

An abridged version of the report submitted to Middlesex University in partial fulfillment of the requirements for an MSc Professional Practice (Psychoneuroimmunology)

Project Title:

How overlaying Meta-programs with Psychoneuroimmunology archetypes can provide a new model for pinpointing possible disease creating mind states.

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## SUMMARY

### Objectives

This study integrates clinical research from the field of psychoneuroimmunology (PNI), with Weinberg's PNI model (which correlates personality profiles or archetypes and their associated somatic manifestations) and meta-programs / thinking patterns from the field of coaching to determine if specific meta-programs are positively correlated with identifiable pathology.

### Methods

A quantitative, survey based methodology was employed. A total number of 69 respondents self completed on-line questionnaires to generate their meta-programs and PNI archetype. These results were analysed by correspondence analysis and deviation analysis to determine if there was a pattern of meta-program association per archetype.

### Results and Conclusions

Different meta-programs were strongly associated with each archetype, thus proving the hypothesis that running specific meta-programs is positively correlated with development of identifiable pathology. A clear description emerged of each archetype's profile and a model developed for use by coaches and applied PNI practitioners that describes the association between meta-programs, PNI archetypes and their associated pathology.

### Key words :

Psychoneuroimmunology, meta-programs, pathology.

## CHAPTER ONE : INTRODUCTION

I own a coaching practice, and work with both private individuals and corporate organisations. For the last 8 years, the work I have done has been in the area of facilitating others to maximize their potential.

During my early years of practice, my interventions focused on Natural Health modalities, including nutrition, supplementation and lifestyle modification; the facilitation of optimal physical health. However I have always believed that there is a connection between an individual's state of mind and their state of health (the mind-body connection), but until I came across the field of Psychoneuroimmunology (PNI), it could not be explained to me with scientific rigour.<sup>1</sup> Freund (2006) borrows from the National Library of Medicine in defining the term, as "the field concerned with the interrelationship between the brain, behaviour and the immune system". The Encarta World Dictionary definition goes one step further and includes the effect emotions have on health by defining PNI as " a branch of medicine concerned with how emotions affect the immune system" (ibid, pxi).

With the knowledge of the role that the mind plays in establishing holistic health, it was inevitable that I investigated coaching as a modality to help my Clients achieve peak performance, not just physically, but emotionally and mentally too. One of the things coaches do is identify thinking patterns, and how these could be holding people back from achieving their desired goals. First, we identify the thinking patterns, and once identified, we coach the client to create flexibility and change along the continua of thought patterns. We call these thinking patterns, meta-programs.<sup>2</sup>

Because of my background, it was only a matter of time before I linked the two fields of Psychoneuroimmunology and Coaching. By increasing our understanding of the brain and its processes, we are better able to facilitate improved performance and meaning for our clients as they move towards self actualisation.

With the above in mind, it became clear to me that I could make a significant contribution to the field of coaching if I could establish what thinking patterns are responsible for the (*emotions that lead to*) disease-creating mind states and their identifiable pathology. To the

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<sup>1</sup> PNI studies the relationship between mind and health, specifically, it is the study of the effect that emotions have on neurochemistry, which in turn exerts an effect on our immune system, creating or possibly even reversing disease

<sup>2</sup> Perceptual filters or thinking patterns used to process and sort for information

best of my knowledge, no similar formal research studies have been conducted that link the two disciplines, hence I did not replicate any methodology from prior studies, nor did I build on any formal knowledge. This research project did however provide the opportunity to conduct an academic exploration of anecdotal observations derived from my practice and that of other coaches.

This study has two applications in creating a more optimal environment for health :

- Firstly, even if a coach has no knowledge of the neurochemistry or theory behind PNI, they would be able to identify if a client was exhibiting a cluster of meta-programs associated with a disease causing mindstate. By coaching them to modify their thinking patterns, there would be a resultant change in mindstate, and the accompanying neurochemistry.
  
- Secondly, when coaching a Client who is already ill, the coach would be able to identify what meta-programs are associated with the client's disease, and then coach flexibility and modification to those specific programmes. This too would result in a changed mindstate coupled with positive neurochemical changes.

In addition to the propositions outlined above, this would also fulfil a personal objective of clearly differentiating myself within the field of coaching as well as paving the way for future studies incorporating neurology and performance.

The aim of this project then, is to overlay meta-programs with three PNI archetypes (which have already been established within an existing, medically accredited model) in order to determine if there is a correlation between meta-programs and identifiable pathology. If this is found to be the case, my intention is to create a model for establishing disease creating mind-states.

## CHAPTER TWO : TERMS OF REFERENCE, OBJECTIVES AND LITERATURE REVIEW

Research is to see what everybody else has seen, and to think what nobody else has thought.

*Albert Szent-Gyorgyi*

*(Nobel Prize Winner in Physiology / Medicine in 1937)*

As I reflect on the progression of events that led to this project, it seems logical to first review the literature and findings that gave rise to my desire to undertake the research project, and then state the research objectives that resulted from that process.

As referred to in Chapter 1, it had long been my personal belief that there is a mind-body connection, but until I was exposed to the field of PNI, it seemed to be relegated to the field of 'new-age' thinking.

In terms of the contemporary medical model, disease states reflect pathology that occurs at the tissue, organ or system level. The conventionally accepted aetiologies include :

- Developmental
- Traumatic
- Toxic
- Infective
- Inflammatory
- Neoplastic
- Degenerative
- Genetic

Conspicuously absent from this model is the influence of mind states on the aetiology and progression of the disease state. It is my view that the field of PNI is not in contradiction with the medical model, but rather that the field of healthcare could be expanded to include PNI in a 'both-and' approach. Not only has clinical research shown a direct correlation between negative mind states and the corresponding neurochemical (and resultant immunological changes), but when PNI is viewed through the lens of being complementary to the traditional medical model, we can understand the influence of mind states no matter what the aetiology. A negative (helpless-hopeless) mindstate retards recovery, whereas a positive mindstate

speeds up the rate of recovery and mitigates against secondary complications like depression and chronic pain. (Robles et al. 2005).

While it is acknowledged that mind states have little influence on developmental, traumatic and toxic aetiologies, they have been shown to play a significant role in infective, inflammatory, neoplastic and degenerative aetiologies. A case in point arguing against Koch's Germ Theory<sup>3</sup> resulted in one of Koch's critics ingesting a glass of water laced with *vibrio cholerae*<sup>4</sup> and remaining completely disease free. (Di Rita 2000).

A further challenge to the conventional medical model arises from the study of epigenetics<sup>5</sup>. The fundamental principle underlying epigenetics contends that environmental influences impact on the cell membrane and influence genetic expression or suppression. This manifests as disease states which may also be genetically transmissible. Consequently whilst certain diseases like Huntington's chorea and cystic fibrosis are the result of one faulty gene, today's lifestyle diseases like "diabetes, heart disease and cancer ... (are the result of) complex interactions between multiple genes and environmental factors." (Lipton, 2005).

Nijhout (1990) argues that "When a gene product is needed, a signal from the environment, not an emergent property of the gene itself, activates expression of that gene." Lipton (2005) further states that environmental changes are picked up by the cell's membrane receptors, and that the cellular membrane is the true brain that controls cellular life.

A landmark case study arguing the theory of epigenetics using mice carrying the 'agouti' gene<sup>6</sup> was conducted by researchers at Duke University (Waterland and Jirtle, 2003). Prior to conception, the control group were fed a diet rich in methyl-group supplements, with the result that the methyl-rich donors were passed from the mothers through the placental barrier into their offspring, resulting in slim, brown mice. Although the agouti gene was passed to the offspring, the prevailing environment resulted in its deactivation, and the resultant offspring were free of diabetes.

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<sup>3</sup> Robert Koch designed a series of four criteria (Koch's postulates) to establish a causal link between a microbe and disease. Whilst Koch applied his postulates to establish the infective aetiology of anthrax and tuberculosis, they have since been generalised to other disease.

<sup>4</sup> *Vibrio cholerae* is the bacterium that causes cholera

<sup>5</sup> Epigenetics is the study of changes in phenotype (appearance) or gene expression caused by mechanisms other than changes in the underlying DNA sequence (Beger et al, 2009)

<sup>6</sup> The Agouti gene is responsible for the yellow obese syndrome in mice and can influence two or more independent characteristics including yellow fur, maturity-onset obesity, hyperinsulinemia, insulin resistance and hyperglycaemia. (Miltenberger et al, 1997)

The Literature Review that follows challenges the conventional aetiology of inflammatory, neoplastic and degenerative pathology and the development of PNI theory.

Although the term PNI was not coined until the mid 1970's by Robert Ader, one of the first observers of how psychosocial factors influence immune function was Viktor Frankl, who was both a psychiatrist and neurologist. He describes in his book "Man's Search for Meaning" (2004) how whilst he was interned in a concentration camp, he observed a mind state of despair, which preceded the development of disease by his fellow inmates. His theory that a hopeless-helpless mind state could give rise to a chemical process which suppressed immunity was subsequently proven by Ader (1975) through his conditioning experiments on rats using cyclophosphamide and saccharine.

Subsequent research by Robles, Glaser et al (2005) has clarified neurological, endocrine and immune involvement, such that we now know that certain predisposing emotional states like depression, anxiety and chronic stress give rise to an increase in pro-inflammatory cytokine production (specifically Interleukin-1, Interleukin-6 and Tumour Necrosing Factor Alpha (TNF- $\alpha$ ), as well as resultant decreases in the neurotransmitters serotonin and dopamine, and an increase in noradrenalin.

Clinical research in the late 1990's and early 2000's shows a direct relationship between negative mind states, increased proinflammatory cytokines (PIC's), suppressed natural killer (NK) cell activity and the increased occurrence of carcinoma (melanoma). In addition, and of particular significance to this project, a statistically significant correlation has been shown between emotional states as well as life and social situations with personality types and immune system manifestations. (Heffner et al. 2002)

Some of the results of the increase in PIC's include increased joint & bowel inflammation, predisposition to the development of type 2 diabetes, suppression of cardiac contractility, contribution to the development of osteoporosis, arthritis, immuno-suppression and sickness behaviour. (Robles et al. 2005)

The PNI influence can be appreciated in context when reviewing a condition such as diabetes. There are two forms of diabetes, type one and type two. Type two diabetes usually follows obesity; insulin resistance occurs initially and thereafter, diabetes.

However, in a significant percentage of diabetics there is a clear genetic predisposition. The aetiology of type one is the loss of the insulin-producing Islets of Langerhans in the pancreas. This is believed to be due to an autoimmune reaction against the islets and is presumed to follow on from a viral infection. The antibodies made against the virus then turn on similar antigen-bearing islet cells.

As discussed above, it has been shown that a negative PNI mind state gives rise to raised levels of cortisol as well as pro-inflammatory cytokines, both of which are significantly diabetogenic.

It follows that appropriate intervention designed to move an individual into a resourceful mind state would have a significant effect on the disease causation and outcome *in the face of a genetic predisposition*. In terms of the viral aetiology of type one, PNI intervention would diminish the incidence of the precipitating viral infection through the enhancement of immune function.

Alongside the PNI research was work done by neuroscientist, Candace Pert, who chronicled her groundbreaking research on neuropeptides in her book ‘Molecules of Emotion’ (1997). She found that the largest concentration of neurotransmitters<sup>7</sup> and their receptors are within the so-called limbic system which is traditionally regarded as a system of functionally related neural structures in the brain that are involved in emotional behaviour.

However, what she discovered is that these chemicals are not restricted to the brain but are found throughout the body; that “*chemical information substances travel the extracellular fluids circulating throughout the body to reach their specific target-cell receptors*” (p140). She explains that because neuropeptides and their receptors are found in the body as well as the mind, that the “mind is in the body” (p188); that at the molecular level, the body is in fact “a mobile brain” (ibid).

Weinberg (2006) took the next step, matching emotion with disease. He collated the research of Kiecolt-Glaser, Robles, Appels, Bar et al and others and rationalised life circumstances, emotional states and personality types into three quantifiable groups or archetypes. Each archetype represents a personality profile and its corresponding somatic manifestation.<sup>8</sup> Further, Weinberg developed a diagnostic in the form of a self-completion questionnaire to identify an individual’s particular archetype.<sup>9</sup>

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<sup>7</sup> A neurotransmitter is a chemical found in the brain that transmits nerve impulses from one neuron to the next across the synapse

<sup>8</sup> PNI Archetypes - derived from The Triangles Model (Weinberg, 2004)

Alpha - characterised by a non-judgemental perception of the environment and high vitality.

Bravo - fear-driven and is generally highly ambitious but insensitive; is associated with cardiovascular disease, obesity and diabetes.

Charlie - characterised by a hopeless-helpless mind-state and has the lowest PNI resilience. This archetype is associated with the development of chronic inflammation, infections, auto-immune disease and tumours.

<sup>9</sup> An example of the questionnaire appears in the full report and has been excluded from this report to maintain Intellectual Property protection. Please contact the author of this report should you require further information about the questionnaire.

Armed with the knowledge of what emotion or mindstate contributed to a particular disease pattern, I embarked on a Meta-Coaching qualification, which gave me the link I required for this project. Meta Coaching is a method of coaching, which amongst other key features, uses the existence of meta-programs to identify a client's thinking patterns. A meta-program is a perceptual filter that we use to structure our thinking patterns. *"They operate at a level meta to (or above) our content thinking and so refer to the sorting devices we use in perceiving, paying attention to things, and inputting and processing stimuli"* (Hall 2005). The one most people are familiar with is the optimist/pessimist pattern. Used with reference to the half full / half empty glass, the content within the glass is exactly the same, but a person's perception will differ dependant on which meta-program they prefer. In Meta-coaching, not only do we track 61 such patterns to help our Clients understand the lenses (or glasses) through which they view the world, but we facilitate the development of flexibility and intentional installation of meta-programs so that they can maximize their potential.

I referred earlier to the association between thoughts and emotion. My own view is similar to the Lazarus theory, which states that when a stimulus in the external environment occurs, a cognitive appraisal is made, based on which an emotional and physiological response follows.

This then led me to question the starting point of the PNI theory. Is it the emotion that triggers the neurochemical and immune changes? Or could it be the thinking pattern (meta-program) which gives rise to the emotion that is the trigger? If an association is found between meta-programs and disease, then by employing Meta-coaching principles, these meta-programs can be changed, and hence the neurochemistry preceding the disease pattern would be altered.

So, changes in neurochemistry, with the resulting changes in neurotransmitters and hormones would effect changes on the cell's environment, which could change the genetic expression of the cell. This theory, known as epigenetics has already been discussed. At a more fundamental level, changes in thinking patterns would give rise to changes in behavioural patterns, promoting more optimal lifestyle choices. Using the type two diabetes example again, this could lead to modified behaviour mitigating against obesity.

In order to test my theory, it was necessary to investigate if there is a link between meta-programs and certain types of disease. Because the grouping work on mind states and disease had been done by Weinberg, what I needed to do to test my theory was take an individual whose meta-programs were known, establish their archetype via Weinberg's diagnostic, duplicate the investigation quantitatively and determine if there a pattern exists.

Hence, whilst the aim of my project is to overlay meta-programs with Weinberg's three PNI archetypes to determine if there is a correlation between meta-programs and identifiable pathology, my research objectives are as follows :

1. Conduct a literature review to summarise the literature within the fields of PNI and coaching and provide an academic framework for this research study
2. Develop a questionnaire to profile an individual's meta-programs. Alternatively, determine if any such profiling tools have already been developed and critically evaluate them for use in this study.
3. Profile an individual's PNI archetypes, using Weinberg's diagnostic.
4. Secure a sample of respondents who are willing to complete both questionnaires.
5. Ensure that the sample size is sufficiently large enough to include respondents from all 3 archetypes.
6. Analyse the results to establish if the 3 PNI archetypes have any strongly associated meta-programs.
7. Prove or disprove the hypothesis that running specific meta-programs is positively correlated with the development of identifiable pathology.
8. If the hypothesis is proved, develop a model for future use that describes the association between meta-programs and identifiable pathology.

## CHAPTER THREE : METHODOLOGY

### APPROACH

One of the research objectives is to establish if the 3 PNI archetypes have any strongly associated meta-programs. Hence, a quantitative approach was selected in order to generate objective standardised data, from a relatively large number of individuals, which could be statistically analysed. This would also allow for future replication, if required. As stated by Leedy (1980 p97), "The nature of the data dictates the research methodology ..."

This view is endorsed by Clarke (2002) who argues that quantitative techniques provide numeric data suitable for statistical analysis which would allow for hypothesis testing, which is another of this study's objectives. This approach would also augur well for credibility and generalisation purposes, as one of the project objectives is to develop a predictive model to be used in practice.

One of the possible weaknesses of a quantitative approach is that it can take human behaviour (motivation, opinions and attitudes) out of context. A qualitative approach would have resolved this issue, and may have provided interesting data rich in explanation. However it was not a requirement of this study to provide insight into human behaviour. In addition, whilst a qualitative approach may have eventually yielded the desired numbers of data, this would have been an unwieldy approach time-wise and would have generated data irrelevant to this study. Finally, there is a possibility that the data generated by a qualitative approach may not be objective or standardised and this would have affected the study's validity. Thus, a qualitative approach was rejected.

### METHODOLOGY

A survey methodology was selected in order to explore a relatively large amount of information and the relationships between the multiple variables. As discussed by Trochim (2006), the decision as to which type of survey is selected is often made by critically considering the relative merits of the different types.

An interview approach was excluded as this approach is often more suited to establishing opinions, attitudes and beliefs via open-ended questions and interviewer participation. The interview approach and administered questionnaire are also fairly time-consuming. Hence, a survey methodology, making use of an on-line self-completion questionnaire was selected to generate the required quantitative data in as time-and-cost efficient a manner as possible. (Walonick, 1993)

While it is a cost effective and fast method of distributing a survey, Action research was dismissed as this project is not attempting to change behaviour or develop a practice; rather it seeks to understand thinking that precedes neurochemical changes. Similarly, a soft systems methodology was also rejected as the aim of this project is not to identify a problem and propose changes but rather seeks to understand the relationship between variables.

Whilst my informal observations made in practice were the starting point for the academic studies that have culminated in this project, formal case studies would not have generated the data required for statistical analysis. Indeed, any conclusions could have been viewed as anecdotal in nature and unsuitable for generalisation purposes. In addition, due to the fact that these case studies would have been based on Clients seen in my practice, the findings could have been subject to researcher and sample bias. Ethnography was also precluded on the basis of sample size, and the qualitative data it would have generated, but more specifically because this project does not seek to understand group dynamics or behaviour.

Whilst an experimental methodology could have provided numeric data, it is not a concern of this project to understand cause and effect on behaviour, and was hence excluded as an option.

#### **DATA COLLECTION TECHNIQUES**

As noted above, data collection via questionnaire was selected in order to generate relatively large numbers of factual, standardised data that could be subject to statistical analysis, and would allow for generalisation of results if the study was deemed to be statistically valid.

It was a requirement of this study that the statistical relationships between the variables (i.e. meta-programs and PNI archetypes) be analysed, and utilising a questionnaire/s permitted this. In addition, using a questionnaire increased the possibility of generating larger numbers of data, and allowed for wide geographic coverage. This technique is relatively low cost and has a relatively fast turn around time, in that results are available within months, rather than years. This advantage was of considerable benefit to me bearing my practice workload in mind and the fact that this degree is self funded and has a project deadline. In addition, I allowed for the possibility that this study, dependant on the eventual sample size, may be used as a pilot study, or that it could be replicated if required. Additional benefits of using this data collection technique include the exclusion of interviewer bias and the possibility of respondent anonymity, which was of relevance due to the personal nature of the data that was collected.

Possible disadvantages of using a questionnaire for data collection include the fact that respondents may want to portray themselves in a good light, and hence may not answer truthfully. In order to avoid confusion, the questions asked must be simple. In the case of self-completion questionnaires there is the possibility of incomplete questionnaires being returned and misunderstanding if the question is not clearly phrased. In addition there may be a need for reminders which could be time-consuming, and there is a risk of a low rate of response.

I attempted to limit these possible disadvantages by critically examining the questionnaires, checking for question clarity and simplicity. Although I could not check for truthful answering, the questionnaires did not allow for completion if all the questions had not been answered. However, several reminders to prospective respondents were required.

Academic journal and Literature review took place simultaneously with the development of the project plan, and contributed significantly to the development of the hypothesis that running specific meta-programs is positively correlated with the development of identifiable pathology.

I excluded the possibility of using interviews as they would have yielded qualitative data, which was not a requirement of this study. Likewise, although informal observation is a natural part of my job, formal observation would have recorded and analysed behaviour of a qualitative or descriptive nature, whereas the data I required was numeric, and needed to allow for analysis between the variables.

One of the research objectives was to profile an individual's PNI archetype. As a result of my earlier studies, I had been trained on and had made use of Weinberg's PNI diagnostic. It takes the form of a self-completion, on-line questionnaire and generates a report detailing the PNI archetype amongst other data. The programme from which the questionnaire was developed is medically accredited by The Health Professions Council of South Africa, and produces consistent standardised data. Although it was convenient that the questionnaire had been validated and was in use, it was still critical that I review the instrument to determine if the design criteria were advantageous for producing quality data. On examination, the design was found to be optimal as questions were simple, short, clear and closed-ended. A multiple-choice format was used throughout, and there were no open ended or leading questions. The questionnaire took approximately 30 minutes to complete, hence was of a suitable length. As a result of the critical analysis I performed, I elected to use the questionnaire in its existing form to profile the PNI archetypes, and took the decision not to adapt it in any way.

As stated in my objectives, it was also a project requirement to investigate how to profile an individual's meta-programs, and secondly, to determine if any such profiling tools had already been developed. I had already commenced thinking about the design of such a questionnaire to meet this objective, when due to my insider-researcher role, colleagues within the Meta-

Coach Foundation alerted me to the existence of a profiling tool which is widely used to profile meta-programs. This tool is called the Identity Compass Profile (ICP).

After contacting the developer in Germany, and ensuring confidentiality of his intellectual property by signing a non-disclosure agreement I conducted a critical review of the questionnaire.<sup>10</sup> This deskwork that I conducted revealed that the ICP is a self completion questionnaire, consisting of concrete closed questions and on completion provides a report detailing the individual's preferred meta-programs. These criteria met my requirements in that standardised data would be yielded by the questionnaire. Thus, a research objective had been met. A suitable method of profiling meta-programs existed, and I decided to make use of it, thus negating the need to develop my own questionnaire.

At this stage I made the decision not to pilot the study as both questionnaires were already in use; I had evaluated both questionnaires and the data that they generated. I did however ensure that the data generated from both questionnaires was suitable for analysis and held a meeting with a researcher and statistician (with examples of the data) before data collection commenced in order to check that it was viable to proceed with the methodology I had outlined.

Finally, it struck me as logical that the coaches who knew of the ICP may have used it, and might have access to the data I needed. This is an example of an advantage my insider-researcher role has offered me as these coaches, and in particular a large coaching organisation had used the ICP extensively and agreed to release their data to me on condition of receipt of informed consent from their clients.

#### **INSIDER - RESEARCHER ROLE**

Thus, whilst my insider-researcher role was certainly advantageous in alerting me to the presence of the ICP, and assisted in opening doors for data collection, it also turned out to be a limitation as it influenced my sampling strategy and resulted in the bulk of data collection being controlled by a third party.

Apart from this limitation however, my insider researcher status was certainly beneficial. In fact this project would not have come about if not for my in depth knowledge of both psychoneuroimmunology and coaching, and my innovative thinking that prompted me to link the two fields of study.

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<sup>10</sup> An example of the questionnaire appears in the full report and has been excluded from this report to maintain Intellectual Property protection. Please contact the author of this report should you require further information about the questionnaire.

After formulating my project aim, I explored it informally with my peer network who expressed enthusiasm at the value the project results would bring to the field if indeed there is found to be a link between thinking patterns and disease. This support, coupled with the additional credibility that the research was for degree purposes eased my path as previously discussed.

My insider-researcher role was not restricted to the coaching community however. The aforementioned researcher and statistician were known to me from earlier days working in the advertising industry. Whilst they readily agreed to assist me, I was mindful and sensitive of the requests I made, knowing that their assistance to me placed additional demands on their respective workloads.

### **ETHICAL / CONFIDENTIALITY ISSUES**

Before commencement of the project, approval by an Ethics Committee in South Africa was required as the research was conducted in South Africa. This was in addition to approval by The University of Middlesex's WBL Ethics Committee.

Approval was duly applied for and granted by The Human Research Ethics Committee at The University of the Witwatersrand (Wits University). Both the Middlesex Ethics Release Form, as well as an example of the Informed Consent Form and Subject Information Sheet were attached to both applications.

The Subject Information Sheet and Informed Consent Forms advised potential respondents of the research study's aim, the potential value of the project, what participation involved, that they were free to withdraw at any time, and it assured confidentiality and anonymity of data. Further both forms clearly spelt out the requirement to release ICP data as well as complete a PNI diagnostic if they had already not done so.

The report generated by the ICP states a random number for the respondent which is allocated when the questionnaire is completed. This unique number was used to identify each respondent and was used instead of a name when they completed the PNI questionnaire.

One of the key elements of this project is that although quantitative in nature, it subscribes to the moral principles of research ethics, as defined by Jesnai and Baria (undated) in their ethical guidelines for social science research in health. These are as follows:

- non-maleficence; the research caused no harm to the participants, or to people in general
- beneficence; the research is intended to contribute positively to the welfare of others

- autonomy; the study protects the rights and dignity of the participants
- justice; the benefits of the research will favour all people equally

Finally, when considering the question of bias, it is my view that most work-based learning studies contain an element of bias based on what the researcher believes about the world or deems important. Referring to an activity for the research methods module, I stated that *“I believe that our reality is built as a result of the meanings we give our world .... we create our thinking patterns (meta-programs) ... including that of the pathological hopeless / helpless state which triggers the neurochemical cascade responsible for much disease”*.

That statement is in itself biased because it is *my* view of the world; what *I* believe in determined what I wanted to study and my choice of research topic.

In addition, it would be almost impossible not to be biased toward a favourable research outcome as this has implications in terms of future career prospects. Ironically, however, merely having this awareness decreased this risk as biased results would reflect even more poorly than unbiased, but inconclusive or unfavourable results.

Whilst I certainly approached the research process as clinically as possible, this study is biased both in that existing questionnaires were used and the respondent selection process employed a convenience strategy due to my insider-researcher status. However, in order to avoid data analysis bias I made use of the two research experts who checked the data and commented critically on the findings. This I believe reduced any outcome expectation on my part and ensured that I focussed on the facts.

### **DATA COLLECTION**

When collected, the ICP data would be classified as secondary data, whilst the PNI data that still needed to be collected via fieldwork, is classified as primary data. In order to collect the secondary data, it was not only informed consent that was required from the coaching organisations' clients, but also their willingness to complete a PNI diagnostic.

The coaching organisation and I agreed that the request for informed consent and the request to undergo a PNI diagnostic were routed through their offices so as to protect their intellectual property in the form of their client database and to ensure confidentiality on behalf of their clients. At the time, I readily agreed to this, believing that it was ethical behaviour on my part and that I demonstrated sensitivity regarding the need for confidentiality for both the organisation and their Clients' personal records.

Before the data was collected a covering letter outlining the nature and value of this project was e-mailed to all prospective respondents who had completed an ICP requesting their participation in this study. Attached to this e-mail was the previously mentioned informed consent form. On receipt of their signed informed consent form respondents were e-mailed the self completion PNI diagnostic, which when completed was released to me along with the ICP data.

Although I had an expectation that the data would be supplied to me in anonymised form, it was in fact saved onto disc with the agreed upon coding, as well as the respondent's name. From this information, demographic data of race and gender were extracted.

### **SAMPLING**

Due to the fact that the criterion for selection was that an individual had to have completed an ICP, and I chose to make use of this (secondary) data, it could be argued that a type of non probability sampling, called convenience sampling was used as a sampling strategy. Once this sample had been defined, all respondents who had completed an ICP were invited to participate further in generating the primary data if they had not done so already.

Whilst convenience or 'available' sampling does not allow for statistical generalisation, theoretical generalisation is still possible using this sampling strategy (Robson 2002). Indeed, "proponents of the available sample procedure claim that if a phenomenon, characteristic, or trait does in fact exist, it should exist in *any* sample" (Wimmer & Dominick, p 60)

Although demographic quotas of race and gender were not applied, the population that was sampled was heterogeneous in nature and a cross section of race and gender resulted.

Table 1  
Demographic sample distribution

Black Males	White Males	Black Females	White Females
10	28	8	23
55% Male		45% Female	

n = 69

During the analysis phase the data was further subjected to stratified sampling in that 3 segments (the 3 different archetypes) were defined, and each segment was subject to the same statistical analyses.

### **DATA TRIANGULATION**

If triangulation of data is a combination of techniques designed to “...enhance the rigour of the research” (Robson 2002), it was traditionally associated with gathering data by combining different research methods.

Denzin (1978) and Patton (1999) identified four types of triangulation:

- Methods triangulation.
- Triangulation of sources
- Analyst Triangulation
- Theory/perspective triangulation

However Kimichi et al. (1991) broadened this concept further by introducing another type of triangulation called analytical triangulation.

Whilst this study does not triangulate via different methods or sources, the data has been subject to analytical triangulation. Two primary methods of analysis were used viz. correspondence analysis and deviation analysis. This is a ‘within-method’ approach using different statistical techniques to determine similarities or validate data, the benefit of which is to increase the validity of the findings should the findings converge.

## CHAPTER FOUR : PROJECT FINDINGS

### CREATING A DATA SET

Prior to data analysis, a data set was created. Raw data was obtained from the results of the IDC and PNI questionnaires. Each IDC questionnaire yielded 50 meta-programs per respondent and each PNI questionnaire yielded 1 archetype per respondent. The final sample consisted of 69 respondents who had completed both questionnaires. (See Appendix A, pp.39-40 for examples of raw data, and pp.41-45 for raw data tables)

The raw data was entered into a data programme called Survey Systems. Apart from offering statistical analyses, this programme also includes a number of checks and balances to mitigate against data capture error. An alternative method of capturing data would have been to scan it electronically, however this was not justified due to the small sample size.

In order to finalise the data set, the data had to be cleaned. Whilst the original resultant sample size was 76 respondents, we only had both sets of data (ICP and PNI data) for 60 respondents. Missing data for another 9 respondents was located, and the balance (7 respondents) where only one set of data existed was deleted off the database.

However, even before the raw data was captured, it had gone through a process of cleaning. Both questionnaires have a built in feature where a report will not be generated if all questions have not been correctly answered.

### COMBINING THE ARCHETYPES

Although this project refers to 3 archetypes, namely Alpha, Bravo and Charlie, there are in fact 2 cross-over archetypes that the PNI questionnaire generates, namely Alpha/Bravo and Bravo/Charlie. The PNI diagnostic generates a score in one of these 5 categories. (See Appendix A, p.39 for an example of the report, category names, and scoring key)

In order to maximise the data I had and keep the archetypes pure, I consulted with the developer of the PNI diagnostic and decided to combine Bravo/Charlie and Charlie; likewise Alpha/Bravo and Alpha, with Bravo remaining unchanged. The 2 crossover categories were originally included to maintain continuity of data when the diagnostic was developed. However, due to the large numbers of data and case studies that have been collected over the years, it is now accepted that Bravo/Charlie is in fact deemed to be Charlie and Alpha/Bravo deemed to be Alpha.

This decision also fulfilled a research objective, which was to ensure that sample size was sufficiently large enough to include respondents from all 3 archetypes. Consequently, the final data set was comprised of raw data in the form of absolute scores per respondent by meta-program per pure archetype. An excerpt from the final data set is shown below. The full table appears in Appendix F, pp.46-47.

Table 2

Excerpt from raw data : Absolute scores per archetype per meta-program

	<b>Charlie (n=17)</b>	<b>Bravo (n=40)</b>	<b>Alpha (n=12)</b>
Comparison: Difference	73.2	72.6	71.3
Comparison: Sameness	78.8	69.8	64.2
Information Size: Details	71.8	63.9	63.3
Information Size: Global	87.4	82.9	85.8
Level of Activity: Pre-Active	72.7	66.8	65.0
Level of Activity: Re-Active	80.6	73.9	73.8
Reaction: Match	83.8	73.4	72.9
Reaction: Mismatch	61.5	59.4	59.2
Success Strategy: Realisation	80.0	76.5	79.6
Time Frame: Long-term	70.9	69.8	69.6
Time Frame: Short-term	74.4	69.6	67.9
Time Orientation: Future	77.1	75.4	73.8
Time Orientation: Past	76.2	65.8	67.5
Time Orientation: Present	79.1	71.0	72.5
Work Orientation: Relationship	79.4	67.3	69.6
Work Orientation: Task	74.4	72.8	69.2
Working Style: Individualist	63.5	63.3	57.9
Working Style: Team-player	74.7	62.8	59.6

### **CORRESPONDENCE ANALYSIS**

In order to look at the relationship between the multiple variables viz. the rows of meta-programs and the columns of archetypes, the data was put through a multivariate exploratory data analysis technique called Correspondence Analysis. This allowed for simplification of the data to be analysed in respect of the interrelationship between the variables.

One output of the correspondence analysis was a data table; a second output was a correspondence map which was generated to provide a visual map of the information.

The data table was interpreted first. Raw scores per archetype were ranked and on initial investigation, it appeared that the Charlie archetype had the highest association with the

majority of meta-programs. (78% or 39/50 statements to be exact)<sup>11</sup>. I questioned why this archetype consistently scored significantly higher than the other archetypes. In fact the Charlie archetype even scored higher on the meta-programs where it was negatively associated with the meta-program.

For example, the meta-program of 'difference' was most highly associated with Charlie. This meta-program explains how an individual works with information and change. Due to the low area of environmental integration with which Charlie is associated, this archetype does not seek out change, but prefers the environment to remain the same, or unchanged. They do not value change, variety and newness but rather seek out similarity and stability. (Hall 2005, p108) (Weinberg 2006, p33)

Likewise, Charlie scored highest on the time frame meta-program of 'future'. This thinking pattern indicates where in time an individual's focus is placed. By definition, the Charlie archetype is routed in the past, suffers from regret and most certainly does not have a future-based orientation. (Weinberg, 2009, p36)

In addition, many of the associations appeared to be contradictory. For example, Charlie scored highest for both 'sameness' and 'difference', 'match / mismatch', 'details / global' amongst others. These are opposite poles of their respective meta-programs (Hall, p108)

It was apparent that additional data analysis was required to make sense of the information, and whilst the correspondence analysis was providing insight *into how closely the data was inter-connected*, it did not explain the differences in the data.

### **DEVIATION ANALYSIS**

It was thus decided to perform a deviation analysis to eliminate the Charlie halo effect and determine how far apart – or how different the archetypes are to each other. Thus, it was not the strength of the attribute that I wanted to measure, but the profile of the archetypes relative to each other.

It was also important to examine the positive as well as negative associations per archetypes to fully comprehend the differences between the 3 archetypes. The association (raw scores) relates to the ability of the archetype to attract a meta-program whereas the deviation profiles what makes them different.

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<sup>11</sup> Appendix B (pp.48-49) highlights the high Charlie association scores; they can also be identified from the data in Table 2, on p.21.

And for the first time, the information behind the data came into focus. Using the deviation analysis, the differences between the 3 archetypes became apparent and concurred with my prior informal observations and past PNI case studies. For example, Charlie respondents may believe they embrace 'difference' but relative to the Bravo profile, they do not. Likewise, although the Charlie archetype scored highest in terms of absolute figures on the meta-program 'success strategy: realization", when analysed via the deviation analysis it is apparent that this variable is in fact most closely associated with the Alpha archetype

In an attempt to understand these discrepancies, it is worth re-stating that the Charlie archetype is characterized by a hopeless-helpless mindstate and low ego-strength which does not bode well for facing reality. Thus, the Charlie respondents may have simply scored themselves higher across all attributes due to an inability to perceive reality correctly or in an attempt to feel better about themselves. The deviation analysis removes the possible effect of false scoring.

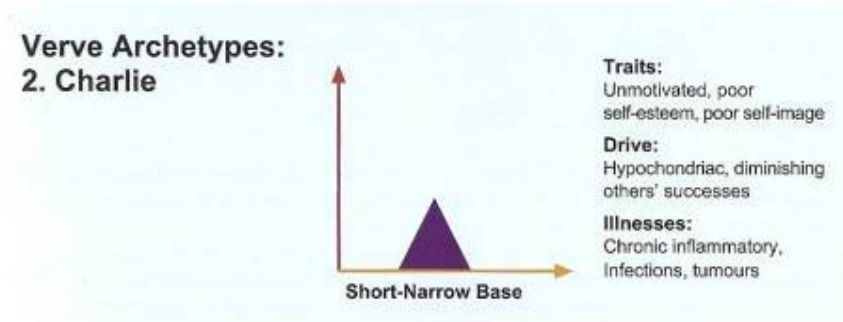
Full deviation results per archetype appear in Appendix C, pp.51-52. A sample of the Charlie deviation from +2 upwards, and -2 downwards appears below.

Table 3 :  
Charlie Deviation analysis

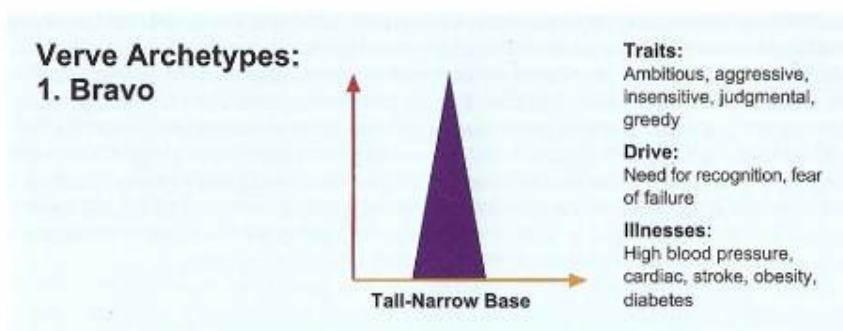
	Charlie (n=17)	Bravo (n=40)	Alpha (n=12)
Reference: External	7.9	-1.6	-6.3
Primary Interest: Places	6.9	-1.6	-5.3
Primary Attention: Caring for Others	5.4	-3.5	-2.0
Working Style: Team-player	5.1	-1.4	-3.8
Motives: Affiliation	5.0	-3.6	-1.4
Primary Interest: Things	4.7	0.9	-5.7
Comparison: Sameness	3.7	0.5	-4.2
Direction: Away From	3.3	-0.9	-2.4
Work Orientation: Relationship	3.0	-3.1	0.1
Sensory Channel: Seeing	2.9	0.4	-3.3
Sensory Channel: Hearing	2.7	-2.8	0.1
Reaction: Match	2.5	-1.5	-1.1
Time Orientation: Past	2.2	-2.4	0.2
Convincer Strategy: Sceptic	2.1	1.9	-3.9
Work Orientation: Task	-2.0	2.4	-0.4
Perspective: Observer	-2.1	4.3	-2.2
Reaction: Mismatch	-2.1	0.8	1.3
Sensory Channel: Feeling	-2.3	3.5	-1.2
Primary Interest: Information	-2.4	0.2	2.1
Success Strategy: Vision	-2.7	-2.7	5.4
Time Orientation: Future	-2.8	1.8	1.0
Convincer Strategy: Trustful	-2.9	-2.4	5.3
Information Size: Global	-3.1	-0.4	3.5
Time Frame: Long-term	-3.4	1.4	2.0
Success Strategy: Realisation	-3.4	-0.3	3.7
Comparison: Difference	-3.4	2.0	1.4
Convincer Channel: Listening	-3.5	-0.8	4.3
Perspective: Own	-3.6	-0.7	4.3
Convincer Channel: Reading	-4.1	2.8	1.3
Primary Attention: Caring for Self	-5.4	3.1	2.3
Reference: Internal	-5.8	2.1	3.7
Direction: Towards	-6.1	1.7	4.5



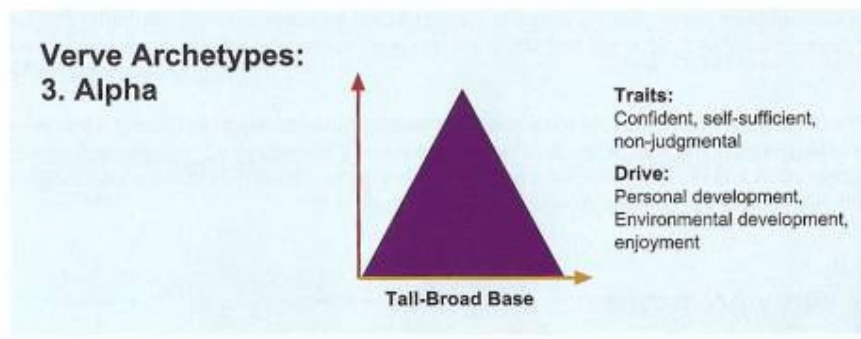
Each archetype was linked with identifiable pathology by Weinberg (2006), who collated the clinical research referred to in the Literature Review of Chapter 2. For the sake of brevity, the following diagrams have been included to clearly define each of the 3 archetypes.



Weinberg (2009 p 24) Figure 4.2



Weinberg (2009 p 24) Figure 4.3



Weinberg (2009 p 25) Figure 4.4

Note: The Y axis represents energy input (meaning, purpose, passion), whilst the X axis represents the individual's spectrum of interest. It is also important to note that whilst the archetypes provide a basis for understanding cognitive processing and behaviour, any

individual can exhibit any of these characteristics depending on the prevailing environment. Whilst it is true that a particular archetype will dominate in general within an individual, it is possible through intervention to change one's archetype.

The section that follows identifies and discusses the meta-programs associated with each archetype<sup>13</sup>, ending with a model that synthesises the connections between meta-programs, archetypes and associated pathology.

### **THE CHARLIE ARCHETYPE**

According to Weinberg (2006), this archetype or configuration is driven by a need for external validation (often via hypochondriasis) and to diminish the success of others, due to their desire need to diminish their own inherent wretchedness. The pathologies of chronic inflammation, auto-immune disease, infections and tumours have been associated with this archetype.

Table 4  
Charlie : Ranked Meta-programs

Reference: External	<b>7.9</b>
Primary Interest: Places	<b>6.9</b>
Primary Attention: Caring for Others	<b>5.4</b>
Working Style: Team-player	<b>5.1</b>
Motives: Affiliation	<b>5.0</b>
Primary Interest: Things	<b>4.7</b>
Comparison: Sameness	<b>3.7</b>
Direction: Away From	<b>3.3</b>
Work Orientation: Relationship	<b>3.0</b>
Reaction: Match	<b>2.5</b>
Time Orientation: Past	<b>2.2</b>
Convincer Strategy: Sceptic	<b>2.1</b>

The complete deviation results by meta-program for Charlie can be found on in Appendix C, pp.53-54. To summarise the results, this is an archetype with a strong 'external' locus of control i.e. authority and permission are vested in others, coupled with a strong focus on 'others'. This configuration will care primarily for others, putting their own needs second. Not

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<sup>13</sup> A full list of meta-programs per archetype (as derived from the deviation analysis) appear in Appendix F, some of the processing styles have been omitted from the discussion due to irrelevance

only will Charlie fulfil the needs of ‘others’ often to the detriment of self, but will do so with conditional or manipulative giving. The meta-program ‘team-player’ ranks highly for this archetype which is no surprise given the ‘external’ and ‘others’ programs. Likewise, this archetype is likely to give priority in a work context to their ‘relationship’ with people, rather than focus on the task, although they will be ‘sceptical’ and distrustful of ‘others’, adopting a guarded and defensive position. Almost paradoxically however, the ‘affiliation’ meta-program is strongly associated with ‘other’, in that this individual will try to create good relationships with others as a success strategy. The strong association with ‘things’ describes how this archetype will seek meaning and happiness; they will typically value both tangible objects (possessions) and more intangible things like status or rank.

‘Sameness’ describes how someone views change and variety – in the case of a Charlie archetype, variety or change would be strongly rejected in favour of things staying the same. The association of ‘match’ correlates well to the ‘sameness’ preference, in that this individual will match for similarity, and will not search for difference or distinctions. Their motivation is ‘away from’ in that they will not move towards what they want, but instead prefer to avoid what it is they don’t want; in so doing the focus remains on what is undesired. The meta-program of being oriented in the ‘past’ is known to be strongly associated with Charlie, in that these individuals focus on what went wrong and are subject to feelings of guilt and regret. According to Hall (2005, p245) this pole of the time zone meta-program is often associated with depression, with individuals becoming embittered and believing that the past has imprisoned them.

In an interesting pattern, many of the meta-programs that are strongly associated with Charlie are found to have their polar opposites strongly dissociated. For example, whilst an ‘external’ locus of control (+7.9) is very strongly associated with the archetype, an ‘internal’ locus of control is found to be strongly dissociated (-5.8). The meta-program continua have been grouped in the table below.

Table 5  
Meta-Program Continua - Charlie

Charlie Associated Meta-Programs		Charlie Dissociated Meta-Programs	
Reference: External	7.9	Reference: Internal	-5.8
Primary Attention: Caring for Others	5.4	Primary Attention: Caring for Self	-5.4
Comparison: Sameness	3.7	Comparison: Difference	-3.4
Direction: Away From	3.3	<b>Direction: Towards</b>	<b>-6.1</b>
<b>Work Orientation : Relationship</b>	<b>3.0</b>	Work Orientation : Task	-2.0
Reaction: Match	2.5	Reaction: Mismatch	-2.1
Time Orientation: Past	2.2	Time Orientation: Future	-2.8
Convincer Strategy: Sceptic	2.1	Convincer Strategy: Trustful	-2.9

Also interesting to note is that the differential proportions between the associated and dissociated meta-programs are fairly similar, except for 'direction', which whilst profiled as 'away from', is twice as strongly dissociated with 'towards', i.e. this archetype is more strongly 'not towards' than 'away from'.

As a result of this insight, a differential analysis was conducted by meta-program for each archetype by subtracting the 2 deviation scores, and highlighting any results above or below a numeric value of '1'. (See Appendix C, p.59) This exercise was conducted to define the attributes most strongly associated with each archetype. In the case of Charlie, those attributes are an 'external' locus of control, motivation which is 'not towards', and a focus on 'relationships'.

### THE BRAVO ARCHETYPE

This configuration is driven by a fear of failure, and fulfilment of own needs (Weinberg, 2006). Associated pathology includes cardiac disease, stroke, type 2 diabetes and obesity. Once again, the complete deviation results are to be found in Appendix C, pp.55-56. What follows is a summary of the most salient associations.

Table 6

Bravo : Ranked Meta-programs

Perspective: Observer	4.3
Working Style: Individualist	3.2
Primary Attention: Caring for Self	3.1
Convincer Channel: Doing	3.0
Convincer Channel: Reading	2.8
Work Orientation: Task	2.4
Reference: Internal	2.1
Comparison: Difference	2.0
Planning Style: Procedures	2.0
Convincer Strategy: Sceptic	1.9
Time Orientation: Future	1.8

One of the meta-programs most strongly associated with this configuration is that of the 'individualist', unlike Charlie who is closely associated with being a 'team-player'. Bearing this in mind, it is no surprise that the meta-program 'internal' is also associated with this archetype. This individual would be self-referenced, independent of thought, and make decisions based on what is right for them. This may give rise to exclusionist or black and white thinking with the individual rejecting that which they do not know or understand. This individual pays attention to 'self', fulfilling their own needs before those of 'others'. This is directly related to the archetype's driver of being fear based and the drive to fulfil their needs

in order to survive. Interesting to note however, is the preference of the 'observer' position as opposed to taking the alternate perspectives of own or partner. In Neurolinguistic Programming terms, this is referred to as taking the 3rd position – one that encompasses both one's own views and that one of one's partner. This makes for a position where truth is valued, but when used as a default position may result in emotional detachment.

Like Charlie, this archetype is also positively associated with the dimension of being a 'sceptic'. Unlike Charlie, however, the Bravo archetype is 'future' oriented, in particular, having a fear of the future. The Bravo archetype will focus on the 'task' rather than build relationships, and is more concerned with 'doing' than 'being'. This is a place of active focus, and describes individuals who are performance and achievement oriented which fits with the drivers of this archetype, in that to reduce fear the individual focuses on achieving goals and objectives. Unlike the Charlie archetype, the Bravo will sort for 'difference', embracing change and variety. However, the high association of 'procedures' alerts us to the fact that this configuration prefers to follow specific and definite procedures, as opposed to an 'options' preference which would result in an individual responding with numerous alternatives.

Again, a pattern of opposite poles along the meta-program continua is found with the Bravo deviation scores, allowing for clear definition of the archetype by meta-program. Table 7 summarises the deviations along the relevant continua.

Table 7  
Meta-Program Continua – Bravo

Bravo Associated Meta-Programs		Bravo Dissociated Meta-Programs	
<b>Perspective: Observer</b>	<b>4.3</b>	Perspective: Partner	<b>-2.7</b>
<b>Working Style: Individualist</b>	<b>3.2</b>	Working Style: Team-player	<b>-1.4</b>
Primary Attention: Caring for Self	<b>3.1</b>	Primary Attention: Caring for Others	<b>-3.5</b>
Work Orientation: Task	<b>2.4</b>	Work Orientation: Relationship	<b>-3.1</b>
Reference: Internal	<b>2.1</b>	Reference: External	<b>-1.6</b>
<b>Comparison: Difference</b>	<b>2.0</b>	Comparison: Sameness	<b>0.5</b>
Planning Style: Procedures	<b>2.0</b>	Planning Style: Option	<b>-1.8</b>
Convincer Strategy: Sceptic	<b>1.9</b>	Convincer Strategy: Trustful	<b>-2.4</b>
Time Orientation : Future	<b>1.8</b>	Time Orientation: Past	<b>-2.4</b>

The differential analysis (see Appendix C, p.59) revealed that the attributes pulling the definition of this archetype are that of the 'observer' perspective, an 'individualist' style, and the sorting information based on its 'difference'.

## THE ALPHA ARCHETYPE

Weinberg's description of this archetype (2006) is an individual driven by personal enjoyment and fulfilment with an awareness of developing their environment and those in it. There is very little fear of failure in this confident and self assured archetype. Pathology is rarely associated with this archetype.

Full results of the deviation analysis for this archetype can be found in Appendix C, pp57-58. The table below summarises the most strongly associated and relevant meta-programs for this archetype.

Table 8

Alpha : Ranked Meta-programs

Success Strategy: Vision	5.4
Convincer Strategy: Trustful	5.3
Direction: Towards	4.5
Convincer Channel: Listening	4.3
Perspective: Own	4.3
Reference: Internal	3.7
Success Strategy: Realisation	3.7
Information Size: Global	3.5
Primary Attention: Caring for Self	2.3
Primary Interest: Information	2.1
Time Frame: Long-term	2.0
Planning Style: Option	2.0

On analysing the deviation results it is apparent that the meta-programs associated with this archetype describe an individual with a large world view, who is able to work with 'information' and create a 'vision' based on the 'long-term', bringing that vision to 'realisation'. Such an individual would make an excellent leader, and is associated with the meta-programs of 'trust', 'listening' and planning for different 'options'. In addition, this archetype is strongly associated with the meta-program 'global' which refers to the deductive thinking i.e. moving from the big picture down to the detail.

Alpha is strongly associated with an 'internal' locus of control, with the individual knowing what it is that they want and moving 'towards' it, unlike Charlie who tries to move 'away from' what it is that is not desired. When viewed with the fact that Alpha is aware of and fulfils their own needs, the dimension of 'trustful' applies not only to 'others' but also to 'self'.

Whilst there is a degree of polarity within the meta-program continua it is not as strong as the previous two archetypes. This has been summarised in Table 10 below and may indicate more of a continuum thinking style, i.e. less black and white processing. What is of further interest is the strong dissociation of 'doing', as this individual may be more likely to focus on envisioning rather than implementation. The negative deviations on both 'team-player' and 'individualist' could indicate that Alpha may be more balanced in terms of their self-image in the work context than the previous two archetypes. Finally, the strong dissociation of 'sameness' (-4.2) and positive association of 'difference' (at +1.4) indicates that although this configuration does not seek sameness, it is not a default requirement to match for difference, and could be a further indication of balance and multi-dimensionality, which is a hallmark of this archetype.

Table 9  
Meta-Program Continua - Alpha

Alpha Associated Meta-Programs		Alpha Dissociated Meta-Programs	
Convincer Strategy: Trustful	5.3	Convincer Strategy: Sceptic	-3.9
Direction: Towards	4.5	Direction: Away From	-2.4
Perspective: Own	4.3	Perspective: Observer	-2.2
Reference: Internal	3.7	Reference: External	-6.3
Primary Attention: Caring for Self	2.3	Primary Attention: Caring for Others	-2.0

The differential analysis reveals that like the Charlie archetype, one of the dissociated meta-programs contributes strongly to the archetype profile. In the case of Alpha, it is the meta-program of *not* being 'external'. The strongly associated attributes are those of being 'trustful', having a 'towards' motivation, and using one's 'own' perspective'. (See Appendix C, p.59 for the differential scores).

#### APPLICATION / MODEL

Prior to discussing possible application of results, it is worth noting that this study was designed to allow for replication in order to increase the future reliability of the findings. The validity of the findings must be borne in mind against the sample size. Whilst this study allows for theoretical generalisation, for true statistical generalisability and validity, it would be recommended to repeat this study on a larger scale, with random sampling and a target sample size of around 500 respondents.

Thus, having reviewed the three archetypes, their pathology and meta-programs, it is possible to integrate the three areas and overlay the meta-programs with the archetypes and their

associated pathology to create a new model based on using meta-programs to pinpoint possible disease causing mind-states.

This model fulfils a research objective and can conceivably be used in practice to detect sub-optimal mind states to prevent the development of disease or promote the optimal mind state for health. The tables below summarise this information per archetype.

Table 10

Charlie : Meta Program and Pathology Overlay

<b>Meta-Program</b>	<b>Archetype</b>	<b>Associated Pathology</b>
Reference: External Primary Attention: Caring for Others Working Style: Team-player Motives: Affiliation Primary Interest: Things Comparison: Sameness Direction: Away From Work Orientation: Relationship Reaction: Match Time Orientation: Past Convincer Strategy: Sceptic	Charlie	- Chronic inflammations - Autoimmune disease - Infections - Tumours

Table 11

Bravo : Meta Program and Pathology Overlay

<b>Meta-Program</b>	<b>Archetype</b>	<b>Associated Pathology</b>
Perspective: Observer Sensory Channel: Feeling Working Style: Individualist Primary Attention: Caring for Self Convincer Channel: Doing Work Orientation: Task Reference: Internal Comparison: Difference Planning Style: Procedures	Bravo	- Hypertension - Hyperlipidemia ( raised cholesterol) - Stroke - Type 2 diabetes - obesity

Table 12

Alpha : Meta Program and Pathology Overlay

<b>Meta-Program</b>	<b>Archetype</b>	<b>Associated Pathology</b>
Success Strategy: Vision Convincer Strategy: Trustful Direction: Towards Convincer Channel: Listening Perspective: Own Reference: Internal Success Strategy: Realisation Information Size: Global Primary Attention: Caring for Self Primary Interest: Information Time Frame: Long-term Planning Style: Option	Alpha	- Optimal state for enhanced wellness

## CHAPTER FIVE : CONCLUSIONS AND RECOMMENDATIONS

This chapter reflects the learning and recommendations that arose from the research undertaken, the conclusions drawn from my findings, and the significance this research has in my working environment.

As a starting point, reference is made to the research objectives outlined in Chapter 2.

1. *Conduct a literature review to summarise the literature within the fields of PNI and coaching and provide an academic framework for this research study*

The literature review that was conducted gathered scientific evidence that mind states are associated with identifiable pathology. In addition the review provided a coaching intervention which, when applied, resulted in changing mind states. This informed the direction of the study and gave rise to the insight that as a result of integrating information obtained from two fields of practice (namely PNI and coaching), I could possibly give rise to a new body of academic knowledge.

2. *Develop a questionnaire to profile an individual's meta-programs. Alternatively, determine if any such profiling tools have already been developed and critically evaluate them for use in this study.*

Due to my insider-researcher status, I discovered that such a questionnaire did exist to profile an individual's meta-programs, and after undergoing a critical review, it was used for this study.

3. *Profile an individual's PNI archetypes, using Weinberg's diagnostic.*
4. *Secure a sample of respondents who are willing to complete both questionnaires.*
5. *Ensure that the sample size is sufficiently large enough to include respondents from all 3 archetypes.*

Weinberg's diagnostic was used to profile an individual's PNI archetypes, thus fulfilling the third research objective. The process of securing a large enough sample was challenging and discussed in length in the full report.

Although the research objective to secure a large enough sample across all 3 archetypes was achieved, it may have increased the study's reliability if a larger sample had been obtained.

This would have necessitated a change in methodology by either drawing up one questionnaire to profile both the meta-programs and archetypes, and would be a recommendation should another study of this nature be conducted. Alternatively, a recommendation should the study be replicated, is that the researcher conduct only primary research, even if utilising both questionnaires, in order to keep control of the sample size. The process I followed was certainly advantageous overall from a time perspective and used the available data to best effect; however a larger study would allow for statistical generalisability but would require additional resources in the form of funding (to acquire a large database) and more time (to allow for collection of greater numbers of data).

6. *Analyse the results to establish if the 3 PNI archetypes have any strongly associated meta-programs.*
7. *Prove or disprove the hypothesis that running specific meta-programs is positively correlated with the development of identifiable pathology*

The results of the study were analysed in order to establish if the 3 PNI archetypes have any strongly associated meta-programs. This was indeed found to be the case as discussed in Chapter 4. Further, it can be deemed to be proved that the hypothesis outlined in the research objectives has been proved. By virtue of the clear association of different meta-programs with each archetype, and having the benefit of clinical research-associated pathology per archetype, it can be concluded that running specific meta-programs is positively correlated with the development of identifiable pathology.

8. *If the hypothesis is proved, develop a model for future use that describes the association between meta-programs and identifiable pathology.*

Finally, as a result of the findings, a basic model was developed in Chapter 4 that describes the association between meta-programs and identifiable pathology. Herein lies the value and new knowledge generated from this research project.

Of significance to coaches, therapists and counsellors with no PNI knowledge is the fact that this model can alert them to the possibility of disease promoting meta- programs. Conversely, the model could also encourage healthcare practitioners to refer patients with specific identifiable disease for coaching in order to modify the meta-programs which contributed to the mindstate which preceded the development of pathology.

Thus, this study has incorporated the complementary nature of the field of PNI and suggests that the field of coaching has an enormous contribution to make in the field of healthcare. By coaching flexibility along the continua of meta-programs to an Alpha configuration, improved vitality and health associated with that particular mindstate should result.

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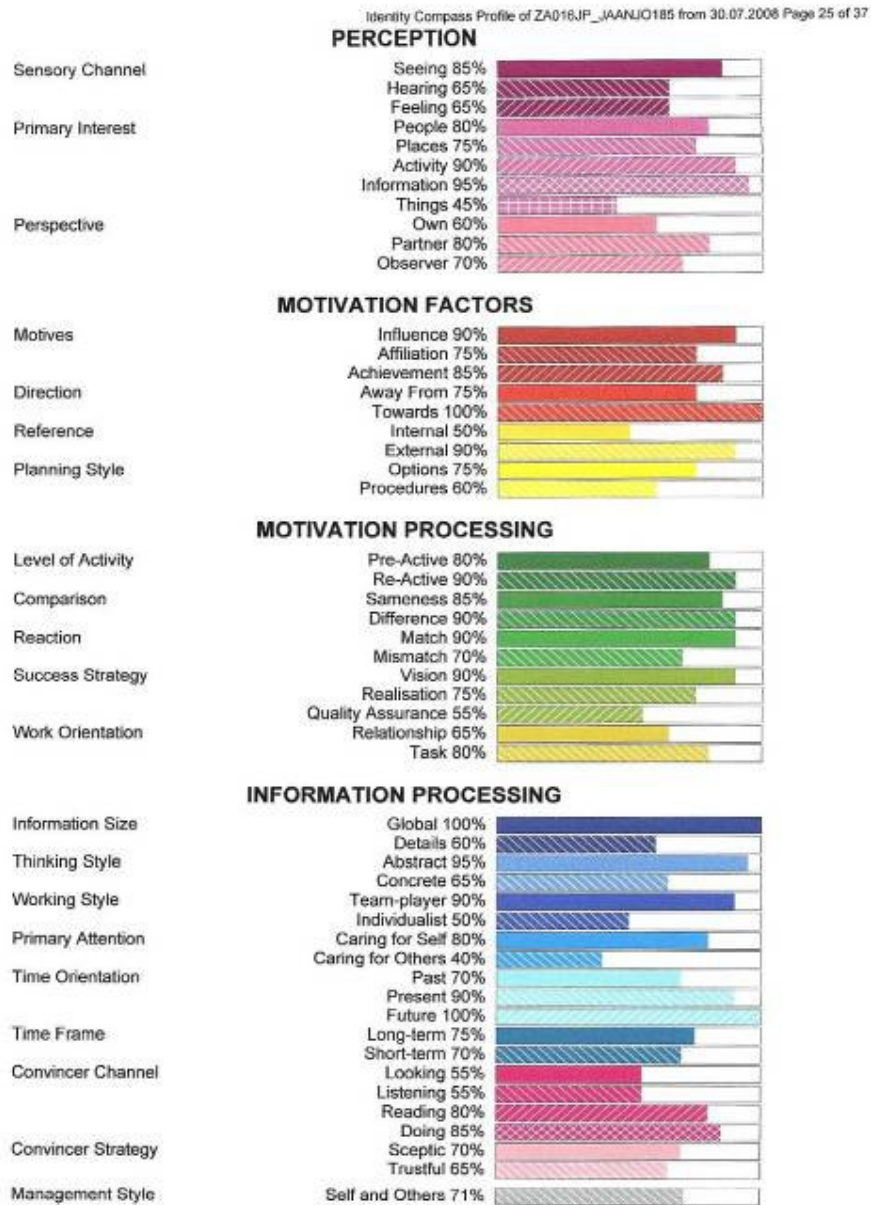
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## APPENDIX A

### EXAMPLE OF RAW DATA – IDENTITY COMPASS QUESTIONNAIRE

Figure A1 : Meta-program data for respondent x



**APPENDIX A**  
**EXAMPLE OF RAW DATA – PNI QUESTIONNAIRE**

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Figure A2 : PNI data for respondent x

pseudo-Verve.



**1.2 Interpretation of Diagnostics: Triangle Integration**

Note if the triangles overlap and to what degree. There are only three degrees of overlap:



- No overlap = non-integration
- One level overlap = partial awareness across overlapped zones
- Two level overlap = full awareness of the overlapped zones

The recreation triangle will be replicated if there exists an overlap of recreation with personal individuals as well as with work colleagues.



## 2. Verve Category

Profile Score: **66**  
Verve Category: **Bravo**

**Scoring Key:**

Alpha	80 and higher
Alpha/Bravo	70 - 79
Bravo	55 - 69
Bravo/Charlie	35 - 54
Charlie	34 and less

## 3. Corporate Application Profile

**APPENDIX A**  
**RAW DATA – COMPLETE DATA TABLES**

Table A1: Complete Questionnaires

	Total	Category		
		Bravo	Charlie	Alpha
Unweighted Base	69	40	17	12
Weighted Base	69	(A)	(B)	(C)
Yes	69 100.0%	40 100.0%	17 100.0%	12 100.0%

Table A2: Perception

	Total	Category		
		Bravo	Charlie	Alpha
Sensory Channel: Seeing	70.80 69	69.50 40	77.94 17	65.00 12
Sensory Channel: Hearing	64.71 69	61.63 40	72.65 17	63.75 12
Sensory Channel: Feeling	67.75 69	68.75 40	68.53 17	63.33 12
Primary Interest: People	71.96 69	69.38 40	78.53 17	71.25 12
Primary Interest: Places	45.29 69	43.00 40	55.29 17	38.75 12
Primary Interest: Activity	76.16 69	74.38 40	82.35 17	73.33 12
Primary Interest: Information	81.09 69	79.88 40	84.12 17	80.83 12
Primary Interest: Things	50.36 69	49.63 40	57.65 17	42.50 12
Perspective: Own	58.62 69	57.38 40	59.41 17	61.67 12
Perspective: Partner	69.13 69	66.13 40	75.59 17	70.00 12
Perspective: Observer	68.70 69	70.13 40	69.41 17	62.92 12

Table A3: Motivation Factors :

	Total	Category:		
		Bravo	Charlie	Alpha
Motives: Influence	71.67 69	70.38 40	76.76 17	68.75 12
Motives: Affiliation	54.06 69	50.50 40	63.82 17	52.08 12
Motives: Achievement	73.91 69	73.13 40	78.24 17	70.42 12
Direction: Away From	66.38 69	64.38 40	74.12 17	62.08 12
Direction: Towards	84.13 69	84.00 40	83.24 17	85.83 12
Reference: Internal	66.67 69	67.13 40	64.71 17	67.92 12
Reference: External	63.12 69	60.38 40	75.29 17	55.00 12
Planning Style: Option	73.70 69	71.25 40	79.12 17	74.17 12
Planning Style: Procedures	62.68 69	62.75 40	65.29 17	58.75 12

Table A4: Motivation Processing

	Total	Category		
		Bravo	Charlie	Alpha
Level of Activity: Pre-Active	67.90 69	66.75 40	72.65 17	65.00 12
Level of Activity: Re-Active	75.51 69	73.88 40	80.59 17	73.75 12
Comparison: Sameness	71.01 69	69.75 40	78.82 17	64.17 12
Comparison: Difference	72.54 69	72.63 40	73.24 17	71.25 12
Reaction: Match	75.87 69	73.38 40	83.82 17	72.92 12
Reaction: Mismatch	59.86 69	59.38 40	61.47 17	59.17 12
Success Strategy: Vision	82.10 69	79.13 40	86.18 17	86.25 12
Success Strategy: Realisation	77.90 69	76.50 40	80.00 17	79.58 12
Success Strategy: Quality Assurance	60.65 69	59.88 40	63.24 17	59.58 12
Work Orientation: Relationship	70.65 69	67.25 40	79.41 17	69.58 12
Work Orientation: Task	72.54 69	72.75 40	74.41 17	69.17 12

Table A5: Information Processing

	Total	Category		
		Bravo	Charlie	Alpha
Information Size: Global	84.49	82.88	87.35	85.83
	69	40	17	12
Information Size: Details	65.72	63.88	71.76	63.33
	69	40	17	12
Thinking Style: Abstract	73.26	71.25	78.24	72.92
	69	40	17	12
Thinking Style: Concrete	71.74	71.13	77.06	66.25
	69	40	17	12
Working Style: Team-player	65.14	62.75	74.71	59.58
	69	40	17	12
Working Style: Individualist	62.39	63.25	63.53	57.92
	69	40	17	12
Primary Attention: Caring for Self	66.38	67.38	64.41	65.83
	69	40	17	12
Primary Attention: Caring for Others	62.90	59.25	73.53	60.00
	69	40	17	12
Time Orientation: Past	68.62	65.75	76.18	67.50
	69	40	17	12
Time Orientation: Present	73.26	71.00	79.12	72.50
	69	40	17	12
Time Orientation: Future	75.51	75.38	77.06	73.75
	69	40	17	12
Time Frame: Long-term	70.00	69.75	70.88	69.58
	69	40	17	12
Time Frame: Short-term	70.51	69.63	74.41	67.92
	69	40	17	12
Convincer Channel: Looking	66.52	64.25	72.94	65.00
	69	40	17	12
Convincer Channel: Listening	61.52	60.13	62.65	64.58
	69	40	17	12
Convincer Channel: Reading	64.86	65.63	64.12	63.33
	69	40	17	12
Convincer Channel: Doing	68.19	68.75	70.88	62.50
	69	40	17	12
Convincer Strategy: Sceptic	52.25	52.25	56.76	45.83
	69	40	17	12
Convincer Strategy: Trustful	75.00	72.38	78.24	79.17
	69	40	17	12

Table A6: Verve Category / Archetype

	Total	Category:		
		Bravo	Charlie	Alpha
Unweighted Base	69	40	17	12
Weighted Base	69	40 (A)	17 (B)	12 (C)
Bravo	40 58.0%	40 100.0%	0 0.0%	0 0.0%
Charlie	3 4.3%	0 0.0%	3 17.6%	0 0.0%
Bravo/ Charlie	14 20.3%	0 0.0%	14 82.4%	0 0.0%
Alpha/ Bravo	12 17.4%	0 0.0%	0 0.0%	12 100.0%

**APPENDIX B**  
**CORRESPONDENCE ANALYSIS RESULTS**

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Table B1 : Absolute scores - all archetypes

	<b>Charlie (n=17)</b>	<b>Bravo (n=40)</b>	<b>Alpha (n=12)</b>
Comparison: Difference	73.2	72.6	71.3
Comparison: Sameness	78.8	69.8	64.2
Convincer Channel: Doing	70.9	68.8	62.5
Convincer Channel: Listening	62.7	60.1	64.6
Convincer Channel: Looking	72.9	64.3	65.0
Convincer Channel: Reading	64.1	65.6	63.3
Convincer Strategy: Sceptic	56.8	52.3	45.8
Convincer Strategy: Trustful	78.2	72.4	79.2
Direction: Away From	74.1	64.4	62.1
Direction: Towards	83.2	84.0	85.8
Information Size: Details	71.8	63.9	63.3
Information Size: Global	87.4	82.9	85.8
Level of Activity: Pre-Active	72.7	66.8	65.0
Level of Activity: Re-Active	80.6	73.9	73.8
Motives: Achievement	78.2	73.1	70.4
Motives: Affiliation	63.8	50.5	52.1
Motives: Influence	76.8	70.4	68.8
Perspective: Observer	69.4	70.1	62.9
Perspective: Own	59.4	57.4	61.7
Perspective: Partner	75.6	66.1	70.0
Planning Style: Option	79.1	71.3	74.2
Planning Style: Procedures	65.3	62.8	58.8
Primary Attention: Caring for Others	73.5	59.3	60.0
Primary Attention: Caring for Self	64.4	67.4	65.8
Primary Interest: Activity	82.4	74.4	73.3
Primary Interest: Information	84.1	79.9	80.8
Primary Interest: People	78.5	69.4	71.3
Primary Interest: Places	55.3	43.0	38.8
Primary Interest: Things	57.7	49.6	42.5
Reaction: Match	83.8	73.4	72.9
Reaction: Mismatch	61.5	59.4	59.2
Reference: External	75.3	60.4	55.0
Reference: Internal	64.7	67.1	67.9
Sensory Channel: Feeling	68.5	68.8	63.3
Sensory Channel: Hearing	72.7	61.6	63.8

Sensory Channel: Seeing	77.9	69.5	65.0
Success Strategy: Quality Assurance	63.2	59.9	59.6
Success Strategy: Realisation	80.0	76.5	79.6
Success Strategy: Vision	86.2	79.1	86.3
Thinking Style: Abstract	78.2	71.3	72.9
Thinking Style: Concrete	77.1	71.1	66.3
Time Frame: Long-term	70.9	69.8	69.6
Time Frame: Short-term	74.4	69.6	67.9
Time Orientation: Future	77.1	75.4	73.8
Time Orientation: Past	76.2	65.8	67.5
Time Orientation: Present	79.1	71.0	72.5
Work Orientation: Relationship	79.4	67.3	69.6
Work Orientation: Task	74.4	72.8	69.2
Working Style: Individualist	63.5	63.3	57.9
Working Style: Team-player	74.7	62.8	59.6

**APPENDIX B**  
**CORRESPONDENCE ANALYSIS RESULTS**

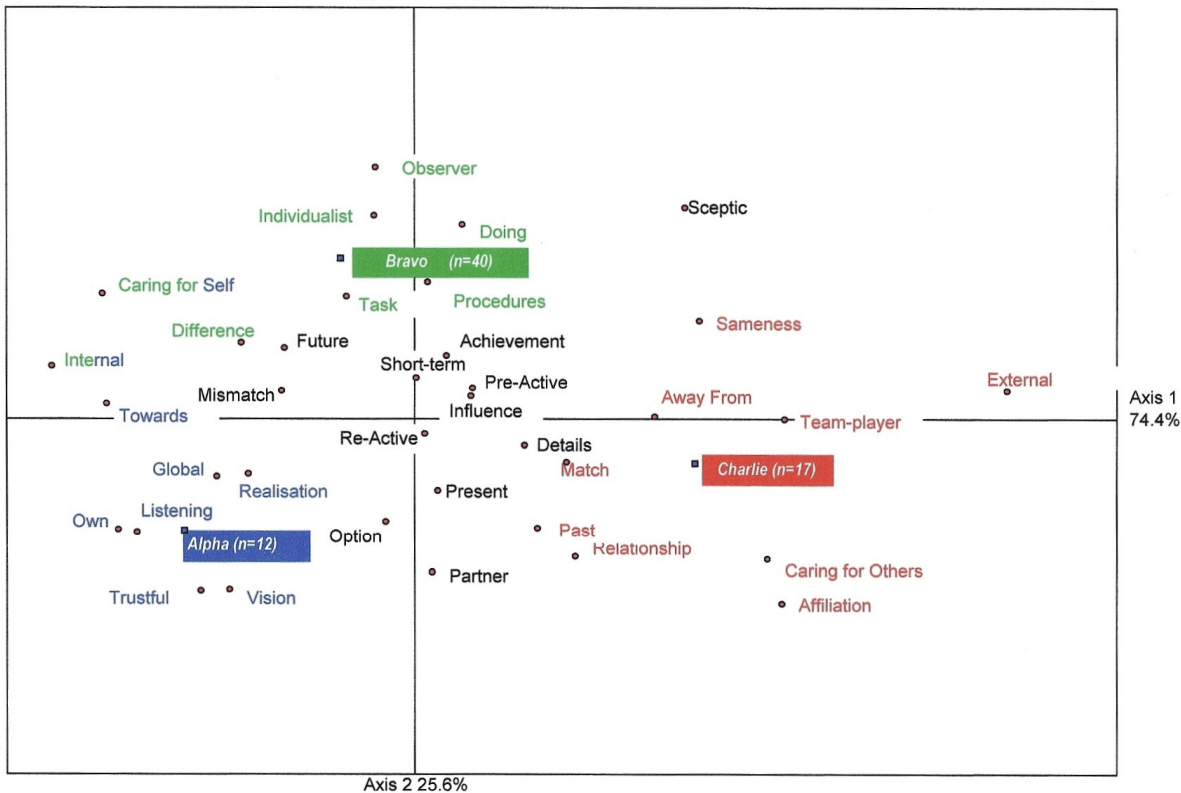
Table B2 : Charlie dominating absolute scores

	Charlie (n=17)	Bravo (n=40)	Alpha (n=12)
Comparison: Difference	73.2	72.6	71.3
Comparison: Sameness	78.8	69.8	64.2
Convincer Channel: Doing	70.9	68.8	62.5
Convincer Channel: Listening	62.7	60.1	64.6
Convincer Channel: Looking	72.9	64.3	65.0
Convincer Channel: Reading	64.1	65.6	63.3
Convincer Strategy: Sceptic	56.8	52.3	45.8
Convincer Strategy: Trustful	78.2	72.4	79.2
Direction: Away From	74.1	64.4	62.1
Direction: Towards	83.2	84.0	85.8
Information Size: Details	71.8	63.9	63.3
Information Size: Global	87.4	82.9	85.8
Level of Activity: Pre-Active	72.7	66.8	65.0
Level of Activity: Re-Active	80.6	73.9	73.8
Motives: Achievement	78.2	73.1	70.4
Motives: Affiliation	63.8	50.5	52.1
Motives: Influence	76.8	70.4	68.8
Perspective: Observer	69.4	70.1	62.9
Perspective: Own	59.4	57.4	61.7
Perspective: Partner	75.6	66.1	70.0
Planning Style: Option	79.1	71.3	74.2
Planning Style: Procedures	65.3	62.8	58.8
Primary Attention: Caring for Others	73.5	59.3	60.0
Primary Attention: Caring for Self	64.4	67.4	65.8
Primary Interest: Activity	82.4	74.4	73.3
Primary Interest: Information	84.1	79.9	80.8
Primary Interest: People	78.5	69.4	71.3
Primary Interest: Places	55.3	43.0	38.8
Primary Interest: Things	57.7	49.6	42.5
Reaction: Match	83.8	73.4	72.9
Reaction: Mismatch	61.5	59.4	59.2
Reference: External	75.3	60.4	55.0
Reference: Internal	64.7	67.1	67.9
Sensory Channel: Feeling	68.5	68.8	63.3
Sensory Channel: Hearing	72.7	61.6	63.8

Sensory Channel: Seeing	<b>77.9</b>	69.5	65.0
Success Strategy: Quality Assurance	<b>63.2</b>	59.9	59.6
Success Strategy: Realisation	<b>80.0</b>	76.5	79.6
Success Strategy: Vision	86.2	79.1	86.3
Thinking Style: Abstract	<b>78.2</b>	71.3	72.9
Thinking Style: Concrete	77.1	71.1	66.3
Time Frame: Long-term	<b>70.9</b>	69.8	69.6
Time Frame: Short-term	<b>74.4</b>	69.6	67.9
Time Orientation: Future	<b>77.1</b>	75.4	73.8
Time Orientation: Past	<b>76.2</b>	65.8	67.5
Time Orientation: Present	<b>79.1</b>	71.0	72.5
Work Orientation: Relationship	<b>79.4</b>	67.3	69.6
Work Orientation: Task	<b>74.4</b>	72.8	69.2
Working Style: Individualist	<b>63.5</b>	63.3	57.9
Working Style: Team-player	<b>74.7</b>	62.8	59.6

**APPENDIX B**  
**CORRESPONDENCE ANALYSIS RESULTS**

Figure B1 : Correspondence map



**APPENDIX C**  
**DEVIATION ANALYSIS RESULTS**

Table C1 : Deviation Results – All Archetypes

	<b>Charlie</b> <b>(n=17)</b>	<b>Bravo</b> <b>(n=42)</b>	<b>Alpha</b> <b>(n=12)</b>
Success Strategy: Vision	-2.7	-2.7	5.4
Convincer Strategy: Trustful	-2.9	-2.4	5.3
Direction: Towards	-6.1	1.7	4.5
Convincer Channel: Listening	-3.5	-0.8	4.3
Perspective: Own	-3.6	-0.7	4.3
Reference: Internal	-5.8	2.1	3.7
Success Strategy: Realisation	-3.4	-0.3	3.7
Information Size: Global	-3.1	-0.4	3.5
Primary Attention: Caring for Self	-5.4	3.1	2.3
Primary Interest: Information	-2.4	0.2	2.1
Time Frame: Long-term	-3.4	1.4	2.0
Planning Style: Option	-0.2	-1.8	2.0
Perspective: Partner	0.8	-2.7	1.9
Comparison: Difference	-3.4	2.0	1.4
Thinking Style: Abstract	-0.3	-1.1	1.4
Reaction: Mismatch	-2.1	0.8	1.3
Convincer Channel: Reading	-4.1	2.8	1.3
Time Orientation: Future	-2.8	1.8	1.0
Time Orientation: Present	0.5	-1.4	0.9
Success Strategy: Quality Assurance	-1.3	0.4	0.8
Primary Interest: People	1.1	-1.9	0.8
Level of Activity: Re-Active	0.0	-0.4	0.4
Time Orientation: Past	2.2	-2.4	0.2
Sensory Channel: Hearing	2.7	-2.8	0.1
Work Orientation: Relationship	3.0	-3.1	0.1
	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Convincer Channel: Looking	1.5	-1.5	0.0
Time Frame: Short-term	-0.5	0.7	-0.2
Work Orientation: Task	-2.0	2.4	-0.4
Primary Interest: Activity	1.1	-0.5	-0.6
Information Size: Details	1.5	-0.8	-0.6
Motives: Influence	0.5	0.1	-0.7
Level of Activity: Pre-Active	0.5	0.3	-0.7
Motives: Achievement	-0.1	1.0	-0.9
Reaction: Match	2.5	-1.5	-1.1

Sensory Channel: Feeling	-2.3	3.5	-1.2
Planning Style: Procedures	-0.7	2.0	-1.3
Motives: Affiliation	5.0	-3.6	-1.4
Working Style: Individualist	-1.7	3.2	-1.5
Primary Attention: Caring for Others	5.4	-3.5	-2.0
Perspective: Observer	-2.1	4.3	-2.2
Direction: Away From	3.3	-0.9	-2.4
Convincer Channel: Doing	-0.5	3.0	-2.5
Thinking Style: Concrete	1.3	1.4	-2.7
Sensory Channel: Seeing	2.9	0.4	-3.3
Working Style: Team-player	5.1	-1.4	-3.8
Convincer Strategy: Sceptic	2.1	1.9	-3.9
Comparison: Sameness	3.7	0.5	-4.2
Primary Interest: Places	6.9	-1.6	-5.3
Primary Interest: Things	4.7	0.9	-5.7
Reference: External	7.9	-1.6	-6.3

**APPENDIX C**  
**DEVIATION ANALYSIS RESULTS**

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Table C2 : Charlie Deviation Scores

	<b>Charlie (n=17)</b>
Reference: External	<b>7.9</b>
Primary Interest: Places	<b>6.9</b>
Primary Attention: Caring for Others	<b>5.4</b>
Working Style: Team-player	<b>5.1</b>
Motives: Affiliation	<b>5.0</b>
Primary Interest: Things	<b>4.7</b>
Comparison: Sameness	<b>3.7</b>
Direction: Away From	<b>3.3</b>
Work Orientation: Relationship	<b>3.0</b>
Sensory Channel: Seeing	<b>2.9</b>
Sensory Channel: Hearing	<b>2.7</b>
Reaction: Match	<b>2.5</b>
Time Orientation: Past	<b>2.2</b>
Convincer Strategy: Sceptic	<b>2.1</b>
Convincer Channel: Looking	1.5
Information Size: Details	1.5
Thinking Style: Concrete	1.3
Primary Interest: People	1.1
Primary Interest: Activity	1.1
Perspective: Partner	0.8
Motives: Influence	0.5
Time Orientation: Present	0.5
Level of Activity: Pre-Active	0.5
Level of Activity: Re-Active	0.0
Motives: Achievement	-0.1
Planning Style: Option	-0.2
Thinking Style: Abstract	-0.3
Time Frame: Short-term	-0.5
Convincer Channel: Doing	-0.5
Planning Style: Procedures	-0.7
Success Strategy: Quality Assurance	-1.3
Working Style: Individualist	-1.7
Work Orientation: Task	<b>-2.0</b>
Perspective: Observer	<b>-2.1</b>
Reaction: Mismatch	<b>-2.1</b>

Sensory Channel: Feeling	<b>-2.3</b>
Primary Interest: Information	<b>-2.4</b>
Success Strategy: Vision	<b>-2.7</b>
Time Orientation: Future	<b>-2.8</b>
Convincer Strategy: Trustful	<b>-2.9</b>
Information Size: Global	<b>-3.1</b>
Time Frame: Long-term	<b>-3.4</b>
Success Strategy: Realisation	<b>-3.4</b>
Comparison: Difference	<b>-3.4</b>
Convincer Channel: Listening	<b>-3.5</b>
Perspective: Own	<b>-3.6</b>
Convincer Channel: Reading	<b>-4.1</b>
Primary Attention: Caring for Self	<b>-5.4</b>
Reference: Internal	<b>-5.8</b>
Direction: Towards	<b>-6.1</b>

**APPENDIX C**  
**DEVIATION ANALYSIS RESULTS**

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Table C3 : Bravo Deviation Scores

	<b>Bravo (n=40)</b>
Perspective: Observer	4.3
Sensory Channel: Feeling	3.5
Working Style: Individualist	3.2
Primary Attention: Caring for Self	3.1
Convincer Channel: Doing	3.0
Convincer Channel: Reading	2.8
Work Orientation: Task	2.4
Reference: Internal	2.1
Comparison: Difference	2.0
Planning Style: Procedures	2.0
Convincer Strategy: Sceptic	1.9
Time Orientation: Future	1.8
Direction: Towards	1.7
Thinking Style: Concrete	1.4
Time Frame: Long-term	1.4
Motives: Achievement	1.0
Primary Interest: Things	0.9
Reaction: Mismatch	0.8
Time Frame: Short-term	0.7
Comparison: Sameness	0.5
Success Strategy: Quality Assurance	0.4
Sensory Channel: Seeing	0.4
Level of Activity: Pre-Active	0.3
Primary Interest: Information	0.2
Motives: Influence	0.1
Success Strategy: Realisation	-0.3
Level of Activity: Re-Active	-0.4
Information Size: Global	-0.4
Primary Interest: Activity	-0.5
Perspective: Own	-0.7
Convincer Channel: Listening	-0.8
Information Size: Details	-0.8
Direction: Away From	-0.9
Thinking Style: Abstract	-1.1
Working Style: Team-player	-1.4

Time Orientation: Present	-1.4
Reaction: Match	-1.5
Convincer Channel: Looking	-1.5
Primary Interest: Places	-1.6
Reference: External	-1.6
Planning Style: Option	-1.8
Primary Interest: People	-1.9
Convincer Strategy: Trustful	-2.4
Time Orientation: Past	-2.4
Success Strategy: Vision	-2.7
Perspective: Partner	-2.7
Sensory Channel: Hearing	-2.8
Work Orientation: Relationship	-3.1
Primary Attention: Caring for Others	-3.5
Motives: Affiliation	-3.6

**APPENDIX C**  
**DEVIATION ANALYSIS RESULTS**

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Table C4 : Alpha Deviation Scores

	<b>Alpha (n=12)</b>
Success Strategy: Vision	<b>5.4</b>
Convincer Strategy: Trustful	<b>5.3</b>
Direction: Towards	<b>4.5</b>
Convincer Channel: Listening	<b>4.3</b>
Perspective: Own	<b>4.3</b>
Reference: Internal	<b>3.7</b>
Success Strategy: Realisation	<b>3.7</b>
Information Size: Global	<b>3.5</b>
Primary Attention: Caring for Self	<b>2.3</b>
Primary Interest: Information	<b>2.1</b>
Time Frame: Long-term	<b>2.0</b>
Planning Style: Option	<b>2.0</b>
Perspective: Partner	1.9
Comparison: Difference	1.4
Thinking Style: Abstract	1.4
Reaction: Mismatch	1.3
Convincer Channel: Reading	1.3
Time Orientation: Future	1.0
Time Orientation: Present	0.9
Success Strategy: Quality Assurance	0.8
Primary Interest: People	0.8
Level of Activity: Re-Active	0.4
Time Orientation: Past	0.2
Sensory Channel: Hearing	0.1
Work Orientation: Relationship	0.1
Convincer Channel: Looking	0.0
Time Frame: Short-term	-0.2
Work Orientation: Task	-0.4
Primary Interest: Activity	-0.6
Information Size: Details	-0.6
Motives: Influence	-0.7
Level of Activity: Pre-Active	-0.7
Motives: Achievement	-0.9
Reaction: Match	-1.1

Sensory Channel: Feeling	-1.2
Planning Style: Procedures	-1.3
Motives: Affiliation	-1.4
Working Style: Individualist	-1.5
Primary Attention: Caring for Others	<b>-2.0</b>
Perspective: Observer	<b>-2.2</b>
Direction: Away From	<b>-2.4</b>
Convincer Channel: Doing	<b>-2.5</b>
Thinking Style: Concrete	<b>-2.7</b>
Sensory Channel: Seeing	<b>-3.3</b>
Working Style: Team-player	<b>-3.8</b>
Convincer Strategy: Sceptic	<b>-3.9</b>
Comparison: Sameness	<b>-4.2</b>
Primary Interest: Places	<b>-5.3</b>
Primary Interest: Things	<b>-5.7</b>
Reference: External	<b>-6.3</b>

**APPENDIX C**  
**DEVIATION ANALYSIS RESULTS**

Table C5 : Differential Analysis – All Archetypes

<b>Charlie Associated Meta-Programs</b>		<b>Charlie Dissociated Meta-Programs</b>		<b>DIFFERENTIAL</b>
Reference: External	7.9	Reference: Internal	-5.8	<b>2.1</b>
Primary Attention: Caring for Others	5.4	Primary Attention: Caring for Self	-5.4	0
Comparison: Sameness	3.7	Comparison: Difference	-3.4	0.3
Direction: Away From	3.3	Direction: Towards	-6.1	<b>-2.8</b>
Work Orientation : Relationship	3	Work Orientation : Task	-2	<b>1</b>
Reaction: Match	2.5	Reaction: Mismatch	-2.1	0.4
Time Orientation: Past	2.2	Time Orientation: Future	-2.8	-0.6
Convincer Strategy: Sceptic	2.1	Convincer Strategy: Trustful	-2.9	-0.8

<b>Bravo Associated Meta-Programs</b>		<b>Bravo Dissociated Meta-Programs</b>		<b>DIFFERENTIAL</b>
Perspective: Observer	<b>4.3</b>	Perspective: Partner	<b>-2.7</b>	<b>1.6</b>
Working Style: Individualist	<b>3.2</b>	Working Style: Team-player	<b>-1.4</b>	<b>1.8</b>
Primary Attention: Caring for Self	<b>3.1</b>	Primary Attention: Caring for Others	<b>-3.5</b>	-0.4
Work Orientation: Task	<b>2.4</b>	Work Orientation: Relationship	<b>-3.1</b>	-0.7
Reference: Internal	<b>2.1</b>	Reference: External	<b>-1.6</b>	0.5
Comparison: Difference	<b>2</b>	Comparison: Sameness	<b>0.5</b>	<b>2.5</b>
Planning Style: Procedures	<b>2</b>	Planning Style: Option	<b>-1.8</b>	0.2
Convincer Strategy: Sceptic	<b>1.9</b>	Convincer Strategy: Trustful	<b>-2.4</b>	-0.5
Time Orientation : Future	<b>1.8</b>	Time Orientation: Past	<b>-2.4</b>	-0.6

<b>Alpha Associated Meta-Programs</b>		<b>Alpha Dissociated Meta-Programs</b>		<b>DIFFERENTIAL</b>
Convincer Strategy: Trustful	<b>5.3</b>	Convincer Strategy: Sceptic	<b>-3.9</b>	<b>1.4</b>
Direction: Towards	<b>4.5</b>	Direction: Away From	<b>-2.4</b>	<b>2.1</b>
Perspective: Own	<b>4.3</b>	Perspective: Observer	<b>-2.2</b>	<b>2.1</b>
Reference: Internal	<b>3.7</b>	Reference: External	<b>-6.3</b>	<b>-2.6</b>
Primary Attention: Caring for Self	<b>2.3</b>	Primary Attention: Caring for Others	<b>-2</b>	0.3

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