79 57 1 . 18 INTJ **TJ
127 PE WK -14 +06 -05 -16 73 78 55 1 . 16 ENTJ **TJ
128 PE RB -21 -16 -28 -25 99 21 . . . . ESTJ **TJ
129 PE PE -15 -10 -03 -03 47 83 . . . . ESTJ **TJ
130 PE PE -01 +12 -09 +01 34 89 62 1 . . ENTP **TJ
131 PE WK -17 -13 -23 -23 99 62 50 1 . 16 ESTJ **TJ
132 RC WK -08 +07 +09 +19 84 69 29 0 . 18 ENFP E*FJ
134 PE WK -04 +12 -06 +13 88 79 . . . . ENTP **TJ
135 PE WK -21 -07 -25 -25 76 61 . . . . ESTJ **TJ
136 RC DR +21 -14 +04 -09 83 74 35 0 . 12 ISFJ E*FJ
138 PE WK -13 -22 -18 -14 99 38 42 1 . . ESTJ **TJ
139 PE WK -20 +01 -23 -19 99 69 34 1 . 18 ENTJ **TJ
140 RC RC -20 +05 -04 -09 32 57 30 1 . 16 ENTJ E*FJ
141 PE PE -10 +02 -11 +02 31 49 47 0 . 16 ENTP **TJ
142 PE WK +08 +13 -23 -20 94 78 . . . . INTJ **TJ
143 PE RC -15 -16 -32 -24 99 40 36 . . 16 ESTJ **TJ
144 WK PE +25 -03 -26 +06 96 40 32 1 . 14 ISTP **TJ
145 PE RC -03 +03 -24 +04 99 38 47 1 . 12 ENTP **TJ
146 PE WK -23 +15 -19 -13 68 73 38 1 . 16 ENTJ **TJ
147 PE WK -24 +12 -20 -21 99 82 39 1 . 16 ENTJ **TJ
148 PE WK -11 -14 -20 +02 78 67 . . . . ESTP **TJ
149 PE DR +19 -19 -06 -09 99 42 44 1 . 12 ISTJ **TJ
150 PE WK -13 +01 -22 -24 82 70 44 1 . 16 ENTJ **TJ
151 PE PR -14 -03 -16 -12 90 66 30 0 . . ESTJ **TJ
152 PE WK +13 -26 -27 -19 78 80 48 1 . 12 ISTJ **TJ
153 PE RC -12 +23 -02 -01 78 69 35 . . . ENTJ **TJ
154 PE RB +03 -04 -03 -10 99 47 . 1 0 . ISTJ **TJ
156 WK RB -17 -20 -04 -01 96 52 29 0 0 13 ESTJ **TJ
159 RC PR -15 -15 +06 -01 89 12 . 0 . . ESFJ E*FJ
160 PE PE -09 +07 -05 -23 35 51 . 1 . . ENTJ **TJ
161 RC PR -25 +19 -01 -05 89 33 . 1 . . ENTJ E*FJ
162 RC PE +01 -14 +07 -20 67 53 54 0 0 12 ISFJ E*FJ
163 RC RC +10 +03 +10 +07 30 59 . 1 . . INFP E*FJ
164 PE WK +21 -09 -22 -19 94 75 . 1 . . ISTJ **TJ
165 RC PE +08 -11 +10 +06 65 53 . 0 . . ISFP E*FJ
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166 PE PR -09 -20 -01 -06 99 30 33 0 3 18 ESTJ **TJ
167 WK PE -08 -01 +05 +01 80 63 31 0 3 12 ESFP **TJ
168 WK DR +08 -04 -13 -12 75 38 29 0 0 16 ISTJ **TJ
169 RC RC -02 +09 +04 +10 32 51 26 1 0 16 ENFP E*FJ
170 PE WK +08 +11 -27 -15 98 72 23 0 0 16 INTJ **TJ
171 RC RC +13 -30 -11 -21 13 47 46 1 . 12 ISTJ E*FJ
172 RC RC +13 -01 +19 -17 32 61 35 1 . 16 ISFJ E*FJ
173 PE WK +08 -24 -29 -07 76 60 29 0 . 16 ISTJ **TJ
174 WK PE -15 +10 -03 -01 90 48 48 1 . 20 ENTJ **TJ
175 PE PE +15 +05 +10 +03 33 53 50 0 . 18 INFP **TJ
176 PE WK +13 +05 -11 -01 68 67 38 1 . 18 INTJ **TJ
177 PE PE -25 +05 +17 -03 37 47 36 0 . 16 ENFJ **TJ
178 RC PE -06 +13 +08 +11 89 30 52 0 0 18 ENFP E*FJ
179 PE WK -02 +13 -26 -16 99 82 52 1 0 18 ENTJ **TJ
180 RC WK -07 -02 +07 -08 89 45 47 0 . . ESFJ E*FJ
181 RC PE -07 +04 -12 -01 79 32 28 0 0 16 ENTJ E*FJ
182 RB PE -11 +15 +12 +24 99 47 22 1 0 12 ENFP EN*P
183 RC PE -18 -00 +17 -14 75 45 29 1 0 18 ENFJ E*FJ
184 PE RC +00 -04 -03 -07 99 60 42 1 0 12 ISTJ **TJ
185 PE WK -17 -24 -28 +04 98 45 52 1 0 16 ESTP **TJ
186 RC RB -11 +17 +15 -09 89 42 30 0 0 16 ENFJ E*FJ
187 RC RC +11 +06 +17 +22 33 55 30 0 0 16 INFP E*FJ
188 RC PE -06 -04 +10 +04 89 45 36 0 0 16 ESFP E*FJ
189 RB RB -21 -03 +06 +05 23 48 23 0 . 16 ESFP EN*P
191 WK DR -02 -02 +13 -19 69 50 42 0 0 16 ESFJ **TJ
192 RC RC +21 +23 +01 +18 16 47 50 0 0 16 INFP E*FJ
193 RC WK -05 -12 -01 -03 86 55 52 0 0 16 ESTJ E*FJ
194 PE PE +17 +17 -25 +03 15 36 30 0 0 16 INTP **TJ
195 RC WK -08 -23 +18 -14 89 27 30 1 0 16 ESFJ E*FJ
196 WK RC +24 -33 +08 -28 54 57 32 0 0 16 ISFJ **TJ
197 WK RB +08 +12 -00 -01 67 32 35 0 0 16 INFJ **TJ
198 PE DR +10 -05 -29 -18 99 22 37 1 0 16 ISTJ **TJ
199 WK RB -12 +05 -13 +10 96 43 45 0 0 12 ENTP **TJ
200 RC RC +08 -12 +00 -15 17 51 26 1 0 16 ISFJ E*FJ
201 PE WK +14 +05 -12 -06 80 77 38 1 0 18 INTJ **TJ
202 RC RC -01 +25 -13 +15 29 45 49 1 0 20 ENTP E*FJ
203 RC PE -05 +11 -07 -07 87 58 30 0 0 16 ENTJ E*FJ
204 PE RC -22 -04 +08 -24 98 53 31 0 0 16 ESFJ **TJ
205 WK WK +22 -19 -19 +14 04 43 36 0 0 16 ISTP **TJ
206 PR PR +08 +03 -11 +02 31 43 . 0 . . INTP *NT*
207 RC RB +10 +05 +14 -09 62 45 18 0 0 12 INFJ E*FJ
208 PE PE +17 +00 -01 -01 30 49 . . . . INTJ **TJ
209 RC WK +19 +01 +05 -02 83 30 18 1 3 12 INFJ E*FJ
210 PE WK +14 -15 -12 -24 99 68 . . . . ISTJ **TJ
211 PE WK +12 -29 -11 +09 94 28 44 1 0 12 ISTP **TJ
212 DR DR +09 -22 -04 +07 44 60 . . . . ISTP I*TP
213 WK PE -02 -07 -17 -13 84 57 . . . . ESTJ **TJ
214 RC WK -09 -10 -01 -12 67 50 . . . . ESTJ E*FJ
215 PE PE -01 -16 -04 -04 43 61 . . . . ESTJ **TJ
216 PE PE -04 -29 -13 -20 13 35 . . . . ESTJ **TJ
217 RC RC +19 +11 +09 +20 37 61 . . . . INFP E*FJ
218 PE RC -23 -25 -10 -23 91 58 . . . . ESTJ **TJ
219 RB DR +11 +10 +04 +02 93 50 . 0 . . INFP EN*P
220 PE RC +04 -07 -01 +04 74 48 . . . . ISTP **TJ
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221 PE WK -22 +10 -01 -10 88 70 18 0 . . ENTJ **TJ
222 RB RB +00 +02 -19 +17 13 36 19 1 0 14 INTP EN*P
223 RC RC +04 +15 -02 -04 19 48 46 0 0 14 INTJ E*FJ
224 RB RB +13 +01 -02 -01 45 55 21 1 0 12 INTJ EN*P
225 PE RB +21 -10 -18 +01 99 37 . . . . ISTP **TJ
226 WK RC +20 -04 -06 -21 61 65 . . . . ISTJ **TJ
227 RC RC -05 +04 +01 -02 30 52 24 0 0 12 ENFJ E*FJ
228 PR PR -03 -19 -01 -13 02 29 34 1 0 12 ESTJ *NT*
229 WK DR +28 +01 -14 +18 84 72 . . . . INTP **TJ
230 RC WK -11 -02 +06 -11 69 53 . . . . ESFJ E*FJ
231 RC PE -06 -11 +07 -11 88 65 . . . . ESFJ E*FJ
232 RC RC -12 +11 +09 +04 21 57 . 0 . . ENFP E*FJ
233 PE RC +09 -17 -02 -15 84 52 . . . . ISTJ **TJ
234 PE PE +05 +12 -08 +24 32 43 20 1 0 12 INTP **TJ
235 RC RC +04 -14 -04 -04 37 49 . . . . ISTJ E*FJ
236 PE PE -14 -05 +00 +04 40 59 18 0 3 12 ESFP **TJ
237 RC RB -24 +03 +14 +23 65 60 33 1 0 16 ENFP E*FJ
238 PE WK +16 +05 -07 -02 82 87 29 0 0 16 INTJ **TJ
239 RB PE -05 +20 +17 +27 96 42 23 1 0 16 ENFP EN*P
240 PE PE +07 +07 +09 +13 48 57 . 0 0 16 INFP **TJ
241 RC PE -05 -22 +01 -17 89 30 22 0 0 16 ESFJ E*FJ
242 WK RC +05 -30 -02 -23 58 33 34 0 0 16 ISTJ **TJ
243 RC RC -04 -01 +05 -15 33 60 . 0 0 . ESFJ E*FJ
244 RC PE -05 +02 +14 +02 89 53 23 0 0 16 ENFP E*FJ
245 PE PE -11 +04 -11 +18 42 51 30 1 0 12 ENTP **TJ
246 PE DR +07 +06 +10 +12 99 38 . 1 0 . INFP **TJ
247 PE RB +00 +17 +03 +12 84 40 22 0 0 16 INFP **TJ
248 PE RC -15 -18 +00 -23 99 45 28 1 0 16 ESFJ **TJ
249 PE PE -09 -17 -11 -19 32 52 32 1 1 18 ESTJ **TJ
250 RB RB -04 +19 +03 +19 32 49 24 1 0 16 ENFP EN*P
251 RC PE -17 +03 +09 -06 88 70 29 1 0 16 ENFJ E*FJ
252 RC WK +22 -06 -01 -25 86 48 32 0 0 16 ISTJ E*FJ
253 RC RC +04 -05 +07 -04 35 44 35 1 0 16 ISFJ E*FJ
254 RB PE -08 +14 -16 +18 84 50 30 1 0 16 ENTP EN*P
255 PE RC +09 -31 -06 -11 84 60 44 1 0 16 ISTJ **TJ
256 WK PE -15 -05 -12 +07 72 43 34 0 0 16 ESTP **TJ
257 PR PR +23 +15 +18 -09 38 51 46 0 3 18 INFJ *NT*
258 RC RB +00 -07 -04 -09 83 43 45 0 0 18 ISTJ E*FJ
259 RC RC -11 +07 -06 -08 29 57 37 0 0 16 ENTJ E*FJ
260 RC RC -17 +15 +09 +23 30 56 26 0 0 16 ENFP E*FJ
261 RC PE -18 +05 +09 -09 69 62 24 1 0 16 ENFJ E*FJ
262 PE WK +16 -26 -29 -26 67 73 32 1 0 16 ISTJ **TJ
263 PE RC -16 +12 +05 -14 78 58 . 1 0 . ENFJ **TJ
264 RC DR +15 -33 +19 -25 84 48 37 0 0 16 ISFJ E*FJ
265 PR RB +06 +05 -09 -04 85 53 40 1 0 16 INTJ *NT*
266 RC RB +19 -16 -02 -15 87 25 42 1 0 16 ISTJ E*FJ
267 DR DR +15 +12 -26 -17 41 51 29 1 0 16 INTJ I*TP
268 RC RC -24 +01 -03 -02 24 44 23 0 0 16 ENTJ E*FJ
269 RB RB -02 +23 -01 +30 19 44 24 1 0 16 ENTP EN*P
270 RC RC +14 +03 +03 -12 32 52 . . . . INFJ E*FJ
271 PE RC -06 +16 -01 +02 96 33 . . . . ENTP **TJ
272 DR DR +06 +00 -28 +25 48 55 21 0 0 12 INTP I*TP
273 WK PE -07 -14 -13 -23 88 62 22 0 0 14 ESTJ **TJ
274 RC PE -04 -05 +15 +21 86 65 . . . . ESFP E*FJ
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275 PR PR -10 +19 -30 +22 52 57 . . . . ENTP *NT*
276 RC PE +16 -13 +00 -22 83 70 19 0 0 12 ISFJ E*FJ
277 PE PE -04 -12 -09 -10 30 48 . . . . ESTJ **TJ
278 PE WK -07 -10 -08 -25 99 73 . . . . ESTJ **TJ
279 PE PE -09 -24 -04 +04 43 59 . . . . ESTP **TJ
280 RC RC +13 -24 -05 -13 21 44 . . . . ISTJ E*FJ
281 RC WK +02 -20 +08 -22 88 45 . . . . ISFJ E*FJ
282 PE PE +04 +16 -02 +08 38 47 . . . . INTP **TJ
283 WK WK +26 +02 -23 -12 10 56 . . . . INTJ **TJ
284 RB RB -20 -12 +01 +30 49 64 . . . . ESFP EN*P
285 PE RC +17 -03 -10 -14 89 48 . . . . ISTJ **TJ
286 PE RC +05 -20 -13 -19 72 57 . . . . ISTJ **TJ
287 WK DR -12 -16 -06 -18 61 55 . . . . ESTJ **TJ
288 PE WK -10 +20 +01 +03 70 48 . . . . ENFP **TJ
289 RC PE -02 +02 +04 +11 63 48 19 0 3 14 ENFP E*FJ
290 PE PE +17 +08 -14 +09 18 52 . . . . INTP **TJ
291 PE WK -20 -04 -08 -13 80 60 26 0 0 12 ESTJ **TJ
292 PE WK +07 -18 -15 -19 67 82 . . . . ISTJ **TJ
293 PE WK +20 +02 -18 +02 72 53 28 1 0 14 INTP **TJ
294 DR DR +00 +10 -14 +03 31 41 . . . . INTP I*TP
295 PE RC +00 -06 -07 -22 76 68 28 1 0 14 ISTJ **TJ
296 PE PE +05 +12 -15 +11 36 40 . . . . INTP **TJ
297 PR DR -18 +14 -27 +30 99 35 . . . . ENTP *NT*
298 PE RC -02 -18 +09 -22 90 57 . . . . ESFJ **TJ
299 PE PE -15 -12 +07 -11 30 45 . . . . ESFJ **TJ
300 RB PR -22 +09 -15 +19 93 65 . 1 . . ENTP EN*P
301 PE WK -12 +04 -03 -13 99 75 . . . . ENTJ **TJ
302 PE PE +12 -13 -15 -04 23 36 . . . . ISTJ **TJ
303 PE WK +02 +04 -21 +02 72 55 . . . . INTP **TJ
304 RC PE -18 +02 +14 +18 89 75 19 0 0 12 ENFP E*FJ
305 PE PR -05 -15 -26 +09 72 58 22 1 0 12 ESTP **TJ
306 PE PE +15 +14 -09 +10 33 40 . . . . INTP **TJ
307 RC RC +00 -13 +12 +06 33 72 18 0 3 12 ISFP E*FJ
308 PE WK -11 -22 -08 -18 99 45 26 0 0 14 ESTJ **TJ
309 RC WK -09 +21 +12 +16 89 42 19 0 0 12 ENFP E*FJ
310 RB RB -05 +16 -06 +27 28 53 18 1 0 12 ENTP EN*P
311 RC RB +06 +14 +15 -07 86 68 . . . . INFJ E*FJ
312 DR DR -01 -01 +11 +08 56 63 22 1 3 14 ESFP I*TP
313 PE PE -05 -05 -03 -07 48 43 . . . . ESTJ **TJ
314 RC RC -08 +08 -10 -12 24 53 18 1 0 12 ENTJ E*FJ