EFFECTIVE PERSONALITY PROFILES IN NEGOTIATION ACCORDING TO THE MYERS-BRIGGS TYPE INDICATOR

by

Hendrieka Truter

Thesis presented in fulfillment of the requirements for the degree Master of Arts (Industrial Psychology) at the University of Stellenbosch

Supervisor: Mr C.J. Calitz
             Dr M.E. Kotze

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DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and has never before been submitted as a whole or part at any other university for the purpose of acquiring a degree.

Signed on this 06th day of June 2001, at Pretoria;

ABSTRACT

Title: Effective personality profiles in negotiation according to the Myers-Briggs Type Indicator.

By: Hendrieka Truter

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Summary: This explorative study set out to investigate the effectiveness of different personalities in negotiation. The research problem originated as result of the search through literature aimed at developing a negotiation skills program for the South African Army. Many authors were found to refer to the importance of personality on the process and outcome of negotiation, but that existing research focus mainly on single personality traits and often indicated inconclusive results. These findings stirred curiosity to explore the possibility that certain personality types, according to a more comprehensive theory of personality, may prove to be more effective than others.

The Myers-Briggs Type Indicator Form G self-scoring and two separate role-plays were used to gather data for this research. The role-plays placed similar boundaries on the participants in terms of the type of agreement that could be reached as well as the financial terms involved. The MBTI results were used as continuous scores and the eight subscales as separate groups and also according to a number of combinations of the subscales.

The possible influence of a number of variables were taken into account namely, age, gender, military rank, level of formal education and ethnicity. Though the majority of these variables were found to be possible covariates of personality they appear not to have influenced the outcome of the research. This was because no significant correlations appeared to exist between the outcome of the negotiation role-plays and the various scales

and subscales of the MBTI. According to these results, and within the confinement of this research it would appear that the various personality types do not differ in terms of the effectiveness in negotiation.

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OPSOMMING

Hierdie studie het ten doel gehad om die doeltreffendheid van verskillende persoonlikhede in onderhandeling te ondersoek. Die navorsingprobleem het voortgespruit uit 'n literatuursoektog wat daarop gemik was om 'n kursus in onderhandelingsvaardigheid vir die Suid Afrikaanse Leër te ontwikkel. Tydens hierdie soektog is bevind dat verskeie skrywers na die belangrikheid van persoonlikheid verwys, synde 'n invloed op die proses en uitkoms van die onderhandeling te hê. Daar is ook bevind dat bestaande navorsing hoofsaaklik gebruik maak van enkele persoonlikheidstrekke en dat hierdie benadering dikwels nie afdoende bevindinge tot gevolg gehad het. Die gedagte het gevolglik ontstaan om ondersoek in te stel na die moontlikheid dat sekere persoonlikhede, gebaseer op 'n meer omvattende teorie, dalk groter sukses in onderhandeling mag behaal as ander.

Ten einde die navorsingsprobleem op te los is besluit om die "Myers-Briggs Type Indicator" vorm G en twee afsonderlike rolspele te gebruik om data in te samel. Die rolspele is spesifiek vir die navorsing ontwerp om ooreenstemmende beperkinge op die deelnemers te plaas in terme van die soort ooreenkoms wat bereik moet word, asook die finsiële terme betrokke. Die resultate van die MBTI is gebruik in die vorm van kontinuë data, as aparte stelle subskale en ook volgens 'n verskeidenheid kombinasies van die subskale.

Die moontlike invloed van 'n verskeidenheid veranderlikes is in berekening gebring, naamlik ouderdom, geslag, militêre rang, vlak van formele opvoeding en etniese groep. Alhoewel daar bevind is dat die meerderheid van die veranderlikes moontlike kovariate mag wees wil dit voorkom asof dit nie die bevindinge van die navorsing beïnvloed het nie. Die rede daarvoor was dat geen beduidende korrelasie gevind is tussen die resultate van die rolspele en die verskillende skale en subskale van die MBTI nie. Volgens hierdie bevindinge en binne die beperkings van hierdie navorsing wil dit voorkom dat persoonlikheidstipes nie verskil in terme van die sukses in onderhandeling nie.

ACKNOWLEDGEMENTS

Thank you;

DEDICATION

This research is dedicated to

my parents

Albert and Elna Truter

You are truly the wind beneath my wings.

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CHAPTER 1: INTRODUCTION

> "If a man will begin with certainties, he shall
> end in doubts; but if he will content to begin
> with doubts, he shall end in certainties".
>
> Francis Bacon

BACKGROUND

As organisations and society progress it is becoming clear that negotiation is not a subject reserved for specialists at government or strategic levels, but that it has become increasingly important in the work and personal lives of individuals, regardless of social or organisational position. It is a common activity used by most people to influence others in order to achieve personal or organisational objectives. Negotiation takes place between parents and children, between spouses, when buying a motor vehicle or house and also between colleagues, departments, employees and employers and in many other situations. Negotiation takes place under various conditions ranging from informal, for example exchanging merchandise at a chain store, to formal, for example career planning or collective bargaining.

In its extreme form the ability to negotiate could mean the difference between life and death in a society where citizens could be faced with an armed criminal at any time, for example vehicle hijacking. The kidnapping of twenty-one tourists, involving a South African couple, from the island of Sipadan in Malaysia on 23 April 2000 is at this point in history perhaps the most prominent example of hostage negotiation in the minds of South Africans. The tourists were kept hostage on the island Jolo for more than four months by an Islam extremist group and resulted in a number of negotiations at various levels. Negotiations were conducted among politicians and the military, red-cross workers, religious leaders, between hostages and hostage takers and even amongst hostages themselves (Beeld, 29 August 2000).

With these examples in mind one could deduce that the potential for negotiation is created whenever one person is in a position where reaching a particular objective is, for whatever reason and to whatever extent, dependent of another person. The other party may be in a position to simply comply, for example a father lending his car to his

son, or be in a position of reciprocal gain, for example that same father lending the car in exchange for doing a chore.

The field of negotiation studies includes a large variety of authors, each with a unique perspective on the definition, process, requirements for success and research of the concept. One could however state with relative confidence that, despite the wide range of paradigms that exist, one element remains the central theme of negotiation, namely people. Individuals are required to face one another, either singly or in the context of teams. They influence the climate, involve themselves in conversation, make proposals, respond to changing signals and arrive at conclusions.

With people as the focal point, it is understandable that most authorities on negotiation maintain that the personality of individuals involved in the process should influence the outcome of the negotiation to some extent. At this micro-level, Spector (1977, p 607) views negotiation as a set of personal and interpersonal dynamics that result in outcomes of varying acceptability to the participants. The first aspect involved in this set is the personality needs of individuals, e.g. the need for power, affiliation, nurture or personal growth to name but a few. The second aspect is the compatibility of the different personalities amongst negotiators representing opposing parties. Thirdly the personality perceptions and expectations of the opponent - the strengths and weaknesses, own intentions and commitment to positions may influence the outcome. The fourth aspect mentioned by Spector is the persuasive mechanisms employed to modify the bargaining positions and values of the opponent to achieve a more favourable convergence of interests.

According to Spector (1977, p 609) negotiator personality influences the basic predispositions towards the opponent and motives for future actions and responses. Individual personality factors are likely to influence the toughness of positions that are assumed, the strength of commitment to these positions, opening tactics, the potential for compromise and concessions and the personal need for goal maximisation. Anastasi (1993, p 5) refers to the application of personality in negotiation as a behavioural approach to negotiation where people apply their natural communication and observation abilities to understand others and their differing styles better.

A thorough understanding of personality traits should allow negotiators to adapt their style in order to accommodate the opposing party, enhance relationships and ultimately conclude a more satisfactory deal. This does not imply manipulation, but rather that the flow of communication may be enhanced when the parties follow a similar approach to communication, irrespective of differing agendas and goals. An understanding of all personalities involved in the process should further assist in the choice of an appropriate strategy. Individuals who know how to utilise the strengths and control the shortcomings found in their own personalities and who understand why the respective people, including themselves, behave in a particular manner, may be more effective negotiators in terms of communication, decision-making and influencing the overall process.

MOTIVATION FOR CONDUCTING THE RESEARCH

During the search in the literature for the creation of a basic negotiation skills development programme for the South African Army, it was discovered how many authors refer to the importance of personality as an aspect that should be planned for and controlled because of its influence on the outcome of the process. A number of questions were asked regarding the construction of the module relating to personality: how will their own and the opponent's personality influence the outcome of the process? What strategies are best suited for specific personalities? What are the personality characteristics that should be used to determine the personality of team members as well as the opponent?

These questions were not sufficiently answered through the study of literature since most research follows a trait approach, where a single trait was utilised to determine the correlation with negotiation. Should the results of the different studies be combined, it could imply that negotiators may have to measure themselves according to a long list of preferred traits. During the process of negotiation the individual would constantly have to keep this list of separate traits in mind, or would have to categorise the traits to render some form of order to the thought process. This would be a phenomenal task because the negotiator is also required to integrate this knowledge with the strategies and complex concepts of negotiation, including the needs and

persuasive tactics of all parties. All these aspects would have to be considered amidst tremendous levels of tension related with negotiation, especially in cases where the outcome of the process is of paramount importance to the parties involved.

Only a limited number of authors appear to follow a more integrated approach to personality and negotiation. Rubin and Brown (1975, p158) were the first who created an Interpersonal Orientation (IO) questionnaire that appears to have a correlation with effective negotiation. Criticism of this questionnaire centres on the personality variables having been selected based on convenience and clarity of measurement scales, rather than a strongly reasoned relationship between the variable and the negotiation process.

The second author is Anastasi (1993) who used the Myers - Briggs Type Indicator, originally based on the Gestalt theory of C.G. Jung, to make certain suggestions regarding the application of Personality Type in negotiation. These applications can only be referred to as suggestions because no indication of the scientific substance or research is provided, other than the sources utilised which describe the MBTI as a tool for improving communication. Anastasi utilised the eight basic scales of the MBTI to make suggestions regarding the planning and structuring of negotiations, for example the best time of day to schedule an appointment with either Extraverts or Introverts and how to present data to either people with a Sensing or Intuitive preference. Hardly any indication is given of the differences between the behaviour associated with personality as part of the actual, face-to-face phase of negotiation.

It was therefore decided to conduct research in order to solve these problems, but first it had to be established whether negotiation does in fact have an impact on the outcome of the negotiation. Should it be found that personality does correlate with negotiation outcome, the next step in the research would be to determine why the different personalities tend to be more (or less) effective and how this knowledge could be applied in negotiation training.

It was decided to use the MBTI as the foundation for the theory of personality, since many of the personnel members of the South African Army have been exposed to

it with great success in the past. The theory underlying the MBTI is usually easily understood and the time required to convey this knowledge could compliment the time available on the short negotiation programme.

The MBTI is furthermore considered an emotionally safe instrument and can be used in any training situation. It is considered as relatively easy to understand and to convey the differences between the sixteen types as well as the strengths and weaknesses of each type. Individuals have control over their own behaviour and can therefore choose the type of behaviour that is suitable for the situation (Myers & Myers, 1980, p11). It is widely utilised in team building, communication training, career enhancement programmes and other organisational development programmes in the United States and around the world (Kirby, 1991, p1).

AIM OF THE STUDY

The primary aim of the study could be postulated as an empirical study in determining whether a relationship exists between type preference of the individual according to the MBTI and effective negotiation outcome.

OUTLAY OF CHAPTERS

The aim of Chapter 2 is to discuss the various paradigms concerning personality. The chapter begins by establishing a basic definition of personality and then provides an overview of what different authors perceive to be the core of the human personality. After these various perspectives have been discussed, the theory of Carl Gustav Jung and his distinctive view of the human psyche, which was used as the foundation for the creation of the Myers-Briggs Type Indicator is introduced. The various scales of the MBTI is explained along with the significance that the different combinations of the scales, such as the temperament, attitudes, functions and quadrants, have on this research.

Chapter 3 is devoted to the theoretical arguments surrounding the concept of negotiation. Similar to the previous chapter a working definition is provided, along with

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negotiation. Similar to the previous chapter a working definition is provided, along with the analysis of the main concepts associated with negotiation. Owing to the important role of negotiation outcome in this research, attention is given to explaining how effectiveness is determined. The choice of negotiation strategies is combined with the negotiator's approach to reaching the set objectives in relation to the desire to maintain a certain level of relationship with the opposing party involved. The next point of discussion is the process normally associated with formal negotiation and provides an overview of the basic flow thereof. Since the aim of the study is related to the success of individuals in negotiation, it follows as a natural conclusion that the criteria for determining success should be investigated. A brief discussion on the relevance of negotiation in the military is included, since the study was conducted by utilizing a sample from the South African Army as part of negotiation training. The chapter is concluded by a discussion of methods for gathering research data in negotiation, with special attention to role-plays, including the advantages and disadvantages of role-plays.

An extensive search of historical and current literature relating to personality and negotiation research forms the basis of Chapter 4. The divergent research is discussed and includes those aspects that can be related to personality as well as those where the relation is vague, but was still placed under the heading of personality by the original authors.

The propositions and methodology according to which the research was conducted are described in Chapter 5. The description of the hypothesis is followed by the operationalization of the independent, dependant and moderating variables. The instruments utilised for conducting the research are described and involves the explanation of the reliability and validity of the MBTI. Next, the participants are discussed and finally the working method that was followed is explained in detail.

The results from the statistical analysis are reported in Chapter 6. The process of determining possible covariates is discussed in detail. The discussion regarding the results is guided by the different hypotheses used to reach the aim of the study. The results are reported in the chapter, while the complete correlation tables are provided in an appendix for each set of data.

In Chapter 7 the results of the empirical study are analysed and discussed using the MBTI subscales and combinations of subscales. The discussions are accompanied by speculations regarding possible causes of the results. Subsequently the shortcomings of the research are highlighted, followed by suggestions for future, related research. Finally, a conclusion is provided in terms of the extent to which the aim of the study was reached.

TERMINOLOGY

There are a number of terms that will be used repeatedly in this research paper, and that may require some clarification:

- **Type preference:** This term refers to the personality classification according to the Myers-Briggs Type Indicator. The term is non-judgemental and only has reference to the preference of the individual for one of the sixteen possible classifications.

- **MBTI scales:** The scales refer to the four continuums used to explain the behaviour of people, namely the Extraversion-Introversion scale, Sensing-Intuition, Thinking-Feeling and the Judging-Perception scale.

- **MBTI Subscales:** The subscales refer to the eight separate preferences.

- **Focal negotiator:** This term is associated with the first person or first party in negotiation. The process or situation is explained from the position of maximum for this party and all other parties are considered as opposition.

- **Negotiation dyads:** Negotiation situations or simulations where only two parties are involved, irrespective of the complexity of the topics.

CHAPTER 2: PERSONALITY

"Scenery is fine – but human nature is finer".

John Keats

BACKGROUND

Some of the unanswered questions that gave rise to this study involve uncertainty about how personality is supposed to influence negotiation and which characteristics should be planned for. Another question that was raised is whether general knowledge regarding human characteristics and behaviour, gained through experience, may suffice for the study of negotiation or whether scientific exploration of personality is necessary.

General knowledge regarding people and acquiring experience in human behaviour is an intrinsic part of the daily activities of humans. When meeting a person for the first time humans involuntarily create a mental picture of that person's personality characteristics by interpreting non-verbal communication, behaviour and   physical appearance. According to these visual clues, assumptions are made about the other's background, attitude and personality. This could lead to spontaneous labelling, whereby a person is referred to as kind, generous, reserved or egocentric, to name but a few. These perceptions are then compared to self-knowledge and experience to determine how to approach the person and the type of relationship that could be established, whether that may be on a personal or professional level. These assumptions regarding personality could further be applied to predict the behaviour of others.

Assumptions that are not specifically founded on scientific proof may however be dangerous since the reliability thereof could be questioned. This statement is best explained by an example derived from the negotiation-training programme, where participants are shown the movie called "The Twelve Angry Men". The movie is used to emphasize the concepts regarding verbal and non-verbal communication, negotiation strategies and to illustrate the role of power and rules of negotiation. It is also an opportunity for participants to use their life experience and intuition to analyse human behaviour. The movie is interrupted a number of times to allow for discussion, to predict

the behaviour of the different characters and also to predict the outcome of the plot, though admittedly they have only limited information. Participants are encouraged to provide the reasoning behind their opinions. Though the findings are not scientifically based, it is remarkable how few people predict the outcome correctly. When the reasoning process is interpreted it is found that predictions are made on prejudgements and assumptions. Thus a more scientific approach may be needed to influence the outcome of negotiation.

The scientific study of personality and human behaviour has intrigued people for centuries. In 450 B.C. Hypocrites described, what he termed temperaments by using the terms choleric, phlegmatic, melancholic and sanguine. Themes to describe human behaviour were also used by Paracelsus in the Middle Ages and even the "American Indian Medicine Wheel" (Van Rooyen & De Beer, 1995, p49).

Before 1920 the term personality was used primarily in discussions of abnormal psychology, which was considered as part of the medical speciality of psychiatry. In 1921 Gordon W. Allport published a review focusing primarily on the distinction between "personality" and "character", two concepts that had been used interchangeably up to then. In agreement with the behaviourist paradigm, Allport suggested that the term "character" be defined as "the personality evaluated according to prevailing standards of conduct" and that it was not an appropriate topic for psychological study (Allport, 1921, p443). He advocated the use of the term "personality" in preference to "character", which soon became general practice.

In order to establish a comprehensive understanding of personality upon which the study between negotiation and personality can be based, it is important to first explore the important paradigms concerning personality. The four paradigms, introduced by Winter (1996, p232), are utilised to explain the study of personality, namely motives, behaviourism, cognitions and traits. Once a general understanding of personality paradigms has been established personality classification according to the Myers-Briggs Type Indicator, based on the theory of Jung, is discussed. This discussion includes the numerous dimensions of personality that are found within the combinations of the

fundamental elements of the instrument and also relates the theory to certain postulations regarding the possible impact on negotiation.

PERSONALITY PARADIGMS

Motivational paradigm of personality

The first paradigm that will be considered is that of motives, because many personality psychologists are in some way influenced by the work of Sigmund Freud, who placed motives at the centre of personality (Morris, 1990, p8). Freud argued that behaviour is predominantly influenced towards or away from a specific goal, in response to incentives, circumstances, opportunities, obstacles and other current goals, hence the term motivation. In contrast to the long lists of specific instincts compiled by 19th century biologists and psychologists, Freud argued that all behaviour is motivated according to a few general classes, namely self-preservation, sexual motives (also termed libidinal motives) and aggressive motives or death instinct (Pervin & John, 1999, p15). Freud claimed that most of these motives function at an unconscious level. To explain why motives might become unconscious, he postulated the structures of the id, ego and superego. He explained the functioning of the process through the notion of defence mechanisms that transform libidinal and aggressive motives in varied ways so as to render them safe, thereby reducing anxiety (Huffman, Vernoy & Vernoy, 1997, p450).

Many post-Freudian theorists used his basic thoughts on motivation as the foundation for their own work. While many neo-Freudians accepted Freud's emphasis on the unconscious, they often disagree that personality is fully formed during the first five years of life. It is also often believed that Freud paid inadequate attention to social and cultural forces. Two of Freud's most influential followers are Carl Jung, (whose theory will be discussed as part of the traits paradigm) Alfred Adler and Karen Horney (Huffman, et al., 1997, p 454).

Adler (Huffman, et al., 1997, p 455) opposed Freud's belief that behaviour is the

result of unconscious motives. He believed that human behaviour is purposeful and goal oriented and that consciousness represents the centre of personality. He maintained that each person has the capacity to choose and to create. He also believed that the goals of the individual provide the motivation for action – especially those goals aimed at security and overcoming inferiority. Adler's theory is known as individual psychology.

Karen Horney believed that the relationship between children and their parents are the most influential factor influencing adult personality (Huffman, et. al., 1997, p457). According to her theory, emotional health requires a balance between three related ways of searching for security. These methods involve moving toward people, away from people or against people.

Behaviourist paradigm of personality

Early in the 20th century behaviourism and the experimental research on learning had a great influence on the definition of personality (Pervin & John, 1999, p18). The behaviourist paradigm suggests that a truly scientific research method should be limited to the study of objective, observable behaviours. It is furthermore believed that all behaviour can be viewed as a response to a stimulus, which is defined as an object or event, either internal or external, that stimulates an organism to respond (Huffman, et.al., 1997, p31).

At the behaviourist extreme is the work of Skinner who, based on Watson's suggestions of changing behaviour through conditioning, introduced the concept of reinforcement. Skinner suggested that positive behaviour could be reinforced through reward and negative behaviour could be diminished by punishment (Morris, 1990, p7). Because of the strength of reinforcement history, Skinner proposed that the concept of personality be dispensed with altogether (Pervin & John, 1999, p18) and that behaviourist approaches could be used to reshape human behaviour and thereby the negative course of humankind (as he perceived it) could be altered (Huffman, et. al., 1997, p31).

Lewin, (Spector, 1977, p611) developed a model for explaining human behaviour by stating that B = f (P, E), where B is behaviour, P is personality and E represents the environment. The personality is fundamentally comprised of needs and tensions. These needs are in turn perceived as motivational states that, when aroused, release energy and increase tension in the personal system resulting in a state of disequilibrium. Simultaneously the environment consists of forces both attempting to facilitate change and to restrain change. Forces are attracted and directed toward regions with positive value, but deflected from regions with negative value. Thus behaviour is believed to be the result of the dynamic interaction between the individual and the environment, all attempting to maintain a state of equilibrium.

In the late 1960s and 1970s, the situationist critique of personality caused a major crisis in the field and led to a re-examination of fundamental postulates and research methods. Finally in the 1980's and 1990's the rise of cultural psychology and the influence of feminist and other critical perspectives from the humanities, as well as a more global perspective, showed signs of generating new interest in the social and cultural macro contexts of personality (Pervin & John, 1999, p18).

One example of this is the work of Berens and Nardi (1999, p1) who claim that human behaviour will change according to the situation or environment. They place personality on three interrelated levels. The level closest to the surface, where the individual interacts with the environment is referred to as the contextual self. In this context choices are made and behaviour is adapted to suit the situation and role fulfilled. Should the contextual self become habitual and ongoing, it becomes a part of the next level called the developed self. At the core of the individual's being the true self can, however, be found. It is an aspect of personality that exists from the beginning of the person's life - it is in the genes. The true self refers to the inborn tendency to behave in certain ways, which influences adaptation, growth and development. Berens and Nardi suggest that when the personality of an individual is analysed, these three levels should be taken into consideration.

Cognitive paradigm of personality

Pervin and John (1999, p16) refer to the late 1950s and early 1960s as the period of the "cognitive revolution", which had a major effect on the development of personality theory. Cognitive psychology focuses on the mental processing of information. It is concerned with the acquisition, storage, retrieval and use of knowledge, using such mental processes as perception, memory, mental imagery, concept formation, problem solving, reasoning, decision-making and language (Huffman, et al. 1997, 34).

Cognitive psychologists take an information processing approach, similar to that found in the computer sciences, in order to understand the human mind. According to this approach humans gather information from the environment, then process it in a series of stages in order to produce a certain response. A certain type of processing is performed at one level before the information is passed on to the next level, where a different method of processing occurs. Cognitive psychologists often express models of human thought with mathematical formulas and computer-related models, such as flow charts (Huffman, et. al., 1997, p34). These models appear to follow a linear approach to human behaviour and create the impression that all behaviour is predictable.

Traits paradigm of personality

Pervin and John (1999, p 15) quote the work of Murray who maintains that the concept of traits contrasts with that of motives in the sense that a given motive may be associated with an indefinitely large number of quite different actions, and simultaneously one action may also serve multiple and varied goals. The concept of traits, however, has been used to indicate consistent patterns of behaviour used by individuals (Winter, John, Steward, Klohnen & Duncan, 1998, p232).

An author who contributed largely to the development of Personality Psychology is Raymond Cattell, who acknowledged "trait" as the fundamental conceptual unit of personality. Cattell believed that the personality is made up of thousands of *surface traits* that are visible to the casual observer, but that are determined by the much more

crucial *source traits,* also termed "factors" (Papalia & Olds, 1988, p468). He also distinguished motivational or "dynamic traits" from stylistic or "temperament traits", as well as "ability traits". In his view each kind of trait had its own pattern of correlational relationships between its component variables and the external situation, thus influencing it to change (Cattell, 1946, p167).

Cattell viewed objective test measurement as the foundation of all further scientific advancements in the science of personality description (Cattell, 1946, p iv). He also maintained that the large number of identified personality factors are inconvenient and that attempts should therefore be made to reduce these numbers. Thus he introduced many conceptual refinements and elaborate methodological developments, especially concerning the use of correlation, factor analysis and other multivariate techniques into the field of personality. (Cattell, 1946, p272).   Cattell's major contribution to personality was his analysis of temperament traits via mathematical and statistical techniques.   From the theory of Cattell the 16- Personality Factor Questionnaire (16PF) was created, which is used in clinical, educational and occupational applications (Bergh & Theron, 1999, p 379).

Another theorist who ascribed to the theory of traits was Gordon Allport, who suggested that traits were neuro-psychic systems with dynamic or motivational properties (Allport, 1967, p10). He originally adopted a behaviouristic definition of traits as "systems of habits". He later, however, changed his focus to the Gestalt theory (Papalia & Olds, 1988, p468). Gestalt theory considers the whole as different from the sum of individual traits. Although it is possible to analyse the individual parts, the analysis does not necessarily constitute the integrated person (Jordaan & Jordaan, 1989, p22).   Allport based his theory on the postulation that each person is unique and displays characteristic behaviour because of the combination of the *cardinal* (or dominant), the *central* (those few traits that can describe the essence of a person) and the *secondary* traits (displayed occasionally) (Louw, 1982, p125). His views on the uniqueness of individuals led him to reject any form of classification of people into "personality types" (Meyer et al. 1988, p352). Thus, despite recording 18 000 different descriptive words and arranging them into more than 4 000 trait names, Allport still

maintained the importance of evaluating personality as a holistic system and not just as a combination of traits (Bergh & Theron, 1999, p377).

Carl Jung was also a scholar of Freud's and at first agreed with the concepts of psychoanalysis, though the essence of his theories is more related to traits than to motives. Jung saw the mind as consisting of the *ego* (conscious mind) the *personal unconscious* (repressed or forgotten material) and the *collective unconscious* (that part of the mind which is part of the ancestral memories) (Papalia & Olds, 1988, p461; Hall & Lindzey, 1970, p82). At the centre of these concepts the psyche of the individual can be found (Louw, 1982, p112). It is this psyche, also termed libido or psychic energy, along with the way in which an individual habitually or preferentially orients himself/herself in the world that forms the bases for Jung's development of the Psychology of Type (Van Rooyen & De Beer, 1995, p1). Jung's theory on introversion and extraversion forms one of the most prominent factors in the trait factor models on personality, such as the three, five and 16-factor models. Jung's concepts were also heavily relied on in the development of projective tests to measure personality, such as the Thematic Apperception Test (TAT) and the Rorschach Inkblot Test (Bergh & Theron, 1999, p345).

Jung believed that there exists, within all people, the potential for the healthy integration of opposing attitudes. He was of the opinion that integration could be achieved by accepting the predominant attitude and at the same time making peace with the opposite. Integration results in self-knowledge and the ability to synthesize the less-differentiated aspects of the personality (Benfari, 1991, p7). This statement by Jung resulted in the development of types in which personality could be sorted rather than being measured. The original aim of Jung, and later also Briggs and Myers, was to provide a system of comparison and orientation to allow individuals to order the experiences of oneself and the world (Van Rooyen & De Beer, 1995, p4). The types are consequently non-judgemental and give no indication of abnormality or psychopathology. There are no good or bad types, even though some of the characteristic behaviours within each type tend to be more constructive than others (Van Rooyen & de Beer, 1995, p 41).

These theories in turn formed the foundation of the work by Katharine C. Briggs and Isabel Briggs Myers, who compiled the Myers-Briggs Type Indicator (MBTI). The Myers-Briggs Type Indicator is one of the most popular self-report instruments in leadership and management development programmes, despite the fact that many writers deem the work of Jung to be extremely complex (Meyer, Moore & Viljoen, 1988, p100).

According to Pervin and John (1999, p13) a working consensus was reached by the end of the twentieth century that the trait domain can be described by five clusters of traits, also commonly referred to as the five-factor model or "Big Five", namely extraversion (also termed "surgency"), agreeableness, conscientiousness, neuroticism and openness. Despite this agreement a minority group of theorists, (e.g. Eysenck, Block and Gough) have continued to follow their own arguments regarding the composition of factors and methods of research (Pervin & John, 1999, p14).

Summary of paradigms

The motivation, behaviourist, cognitive and trait paradigms are not the only ones related to psychology, but are the most influential in terms of developing an understanding of human personality. These paradigms were discussed in isolation for academic purposes, but it is important to keep in mind that most modern psychologists recognise the value of each orientation and at the same time concede that there is a measure of truth in each. Thus the modern approach is to use a more eclectic approach to psychology, using principles and techniques from different perspectives to suit the situation (Huffman et al., 1997, p35).

PERSONALITY CLASSIFICATION THROUGH THE MBTI

In 1913 Carl Gustav Jung delivered his first major lecture on typology to the Fourth Psychoanalytic Congress in Munich, (Nagy, 1991, p25). According to his theory the psychic energy (alternatively termed the libido) is found at the centre of personality

and determines the human attitude towards the external environment (Hall & Linzey, 1970, p92). In order to create a clear understanding of personality used in this research, the theory of Jung will be discussed using the MBTI scales, subscales and combinations of scales as background.

Scales of the MBTI

Jung postulated two opposing attitudes as to where the psychic energy originates. Myers and Briggs, who added a separate set of opposites related to the individual's attitude towards life, later extended these attitudes. Jung further identified two mental functions that he believed to be natural impulses and that these support the psychic energy. These tools assist individuals to relate meaningfully to the world and people (Fitzgerald & Kirby, 1997). The first set is used for gathering information from the environment and the second set is applied in making decisions. For more clarity, the different attitudes and functions will be discussed in more detail.

Mental attitudes

The first attitude proposed relates to people with an extraverted preference who may direct their energy and attention primarily to the external world and also draw their energy from their environment, people and objects. In contrast to this, people with an introverted preference might focus on their inner world of ideas, values and experiences. People with an introverted preference draw their energy from quiet, introspective actions (Fitzgerald &Kirby, 1997, p7).

The set added by Katharine C. Briggs and Isabel Briggs Myers is called Judging and Perceiving, relating to an individual's attitude towards life. Those preferring Judging need to function in an orderly structured environment, characterised by clear plans and schedules, as well as finding closure in decisions. The Judging function is characterised by a need to control situations in the life of the individual, for example when a decision has been made to do something in a specific manner, people with a Judging preference normally do not appreciate conditions forcing them to adopt another method. In contrast

with this, people with a Perceiving preference would rather keep their environment open and free of structure. They want more information before they make any decisions and view goals as moving targets, which provide more flexibility and spontaneity. The Perception attitude is characterized by its focus on the experience itself, rather than the results achieved for example the climb to the top of a mountain is just as important as the view from the top (Fitzgerald & Kirby, 1997, p7). These contrasting attitudes could lead to conflict among people, because those who prefer a Judging attitude are often accused of being rigid and non-compromising, while those preferring a Perception attitude are viewed as unable to make up their minds.

Mental functions

The first function, named Perception, enables people to gather, store and retrieve information by observing the world around them as well as their own memories and inner states. The Perception function is divided into a Sensing and Intuition preference, generally referred to as S and N. Those who prefer Sensing will most probably focus on data that can be collected by the senses, e.g. concrete facts that can be seen or heard. They may prefer to focus on the detail of the facts. Contrary to the Sensing preference, the Intuition preference implies that the individual might be drawn to the overall patterns and meanings or theoretical explanations that will put specific data into context (Fitzgerald & Kirby, 1997, p5). The intuition function is described by Jung as an experience of the self, something inside the individual that knows what to do and how to act. It is the ability to not only view isolated clues found in the environment, but also to recognise the interconnection that exist between them.

By studying the ways people react to different situations, Jung recognised that every person possesses a relatively consistent method of making decisions and dealing with difficult situations or problems. He believed that the basis of decisions give valuable insights into a person's psychic system of adaptation and therefore identified decision making as the second tool, also referred to as the Judgement Function (Van Rooyen & De Beer, 1995, p2). In order to organise and structure information and make decisions, Jung described the two opposites called Thinking and Feeling. Individuals with a

Thinking preference generally indicate a preference to apply logical principles and make objective decisions. Contrary to this, those who prefer Feeling tend to make decisions by applying a process of evaluating the problem against their personal value system. They measure all decisions against their own values, the values of others and the values of the organisation (Fitzgerald & Kirby, 1997, p6).

There exists a generally accepted order that is used when the scales of the MBTI are used. This order is used in Figure 1 to summarise the two Attitudes and Functions visually.

Figure 1: MBTI scales
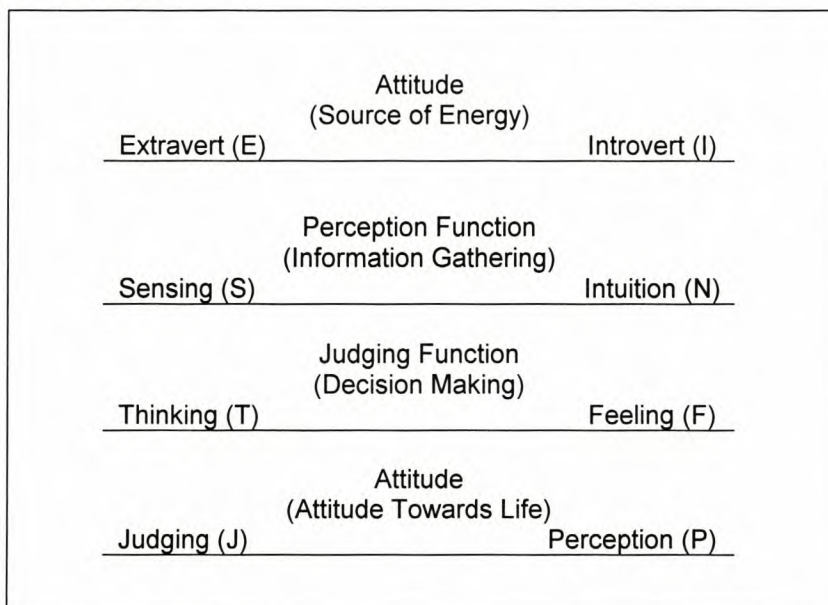
Opposites

Each of these four scales functions on a continuous line with two opposing or extreme ends. Jung (in Jacobi, 1971, p4) makes it clear that "... everyone possesses both mechanisms, extraversion as well as introversion, and only the relative predominance of one or the other determines the type". This statement applies to all the attitudes and functions. This concept is best explained by comparing it to the facility with wich people use either their left or right hands. Most people have two hands and use both with relative ease, but one is stronger than the other and is normally used for more

specialised skills, such as holding a pen or tennis racquet. Jung believed that inborn differences exist which govern this preferred application of the scales, implying that no person is solely, Introvert or Extrovert (Fitzgerald & Kirby, 1997, p5).

The four sets of opposites identified by the MBTI personality inventory result in sixteen possible combinations, commonly referred to as "Type" preferences, each with unique characteristics, strengths and weaknesses. These combinations hardly ever represent preferences that are extremely clear on all four dimensions, but rather constitute a mixture of preferences. Individuals can therefore be categorised according to the preferred Type, but still possess unique characteristics. Similarly the sets of opposites can be arranged in a number of ways resulting in a number of meaningful combinations. These combinations need to be explored since it is of particular importance for the current research.

The four functions are considered to be the part of the psychological type most closely related with communication skills. Whereas Extraversion and Introversion preferences are important in *establishing* communication, the Judging and Perception attitudes are needed to bring the communication to a close. For effective communication people, especially those involved with negotiation, need to understand their own and other's ST, SF, NF or NT style (Krebs Hirsh, 1992 p64). The ST communication style can be described as one that focuses on details and the logical implications of those details, while ST's place high value on responsibility. The SF style also focuses on details, but is more concerned with the impact of those details on the people involved. The NF communication style focuses on the overall view of a situation and its impact on people, because this preference generally seeks to make a difference in the lives of others. Finally, NT's also focus on the big picture, but they are more concerned with its logical implications and place a large emphasis on competence (Krebs Hirsh, 1992, p64).

A standard method of presenting profiles exists and is generally referred to as the type table, as illustrated in Table 1 (Van Rooyen & De Beer, 1995, p27). The table is structured to highlight the similarities and differences of the types (Myers & McCaully,

1985, p30). Each type has three letters in common with any adjacent type. The attitudes are presented in the horizontal lines (Table 2 and 3) and the four functions in the vertical columns (Table 4 and 5).

Table 1: Myers-Briggs Type Table

ISTJ	ISFJ	INFJ	INTJ
ISTP	ISFP	INFP	INTP
ESTP	ESFP	ENFP	INTP
ESTJ	ESFJ	ENFJ	ENTJ

Table 2: Attitudes (I and E)

Introversion
Extraversion

Table 3: Attitudes (J and P)

Judging
Perception
Perception
Judging

Table 4: Functions (S and N)

Sensing	Intuition

Table 5: Functions (T and F)

Thinking	Feeling	Feeling	Thinking

Dominance

It is assumed that one of the four mental functions (S,N,T or F) uses the largest share of a person's psychic energy. It is the most conscious or dominant function - the individual is aware of it and can direct and control the related behaviour. The individual usually enjoys using it, so tends to acquire a lot of experience and facility with it. The desire to use the dominant function as much as possible influences the choice of work and the way the person relates to others (Quenk, 1996, p4).

The dominant function is determined by both the attitudes present in the particular profile. Jung (in Jacobi, 1971, p4) proposed that the dominant function is extraverted (shown to the world) whereas the other three functions are introverted. This implies that the behaviour of the dominant function is visible to the world, while the other functions are used in the thought process. It was, however, postulated at a later stage that this concept is true for Extraverts, but that people with an Introversion preference tend to use their dominant function in the thought process while projecting the second function to the outside world (Van Rooyen & DeBeer, 1995, p61).

The dominant function in a personality is established by the particular combination of the various functions within the type profile. The JP attitude determines which function is extraverted, but the dominant function will depend on the particular combination with Extraversion or Introversion. If Judgement is present in the profile either the Thinking or the Feeling function will be extraverted and if Perception is present then either Sensing or Intuition will be extraverted (Van Rooyen and De Beer, 1995, p62). This concept is best described by means of an illustration (see Figure 2).

Figure 2: Determining the dominant function
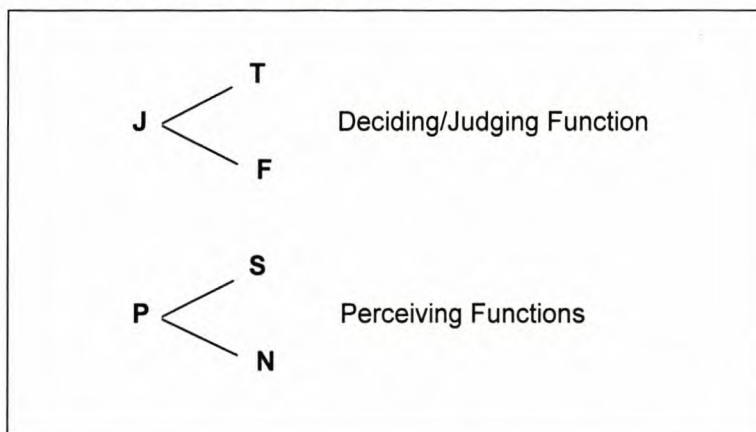
The two preferred functions, indicated by the particular profile, form a team. In each type, one of the preferred functions dominates that type while the other serves as the balancing factor, also referred to as the "auxiliary" function. The main responsibility of the auxiliary function is to provide balance between Introversion and Extraversion between the outer and inner worlds (Myers & Myers, 1980, p12). The auxiliary function is

second to the dominant in available energy. It is not quite as conscious, but the individual can still exert some control over it. Thus the two superior functions at the conscious level are controllable, whereas the two less differentiated functions are at an unconscious level and less controllable.

The less developed functions have a place in the personality as well. The function opposite the auxiliary function is referred to as the third or tertiary function. Though it is not well developed, some levels of control may still be exerted over it (Brownsword, 1987, p88).

The inferior function is considered to be the exact opposite of the dominant function. It is postulated that, should the dominant function be Sensing, the inferior will be Intuition. The inferior function is believed to be the least developed function and that little or no control exists over it. When the conscious energy involved with the dominant function diminishes sufficiently the unconscious energy of the inferior erupts and takes over the personality. This could happen in situations of fatigue, illness, stress, when the individual is under the influence of alcohol or uses mind-altering drugs. This eruption normally resembles the behaviour associated with the dominant function, but in its extreme or exaggerated form. The behaviour appears immature and prone to categorical statements with no room for acceptance of deviations.

Other people may observe these changes and find it strangely out of character with the individual, causing confusion. The individual, however, often remains unaware of the change until the eruption has subsided (Brownsword, 1987, p89). Jung refers to the example of the Extraverted Feeling type who, despite a normally excellent feeling rapport with other people, can occasionally express tactless opinions (in Jacobi, 1971, p340). Though not an extreme example it does indicate the influx of subconscious energy into the conscious personality. This phenomenon could create the dilemma for the observer trying to differentiate between the types, because the manifestations of both the conscious and the unconscious are visible. He states that a proper differentiation can only be possible after thorough study of the observed material (Jacobi, 1971, p522).

According to research most people tend to rely on their dominant functions in stressful conditions in order to control the circumstances, regardless of any learnt behaviour to the contrary. This implies that the balance normally provided by the auxiliary function is absent. At an extreme, for instance under conditions of prolonged stress, the inferior function may temporarily assume the lead (Fitzgerald & Kirby, 1997, p298).

In terms of research on negotiation it may be insightful to explore the effect of the shadow on the outcome of the process, since negotiation could be considered a high-stress situation. Even in negotiation role-plays, participants often report increased levels of anxiety. In real life, when much is at stake, the process is prolonged, the individual has to deal with overwhelming amounts of information and often the abusive behaviour of opponents, and it could be expected that the levels of stress may rise considerably. Under these conditions the contribution of the auxiliary function may diminish, or in extreme cases the inferior function may even take over control as explained earlier. Should a correlation be found between dominant function and negotiation outcome it could assist in describing the behaviour required for success in negotiations. These findings could also lead to further research in order to determine the impact of the auxiliary and inferior functions.

Combination of subscales

Describing a set of types with common characteristics is considered to be useful (Myers & McCaully, 1985, p31). These combinations provide a grouping of characteristics that can be used to explain the behaviour of people and to promote understanding of similar and differing behaviour amongst people. Working with combinations also creates a comfortable middle ground between the simplicity of the separate scales and the complexity of the full type preference. For the aim of this study, the combinations could be helpful in understanding and explaining the behaviour in negotiations. For example, should correlations be discovered between the effectiveness in negotiation and some of the combinations, it could indicate what behaviour is important for an effective result. Since the characteristics of each combination are known, it could assist in developing a training module on personality in negotiation.

Though a number of possible combinations exist, only the most prominent ones will be discussed, namely Attitudes, Functions and Quadrants.

Attitudes

The combination of the various attitudes provides information regarding rational decision-making in relation to introversion and extraversion (see Table 6). The irrational introverts and irrational extroverts are found in the IJ and EP combinations respectively, while the IP and EJ are described as the rational introverts and rational extraverts (Myers & McCaully, 1985, p32).

Table 6: Combination of Attitudes

ISTJ	ISFJ	INFJ	INTJ	Introvert with Judging
ISTP	ISFP	INFP	INTP	Introvert with Perception
ESTP	ESFP	ENFP	ENTP	Extrovert with Perception
ESTJ	ESFJ	ENFJ	ENTJ	Extrovert with Judging

It could be argued that those individuals favouring a more irrational approach may be prone to risk taking, which could lead to mistakes in negotiation. It may also seem logical that a negotiator needs to make well-considered, rational decisions, which would lead to the premise that the IP combination might be more successful in negotiation, than some of the other combinations. This is an aspect that should however be established through the statistical analysis of the data.

Functions

The functions involve the combinations of perception (Sensing and Intuition) and judgment (Thinking and Feeling) as indicated in Table 7. The combination of functions provides a unique blend of gathering facts through the use of the senses (S) or through envisaging possibilities with either impersonal or subjective analysis of the information. These combinations result in the practical matter-of-fact type (ST), or the sympathetic and friendly types (SF). The alternatives are the enthusiastic and insightful type (NF) or

the logical and ingenious types (NT) (Myers & McCaully, 1985, p33).

Table 7: Combination of Functions

Sensing with Thinking	Sensing with Feeling	INtuition with Feeling	INtuition with Thinking
ISTJ	ISFJ	INFJ	INTJ
ISTP	ISFP	INFP	INTP
ESTP	ESFP	ENFP	ENTP
ESTJ	ESFJ	ENFJ	ENTJ

Negotiation theorists may have a difficult time determining which of these types might be more successful in negotiation. Some may postulate that the ST with the impersonal analysis and decisions based on facts might render the largest possibilities for profit. But the gift of the NF for the spoken or written word, including the ability to communicate the possibilities they envision and the values they attach, may again have the power to persuade the opponent or to create insightful solutions to problems (Krebs Hirsh, 1992, p73). Once again these possibilities would have to be explored through statistical analysis.

Quadrants

The type table can be divided into four quadrants reflecting IS, ES, IN, EN, as indicated in Table 8. The quadrants combine the functions of Perception (S&N) and Judgement (T&F) with Extraversion as well as Introversion (Krebs & Hirsh, 1992, p74). The four types present in each quadrant do not possess the same dominant functions, e.g. only two types namely, ISTJ and ISFJ in the IS quadrant are accurately called dominant Introverted Thinking and Introverted Feeling types, respectively (Krebs Hirsh, 1992 p73).

Table 8: Myers-Briggs Type Indicator quadrants

ISTJ	ISFJ
ISTP	ISFP

INFJ	INTJ
INFP	INTP

ESTP	ESFP
ESTJ	ESFJ

ENFP	ENTP
ENFJ	ENTJ

Different speculations could be made regarding which type may be more effective in negotiation. Some may predict that the thoughtful realists (IS) might have the advantage because they prefer to deal with what is real and factual and to find the facts underlying the ideas, while others may think that their unhurried style may frustrate opponents leading to less than optimal relationships and outcomes. Another possibility is that the action-oriented realist (ES) may be more effective in terms of the implementation and follow-up of agreements made in negotiation, because they are practical and active implementers. Though the IN may not be good at implementing decisions made during negotiations, it could be postulated that they could also be good at negotiation on account of their depth of understanding, while the action-oriented innovators (EN) may be best at creating solutions (Krebs Hirsh, 1992, p74). Once again these hypotheses should be explored through statistical analysis rather than mere speculations.

Temperament

David Kersey followed in the tradition of Hypocrites who, in 450 B.C., described human behaviour in terms of four temperaments. (Hypocrites named his temperaments choleric, melancholic, phlegmatic and sanguine.) Kersey based his theory on the observation of behaviour and proposed that each of the temperaments is characterized by unique sets of wants, abilities, motivations, interactional patterns of behaviour and potential. At first Kersey used a specially designed questionnaire to determine the temperament of an individual, but later the MBTI was used because of the similarities believed to exist between the theories. The four temperaments are described as the

guardian (SJ), the artisan (SP), the idealist (NF) and the rational (NT) (Van Rooyen & De Beer, 1995, p49). (Table 9 provides a number of descriptive terms for the various temperaments.)

Table 9: Temperaments

Idealist	Guardians
Intuitive Feeling – NF	**Sensing Judging – SJ**
• Cultivate relationships/personal • Developing human potential • Values authenticity, integrity • Desires meaningful activities • Abstract/global • May seek personal fame or impact • Accepting/tolerant • Dislike routine	• Comfort/security/stability • Need to conform/ institutions/ rules • Concrete realities/stability/common sense • Responsibility/dependability • Detail • Fear of the unknown • Worth must be earned
Rationals	**Artisans**
Intuitive Thinking – NT	**Sensing Perceiving – SP**
• Knowledge/ competence/ coherence/ quality • Abstract/theoretical • Patterns/ deriving principles • Independent • Impersonal and may seem uncaring • Identify and solve problems • Do things in order to learn	• Instantaneous decision making • Observe the specific and concrete • Improvisation/ freedom pragmatism/ expedience • Immediate/active/optimistic, but can be very cynical • Negotiate anything • Cool exterior

The temperaments have been used to describe possible behaviour in terms of management and leadership (Steward, 1990). Steward makes an interesting statement by referring to the SP temperament (in terms of management) as a "natural negotiator". She even states that the artisan would "negotiate anything". Should this be the case then it could be postulated that a positive correlation might exist between the SP temperament and negotiation outcome or perhaps a unique style of negotiation.

Another postulation is that the NF temperament may not necessarily obtain short-term results in negotiation, but that they may be more successful in the long-term

because of their focus on cultivating human relations. This may result in a trusting relationship between parties, leading to future successes. These possibilities should, however, have to be explored further.

SUMMARY

In order to answer the research question it was necessary to establish a theoretical foundation for personality if it was to be brought into relation with effective negotiation. This was done by first investigating the four most important paradigms associated with personality. The first paradigm is that of motivation as the driving factor for behaviour, which is dominated by the work of Freud as well as some neo-Freudians, for example Adler and Horney. The second paradigm is that of behaviourism, which associates personality with external stimuli and views the environment of the individual as important. The cognitions paradigm was the third to be discussed and is primarily concerned with the processing of information and how it influences the behaviour of the individual. Lastly the traits paradigm was discussed. This paradigm include the work of Catell and Allport who explored a wide range of personality traits and also included the theory of Jung who viewed traits in a more structured manner.

The next part of the chapter was devoted to the theory of Jung and the resultant Myers-Briggs Type Indicator. This was done in order to create a specific understanding of the factors to be used to determine whether a relationship exists between personality and effective negotiation. Apart from explaining the basic constructs of the mental attitudes and functions as well as their interaction in the personality, a number of combinations of the subscales were also discussed. Through the discussion of the combinations it was illustrated how easy it is to speculate regarding the possible influence of personality on negotiation. Simultaneously, it is very difficult to prove these postulations by any method other than statistical analysis, thus emphasising the importance of solving the present research problem.

CHAPTER 3: NEGOTIATION

> "The meeting of two personalities is like the contact of two chemical substances: if there is any reaction both will be transformed".
>
> Carl Gustav Jung

INTRODUCTION

The aim of this study is to determine the relationship between personality and the successful outcome of negotiation. In order to comply with this aim an understanding of the definition of negotiation is facilitated through the discussion of various definitions of the concept and confusion regarding terminology and concepts is avoided, by providing descriptions of each. Once the definition is understood, the difference between successful and unsuccessful negotiation can be explored. Different parties in a negotiation may have different (or similar) perceptions regarding the determining factors for success in a particular situation. These opinions may influence the choice of a negotiation strategy, which may in turn change the appearance of the particular negotiation, ranging from adversarial to integrative. The choice of strategy may also influence the natural flow of the actual negotiation. With this in mind the views of a number of authors are combined in order to provide a generally agreed upon process of negotiation, usually associated with formal negotiation situations. Knowledge of the strategy and process may assist in understanding the extent of the influence of personality in the different approaches and steps.   The chapter is concluded by a discussion of the role of negotiation in the military, since the motivation for conducting this study was based on the creation of a negotiation skills programme for the South African Army.

DEFINITION OF NEGOTIATION

Various definitions have been proposed for negotiation, most of which carry a similar emphasis. Anastasi (1993, p17) for instance defines negotiation as *"... the process by which two or more parties come to a mutually beneficial agreement. Each party has something the other party wants, and in return, can give something the other*

party needs........ Negotiation is a process because there are several steps to the successful conclusion of a negotiation. During the negotiation process, both parties explain to each other what they can offer the other side, and the reasons why both parties will come out ahead when they agree on a deal."

Pottas and Nieumeijer (1992, p8) refer to negotiation as a communication process whereby different parties try to reach an agreement through mutual persuasion. They emphasise the importance of mutual dependence between the opposing parties, and state that neither one of the parties can achieve its goals unless an agreement is reached jointly.

The definition given by Fowler (1990, p3) is a combination of various principles. He states *"Negotiation is a process of interaction by which two or more parties who consider their need to be jointly involved in an outcome, but who initially have different objectives, seek by the use of argument and persuasion to resolve their differences in order to achieve a mutually acceptable solution."*

Mark Anstey (1991, p91) is of the opinion that conflict provides the rationale for negotiation between individuals and groups. The conflict is the result of limited resources or opposing interests, despite the fact that certain interests may be shared. The parties engage in communication and joint action, in order to achieve a mutually acceptable agreement, without resorting to arbitration or judicial processes.

A more comprehensive definition is given by Spoelstra and Pienaar (1996, p3). They state that,

"Negotiation is a process of interaction between parties directed at reaching some form of agreement that will hold and which is based upon common interests, with the purpose of resolving conflict, despite widely dividing differences. This is achieved through the establishment of common ground and the creation of alternatives. To the present authors, common ground is not just what people have in common but what they could become together."

A simplified description by Mills (1991, p7) indicates that it is not just a term associated with business, but that it is part of the daily lives of people. He states that, "we all negotiate because negotiation is simply a very effective way of getting what we want. We negotiate to settle our differences and we negotiate out of self-interest to satisfy our needs."

When analysing these definitions it becomes apparent that most authors view negotiation as a process between opposing, but interdependent parties. Negotiation is a peaceful process and excludes arbitration or other judicial processes. The emphasis is rather on communication, persuasion and decision-making. Lewicki and Litterer (1985, p165) feel so strongly about the contribution of communication that they refer to it as the *heart* of negotiation and express the opinion that without communication negotiation would be no more than a series of bids or offers exchanged between parties.

What sets negotiation apart from "ordinary" communication situations are the elements of conflict and needs which are ever present in the case of negotiation. Different parties are discussing a particular aspect or event, but it is two or more parties who have different, and often opposing, needs and positions in the same situation. Greenhalgh and Chapman (in Kramer & Messick [eds], 1995, p167) view negotiations as the response to conflict. The particular conflict situation arises at a decision point when the interests or needs of the involved parties are not compatible and the other parties are capable of affecting the achievement of one's interests. They refer to negotiation as one of three alternatives for pursuing one's interests in the conflict. The other two are using power (the ability to impose a solution) and conflict resolutions, also referred to as alternative dispute resolution (ADR), which involves conceptualising the dispute in less decisive terms (Lewicki, Hiam & Olander, 1996, p177).

NEGOTIATION RELATED CONCEPTS

It is necessary to explore the most prominent alternative dispute resolution

methods (ADR), because the term negotiation is often confused with some of the other terms. In fact negotiation is often believed to be synonymous with the terms mediation and arbitration. In Figure 3 the different options are depicted, including a fourth possibility in which case no negotiation takes place (Lewicki et al. 1996, p181).

Figure 3: Control over outcome and process in third party interventions

Level of third party control over outcome

	High	Low
High	No negotiation	Mediation Process Consultation
Level of third party control over process		
	Arbitration	Normal Negotiation
Low		

In negotiations the various parties deal directly with one another, with the chairperson in control of the process and all parties responsible for determining the outcome, but in the case of most ADR processes, a third party is involved. Third party interventions are usually the result of a failure of normal negotiation procedures, or when communication has deteriorated to the extent that conflict is the prevalent factor. There can be several objectives in consulting a third party. First the parties may be predominantly concerned with the outcome of the dispute. A second reason may be to smooth, repair or improve the relationships between parties. A third and final reason may be to separate parties and halt the conflict or to restrict future interaction as much as possible. A good example of this last reason is the intervention of the United Nations in war-torn countries (Lewicki et al. 1996, p177).

In arbitration the third party listens to the presentation of both parties and then makes a decision on either a single issue or a combination of issues, thus shaping and determining the outcome (Lewicki et al. 1996, p182). In order for arbitration to be successful it is important that the arbiter has the authority to make the decisions and that

all the parties involved are in agreement regarding the authority and the binding effect of the decisions.

Formal mediation is based on established rules and procedures. The objective of the mediator is to help the different parties negotiate more effectively. The mediator does not solve the problem or impose a solution. He or she assists the disputing parties to develop the solution themselves and then to agree to it (Lewicki et al. 1996, p185).

Process consultants (PCs) first interview the parties individually. Then they design a schedule of structured meetings for the parties. At these meetings the PC has the disputing parties discussing their past differences and conflict. The PCs remains neutral, guiding the parties as needed. They keep people on track, keep the emotional level from escalating and move the parties towards problem solving behaviour. The objective is to change the conflict management climate, improve communication, promote constructive dialogue and create the capacity for parties to manage the process themselves (Lewicki et al. 1996, p190).

In negotiation without a third party the opposing parties maintain control over both process and outcome. Process refers to how they negotiate and the outcome refers to the result of the negotiation. Should the parties move to mediation or process consultation, they relinquish control of the process, but not the outcome. If they opt for arbitration, control is lost over the outcome, but not the process.

DETERMINING SUCCESS IN NEGOTIATION

The aim of this study is to explore the relationship between personality and successful negotiation. It is therefore important to determine what constitutes success in negotiation by first examining why individuals are willing to enter into negotiation to begin with. Different parties may have different reasons for entering into the negotiation and may also have different perceptions of what a successful outcome would constitute. This may ultimately influence the similarity or differences in the choice of strategy and also influence the time frame for the conclusion of the process.

The alternative to negotiation

The decision to actually negotiate rather than using any other form of dispute resolution method may be based on what Ury and Fisher (1981, p104) term the best alternative to a negotiated agreement (BATNA). In terms of labour disputes the BATNA could imply a labour strike, or in a business context it may involve judiciary actions. In the case of the military the ultimate BATNA could imply nations entering into war. Thus whenever parties commit themselves to negotiation it could be assumed that the alternative options may be less attractive than to enter into negotiation and that they therefore would want the process to be successful to some degree in order to avoid having to revert to the alternative options. If a rebel group in a country believes that more success could be achieved by a civil war, the chance of maintaining their commitment during the course of the process may be slim, depending on what they may wish to gain from the process.

Satisfaction of needs

Maslow's theory of motivation is used by a number of authors to explain the role of the needs of individuals in negotiation (Scott, 1981, p201) and what they may wish to gain from the process. Maslow's theory involves the motivation of behaviour through the satisfaction of needs, moving through five consecutive levels, namely survival, security, social, ego and self-actualisation (Morris, 1990, p430).

Leritz (1987, p4) suggests five primary needs almost similar to that of Maslow, namely physical survival, worth or value, competence, belonging and meaning (also termed purpose). Though no scientific background for these categories is provided, it is presumed to be present in negotiation at two different levels. The first level described by Leritz refers to the content or focus of the discussion. A second level of underlying needs exists, as symbolized by the solutions requested. For example, though employees may be requesting a salary increase that can be interpreted as a financial solution related to the content level, interpreted as the need for physical survival, there

may exist specific needs at the second level, such as the need to be viewed as valued members of the organisation.   The primary objective, however, remains to influence the other party to cooperate in meeting the needs of the focal negotiator (Leritz, 1987, p18). Though not as obviously manipulative as suggested by Scott, this approach does imply evaluating the opponent's obvious needs, but also recognising what may be needed at a deeper level, such as the ego-satisfaction of winning.

The needs theory of Maslow and Leritz could be used further to discuss two important concepts that are widely referred to when success in negotiation is determined. These concepts involve firstly the need to satisfy financial or other physically measurable outcomes. The second concept is related to the need to maintain a specific relationship with the other parties involved. These two concepts will be discussed in more detail. According to Maslow's theory the first concept could be linked to the survival or security levels while the second could be linked to the social level.

The economics-based paradigm

The economics-based paradigm (also referred to as utility-based) as identified by Greenhalgh and Chapman attempts to understand negotiation as the result of rational and interdependent decision-making aimed only at achieving the measurable needs of the focal negotiator (Kramer & Messick, 1995, p170). In this context the term interdependent refers to a course of action decided on, which optimises the position of the focal negotiator. This could involve financial gain or any other physical advantage that may be associated with success, such as keeping an heirloom safely in the family or negotiating a salary package. In its extreme form it is postulated that the individual would have preferred to make decisions independently of the needs of others, but is restricted by the fact that, for some reason, the consent of the other party is required. Thus satisfying one party's interests is dependent on satisfying the other party's (at least) minimum needs and sometimes involves joint maximisation of outcome negotiator (Kramer & Messick, 1995, p171).

Whenever financial terms are involved in negotiation, the perception of success may be influenced by the extent of the profit for each party. When finances are involved

in the process, parties usually enter the planning phase of negotiation with an absolute minimum or maximum amount (depending on whether the person is buying or selling) that would be acceptable, also referred to as the "real base" or "bottom line" (Ury & Fisher, 1981, p102). Any amount more (or less depending on objective) would signify either a loss or a profit. Should either party be forced to exceed the real base they may have to revert to their BATNA, thus implying a failure of the process. The economics-based paradigm therefore focuses on reaching the highest possible physical gain from the negotiation. It is believed that the negotiator whose interests are mainly associated with the economic gain may employ those strategies and tactics associated with the anticipation and enhancement of competitive interaction amongst the parties (Kramer & Messick, 1995, p170).

The relationship paradigm

The second paradigm postulated by Greenhalch and Chapman views the relationship as the context in which conflict and negotiation occurs (Kramer & Messick, 1995, p170). In the relationship-based model the negotiator views the relationship as important and may therefore strive towards maintaining a positive association with the other parties involved. Construed in this manner interdependence changes from being viewed as opposing the interests of the different parties to a position where it is difficult to differentiate between the interests of the different parties. The relationship between individuals is at an emotional and social level rather than economic (in Kramer & Messick, 1995, p170).

According to Lewicki et al. (1996, p55) the importance of the relationship may be influenced by the existing relationship, whether positive or negative, the history of the relationship, the level of existing and desired commitment, the degree of interdependence and the extent of free and open communication between the parties. Greenhalgh and Chapman, however, maintain that the centre construct of the relationship-based paradigm is identity, rather than utility (in Kramer & Messick, 1995, p179). Whereas utility refers to others as sources of (or barriers to) achieving one's goals, the relationship-based model views others as important and strives towards

maintaining an acceptable level of social or professional relationship. It is presumed that the stronger the sense of community is amongst the different parties, the more the focus of the situation will move from the notion that the different parties' problems oppose one another, towards one where there exists only one shared problem (Kramer & Messick, 1995, p182).

Spoelstra and Pienaar (1996, p11) distinguish between continuous negotiation and intermittent negotiation, signifying the type and importance of the relationship for the opponents. In continuous negotiation there is an ongoing relationship between parties that must be maintained throughout the process and into the future, such as the case of employers and employees, husband and wife or suppliers and long-term customers. Intermittent negotiation takes place when a problem arises that may threaten the past relationship of opponents or in cases where opponents deal with one another once only, for example buying a house or car (Spoelstra & Pienaar, 1996, p11).

Perception of fairness

Another aspect that can be linked with success in negotiation is the question whether the deal reached by the parties was fair. The question is, however, whether a fair agreement according to one party implies an unfair outcome for the opponent. The concept of fairness is closely related to the relative value associated with a particular item or aspect, for example the focal negotiator may view an object as practically worthless, while the opponent may view the same object as priceless, due to the associated sentimental value. Scott (1981, p98) explains this concept by referring to jewellers who buy their merchandise at wholesale prices and then calculate their profit margins at different percentages. If a person then buys a ring for more at the one jeweller, when he could have had an almost similar ring at another, is the outcome of the negotiation regarding the price and terms of payment fair towards him? This question is raised against the background that the buyer was aware of the cheaper price, but not that the rings originally had the same price. Scott states that normally an objective standard, as in this case, is not available and one can only judge by the satisfaction of the various parties. Scott is of the opinion that the criterion for a fair deal is that it should

be equally satisfactory to both parties in order to be successful. However, satisfaction is not absolute, but depends on the value people attach to the particular outcome (Scott, 1981, p99).

NEGOTIATION STRATEGY

The strength or importance of the above-mentioned concepts, and their relative priority, may direct the selection of the optimal strategy for which five options exist as depicted in Figure 4. (Lewicki et al. 1996, p55). Each strategy has its own strengths, weaknesses and results and is supported by a number of techniques aimed at manipulating the perception of the other parties.

- **Avoiding (lose - lose).** Should neither the perception of the relationship nor the outcome be important enough to pursue the conflict, an avoiding strategy is often chosen. This implies withdrawing from active negotiation, e.g. staging a walk out or by refusing to negotiate altogether.

- **Accommodating (lose to win).** This strategy is typical of incidences where the regard for the relationship is higher than that for the outcome of the process. This strategy represents an intentional sacrifice of own interests in order to preserve the relationship.

- **Competitive (I win- you lose).** When the perception exists that the relationship is not important at all, the strategy of winning at all costs is often applied. This strategy may lead to short-term victory, but may often prove detrimental in the long term.

- **Collaborative (win-win).** Parties attempt to maximise their outcomes while preserving the relationship as best they can, in cases where both concepts are deemed of equal importance. Methods are employed such as creating alternative solutions, or creating opportunities for future gain.

- **<u>Compromising (split the difference).</u>** A combination of various strategies may result in compromise. It is often used when parties cannot achieve satisfactory collaboration, but still desire some outcomes and want to maintain a relatively positive relationship. It is also often used when parties are under time pressures or not well prepared.

Figure 4: Choice of negotiation strategies
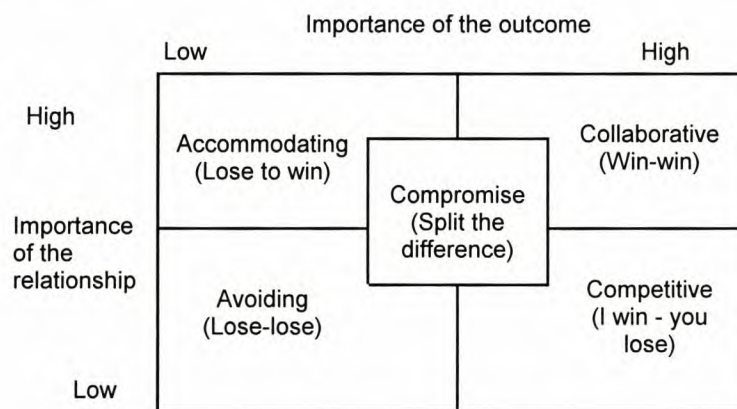
The interaction of the two parties' choice of strategies will influence the process that actually occurs, and this will dramatically impact on the outcome. It is also more complicated when the different parties choose contrasting strategies, because this may limit cooperation.

FACTORS LEADING TO SUCCESS IN NEGOTIATION

Apart from choosing and employing an appropriate strategy for negotiation, there are a number of other factors that authors have suggested may influence the success or failure of a negotiation outcome. Some of these factors involve power (Spoelstra & Pienaar, 1996), communication, including non-verbal communication (Spoelstra, 1998), conflict and strategies for managing conflict (Ury, 1991). Another important factor often described by theorists is the type of techniques (ethical, bordering on lies, or even those referred to as "dirty tricks") employed to persuade or manipulate the perception of the opponent, including how to deal with these techniques when used by the opponent (Anstey, 1991; Lewicki, et. al., 1993). The list is almost endless and volumes could be written about each. For the purpose of this study it may be important to briefly

investigate two factors that have a resemblance to the functions of the MBTI, namely information-gathering and decision-making.

Information gathering

Thompson, Peterson and Kray refer to decades of research that attest to the significance of information in ensuring effective negotiation agreements (Kramer & Messick, 1995, p5). Information is regarded as important in defining the negotiation problem adequately, in generating and exploring the potential of numerous alternatives and assisting in producing higher quality solutions. Furthermore information is the main factor in determining the bargaining positions of the various parties.

Thompson, Peterson and Kray consider the theoretical development of information-processing models as advantageous for the negotiation theorist. These models aim at providing insight into how individual negotiators process information, from the initial stages of encoding to retrieval and judgment, in a number of ways. Firstly these theories provide conceptual connections with different areas and levels of scientific analysis, such as decision-making. Secondly, information-processing approaches account for a variety of cognitive shortcomings that permeate human judgment. Finally these models are accompanied by methods that have proven useful in identifying constructs, measuring variables and exploring implications. Despite these advantages, the models are criticised for not considering the influence of the social context. The term social context refers to the constellation of four major social factors, namely negotiation parties, social knowledge and goals, social norms of the particular institution or organisation and communication.

According to the theory of the MBTI, two preferences exist for gathering information. The first, as explained in the previous chapter, involves deriving information through the senses in a logical orderly fashion according to the Sensing preference. The second involves the use of the Intuitive function to find connections between pieces of information and to determine the context of the information. The question should naturally be asked which of these two functions might prove to have a larger impact on

negotiation outcome.

Decision-making

Decision-making is one of the key elements associated with negotiation. The individual or team is expected to evaluate available information, weigh options, project future implications and avoid traps, while keeping the best interests of all parties (including stakeholders and constituencies) in mind. These actions very often take place within strict time limits and without the luxury of adjourning the process to contemplate or discuss decisions that need to be made. Theorists such as Kumar (1989) and Young (1975) have attempted to create models for decision-making. These models are aimed at mapping the process in a linear fashion and determining what the best alternative would be. The models are normally based on the assumption that the individual is fully rational, void of emotional and social influences and, above all, primarily interested in the tangible or economical gain achieved through the decision. For this particular reason these models of decision-making are commonly referred to as "economic-based theories" or "game theories".

The critique supplied by Greenhalgh and Chapman regarding the economic-based paradigm concerns the method of research (Kramer & Messick, 1995, p170). Although they acknowledge laboratory simulations for its value, certain questions are raised regarding the content validity - whether these methods truly measure the concepts of conflict and negotiation as intended by the researcher. Their concern is based on the fact that laboratory situations differ from real life negotiations in a number of important ways. The first is that it is viewed as common practice that people make sacrifices in terms of the utility of their needs in everyday negotiation situations and secondly the perception that people do not conceptualise decision preferences in a social vacuum. Thirdly their concern is directed towards the assumption that real life negotiations are usually not restricted to isolated incidents concerning complete strangers and related to this assumption is the idea that people often view the outcome of greatest importance to be the possibility of an ongoing relationship.

Should the game theorists be correct, perhaps the Thinking function, as

Should the game theorists be correct, perhaps the Thinking function, as described in the MBTI theory, may indicate a positive correlation with negotiation outcome. Conversely, the Feeling preference, aiming at fostering harmony and building relationships, may be more effective in establishing long-term relationships and promoting integrative negotiation. This second possibility, however, falls outside the borders assumed by the economic theory, because relationships are not considered to be a measurement of success.

Conclusion

Through this brief discussion, it can be seen that the concepts of information gathering and decision-making are complex, but that it is important for success in negotiation. Though some may attempt to view negotiation and those involved in the process as absolutely rational, it becomes clear why others may opt for the notion that the method of information gathering and decision-making will be influenced by the personality of the individual involved.

NEGOTIATION PROCESS

The reasons for entering into negotiation and the choice of strategy may influence the flow of the process of negotiation. It is important to briefly examine the flow of the negotiation process in order to distinguish where the personality of the parties involved may have the largest impact on the outcome thereof. Most authors agree that negotiation follows a natural flow of events forming a process, but differ in terms of the names and sequence of steps: some add in steps while others omit certain steps. The manner in which these phases are approached will vary in each situation and may not necessarily be followed sequentially (Scott, 1981, p27).

Mills (1991, p10) utilises the acronym R-E-S-P-E-C-T to describe the different steps involved in the negotiation process (See Figure 5). This acronym indicates readying (preparing) yourself for the process, exploring each other's needs, signalling for movement, probing for the acceptance of proposals, exchanging concessions, closing

proposals and, lastly, tying up the loose ends (Mills, 1991, p10).

Figure 5: Steps of negotiation as described by Mills

Face to face meeting

R – Readying (preparation)
E – Exploring information
S – Signalling
P – Probing
E – Exchanging concessions
C – Closing proposals
T – Tying up loose ends
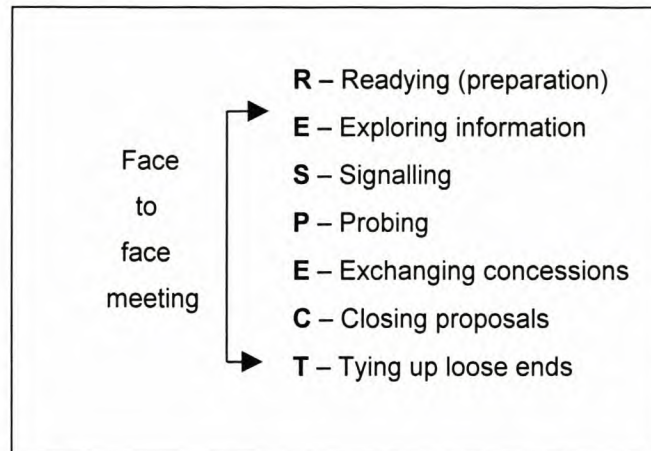
Preparation for negotiation

Preparation and planning takes place at two levels. The first involves the focus on a specific negotiation situation with specific opponents (Lewicki & Litterer, 1985, 61). Specific information about the situation and opponent is collected, the positions of both parties are reviewed, possible concessions are determined and decided what concessions are needed in return. All strategies and supporting tactics are also planned for presentations are prepared and an applicable strategy is adopted (Mills, 1991, p11). The second type of preparation refers to the creation of a negotiation attitude that enables individuals to be prepared to negotiate at any given point in time (Lewicki & Litterer, 1985, 61).

Knowledge of the personalities involved in the process is considered as important at both levels of preparation. In the first instance negotiators are advised to obtain as much information as possible regarding the opponent's personality in order to choose the most appropriate strategy and predict behaviour. In the second instance advantage could be gained through knowledge of the focal negotiator's own personality and also through understanding the personalities of potential opponents (Spector, 1977, p609).

Meeting face to face with the opponent

Whereas planning normally takes place before parties meet officially the actual meeting could also be signified by a number of consecutive steps, though some of the steps could already have taken place previously, for example the various parties may already know one another when the negotiation commences, thus changing the social interaction associated with the first step. It is believed that the personalities of the parties involved will determine the behaviour displayed and the strategies employed during the various steps of this phase of the process.

Climate creation

During the first meeting, time is often spent creating the desired working climate for the rest of the process. Though Mills does not refer to this aspect, many other authors view climate creation as of paramount importance. Climate creation serves as the lubricant for the process, ensuring the consensus to negotiate is maintained, by assisting the process of obtaining a first offer and by enhancing the possibility that an agreement may be reached.   Frequently the climate has been greatly influenced by what has happened before the meeting. The first meeting usually takes the form of an initial informal phase where parties embark on a period of no related issues (Cairns, 1996, p85). Some authors (Churchman, 1995, p4 and Scott, 1981, p26) sort the creation of climate under the next phase of negotiation where parties start presenting the information regarding their positions. This opinion should not be viewed as opposing that of other authors, because climate creation and maintenance are ongoing processes throughout all the phases.

Information exchange

The exchange of information usually involves the different parties stating their position, supplying arguments supporting their position and summarising their proposals (Cairns, 1996, p87).   This is the opportune moment for parties to explore each other's needs and to test each other's assumptions and positions (Mills, 1991, p12). Scott (1981, p26) expands on this view by including the identification of issues that will need to

be settled during the bargaining process and establishing the attitudes that parties will display towards one another for the rest of the process. He states that even this early in the process the outline of the prospective deal could already start to develop.

After this formal phase of presentation and clarification, Cairns (1996, p98) suggests that the process should advance into a state of more fluidity where hypothetical questions and relatively risk-free statements are made. He stresses the fact that no decisions should be made at this point, but that alternative solutions should be explored. This phase is named the bidding phase by Scott (1981, p26). The start of this phase is often pre-empted by one of the parties signalling for movement, thus giving an indication of the willingness to continue with the process, however Mills (1991, p12) views signalling as a phase on its own, before the onset of the probing phase. Another method relevant to the exploring phase is to change the appearance of previously rejected proposals into a more acceptable form (Mills, 1991, p12).

Exchange concessions

Step five is mainly concerned with trading concessions by giving the other party some, or part, of their demands in exchange for receiving some concessions (Mills, 1991, p12). Scott refers to this phase as the bargaining phase where each party negotiates to satisfy its best interest (1981, p26). Negotiators often begin by indicating that the opponent's remarks were understood, giving hope of eventual settlement, but that they contain elements that remain acceptable. Proposals frequently begin or end with explanations and justifications (Churchman, 1995, p5).

In order to avoid conceding too much, Mills suggests that the bargaining process be ended by making a credible and acceptable closing proposal (1991, p12). Scott refers to this stage as "settling the process" (1981, p26). It may be difficult to determine when the negotiation should be concluded; especially since the term "final offer" may have been used extensively throughout the process as a manipulation technique. Thus three minimal conditions are proposed before a final offer should be considered (Cairn, 1996, p116):

- The offer has to be better than the existing condition;
- The offer has to be credible in relation to the original claim or grievance;
- the time of the offer has to be right.

Tying up loose ends and closing

The last phase involves tying up the loose ends. Negotiators are also advised to use this step to agree on a strategy to deal with possible future differences (Mills, 1991, p13). The term *ratifying* is used by Scott to describe this phase (1981, p26).

Follow-up

The follow-up of the decisions made during the face-to-face step is also an aspect not referred to by Mills, but deemed as very important by the majority of authors. This implies ensuring that contracts are complied by and agreements upheld.

NEGOTIATION IN THE MILITARY

The military, similar to privately owned organisations driven by profit, is also managed according to short and medium-term strategies. A similar strategy exists for managing each part of the overall strategy, for example the budget of the organisation and for the education, training and development of personnel as well as the different strategic issues. These strategies have to be managed and negotiation is therefore an important management tool. Negotiation takes place between departments as well as within departments. These are not just formal negotiation processes, but also informal sessions where isolated negotiation tactics are implemented to build relationships, enhance positions and satisfy needs.

As the Department of Defence adopts more contemporary managerial approaches and processes the need for negotiation increases. One example is the establishment of service agreements between sections, departments and arms of services. This implies that parties negotiate for the rendering of particular services and also for the standards that have to be adhered to.

establishment of service agreements between sections, departments and arms of services. This implies that parties negotiate for the rendering of particular services and also for the standards that have to be adhered to.

The Department of Defence is becoming more and more involved in the peaceful resolution of conflict. It could also be expected of the Department to support diplomatic initiatives in a more practical manner in the future. One could therefore easily reason that some officials in such a capacity should have the ability, not only diplomatically to impose South Africa's will and national interests, but also to build and establish an environment in which active security and confidence building measures could be enhanced (Huysamen, 1999, p1).

METHODS OF CONDUCTING RESEARCH IN NEGOTIATION

Now that the basic concepts of negotiation and application within the military have been explored it is necessary to establish possible methods for researching the concept to serve as background for the choice of method used in this research. According to Kerlinger, (1986, p364) social scientific research can be divided into four major categories, namely survey research, field studies, laboratory experiments and filed experiments. These categories of methods are based on the distinction between experimental and non-experimental research as well as the distinction between laboratory and field research.

The applicability of using any of these methods in negotiation research depends on the particular research problem. Even though these methods are available to the researcher, simulations and role-plays are frequently used to study various constructs underlying negotiation (McGillicuddy, Pruitt & Syna, 1984, p105). Since this particular research will make use of role-plays it is appropriate to provide background on the distinction between role-plays and simulations and then to discuss different types of role-plays that exist.

The distinction between games and simulations

Kurt Lewin was considered a pioneer in experimenting with real life situations in order to study behaviour. This method entails creating various kinds of social situations in which certain variables are introduced into the experimental design in order to reproduce some of the problems dealt with in real life (Maier & Verser, 1982, p14). These situations can be presented in a number of almost similar, but yet distinctly different formats, namely simulations and games.

Bailey (1987, p317) views simulations and games as special kinds of models. He defines a model as; "... a representation of a system that specifies not only its parts or components (generally variables in social-science models) but also the relationship among the components." The model demonstrates the structure of the system. Bailey distinguishes between, firstly, the static, cross-sectional representation of a system, eg the architectural model of a building and, secondly, operating models, e.g. role-plays. The operating model or simulation operates over a period of time to give proof of the structure of the system and also the way change in one variable or component effects change in the other variables.

Bailey distinguishes between role-plays and simulations, by stating that a model is more likely to be a simulation if all the dominant variables are formally programmed and if it is a complete and accurate model of the system it represents. A model is also more likely to be named a simulation if it is completely computerised with no human participants. If the model includes human participants, it should be called a game. Games may also be more informal and tentative than simulations. The term role-play refers to the process whereby real people are behaving in a real manner, in an artificial situation which has been set up to provide a context for their participation (Crookall, et al. 1987, p187). It should be noted that other authors use the terms "games" and "simulations" interchangeably. It is important to note that in this research no computer will be used as instrument for collecting data. In order to promote clarity the term role-play will be used throughout.

Structured games

The first type of game is where participants are required to make certain decisions based on facts or situation presented to them. Often their choices are restricted and restricted interaction is allowed amongst participants. Probably the widest utilised game in terms of negotiation research is the Prisoner's Dilemma, which was developed by Flood and Dresher (Young, 1975, p23) for studying the social context of decision- making. In this game participants are separated and are restricted to a choice of two possible answers, according to a time limit. Depending on the method of application the participants are allowed to negotiate with one another but only in a limited time frame.

Formal models of this type include a series of assumptions that operate to group the scope for strategic interaction. First, both the number of players and their identity are fixed and known to everyone. Second, all players are assumed to be fully rational, and each player knows that the others are rational. Third, the payoff function of each player, for example, the range of alternative choices or strategies, is fixed and known at the outset. Fourth, the formal models of game theory restrict the role of communication among players in a highly stylised fashion. In particular, communication can never affect either the form or content of a game's payoff matrix once it is initially established. These assumptions reduce the scope for strategic interaction which aims at controlling specific variables associated with real world interactions (Young, 1975, p23).

Objections to game-theoretic predictions involve the omission of the social contexts. After studying the research conducted by utilising the Prisoner's Dilemma game, Morris, Sim and Girotto (Kramer & Mesick, 1995, p209), however maintain that participants follow rules of accepted behaviour through their personal experience of interdependent decision-making in every social context. That is, decision makers simplify dilemmas by introducing trait assumptions about social relations - they respond to uncertainty by automatically drawing on mental representations of typical social contexts. The assumption that participants are rational at all times may further prove difficult to generalise to the larger population, since it would be difficult to prove. In fact Jung based his theories on the assumption that all people possess rational and irrational

functions. These theories are often also based on complicated decision making formulas that create the impression that human beings do not have a free will, see for example the work of Young (1975, p196 - 280) and Bontempo (1990, p19 - 20).

Role-plays

Underlying the role-play approach to experiments, as apposed to that of structured games, is the reasoning that solving problems, e.g. business-related problems involves more than logic and facts. Research interests have increased in "business games" (or "war games" in the case of the military) where individuals compete in running businesses or waging war. In these games participants are required to make a series of decisions dealing with the scenario as if it is real and learn what the consequences may be, even though no lives are lost or financial losses incurred.

War games as variation of role-plays

The term "war games", rather than "war-simulations", is used when soldiers are trained in terms of different tactical and strategic manoeuvres. These war games involve the use of computers as the representation of the battlefield, along with the available weapon systems and deployed forces. According to the abovementioned definitions of simulations and games the term war *game* is accurate, because participants do not compete with the computer, but only use the computer as a training aid. Participants are generally divided into a red team and a blue team, each with its own strategy, objectives and available force. These teams wage "war" against each other and the only interaction between them is the results of their decisions that are shown on the computer. The two teams have very limited interaction, but this is not a problem since in real life the communication between opposing forces are generally extremely limited. The different teams are consequently measured in terms of their interaction within each team, their own planning and the decisions made independently and in response to the actions of the other side. The game is complete when one side has reached its objectives. A particular war game can continue for a few hours or even a few days.

Types of role-plays

The role-plays in experiments on negotiation usually utilise two kinds of scenarios. The first involves negotiation about a single issue, for example the price of a car. The second involves negotiation about two or more issues, such as the price of the car and the accessories to be mounted on it. According to Pruitt and Carneval, only the second type of role-play allows for win-win agreements, in which both parties accomplish their major goals (1993, p9). This may be the case, but when the results of single-issue role-plays are discussed with participants they are often satisfied with the results of the outcome and usually base their assumptions on the perception of the fairness of the deal for all parties involved. Parties usually ensure that they are satisfied with achieving their own goals, without intending to be unjust towards the other party. It is usually only after the results of the whole group are made public that the differences in the outcome becomes evident and is then sometimes associated with negative emotions.

Role-plays also differ in terms of the number of times a particular scenario is enacted or conversely the number of different scenarios enacted by the same participants. The amount of preparation time and additional role information may differ depending on objectives for the role-play, for example written instructions outlining basic facts, but no prescribed point of view and only a short preparation period or detailed instructions including objectives, point of view and additional facts with formal preparation period (Abella, 1986, p113).

A choice of two learning models exists for the utilisation of role-playsin either training or research. The first model is called the "discovery" model, in which participants handle the situation whatever way they wish, then analyse what happened and draw conclusions for handling future situations. The second possible choice is called the "practice" model in which participants are prescribed ways to handle the situation, and receive feedback after completion in terms of how well they performed (Abella, 1986, p112).

Advantages of role-plays

Creating a role-play in the laboratory has the advantage that, a given situation can be repeated with a number of groups. This potential for repetition enables the researcher to manipulate variables in order to observe its effect on the situation, e.g. the effect of different decisions, methods and reactions on the same scenario (Maier & Verser, 1982, p14). Furthermore perceptual, motivational and decision processes can often be examined as they unfold, permitting the tracking of complex sequences of events that are hard to observe in other settings (Pruitt & Carnevale, 1993, p11).

Another great advantage of this method is the inclusion of the human dynamics in the scenario, while possibility exist that external conditions can be controlled (Mayo & Du Bois, 1987, p72) (Pruitt & Carnevale, 1993, p11). Participants become personally involved in a situation, experience the feelings and even gain personal experience for later reference (Silberman, 1990, p96). Decisions have to be made without delay and participants must respond immediately to other players. The spontaneous action and reaction moves the role-playing closer to reality, because of the authenticity of the emotions experienced. Thus, the participants not only deal with the factual content of the situation but also with the emotional and interpersonal components (Erasmus & van Dyk 1999, p221). This could be an effective way to measure the level of competence of the participants; it is highly active and provides the opportunity for participants to draw from their personal experience regarding the topic (Buckley & Caple, 1990, p165). Abella, (1986, p111) adds another advantage by stating that participants are provided with direct feedback regarding behaviour in a particular situation.

Disadvantages of role-plays

Bucley and Caple, (1990, p 165) warn that the application of interpersonal skills could be threatening to inexperienced or inadequately prepared individuals. They also state that over- enthusiastic participants could contaminate some experiences, by over playing their roles. Pruitt and Carnevale (1993, p11) are also of the opinion that role-plays may not always reveal the relative importance of different variables as they

influence negotiation. They also indicate that there are often difficulties in generalizing results from laboratory settings to natural settings.

Two possible solutions are proposed in order to overcome these shortcomings. One is to test hypotheses deduced directly from theory. The results could then be generalized because the theoretical processes on which they are based also occur in natural settings. The second proposed solution is to do parallel research in laboratory and natural settings. The laboratory research would then assist in clarifying causal mechanisms, while the natural research confirms its relevance in actual negotiations (Pruitt & Carnevale, 1993, p11).

CONCLUSION

A number of definitions associated with negotiation have been explored in order to create a common understanding of the concept, because it is a term used by scholars of communication, businessmen and the public in general. Some of the common elements include the interests of parties that may be complementary or opposing, independent or interdependent. Negotiation often leads to, includes or is the result of conflict, but it is still essentially a peaceful method and in most cases excludes third-party interventions. The choice of strategy depends on the various opinions of what would constitute a successful outcome and the needs that must be met. These interests or needs are satisfied through a process involving communication and a variety of techniques and strategies.

Negotiation is a complex concept involving a wide variety of constructs that have to be taken into account simultaneously. The behaviour associated with negotiation displayed by individuals may be different and even more complex than in the case of other communication situations. It therefore seems logical that authors have ventured onto the terrain of psychology, and more specifically personality, in an attempt to explore what is at the core of the behaviour. This complex behaviour may require methods of research that could perhaps be viewed as unscientific by some, but may very well be appropriate for negotiation.

CHAPTER 4: RELATED STUDIES

"Read not to contradict and confute, nor to believe and take for granted, nor to talk and discourse, but to weight and consider".

Francis Bacon

INTRODUCTION

A basic understanding for the concepts of personality and negotiation has been created in the preceding chapters. The aim of this study is to determine whether the assumptions of so many authors are correct that a correlation exist between these concepts. It is necessary to investigate research that had a similar focus. This will provide background in terms of the point of reference followed by the various authors, the definitions of personality that the research was based on, as well as the research methods that were employed to do so.

The search for related research yielded three traditions in the study of negotiation. The first consists of books and manuals providing *advice* (Fisher & Ury, 1981; Spoelstra & Pienaar, 1996; Shapiro & Jankowski, 1998). The second consists of *mathematical models* of rational behaviour developed by economists and game theorists (Young, 1975; Luce & Raiffa, 1956). The third, *behavioural,* approach seeks to develop and test predictive theory about the impact of environmental conditions, such as personality, on negotiation (Rubin & Brown, 1975). This last tradition tends to lean heavily on the first two for inspiration (Pruitt & Carnevale, 1993). Most of the authors who attempt to provide advice for effective negotiation refer to the concept and influence of personality, but seldom support their advice with empirical data. Those authors who base their assumption on research, relevant for this study, can often be found among those following the behavioural approach.

Rubin and Brown seem to have been the first to investigate the effect of background, demographic, and personality factors on negotiation in the late 1950's (Lewicki & Litterer, 1985, p259). They, similar to those researchers who followed suit, attempted to relate personality to either the process of negotiation or the outcome by

following a single-trait approach. This implies that most often a limited number of characteristics were isolated and then applied to a specific component related to negotiation, for example communication, conflict management or decision-making.

Since 1976 researchers continued to focus on traits needed by negotiators in order to be successful. Different aspects or themes were also studied under the heading of personality though the relation with personality is sometimes vague. These themes will be included in this chapter to give an indication of the diversity of the thoughts surrounding the concept of personality and negotiation and also to provide insight in the research problem relevant for this study.

THE RELATIONSHIP BETWEEN PERSONALITY TRAITS AND NEGOTIATION

Traits identified by Rubin and Brown

The research of Rubin and Brown focused on risk-taking, perceived locus of control, level of cognitive complexity, tolerance for ambiguity, level of self-concept, nature and strength of social motives (need for achievement, power, affiliation), attitudes (trust, cooperativeness, authoritarianism) as well as normal and abnormal personality structure (Rubin & Brown, 1975, p175).

According to Lewicki the findings of the studies by Rubin and Brown were inconclusive and contradictory "... the effect of individual differences is too subtle and elusive to be revealed by contemporary research strategies and methods" (Lewicki & Litterer, 1985, p260).

Three explanations were proposed for the inconclusive results. The first was that the structural variables in negotiation (the nature of the bargaining problem, relative power between parties or even the behaviour of the other party) might be so strong that the natural behaviour according to personality may only be visible in the preliminary phases of negotiation. The second was that specific personality factors might only be visible and effective under specific conditions. The third explanation was aimed at the

predominantly homogenous populations of research subjects used for the studies, because the population usually consisted of volunteer college students (Lewicki & Litterer, 1985, p261).

Traits identified by Hermann and Kogan

Hermann and Kogan (Lewicki et al, 1994, p327) proposed eight personality factors that could influence negotiation outcomes, namely level of manifest anxiety, authoritarianism, cognitive complexity, tendency to be conciliatory (overcome hostility by making friendly overtures), dogmatism, tendency for risk taking, level of self-esteem and suspiciousness. It was hypothesised that these factors would influence the negotiator's behavioural intentions and the expectations about the other party's behaviour. Furthermore it was believed that these factors would influence the behaviour of the negotiator regardless of the conduct of the other party.

Hermann and Kogan tested their hypothesis by using a sample consisting of hundred and eight undergraduate, male students, who were paired into different dyads. They were requested to complete a battery of personality instruments and consequently to play a number of rounds of the Prisoner's Dilemma game. The results revealed no consistent pattern with regard to the clear effect of any particular personality element across all three outcome measures. These results are believed to be attributed to the perceived homogeneity of the population and the constrained choice options of the Prisoner's Dilemma game that minimise the subtlety and strength of the variables (Lewicki, et al, 1994, p327). The Prisoner's Dilemma is illustrated in Appendix A because of its prominence in this study, as well as many that would follow.

Interpersonal orientation

Rubin and Brown (1975, p194) also proposed a single dimension of personal style, namely Interpersonal Orientation (IO), in an attempt to explain the contradictory results of previous researchers. According to them individuals could be classified as either high or low in their Interpersonal Orientation (IO). People with a high IO will adapt

their behaviour according to the other parties' cooperativeness, competitiveness, relative amount of power, use of power or adherence to certain bargaining norms (see Figure 6). A high IO with a cooperative attitude will respond to the behaviour displayed by the other party in a way that also promotes cooperation and a mutually satisfactory outcome. The high IO with a competitive attitude may use the information regarding the other person in order to gain strategic advantage. In contrast to the high IO the individual with a low IO is characterised by a non-responsiveness to the interpersonal aspects of his relationship with his opponent. His interest is neither in cooperating nor competing with the other, but is rather focused on optimising personal gain without showing much interest in the impact the situation has on others. They determine their behaviour according to their own goals and preferred outcomes and evaluation of the situation (Rubin & Brown, 1975, p158).

Figure 6: Interpersonal Orientation
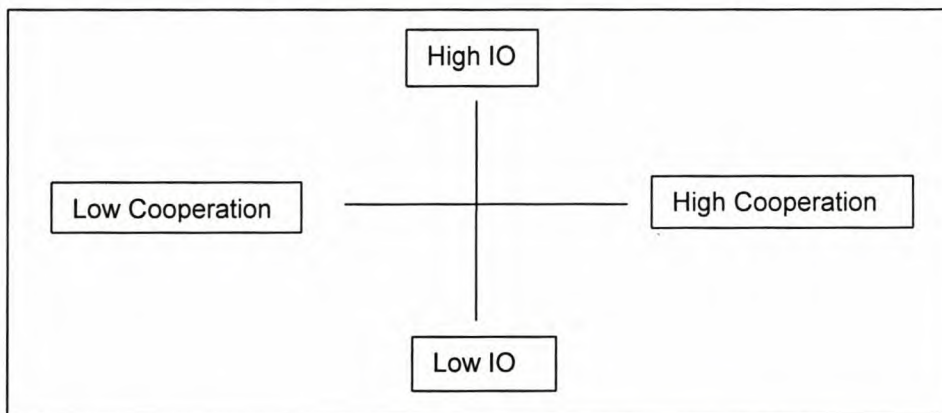
The value of the IO construct, according to Lewicki and Litterer (1985, p264), is that it provides a single, uniform dimension for organising and explaining many of the conflicting findings in earlier research. The main application of the IO appears to be in understanding the behaviour of various groups, such as the differences between younger and older children, males and females or whites and blacks. It is, however, the opinion of Lewicki and Literrer (1985, p265) that the personality variables were selected based on convenience and clarity of measurement scales, rather than on a strongly reasoned relationship between the variable and the negotiation process. One could therefore question the completeness of the study and whether it takes the complexity of

the human personality into full account, thus limiting its application to real life negotiation situations. A final question that remains unanswered is how the use of the IO model will assist the layperson in the negotiation process.

Assertiveness and co-operation

One of the central themes in negotiation is dealing with conflict. It is believed that the manner, in which conflict is approached, may influence the outcome of the process. Lewicki, et al. (1994, p331) suggest that the approach to conflict may be influenced by the personality of the individual, according to the level of assertiveness and natural tendency to co-operate with others. The combination of these particular personality factors may in turn influence the choice of strategy aimed at addressing the conflict. The authors associated these strategies with the Thomas-Kilmann model for conflict management, which was developed in 1976 (see Figure 7). The model involves a choice of five possible styles for dealing with conflict namely, competing, collaborating, avoiding, accommodating and compromising. Negotiators may choose to use a specific style according to the situation, as influenced by their personalities (Lewicki, et. al., 1994, p331). These suggestions appear to have been the result of assumptions made by the authors, rather than sound scientific methods.

Figure 7: The Thomas Kilmann conflict orientation model

Assertive personality	Competitive Strategy			Collaborative Strategy
		Compromising Strategy		
Unassertive personality				
	Avoidant Strategy			Accommodative Strategy
	Uncooperative Personality			**Cooperative Personality**

Interpersonal trust

Individuals differ in their level of interpersonal trust, a factor that has a profound effect on interpersonal relationships. This interpersonal trust is defined by Rotter as "...the generalised expectancy held by an individual that the word, promise, oral or written statement of another individual or group can be relied upon" (in Lewicki et al. 1994, p335).

Rotter and his colleagues (Lewicki et al. 1994, p336) developed a test for diagnosing the level of interpersonal trust and used these scores to measure levels of trustworthiness. It was found that individuals who act in a more trusting way might also be less likely to lie or cheat. A second discovery was that high trusters appear to be more popular amongst their peers. Another, maybe surprising, discovery is that high trusters appear to be no more gullible than low trusters. Finally, it is stated that both orientations could lead to self-fulfilling prophecies, respectively positive and negative. The example is used of a person with high interpersonal trust who is likely to, subconsciously, approach the negotiation situation in a style and attitude that communicates trust. Should the other party be searching for signs that illustrate trust, he might react to these subconscious cues in a positive fashion. Of course the opposite of this example is also true.

Manipulation

Richard Christie (Lewicki and Litterer, 1985, p317; and Lewicki et al. 1994, p332) applied the theories of Niccolò di Bernardo Machiavelli in an attempt to understand individuals who are effective in manipulating others, and would in their opinion be good negotiators. He created a test that could identify a high or low Machiavellian attitude and conducted various research projects to determine which is the more effective attitude for manipulation. It was found that a person with a high machiavellian score would be a better manipulator and would therefore be assumed to be a better negotiator.

Risk taking

People with a natural tendency towards risk taking are believed to behave significantly differently in negotiations to those people who prefer not to take risks. Risk takers appear to exhibit more competitiveness and make higher demands (Johnson, 1993, p89). However, no indication is provided regarding the effectiveness of these high-risk takers in actual negotiation situations or in negotiation games or role-plays.

Self-efficacy

Perceived self-efficacy is considered to be a critical aspect of mastering complex interpersonal skills, such as those involved in negotiation. Wood and Bandura (Lewicki et al. 1994, p337) define self-efficacy as: "people's beliefs in their capabilities to mobilise the motivation, cognitive resources and courses of action needed to exercise control over events in their lives". The research conducted by Gist, Stevens and Bavetta (Lewicki et al. 1994, p338) indicated that people with higher levels of self-efficacy seem to obtain better results in negotiation. This research was conducted through the use of negotiation simulations. The researchers attributed the results to the behaviour of more successful subjects during the role-plays, as well as the fact that they indicated a tendency to set higher goals at the outset. Another concept that forms part of self-efficacy and is believed to influence negotiation aspirations, preferences and outcomes, is the locus of control of the different parties. However, it would appear as if the research conducted implied certain outcomes, but was not conclusive enough to make accurate predictions (Lewicki, et al 1994, p338).

Traits identified by Greenhalgh, Neslin and Gilkey

Greenhalgh, Neslin and Gilkey (Lewicki et al 1994, p338) conducted research that investigated the effect of numerous personality variables, rather than single traits. The results of the study indicated that personality appears to have a significant effect on preferences for negotiation outcomes, and these preferences in turn appear to have an effect on the outcomes actually obtained. The following personality variables seem to

have an influence on the results, namely accommodating, outgoing, open-minded, assertiveness, driven, emphatic, intelligent, people-oriented and task-oriented.

Traits identified by Le Pool

Amongst the authors utilising the trait approach to personality a few can be found who make statements regarding the characteristics that should be present in order to ensure success in negotiation. Le Pool is such an author who gives an explanation of what characteristics the ideal negotiator should possess, as indicated in Table 10, without mentioning the scientific premise for his statements (1987, p11). He gives no indication to what extent the individual has the potential to control the behaviour associated with these traits. The impression is created that the successful negotiator needs to be an almost flawless human being.

Table 10: Qualities of the ideal negotiator

Qualities that should be present	Flaws that should rather be absent
Patience	Naive and over trusting
Think on his feet	Eager to please
Cool under stress	Willing to be unreasonable
Inventive and creative	Distrust
Perseverance	Rigid
Does not take no for an answer	Quarrelsome/Argumentative
Ambitious	Uncomfortable with uncertainty
Self-confident	
Observes well	
Perceive and exploit power	
"Go-getter"	
Good business judgement	
Take charge	
Self control	
Analytical mind	
Persuasive	
Reasonable	
Rational	
Realistic	

PERSONALITY-RELATED CONCEPTS

The character of the opponent

In the book "*The New International Manager*" Guy and Mattock (1991) devote a

whole chapter to the analysis of the character of the negotiation opponent. They start off by warning against stereotyping people according to their cultural backgrounds, but elaborate on mechanisms for studying the character of the individual by suggesting that the answers to the following questions be sought:

- What is the principle guiding the life of an individual?
- What kind of childhood did the individual have? This includes questions about what the first memory of the individual was. No indication is given regarding how this knowledge can be utilised.
- Is the person a product of his/her cultural background and to what extent does the particular organisation comply with the specific culture?
- What internal contradictions is the person trying to resolve? The authors are convinced that it is the contradictions and tension that are the essence of psychological biographies. In this sense the work of Jung is quoted briefly in terms of the quest for equilibrium in people as well as a brief description of introversion and extraversion.
- To what extent is the personality of the individual integrated with the culture of his organisation?
- How colleagues or superiors view the individual.
- What is the mood of the individual? A brief description is given regarding Neuro-linguistic Programming (NLP) and the three basic types, namely visual, auditory and kinaesthetic (Guy & Mattock, 1991, p81).

The authors concluded their chapter on character with an example of how the mood of another can be determined by giving him a blank piece of paper and requesting that he write down his feelings regarding the piece of paper (Guy and Mattock, 1991, p82). No indication is given regarding the theory or structure according to which the conclusions were reached. This example appears to be very superficial and not related to any empirical research. It is unstructured and could possibly lead to stereotyping. The authors give hardly any indication as to how this knowledge about the character of a person should be applied. Thus a profile compiled that is based on these loosely constructed topics appears to have only limited application value. Though the

assumptions of these athors may appear out of context with the current study, it is still deemed as important to point out the wide spectrum of opinions held on the subject of personality in negotiation, since it gave rise to the research question.

Perceived power

A completely different approach is based on the perception regarding the relative power of the various participants in negotiation, which determines the choice of strategy. Many negotiators do not make a conscious choice regarding the negotiation strategy that will be followed in a particular situation, but rely on intuition, experience, or some social stereotype about the other party to determine their behaviour as the process unfolds. This opinion is supported by Bartos (Johnson, 1993, p69) whose research indicated that women appear to take a tougher stand than men, but that both sexes adopt tougher approaches than usual when confronting someone young, female, of another race or anyone seen as psychologically poorly adjusted. Thus it is presumed that negotiators intuitively adapt their style when facing somebody perceived to be significantly different or inferior to them.

Johnson (1993, p70) quotes Spector who states that negotiators may prefer applying an approach that compliments their personality needs and self-image, rather than one that is best suited to their goals. Each of the strategies is believed to possess unique power and generates its own type of arguments, and also has particular advantages and disadvantages. The strategies listed by Johnson in Table 11 show close resemblance to the Thomas-Kilmann styles of conflict management. The strategies mentioned by Johnson are referred to as "Soft Bargaining", "Hard Bargaining", "Tit-for-tat Bargaining" and "Principled Bargaining".

Johnson maintains that it is easy to adopt a particular style as a result of personal characteristics, but that it is more productive to think of each style as a different strategy that anyone can learn and use as a method of reaching their goals (Johnson, 1977, p70).

Table 11: Johnson's negotiation strategies

Soft Bargaining (Accommodate)	Principled bargaining (Collaborate)
- Agreeable and flexible. - Create relationship to use it later, by implying that it will be enhanced by the compliance of the other party. - Expect that a cooperative attitude will produce a similar attitude in others. - Use guilt, sympathy, implied threats to withdraw friendship to manipulate.	- Separate people from problem. - Focus on interests not positions. - Generate options for mutual gain. - Use objective standards.
Tit-for-Tat (Cooperative)	**Hard bargaining (Compete)**
- See themselves as motivating and educating the counterpart by punishment and reward. - Allow the other side to move first - if the move was positive the countermove would be rewarded. - Characterised by cool, deliberate, pre-planned responses. "Meet me half way" or trades.	- Use threats and displays of power and intimidation. - Refuse to make concessions, but insist that the other party does. - Use the force of their personalities. - Promise that compliance of the other party will remove the threat.

Individual essence

Warschaw (1980, p16) believes that four categories of forces and the feedback they produce contribute to shaping people's style of negotiation, namely the basic emotional needs, economic needs, role models and values. The style adopted is said to vary according to the situation, the people involved, the time of life and the needs of the moment. The seven styles identified by Warschaw are called Jungle Fighters, Dictators, Silhouettes, Big Daddies and Big Mammas, Soothers and Win-Win Negotiators. Once again these strategies appear to be the assumptions of the theorist, rather than the result of empirical research aimed at proving the postulations, thus limiting the scientific reliability.

Conclusion

Reading through many of the theories relating to negotiation and personality, one is struck by the apparent logic of the assumptions. It seems obvious that personality

should influence the process and many of the characteristics described by the authors make perfect sense. From a scientific perspective, however it is clear that the majority of the theories lack empirical study of personality as something more than a list of single traits.

PERSONALITY THEORIES

A number of authors explored the possibility of relating negotiation processes and strategies to some form of personality model. These models included that of the Myers-Briggs Type Indicator, the so-called challenging personalities as proposed by Shapiro and Janowski (1998) as well as a model for negotiation constructed by Spector (1977). These models and related assumptions will be discussed briefly in order to clarify the similarities and differences with the current research problem.

The Myers-Briggs Type Indicator

Anastasi (1993) published Personality Negotiation in which he utilises the MBTI to make suggestions for improved negotiation. He states that it is easier to negotiate with people who have correlating personality types, because people and situations are perceived similarly. The opposite is also true, in that a negotiator may have to exert more effort to put his message across to those people who have different personality styles (Anastasi, 1993, p5). The suggestions in Table 12 are aimed at improving the possibility of successful negotiation. These suggestions are based purely on the literature regarding the MBTI and communication skills and it appears that no research was conducted in order to related the assumptions to negotiation in particular. These suggestions focus mainly on the personality of the opponent and how the focal negotiator could use the knowledge for reaching his or her own goals. It would therefore appear that the focal negotiator is presumed to have a basic understanding of the MBTI and also have some experience in determining the type preference of the opponent in order to benefit from the suggestions.

Table 12: MBTI preferences and negotiation

Introvert	Extrovert
• Prefer to analyse information alone. • The optimal time for a meeting is after they have had a chance to be alone. • Prefer small negotiation groups. • Start immediately with business, without much regard for casual conversation. • Do not interrupt their thinking process, or while they are speaking – wait for the answer. • May not volunteer an opinion	• Prefer talking about information. • Any time is suitable for negotiation, because company energises them. • Meet regularly, preferably in larger groups. • Prefer casual conversation before conducting business. • Verbalise what they are thinking, so it is advisable to ask for the final decision. • Give their opinion freely

Sensing	Intuition
• Persuaded by data that relies on facts. • Need to see and discuss details in a presentation. • Determine if ideas are practical and are skilled in implementing plans. • Loose interest and confidence if spelling mistakes occur in a presentation.	• Persuaded by the theory behind an idea. • Presentations should portray the big picture. • See possibilities and innovations and are skilled in developing plans. • Lose interest with cluttered presentations.

Thinking	Feeling
• View people and things objectively. • Motivated by logic. • Focus on the logical reasoning, cost effectiveness and practical implementation.	• View people and objects personally. • Want to make life better for others • Stress the human component of a decision, give references and do a trial implementation.

Judging	Perceiving
• Has a concrete sense of time. • Prefer a structured approach with deadlines. • Need to make decisions fast. • Prefer presentations that are efficient.	• Has a general sense of time. • Prefer a sequence of events to structure. • Waits all possible facts have been evaluated. • Prefer presentations that make the facts clear.

Challenging Personalities

Shapiro and Janowski (1998, p174) utilise their experience in negotiation to identify a number of personality types, which they describes as challenging to deal with, as illustrated in Table 13   At face value, these types resemble some of the Type

preferences present in the MBTI. The description of the Extrovert appears to be consistent with Jung's Extraversion attitude, while the description of the Pragmatic shows resemblance to the Judging scale (Fitzgerald & Kirby, 1991, p5). The Analytic personality could possibly be related to the Sensing scale on the MBTI and the Amiable personality resembles the Feeling scale. Shapiro and Janowski state that these personalities will seldom be encountered in their pure form, but will more likely be a combination of different types (1998, p179). This notion is also consistent with the utilisation of Types described by the MBTI (Jung, 1971, p522). Similar to Anastasi, these writers give no indication of scientific support for their conclusions in terms of personality or its application in negotiation.

Table 13: Personality traits and styles identified by Shapiro and Janowski

Personality Traits	How to Identify	Negotiation Style
Extroverts are outgoing, impulsive and full of energy. Strong point is enthusiasm and weak point is a lack of focus.	**Extroverts** tend to be stylish and fashionable. They want to be noticed. They are emotional, stimulating and catalysts of conversations.	**Extroverts** cannot resist saying, "that reminds me of a story..." These stories may sometimes be irrelevant. They believe in building social relationships.
Pragmatics cut to the core of matters by using lists and key issues. They are impatient and prefer to make decisions and deals fast.	**Pragmatics** generally dress simply and functional. Their surroundings are design-neutral, efficient and organised. They prefer to participate in sport, rather than being spectators.	**Pragmatics** tend to focus on winning, despite the fact that the other party may loose. They set high goals and are purposefully intimidating.
Analytics desire logic. They are cautious and more concerned about process than outcome. They attempt to eliminate emotions and believe that things must be done right.	**Analytics** are formal and conservative and structured. Their workspace and working methods are organised. They spend their free time pursuing technical hobbies.	**Analytics** are accurate and correct and prepared, but negotiate slowly and calculatedly. They are not interested in bonding and not focused on the needs of the other party.
Amiables are relationship oriented. They avoid confrontation, moving slowly and avoiding quick decisions. They take a team approach and try to reach consensus, because people are more important than facts.	**Amiables** appear casual, open and conforming. Their actions are tentative and reserved and careful not to upset others. Their work environments are personal and relaxing.	**Amiables** believe in win-win negotiation. They are good listeners with high levels of empathy. They would prefer to close every deal with both the deal and relationship intact.

Spector's model of negotiation

Spector (1977, p609) criticised the research attempting to link negotiation with psychological factors for two reasons. The first is that most of the studies take a single trait approach by examining the relevance of a single psychological determinant in isolation from other psychological and contextual variables. The socond is that many studies appear to have sacrificed substantively based bargaining scenarios in the experiments to observe and measure psychological variables in a simplified manner. He states that the methods utilised are mostly dominated by the Prisoner's Dilemma game and are therefore closer to the definitions of games, rather than true negotiation. According to him these games elicit trivial and bored responses from participants, fail to track longitudinal processes and offer narrow behavioural options that constrict the full expression of personality.

Subsequently, Spector, (1977, p609) attempted to develop a model to determine the extent to which the interaction between personal predispositions and the psychological environment could affect the process and outcomes of bargaining. The model was specifically created for two-party situations, also referred to as negotiation dyads. Lewin's field theory was used as the conceptual foundation for the model, but was expanded to fit the interpersonal context of dyads. This implies that the personality and environments of the individuals involved should be taken into consideration, resulting in a system of interdependent, reciprocal behaviour, rather than separate behaviour patterns (Spector, 1977, p612).

Spector's model proposes that the personalities of the negotiating parties represent the personal predispositions regarding own goals, methods and commitment to achieving those goals. Furthermore, the psychological environment and atmosphere of the negotiation are represented by the perceptions and expectations held regarding the opponent's position, goals, intentions, commitment, strategies and actions. These two factors, personality and expectations, interact within each party, leading to specific bargaining strategies and tactics that are aimed at goal achievement. The

interdependence of the two parties is reflected in the outcome they can achieve jointly by their efforts at mutual persuasion (Spector, 1977, p613). The model is represented schematically in Figure 8.

Figure 8: Spector's model of dyadic negotiation
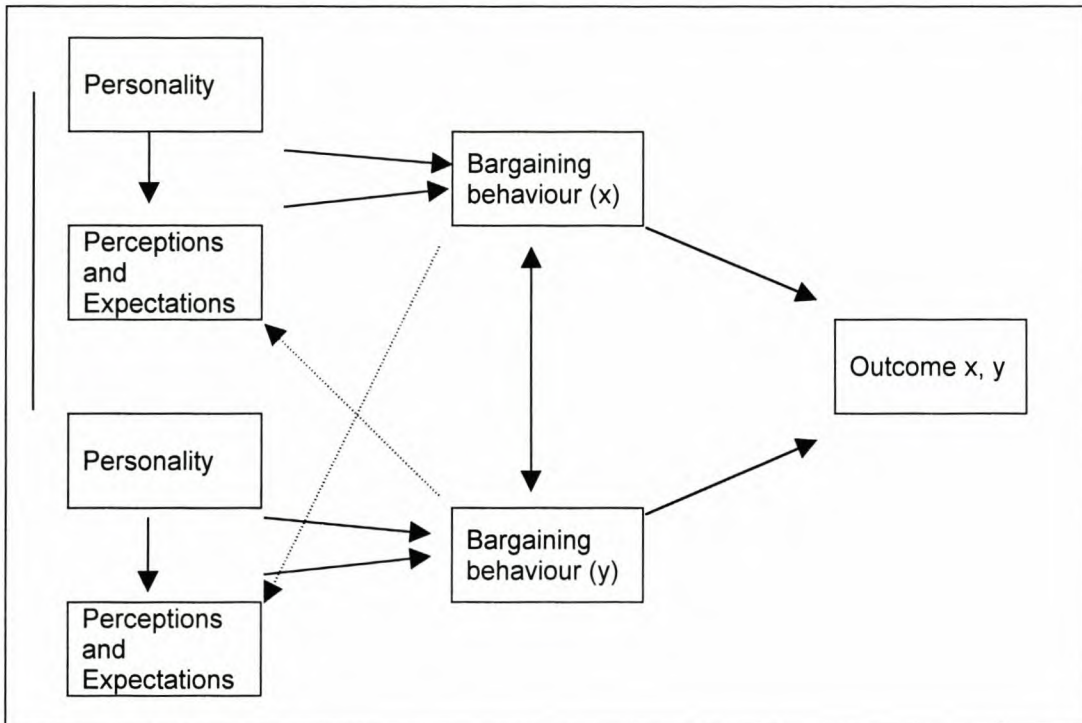
He attempted to validate the model by using a set of dyadic-negotiation laboratory experiments in order to determine the degree to which the negotiation process and outcome could be explained by reference to the psychological dynamics postulated. A hypothetical business-like scenario was developed by the author and used in combination with Stein's Self-descriptive Questionnaire as the personality measure. The results indicated that negotiators with significantly different personality profiles and situational expectations appear to employ very different behavioural bargaining strategies. Each distinct bargaining style appears to be activated by a different set of motivational elements. The empirical findings seem to have indicated that these motivations are not always obvious or self-evident. Needs for achievement dominance, aggression and counteraction against harsh demands were not significant predictors of strategy choice. Instead four basic behavioural patterns emerged:

- Highly co-operative bargainers were motivated by self-oriented needs for social approval and emotional support.
- Altruistic bargainers, who transferred pay-off that could have been theirs, were motivated by defeatist and harm-approaching needs.
- Bargainers who bluffed and deceived were motivated by needs for play, seduction, cleverness and exhibitionism.
- Hostile bargainers who employed elements of coercion were motivated by the mirror-image hostility of their opponents.

Controlling for variation in the psychological environment altered the motivational structures that activated the bargaining process and outcome. Given the high perception of threat, bargainers tended to be more defensive and fearful of their opponents, while low perception of threat aroused few personality needs and participants' choice of strategy became a matter of responsiveness to the opponent's actions. The degree of similarity between adversary personalities also appears to have had an impact on the choice of strategy. Thus outcomes seem to rest more heavily on personality and perceptual predictors than on the use of mutual persuasion. Bargainers obtained higher results if they were not motivated by aggressive needs, were perceived to have friendly intentions, and had adversaries who were excessively impulsive, escapist and ineffective (Spector, 1977, p618).

CONCLUSION

The majority of researchers concerned themselves mainly with negotiation in relation to one or more separate personality traits and few ventured to establish the effect of the personality as a whole. There are a number of theorists who apparently base their statements on perceptions gained through experience, but do not support their findings in a scientific manner. Those who confirmed their hypothesis by research generally employed role-plays and games, in particular the Prisoner's Dilemma as the preferred method for gathering data.

The traits discussed include, locus of control, tolerance for ambiguity, conflict

management, interpersonal trust, perceived self-efficacy, proneness to manipulation and risk taking. Some authors present profiles consisting of a combination of traits that should be present in order to guarantee success. These combinations appear unstructured and void of scientific support. Many other authors provide extensive suggestions regarding psychological factors that may influence negotiation. Though they place these factors under the title of personality, it is in most cases difficult to find the relation with actual personality theories.

There are those who view the choice of a specific negotiation strategy as a function of perceived power distribution amongst opponents, rather than a function of personality. A more simplistic, albeit applicable, approach warns negotiators against their own "hot buttons" or topics that could result in angry and irrational behaviour.

The style utilised by a negotiator is considered to be as individual as a thumbprint and supposedly portrays the essence of a person. Different styles are in a sense described as individual personalities, but it only describes the behaviour and not the core of why a person behaves in a specific manner.

Anastasi is one of the few authors who really went beyond the trait approach and links negotiation to the theory of the MBTI. He based his suggestions on the conclusions of writers who linked the MBTI with normal communication situations and provides no scientific explanations for his deductions.

The final word in this matter can be left to Liwicki, et al., (1996, p50) who summarised the research pertaining to personality and negotiation by stating that, "Although many researchers have studied the potential impact of personality factors on negotiation, the true impact of these factors remains elusive."

CHAPTER 5: PROPOSITIONS AND METHOD OF RESEARCH

"The essence of science: ask an impertinent question, and you are on the way to a pertinent answer".

Jacob Bronowski

INTRODUCTION

The aim of this research paper is to determine which correlations exist between the personality of the individual, according to the Myers-Briggs Type Indicator, and the outcome of negotiation. The discussion of the definitions and theory of personality and negotiation created the theoretical foundation for reaching this particular aim. Through the study of the literature it was determined what the extent and focus of previous research was with a similar aim. Since few of the theories regarding personality and negotiation are supported by empirical studies, it was decided to follow an explorative approach to the research. This approach implies that a large number of variables associated with personality were used and the correlations with negotiation were also conducted in a number of ways.

This chapter explains the method followed to realize the aim of the research. After the hypothesis, the variables and their operationalization are explained, followed by the discussion of the instruments used. The chapter is concluded by a description of the participants used in the sample and the working method followed to gather and analyse the information.

PROPOSITIONS

Based on the findings from the literature, it was hypothesized that:

H_1 : There is a significant correlation between the type preference of the MBTI presented as continuous data and the profit made in negotiation.

H_2 : There is a significant correlation between the type preference of the MBTI presented as separate groups and the profit made in negotiation.

H_3 : There is a significant correlation between the temperaments of the MBTI and the profit made in negotiation.

H_4 : There is a significant correlation between the attitudes of the MBTI and the profit made in negotiation.

H_5 : There is a significant correlation between the functions of the MBTI and the profit made in negotiation.

H_6 : There is a significant correlation between the quadrants of the MBTI and the profit made in negotiation.

H_7 : There is a significant correlation between the dominant functions of the MBTI and the profit made in negotiation.

VARIABLES AND OPERATIONALIZING OF VARIABLES

In this study the participants completed two role-plays in order to establish whether they have a natural aptitude for negotiation and whether negotiation training had an influence on any particular type preference. The role-plays used financial gain as the measurement of success. The outcome of the role-plays was correlated with the subscales of the MBTI in terms of continuous data. The eight separate subscales as well as a number of combinations of preferences was used.

Independent Variables

When the MBTI is used as an instrument to describe personality, there are a number of ways in which the information can be utilised. The first and most commonly used is that of descriptive statistics. This method implies that the researcher reports on the frequencies of the various profiles, subscales or combinations of subscales (De Beer, 1997). The second method is to use the eight subscales as separate groups by using the strength of preference reported in each. The maximum scores that can be obtained according to Form G are indicated in Figure 9 below (Van Rooyen & De Beer, 1995, p31). Thorne and Gough (1991, p8) warn that the separate use of these subscales could give rise

to redundant information, because of the considerable overlap within pairs, namely 18 items for E-I, 14 for S-N, 12 for T-F (male) and 11 for T-F (female) and 18 for J-P. The overlapping items are scored in opposite directions on each scale in a pair, and high intra-pair, negative correlations are therefore to be expected.

Figure 9: MBTI subscales and maximum possible scores


```
(26) Extraversion   ─────────────────────  Introversion (28)

(34) Sensing        ─────────────────────  Intuition (25)

(33) Thinking       ─────────────────────  Feeling (19)
                            Males

(33) Thinking       ─────────────────────  Feeling (21)
                           Females

(28) Judging        ─────────────────────  Perception (30)
```
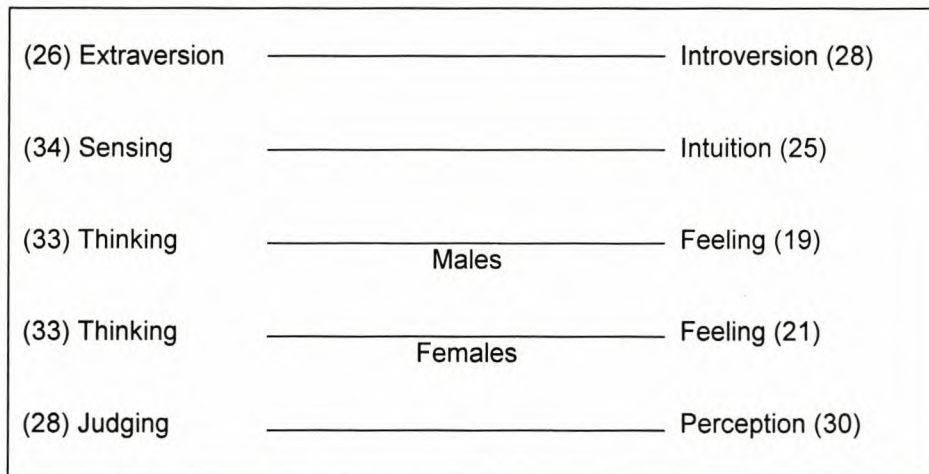
An alternative method of analysis is to place the strength of preference for each subscale on a continuous scale, by subtracting the lowest reported score from the highest, although these calculations could lead to a score of zero for a particular subscale, as stated before, this would be untenable. According to MBTI practice the results are then presented as the particular subscale that is normally least encountered, namely Introversion (01), Intuition (01), Feeling (01) or Perception (01), depending on the subscale (Myers & McCaully, 1987, p9).

For the purpose of this research a combination of methods will be utilised. Firstly, it is important that complete type profiles of individuals will not be used, because of the absence of certain profiles. Owing to the explorative nature of the study the subscales will be used as separate scores and also as a continuous scale. A number of subscale combinations will also be used in order to explore the postulations as described in Chapter 2. These combinations include the

following:

- The Temperaments, which include NF, SJ, NT and SP.
- The various Attitudes, namely IJ, IP, EJ and EP.
- The functions that were not included in the Temperaments, namely ST and SF.
- The four quadrants, namely IS, IN, ES and EN.
- The four dominant functions, namely S, N, T and F.

Dependent Variables

The dependent variable is the response, or the criterion variable presumed to be influenced by the independent treatment conditions (Creswell, 1994, p129). In this research the dependent variable is the amount of profit made by the participants in the two different role-plays. The profit will be expressed in terms of rands. The outcome of the role-plays will be used both separately and combined. This implies that a correlation will be determined between the independent variables and each of the role-plays. After these correlations have been completed the average profit obtained in the two role-plays will be used to determine possible correlations with the independent variables.

Moderating Variables

It is important to take into consideration the possibility that many variables, other than personality, may have a distinct influence on negotiation outcome. With this in mind certain common biographical variables were identified including, age, gender, ethnicity, military rank and level of formal education.

Each variable will now be discussed separately, with reference to the reasons for including each and also in comparison to the database, compiled by De Beer (1997), as the main reference. This database includes 6236 South African MBTI profiles, which makes is probably the most prominent source of

reference in the South African context. It is important to note that apart from the large differences between the sample sizes, de Beer used predominantly descriptive statistics, while this research also included the strength of preference.

Age as moderating variable

In order to establish the relationship between the MBTI profiles and age, De Beer (1997, p264) categorized a number of males between the ages of 20 and 29 and another group of males between the ages of 50 and 59. She also used the same categories for the female sample. When the means of the frequencies for the various type preferences and subscales were compared it was found that the results for the male and female groups were similar in many ways, but that the older groups reported higher incidences of Introversion, Sensing and Judging, see Table 14.

Table 14: Description of the age distribution amongst participants

Age	Frequency	Percentage		Age	Frequency	Percentage
18	3	1.7		36	3	1.7
19	16	9.2		37	2	1.2
20	3	1.7		38	2	1.2
21	11	6.4		39	4	2.3
22	7	4.0		40	4	2.3
23	10	5.8		41	2	1.2
24	10	5.8		42	3	1.7
25	21	12.1		43	1	.6
26	14	8.1		44	4	2.3
27	17	9.8		45	1	.6
28	6	3.5		47	3	1.7
29	4	2.3		48	2	1.2
30	2	1.2		51	1	.6
31	2	1.2		52	1	.6
32	7	4.0		53	1	.6
33	3	1.7		57	1	.6
35	2	1.2		Total	173	100.0

The hierarchical structure of the South African Army implies that a larger distribution of personnel, as depicted in Table 14, is found between the ages of eighteen and thirty, than between thirty and retirement age. The age of individuals was used on an interval scale in order to conduct the statistical analysis.

Gender as moderating variable

When analysing the differences in the preferences reported by males and females, De Beer (1997, p240 – 253) categorized the sample according to Afrikaans-speaking, English-speaking and those participants who have an indigenous African language as their mother tongue. In each category the differences between the males and females were analysed according to the frequency of preferences reported. In all three categories a preference for Sensing, Thinking and Judging was indicated for both sexes, even though females indicated higher incidences of Feeling and Perception than their male counterparts.

The distribution of males and females within the South African Army influenced the numbers included in the sample, as illustrated in Table 15. Placing males and females in two separate categories simplified the statistical analysis, where category 1 represents males and category 2 represents females.

Table 15: Distribution of males and females within the sample

Category	Label	Frequency	Percent
1	Male	138	79.8
2	Female	35	20.2
	Total	173	100

Ethnicity as moderating variable

According to De Beer (1997, p120), comparative studies of cultures are fraught with difficulties, because   the type distribution results are seldom based

on representative sample groups and the distribution reported would not typically include verified type, but rather reported type. She is however of the opinion that there is significant evidence of the validity of the MBTI in different populations, though some items could be criticized and the item weight may not account for the social desirability of some items in some cultures.

Before 1994, research in South Africa was predominantly based on the white population. As a country where many people speak and understand English, it has generally been assumed that SA type distribution is identical or similar to results found in the UK, USA, Australia, Canada or New Zealand. For this reason De Beer included the reported profiles of the Afrikaans-speaking participants with those of the English-speaking participants, as well as those who speak an indigenous African language. In order to promote equality the form G English version was used for all participants. No significant differences were reported, with most groups indicating a preference for E, S, T, J.

Table 16: Distribution of home languages within the sample

Category	Language	Frequency	Percentage
1	Afrikaans	86	49.7
2	English	5	2.9
3	Zulu	6	3.5
4	Xhosa	15	8.7
5	Tswana	16	9.2
6	South Sotho	9	5.2
7	North Sotho	15	8.7
8	Shangaan	3	1.7
9	Venda	7	4.0
10	Tsonga	4	2.3
11	Portugese	4	2.3
12	Swazi	3	1.7
Total		173	100

The distribution of the different language groups in this research is not equal, since this knowledge was not available before the research commenced and since race and sex are not used as entrance requirements for the negotiation programme. The various languages were placed in different categories for the sake of statistical analysis, as laid out in Table 16. It is important to note that these categories were determined in random order and not according to percentages representing the demographics of society or order of importance.

<u>Military rank as moderating variable</u>

Van Rooyen (1997, p93) reported that the MBTI type with the highest frequency among various levels, in three different organisations, indicated a preference for ISTJ. Determining the profile from continuous data indicated that all groupings, with the exception of Middle Management had an ESTJ mean profile. Middle management had an ISTJ profile. This implies that even though the majority of the subjects indicated a preference for ISTJ (when analysed as descriptive data), the means of the ESTJ profiles however indicated a more clearly defined preference. The levels used by van Rooyen consisted of executive level, senior management, middle management and non-management.

The different ranks in the military represents the individual's position in the organisation and could be related to the post level held in a civilian organisation. In order to be promoted in the South African army, personnel have to undergo specific training courses and have served a minimum time period in the previous rank. This implies that rank represents level of training, experience and could also be linked with age. In terms of the MBTI it has also been suggested that a correlation exist between the level of the organisation and the type preference of personnel (van Rooyen, 1997, p115).

The different ranks were categorised from 1 indicating riflemen to 16 indicating Major Generals. It should be kept in mind that these categories only serve as method for distinguishing between the different groups and that it does

not represent rank order in the true sense. This is due to the unique hierarchy of the military where two almost parallel rank systems are found for officers and non commissioned officers. Category 1 to 7 includes the non commissioned Officers, category 8 indicates the Candidate Officers who does not have real status in the organisation and is often placed at the same rank level of riflemen, but simultaneously they will shortly be introduced to the officer ranks. Categories 9 to 16 represent the officer ranks, see Table 17.

Table 17: Distribution of military rank in the sample

Category	Rank	Frequency	Percentage
1	Rifleman	0	0
2	Lance Corporal	0	0
3	Corporal	5	2.9
4	Sergeant	8	
5	Staff Sergeant	5	2.9
6	Warrant Officer Class 2	10	5.8
7	Warrant Officer Class 1	5	2.9
8	Candidate Officer	107	61.8
9	2Luitenant	0	0
10	Lieutenant	5	2.9
11	Captain	11	6.4
12	Major	6	3.5
13	Lieutenant Colonel	7	4
14	Colonel	2	1.2
15	Brigadier General	1	0.6
16	Major General	1	0.6
	Total	173	100

The various ranks were not distributed equally, once again indicating the bureaucratic hierarchy of the organisation where larger numbers are situated amongst the lower ranks. No participants from category 1 and 2 were however included due to the level of literacy required as entrance requirement for the negotiation programme. Category 8 is exceptionally large due to the inclusion of the junior leader group at Candidate Officer level. According to the previous

explanation of the organisational level of the candidate officer, this group therefore also represents the two lowest levels of the organisation.

Level of formal education

The distribution of the highest level of formal education obtained by participants could be viewed as a true representation of the organisation, where the majority of personnel have passed matric as indicated by category 3. Only a limited number of candidates entered the organisation while holding a qualification of less than matric, as indicated by categories 1 and 2. For the sake of the research those candidates holding a certificate from a technical college were placed in category 4, those with a diploma from a technikon in category 5 and those holding a bachelors degree from a university in category 6. Although provision was initially made for those participants who have completed postgraduate studies, non were included in the sample (see Table 18).

Table 18: Distribution of level of formal education

Category	Frequency	Percent
1	3	1.7
2	7	4.0
3	136	78.6
4	3	1.7
5	17	9.8
6	7	4.0
Total	173	100.0

INSTRUMENTS

The instruments used to gather information for this study consisted of the Myers-Briggs Type Indicator Form G and two separate role-plays. These instruments will be described briefly followed by a thorough discussion of the reliability and validity of each instrument.

Myers-Briggs Type Indicator

The instrument utilised to determine the personality categories, was the Myers-Briggs Type Indicator Form G self-scorable, Afrikaans and English versions. The questionnaire was completed on a voluntary base, but not one person declined. Those who had recently completed the MBTI, and could recall their profiles, were given the option not to complete another questionnaire, but all were prepared to repeat it in order to supply the strength of preferences.

Care was taken to put participants at ease in terms of the questionnaire by, in addition to the normal instructions, explaining a number of factors;

- the MBTI is not a test, but a questionnaire.
- the questionnaire does not give the researcher insight in psycho-pathology.
- the questionnaire does not reflect intellect, emotional state, experience, level of education or affluence.
- it is a fun way to stimulate communication, but that nobody will be forced to disclose their profiles.
- the results will be used anonymously and will not be reflected on the individuals personnel file or superiors.
- detail feedback will be provided to the individual.

In most cases participants appeared eager to complete the questionnaire, in the light of the promised feedback. Many stated that it would be exiting to analyse themselves and their behaviour and thus developing more insight into the reason for their behavioural patterns.

Role-plays

Two separate, but with similar negotiation ranges, role-plays were utilised to determine the dependant variable. According to the theory this constitutes a one- situation-once, type to ensure that the reaction of participants remains

uncontaminated by previous experience in each of the separate situations. The scenarios were predetermined with a written description, including written instructions. These instructions outlined the basic facts, parameters and needs of the different roles, but did not prescribe a specific point of view.

The instructions were aimed at enabling participants to negotiate within the same boundaries, which would help to exclude certain variables, e.g. the subjects are instructed to negotiate for a financial profit in cash terms only. This ensured that the outcome of the various role-plays could be compared. For example it would be difficult to compare the results if one group agreed on a single cash amount, while another group agreed to payment over a period of time or the inclusion of other tangible items, such as putting up a fence.

Participants were randomly assigned to a partner and the choice of the different roles was also made at random. This was done by asking one of the opponents to sit, while the other stands, without any prior knowledge of who would be assigned to what role. The instructions for the one role was then distributed to all those standing and the other role, to all those sitting. Participants were generally excited by their roles, although nervous to some extent.

Before each role-play the participants were allowed sufficient time for preparation and no time restriction were placed on the participants. The average role-play lasted about twenty minutes.

Role-play 1 – Parker Gibson

The role-play is called the "Parker-Gibson" scenario and is normally applied in the Negotiation course designed by Prof M. Spoelstra (1998, p1). In this role-play participants have to negotiate a cash price for a piece of land (See Appendix B). Participants assume the role of either the buyer of the piece of land (Gibson) or the seller (Parker).

Role-play 2 – Inheritance

The role-play is called "Inheritance" was designed specifically for this study (See Appendix C). Care was taken to create similarities with the financial range of the "Parker-Gibson" scenario. Once again participants assume the role of either the buyer or seller of an antique Chinese vase.

The success in negotiation was determined according to the profit made by each participant, according to the economics based model. In the instructions participants are respectively given a minimum or maximum amount that they have to negotiate for and which served as the determining factor for the profit or loss made by the individual. In the case of the seller, no amount smaller than R15 000 may be accepted. This implies that any amount agreed upon, more than R15 000 is a profit for the seller and any amount less than R15 000 is a loss. In the case of the buyer the maximum amount that may be paid for either the land or vase is R40 000, which means that any agreement less than R40 000 is a profit and more than R40 000 is a considered a loss.

RELIABILITY OF THE MBTI

The reliability of a psychometric instrument indicates the consistency with which the constructs are measured, regardless of a number of possible, independent influencing factors (Huysamen, 1993, p122). The factors involve the conditions surrounding the administration of the instrument, such as, when it was administered, by whom and what particular version of the instrument was utilised.

Myers and McCaully (1985, p164) focused on two sets of questions when they conducted research on the reliability of the MBTI. The first set concerned the internal consistency of the data and the second concerned the test-retest correlations. In both cases they utilised two sets of data to reach their conclusions. The first set of data involves the strength of preference of the individual, expressed as continuous data and the second set involves the type

preferences expressed as separate categories. These concepts will be discussed consecutively and the relevant supporting data will be provided in separate annexures.

Internal Consistency Reliability Estimates

During the construction of a questionnaire, it is important that a number of questions or items are used to test for a particular construct. Should the respondent then produce the same type of answer for all these related items, it would give an indication of the individual's preference or aptitude for that particular construct. It is however important to ensure that the items are truly related and that a similar response is not merely the result of chance. When the relatedness and accuracy of the items are proved, it enhances the reliability of the instrument. This type of reliability is referred to as internal consistency. A high internal consistency implies a high level of generalization with other tests compiled of similar items (Huysamen, 1993, p125).

There are a number of methods that could be used to determine the internal consistency of an instrument. One of these methods involves the analysis of the results obtained regardless of whether the participant leaves a number questions unanswered. Other methods involve comparing the results obtained from various groups according two different variables, such as age, intelligence or gender. The results of these comparitive studies regarding the internal consistency of the MBTI will be discussed briefly.

Internal Consistencies of Continuous Scores

Myers and McCaully (1985, p165) report on X and Y Split half scores. Items were selected for the X and Y halves by a logical split halve procedure, taking all available item statistics into consideration and pairing items that most resemble each other and correlate most highly. The results indicated that reliabilities are consistent with those of other personality instruments, many of

which have longer scales than the MBTI. It was found that reliabilities remain stable up to thirty-five omissions for Form F and up to twenty-five omissions for Form G. Since form G was used in this particular research, it would imply that those respondents, who left more than twenty-five items out, would not be included in the sample. The results of the number of allowed omissions are reported in Appendix D.

Myers and McCaully (1985, p169) further reported on reliability coefficients for different age groups, by using coefficient alpha. This test specifically indicates the extent that items in an instrument measures a similar construct. An internal consistency, using this measurement, implicates the ability to generalise across item in the instrument. For example if a person achieved a high score on some of the items related to a specific construct, it can be assumed that the individual will achieve high scores on the rest f the items as well Huysamen, 1993, p125). The reliabilities reported tend to be somewhat lower for respondents in their teens (r = between .64 and .83), but appear to stabilize from the twenties onwards (r = between .74 and .85). The results of these findings are displayed in Appendix E.

The next set of variables used is that of postulated levels of achievement. It was indicated that the internal consistency tended to be lower amongst those groups postulated as low achievers (r = between .28 and .81) while those considered as gifted indicated higher internal consistencies (r = between .37 and 4.28). It is believed that intelligence may correlate with the MBTI because of two reasons. Firstly it is believed that the perception and judgment functions may be better developed in intelligent children, leading to a larger amount of information and better judgements. Secondly it is believed that more intelligent children may have higher reading levels, leading to better understanding of the MBTI vocabulary (Myers and McCaully, 1985, p169).

In summery, the estimates of internal consistency reliability for the continuous scores of the four MBTI scales are acceptable for most adult samples, with reliability being consistently +0,8 (Fitzgerald & Kirby, 1997, p14). The results

are adequate, albeit somewhat lower for younger samples and for other populations of persons who can be considered to be performing at lower levels of achievement or type development (Myers & McCaully, 1985, p169)

Internal Consistency of Dichotomies

Establishing the reliability of the dichotomous categories of the MBTI depends on the reliability of scores in the vicinity of the division point.   It is, however, difficult to determine which formulation would be appropriate to use in estimating the reliability of the dichotomy. This is firstly because MBTI data are not true categories, but rather the product of scoring. This factor influences the appropriateness of the use of phi, a statistic designed for categorical data. Secondly, one has to take into account that MBTI scores are typically not normally distributed. This factor influences the application of tetrachoric correlation, which is often used as an quantitative index (Myers & McCaully, 1985, p170).

It was therefore suggested that reliabilities of type categories could be estimated by comparing phi coefficients (which tend to estimate low) and tetrachoric correlations (which tend to estimate high). Actual correlations would then probably be found between these two estimates.   Under these conditions, the type categories can be assumed to be as reliable as would be expected from the reliabilities as measured by continuous scores The results, as presented in Appendix F, indicated that the phi coefficients vary between .49 an .79, while the tetrachoric correlations vary between .66 and .92   (Myers & McCaully, 1985, p171).

Test-Retest Reliability Estimates

Test-retest reliability refers to the extent in which a specific questionnaire represents a stable outcome over time, irrespective of emotional or social instability on the part of the respondents when completing the questionnaire

(Huysamen, 1993, p124). For the MBTI, computations of correlations for test retest reliabilities not only include the four continuous scores, but are also included in the question whether respondents will repeatedly indicate a preference for the same pole of all four dichotomies. The question would determine whether the person indicates same MBTI type preference over time, taking into consideration that type development is a natural phenomenon (Myers & McCaully, 1985, p170).

Test -Retest Correlations of Continuous Scores

Test-retest product-moment correlations were utilised in fourteen different samples where the age of respondents increase from thirteen-year-old to medical students. In eight of the comparisons, the reliability coefficient for TF is the lowest of the four scales (r = between .45 and .86), as predicted by Isabel Myers (Myers & McCaully, 1985, p170). This may imply that type development and fluctuating preferences are more likely to occur between thinking and feeling than the other scales. The results are presented in Appendix G.

Test-Retest Reliabilities of Type Categories

When tables indicating the EI, SN, TF and PJ scales are analysed it becomes evident that the chance probability of choosing all four preferences on retests is 6.25%. This implies that respondents indicate similar profile over a period of time, because it is truly their preferred behaviour and not just the result of chance, the environment or the mood of the individual (Myers & McCaully, 1985, p170).

In an attempt to measure the effect of mood changes on the MBTI results volunteers were asked to complete both the MBTI and the 16 PF at two separate occasions. The results, as presented in Appendix H, indicated that though the mood levels of respondents changed considerably, the preferences indicated by the MBTI remained relatively stable. It was discovered that the most changes in

MBTI preference occurred in cases where the original preference was low (Myers & McCaully, 1985, p171).

In conclusion it can be stated that the MBTI show consistency over time. When subjects report a change in type, it is most likely to occur in only one scale where the original preference was low (Myers & McCaully, 1985, p171).

VALIDITY OF THE MBTI

The validity of a test is the extent to which a test can fulfil the purpose for which it can fulfil the purpose for which it was intended and does not measure other irrelevant constructs (Huysamen, 1993, p117). The MBTI was designed to implement the theory of Jung. Its construct validity is therefore determined by its ability to demonstrate relationships and outcomes predicted by the theory. Myers and McCaully (1985, p175) concerned their research in validity in terms of certain important questions. Firstly it is asked whether the MBTI continuous scores correlate in the expected directions with other instruments that supposedly measure similar constructs. Secondly it is critical to determine whether the MBTI types are consistent with the behaviour predicted by Jung's theory. Lastly a question was raised regarding the knowledge of type differences contributes to the understanding of other issues of importance to psychology.

Content Validity

According to Carlyn, (Myers & McCaully, 1985, p175) Myers has already submitted proof for the content validity of the MBTI through her extensive description of the construction of the MBTI. The theory of Jung was taken very seriously during the development of the questionnaire, as was the observation of the behaviours in different types, but item selection was ultimately based on the empirical evidence that the items separate persons with opposing preferences.

Construct Validity

Type distributions are the basic method for presenting MBTI data on groups. Type tables provide evidence for construct validity, e.g. if the type table for a given occupation has significantly more of the types than was predicted by the theory, then the type table contributes to construct validity.

In the review regarding the construct validity provided by Carlyn, (1977, p471) he concludes that the numerous studies conducted indicate that the individual scales of the MBTI do measure important dimensions of personality. These dimensions appear to be consistent with those postulated by Jung.

The correlation between the MBTI and the Jungian Type Survey (JTS) contributes to the construct validity of the MBTI. The JTS was developed independently from the MBTI, but also based firmly on the theory of Jung. One of the few differences between the two questionnaires is the absence of the JP scale. After a number of studies conducted to compare the two questionnaires, it was concluded that the same constructs are being measured, which are in congruence with the theory postulated by Jung (Myers and McCaully, 1985, p209).

Criterion Validity

Criterion Validity refers to the ability of a test to estimate or predict behaviour as represented either by other test scores or by observable behaviours (Zeisset, 1996, p30). There are two types of criterion validity – concurrent and predictive. Concurrent validity addresses the question whether knowledge of a person's test score allows an accurate estimation of a person's current performance on another test or behaviour criterion (Zeisset, 1996, p30). Predictive validity is concerned with using test scores to estimate behaviour or scores on a criterion to be administered in the future. According to Hammer (1996, p37), the evidence for concurrent validity is strong, but there exists a lack

of evidence regarding predictive validity. Hammer suggests that attempts be made to conduct predictive validity research despite the inherent difficulties associated with conducting longitudinal research.

Face Validity

Self-assessment, based on the basic understanding of the MBTI scales, has been found to be one of the best methods to validate or correct MBTI reports. This is done by explaining the theory and scales of the MBTI to the respondents and allowing them to agree or disagree, ask questions and elicit supplementary information. The research in this regard, conducted by Carskadon (1975, 1982 in Myers & McCaully, 1985, p209) concluded that type descriptions other than one's reported type would seldom be appealing. It was also concluded that subjects seemed to feel more confidence in their preferred functions (S, N, T or F) than their attitudes (E, I, J or P).

Conclusion

De Beer (1997) utilised the summary provided by Harvey in order to determine the reliability and validity of the MBTI. He concluded that the average overall reliability coefficient is 0.84, while the internal consistency averages 0.86. He further concluded that for people showing moderate to clear preferences, the type profile appears to be reasonably stable over time (92% of clear preferences classified as the same type, while 82% of moderate preferences are classified identically).

RELIABILITY AND VALIDITY OF ROLE- PLAYS

Simulations and role-plays are frequently used in order to study the various constructs underlying negotiation (McGillicuddy, Pruitt & Syna,1984, p105).

A role-play is valid to the degree that the theory and assumptions it is based on can be shown to be congruent with the reference system and that the process observed in the game is congruent with those observed in the reference system (Raser, 1969, p144). Furthermore role-plays can provide a valid research situation, provided that it incorporates an appropriate research design. According to Stevens the research design is the component that transforms the learning environment into an experimental situation. The important aspect is the manner in which the experiment is set up, the elements reported and the detail with which they are reported (in Crookall, 1987, p192).

Raser (1969, p144) stresses the importance that the role-playing environment should be realistic for the subjects involved. The more closely the laboratory situation simulates real life, the more accurate and dependable the results and conclusions are. This opinion is congruent with that of Erasmus and van Dyk (1999, p221) who believe that the success of role-plays depends on the participants' willingness to adopt the roles and to react as if they are in a real life situation. Despite the realistic creation of the role-plays and the participation of the subject, Maier and Verser (1982, p14) maintain that the findings of role-plays may still need to be verified in true life to ensure that researchers do not overlook certain important aspects or variables.

PARTICIPANTS

The sample comprised of personnel from the South African National Defence Force who attended a Basic Negotiation Skills course. The course is presented on a voluntary basis to members of the South African National Defence Force and especially in the South African Army, between the rank group Sergeant to Major General. This implies that the sample did not comply to the definition of a random sample, because the participants were self-selected. The coursed were presented at different units across the country. This implied that some participants knew one another slightly, while others work together closely.

The sample consisted of one hundred and seventy three (N= 173) participants. The size of the sample is based on the frequency for the uneven distribution of MBTI profiles in the human population. This fact is supported by the work of Dr Jopie de Beer who compiled the South African database of MBTI profiles, which consists of 6452 MBTI profiles collected between 1994 and 1997. When analysing the database it becomes clear that all the type preferences are represented, but that some are more scarce than others, e.g. S = N4186 (64.88%) while N = N2266 (35.12%) and T = N4817 (74.66%) while F = N1635 (25.12%) (de Beer,1998, p56).

WORKING METHOD

Schematically the working method could be presented as follows:

Figure 10: Presentation of working method

| Complete MBTI | ➔ | First Role Play | ➔ | Intervention | ➔ | Second Role Play |
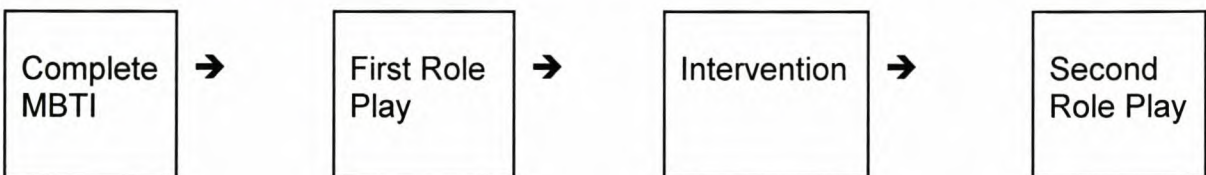
Completion of the MBTI

The research was conducted as part of a basic negotiation-training course. Firstly the participants were requested to complete the MBTI questionnaire. The feedback of the questionnaire was given to the participants at a later stage as part of a module in the course. The results of the questionnaire will be laid out according to the prescribed method of MBTI presentation, as follows:

First Role Play

The participants were presented with the opening role-play to the course, namely the Parker and Gibson scenario. Participants were randomly assigned to

their opponent in the role-play, each with confidential instructions regarding the minimum or maximum amount that may be spent. At the completion of the role-play each individual reached a conclusion in financial terms, except for those who ended in deadlock. The results of the role-play were handed in and the amounts were converted into profit or loss. The following example can be used as illustration; Two participants negotiated as Parker and Gibson. They reached an agreement to sell the plot of land for R30 000. This implies that the person acting as Parker had a profit of R15 000, while Gibson showed a profit of R10 000, according to their instructions.

Intervention

After completion of the first role-play, the theoretical explanation of the course commenced, along with more practical exercises. The following modules were presented:

Introduction and definition

After the initial introductions, participants were made aware of the fact that this is a basic introduction to the concept of negotiation and that the aim is not to develop them into experts dealing with complicated situations, such as hostage situations or collective bargaining. Then time was spent on exploring the basic definitions of negotiation including the difference between formal and informal situations, including identifying a variety of situations involving negotiations in the formal and informal setting of the work place as well in the homes of individuals. Certain definitions from the formal literature were discussed and a definition unique to the participants was formulated, whereby certain key aspects were explained, for example the concept of potential conflict, role of communication and the presence of a definite process. Participants are faced with the question of the role Mr Nelson Mandela plays in various African countries whenever he tries to help the opposing parties in creating peace and stability. Does he function as a negotiator, mediator or arbiter? Through group discussions the definitions of

these related concepts are established.

Pillars of negotiation

The pillars of negotiation are those aspects that are always present in negotiations situation and without which the process would fail. The pillars include, the attitude toward winning, attitude towards the relationship, trust, visibility and flexibility. These concepts were explained by utilising the Prisoner's Dilemma game. It was stressed that even though this is not true negotiation, but a game, it usually produces certain behavioural aspects that are important for the process. The behaviour of the different teams were observed and used as examples, while the outcome of the game was not treated as the main aspect of concern.

Process of negotiation

The process as adapted from the work of Anstey (1991) was utilised to explain the different steps or phases. The steps were explained in a linear sequence by using different role-plays. The Parker Gibson role-play was frequently referred to, especially in the case of the planning phase. After the basic theory was discussed, the movie called "12 Angry Men" was showed in order to illuminate some of the key aspects discussed thus far. The movie also served as basis for the explanation of various ethical concepts, the type of pressure techniques that may be encountered in negotiation and especially how to deal with these techniques.

Personality in negotiation

Feedback was provided to the participants regarding the MBTI questionnaires completed earlier in the programme. It was done by first explaining the theory in broad, once again referring back to the movie and the behaviour displayed by the different individuals in the class. After the basic

understanding of the theory has been established, participants were provided with their profiles according to the questionnaires.   The theory was then also related to assumptions regarding negotiation and specific strengths and potential pit falls were pointed out. Afterwards those who did not agree with their profiles were given the opportunity to do individual verification of their profiles.

Second Role-play

At the end of the three-day programme a similar role-play was conducted, called Inheritance. The ranges of the possible results are similar for this role-play and once again the profit and loss for each participant was calculated.

STATISTICAL ANALYSIS

The aim of the study is to determine the correlation between the outcome of negotiation and type preference according to the MBTI. In order to reach this aim the Pearson product-moment correlation was used to determine whether a significant difference exist between the various personality factors and the role-plays. Each postulation was dealt with individually, by applying the correlation separately to the results of the two role-plays.

It was further decided to calculate the average profit gained by the participants for the two role-plays. This was in an attempt to explore the possibility of a correlation between personality and negotiation in the long term, though admittedly the research lacked more role-plays as well as a variety of role-plays. Once again the Pearson product-moment correlation was utilised

CONCLUSION

In keeping with the explorative nature of the research a number of postulations were set that were aimed at finding a possible correlation between personality type, according to the scales and sub-scales of the Myers-Briggs Type

Indicator and success in negotiation. Furthermore a number of moderating variables were taken into consideration in order to ensure that the results were not contaminated in any way.

Through the discussion of the reliability and validity of the MBTI it was once again realised how well researched the instrument is and applicable for this particular study. The role-plays were not as thoroughly validated, but care was taken that they were created in accordance with the guidelines provided by literature.

The process of gathering data was carefully planned and executed in order to promote accuracy and logic. Care was taken to maintain in methods of presentation and involvement in order to provide equal treatment and levels of information of all participants and in an attempt to maintain consistent responses and the data required.

CHAPTER 6: RESULTS AND FINDINGS

> "In the culture I grew up in you did your work and did not put your arm around it to stop other people from looking – you took the earliest possible opportunity to make knowledge available".
>
> James Black

INTRODUCTION

The previous chapters served as a guide to reach the point, where the results obtained through applying the method as explained are now reported. The possible covariates are reported first to establish whether there was any influence on the results obtained in the actual statistical findings.

In order to reach the aim of the research and through maintaining an explorative approach, a number of related postulations were used. The results pertaining to each of these postulations is provided in terms of a brief discussion in this chapter, while the majority of the statistical analysis, not indicating any correlation, are reported in separate appendixes.

RESPONSE RATES

Initially 185 participants were included, but twelve had to be excluded due to various reasons; the results of seven participants were omitted for not taking part in one of the two role-plays. This was normally the result of participants arriving late or withdrawing early, due to work responsibilities. The results of four participants were left out because the amounts reported after one of the role-plays did not correspond with one another. Thus if the person playing the role of Parker reported a final deal of R20 000 and the person representing Gibson reported R80 000 the results were not utilised. The completion of the MBTI resulted in one participant not being included due to obvious patterning in the answering of the questions. In the end results of one hundred and seventy three respondents could be included in the statistical analysis.

COVARIANCE

Covariance, according to Howell, (1989, p107) indicates the degree to which two variables vary together. Only those variables that indicated a possibility of covariance are reported in this chapter, while the complete results are reported in a separate annexure. A variety of statistical methods were used to determine which of the factors could be covariates of personality. These methods obviously depend on the level of measurement and the number of groups involved.

Age as possible covariate

Pearson's product-moment correlation coefficient (r) was used to determine the relationship between age and the independent variables. When type preference was calculated as continuous data for the four subscales, it was found that a significant correlation, at the < 1 % level (2-tailed) exists between age and the JP scale (r = .195), as indicated by Table 19. The complete results are displayed in Appendix I.

When the strength of preference was calculated for each of the eight subscales, the results indicated a significant correlation, at the < 1% level (2-tailed), between age and the Judging and Perception subscales, as indicated in Table 19.

A significant correlation, at the <1% level (2-tailed), was also found between age and the SP temperament, also represented in Table 19.

In terms of the four quadrants it was found that a negative correlation exists between age and the ES-Quadrant and a positive correlation with the EN-Quadrant (.192). Both of the correlations were found at the < 5% level (2-tailed), as indicated in Table 19.

These correlations are not very strong, with the highest being 2%. Should it therefore be found that a significant correlation exists between the dependent variables and those personality factors indicated above, the interpretation of the results would have to be done with more care.

Table 19: Correlation between age and MBTI preferences

	JP	J	P	SP	ES	EN
Pearson Correlation	.195 ***	.211 ***	-.171 ***	-.158 ***	-.156 **	.192 **
Sig. (2-tailed)	.010	.005	.024	.038	.040	.011
N	173	173	173	173	173	173

*** Correlation is significant at the < 1% level (2-tailed)

** Correlation is significant at the < 5 % level (2-tailed)

Gender as possible covariate

In order to determine if gender could be considered a covariate Levene's test for equality of variances and the t-test for equality of means were utilised (see Appendix J). This decision was based on the existence of two independent samples, namely males and females.

The first set of data utilised to compare the means was that of type preference expressed as continuous data. It was found that a significant difference exists between the means for males and females according to Levene's test for equality of variance as well as the t-test. The JP scale indicated a significant difference for the means according to the t-test.   It would appear that the differences exist because of the higher means for the male group indicating a clearer preference for Thinking and Judging respectively. The results of these tests are displayed in Table 20.

Table 20: Comparison of means for gender for MBTI scales as continuous data

	Levene's Test			t-test for Equality of Means						
	Equal variances	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval	
									Lower	Upper
TF	Assumed	8.152	.005***	3.138	171	.002***	5.70	1.82	2.11	9.28
	not			2.686	44.703	.010***	5.70	2.12	1.43	9.97
JP	Assumed	1.968	.163	2.276	171	.024**	4.38	1.93	.58	8.18
	not			2.122	48.501	.039**	4.38	2.07	.23	8.54

*** Correlation is significant at the < 1% level (2-tailed)

** Correlation is significant at the < 5 % level (2-tailed)

When utilising the subscales as separate scores it would appear that a significant difference appears to exist between the two samples for Thinking, Feeling, Judging as well as Perception (see Table 21).

Table 21: Comparison of means for gender for MBTI subscales as separate sets

	Levene's Test for equality of variance			t-test for equality of means					95% Confidence Interval	
Equal variances	F	Sig.	t	Df	Sig. 2-tailed	Mean Diff	Std. Error Diff		Lower	Upper
T Assumed	7.507	.007***	3.114	171	.002***	3.69	1.19		1.35	6.03
Not			2.717	45.464	.009***	3.69	1.36		.96	6.43
F Assumed	4.616	.033**	-3.111	171	.002***	-2.27	.73		-3.71	-.83
Not			-2.729	45.686	.009***	-2.27	.83		-3.94	-.60
J Assumed	2.950	.088	2.150	171	.033**	2.07	.96		.17	3.97
Not			1.991	48.171	.052	2.07	1.04		-2.04E-02	4.16
P Assumed	3.274	.072	-2.376	171	.019**	-2.37	1.00		-4.34	-.40
Not			-2.189	47.924	.034**	-2.37	1.08		-4.55	-.19

*** Correlation is significant at the < 1% level (2-tailed)

** Correlation is significant at the < 5 % level (2-tailed)

According to Levene's test for equality of variance, the EN quadrant and dominant-S also indicated a significant difference. The t-test indicated a significant difference between the means for males and females, for a number of variables (see Table 22). These variables further included the NF and SJ temperaments as well as the IJ attitude. It also included the ST and SF functions, the IS and EN quadrants and lastly the dominant N and dominant F functions. After studying the mean tables of these variables it was found that in most cases the strength of preference was higher for males than for females, only in the case of Feeling, Perception and the NF temperament did the strength of preference appear to be stronger for females.

Table 22: Comparison of means for gender for combinations of MBTI subscales

	Levene's Test for equality of variance			t-test for equality of means					95% Confidence Interval	
	Equal variances	F	Sig.	t	df	Sig. 2-tailed	Mean Diff	Std. Error Diff	Lower	Upper
NF	Assumed	20.962	.000	-2.267	171	.025**	-7.12E-02	3.14E-02	-.13	-9.20E-03
	not			-1.451	37.126	.155	-7.12E-02	4.91E-02	-.17	2.82E-02
SJ	Assumed	13.186	.000	2.097	171	.037**	.15	7.38E-02	9.10E-03	.30
	not			1.810	45.037	.077	.15	8.55E-02	-1.74E-02	.33
IJ	Assumed	28.641	.000	2.529	171	.012**	.24	9.33E-02	5.18E-02	.42
	not			2.668	56.474	.01***	.24	8.85E-02	5.89E-02	.41
ST	Assumed	26.570	.000	3.803	171	.000	.29	7.64E-02	.14	.44
	not			3.186	43.891	.003***	.29	9.12E-02	.11	.47
SF	Assumed	35.019	.000	-3.194	171	.002***	-.18	5.78E-02	-.30	-7.05E-02
	not			-2.363	40.121	.023**	-.18	7.82E-02	-.34	-2.67E-02
IS	Assumed	30.691	.000	2.294	171	.023**	.21	9.34E-02	2.99E-02	.40
	not			2.422	56.519	.019**	.21	8.85E-02	3.71E-02	.39
EN	Assumed	9.853	.002***	-1.606	171	.110	-7.08E-02	4.41E-02	-.16	1.62E-02
	not			-1.236	41.181	.223	-7.08E-02	5.73E-02	-.19	4.49E-02
D-S	Assumed	5.505	.020**	.979	171	.329	9.28E-02	9.48E-02	-9.43E-02	.28
	not			.984	52.969	.330	9.28E-02	9.43E-02	-9.63E-02	.28
D-N	Assumed	30.147	.000	-2.753	171	.007***	-.11	4.14E-02	-.20	-3.22E-02
	not			-1.846	37.959	.073	-.11	6.17E-02	-.24	1.10E-02
D-F	Assumed	34.824	.000	-2.986	171	.003***	-.14	4.53E-02	-.22	-4.58E-02
	not			-2.031	38.240	.049	-.14	6.66E-02	-.27	-4.45E-04

*** Correlation is significant at the < 1% level (2-tailed)

** Correlation is significant at the < 5 % level (2-tailed)

According to these results it would appear that gender might possibly be a covariate of type preference. This would imply that the interpretation of the correlation between type preference and negotiation outcome would have to be done very carefully.

Ethnicity as possible covariate

Initially a one-way analysis of variance (ANOVA) was conducted on the various personality factors in relation to home language. The results indicated a significant difference for the Judging and Perception subscales. However, the distribution of the various ethnic groups was not equal, with the Afrikaans-speaking group accounting for 49.7% of the sample. The Kruskal-Wallis one-way analysis of variance, which is a non-parametric test, was applied to determine whether a significant difference exist between the means of the personality factors in relation to all the language groups, other than Afrikaans (see Appendix K). Since no significant differences were identified it was decided to group the English and Afrikaans-speaking participants together (henceforth referred to as group 1) and participants with other home languages together (group 2). Those participants who belong to the so-called "coloured" community, but are Afrikaans-speaking were placed in group 2. Thus essentially the two groups represent the participants from the black and white communities of the population.

Levene's test for equality of variances and the t-test for equality of means were subsequently used to determine whether ethnicity could be considered a covariate (see Appendix L). The tests were first performed on the type preference as presented on a continuous scale. According to Levene's test for equality of variance a difference exists for the EI scale, for the SN scale and for the TF scale. According to the t-test for equality of means a significant difference exists for the JP scale. It would appear that, with the exception of the EI scale, the means for the second group tends to be higher. These results are presented in Table 23.

The group that was tested next was that of type preference expressed as separate groups as displayed in Table 24. According to the results the white group indicated a more clearly expressed preference for Extraversion, Introversion, Intuition, Thinking and Feeling, while the participants of colour indicated a higher preference for Sensing and Judging.

Table 23: Comparison of means for ethnicity of type as continuous data

	Levene's test for equality of variances			t-test for equality of means						95% Confidence Interval	
	Equal variance	F	Sig.	T	df	Sig. 2-tailed	Mean Difference	Std. Error Difference		Lower	Upper
EI	Assumed	5.669	.018**	.061	170	.951	.11	1.76		-3.36	3.58
	Not			.060	147.564	.952	.11	1.79		-3.43	3.65
SN	Assumed	10.231	.002***	-.817	171	.415	-1.21	1.48		-4.13	1.71
	Not			-.790	133.859	.431	-1.21	1.53		-4.24	1.82
TF	Assumed	5.734	.018**	-.229	171	.819	-.35	1.51		-3.32	2.63
	Not			-.222	137.119	.825	-.35	1.55		-3.42	2.73
JP	Assumed	2.371	.125	-3.467	171	.001***	-5.29	1.53		-8.30	-2.28
	Not			-3.406	149.910	.001***	-5.29	1.55		-8.36	-2.22

Table 24: Comparison of means for ethnicity for type preference as separate sets

	Levene's Test for equality of variances			t-test for equality of means						95% Confidence Interval	
	Equality of means	F	Sig.	T	df	Sig. 2-tailed	Mean Difference	Std. Error Difference		Lower	Upper
E	Assumed	4.606	.033**	.016**	171	.987	1.47E-02	.90		-1.76	1.79
	not			.016**	149.269	.987	1.47E-02	.92		-1.79	1.82
I	Assumed	6.128	.014**	.059	171	.953	5.45E-02	.92		-1.77	1.88
	not			.058	145.327	.954	5.45E-02	.94		-1.81	1.92
S	Assumed	6.616	.011**	-.625	171	.533	-.58	.92		-2.39	1.24
	not			-.609	142.630	.543	-.58	.94		-2.44	1.29
N	Assumed	9.225	.003***	.805	171	.422	.53	.66		-.78	1.84
	not			.779	135.551	.437	.53	.68		-.82	1.89
T	Assumed	9.205	.003***	.163	171	.871	.16	.98		-1.78	2.10
	not			.157	131.912	.875	.16	1.02		-1.86	2.18
F	Assumed	4.178	.042**	.323	171	.747	.20	.60		-1.00	1.39
	not			.316	145.214	.752	.20	.62		-1.03	1.42
J	Assumed	4.258	.041**	-3.450	171	.001***	-2.63	.76		-4.13	-1.12
	not			-3.372	145.064	.001***	-2.63	.78		-4.17	-1.09
	not			-3.372	145.064	.001***	-2.63	.78		-4.17	-1.09

The t-test further indicated that a significant difference in means exist for the NF and SJ temperaments, the EP attitude, the ST function, as well as for dominant-N, dominant-T and dominant-F. For these results the majority of group 2 had a higher mean, except for the NF temperament and dominant-F where a higher number of incidences were reported for the white population. These results are displayed in Table 25.

Table 25: Comparison of means for the combinations of MBTI subscales

	Levene's test for equality of variances			t-test for equality of means					95% Confidence Interval	
Equality of means	F	Sig.	T	df	Sig. 2-tailed	Mean Difference	Std. Error Difference	Lower	Upper
NF	Assumed	29.649	.000	2.536	171	.012**	6.41E-02	2.53E-02	1.42E-02	.11
	not			2.297	77.000	.024**	6.41E-02	2.79E-02	8.52E-03	.12
SJ	Assumed	45.630	.000	-3.235	171	.001***	-.19	5.86E-02	-.31	-7.39E-02
	not			-3.116	130.073	.002***	-.19	6.08E-02	-.31	-6.92E-02
EP	Assumed	20.622	.000	2.176	171	.031**	8.38E-02	3.85E-02	7.77E-03	.16
	not			2.063	113.818	.041**	8.38E-02	4.06E-02	3.31E-03	.16
ST	Assumed	15.726	.000	-1.992	171	.048**	-.13	6.35E-02	-.25	-1.13E-03
	not			-1.953	148.405	.053	-.13	6.47E-02	-.25	1.46E-03
D-N	Assumed	35.595	.000	2.756	171	.006***	9.20E-02	3.34E-02	2.61E-02	.16
	not			2.547	91.294	.013***	9.20E-02	3.61E-02	2.03E-02	.16
D-T	Assumed	10.792	.001***	-1.875	171	.062	-.14	7.48E-02	-.29	7.37E-03
	not			-1.886	167.604	.061	-.14	7.44E-02	-.29	6.57E-03
D-F	Assumed	6.679	.011***	1.276	171	.204	4.76E-02	3.73E-02	-2.60E-02	.12
	not			1.234	133.933	.219	4.76E-02	3.86E-02	-2.87E-02	.12

These results imply that ethnicity as represented by the white and black members of the population may very well be a covariate and should a correlation be found to exist for any of these personality factors, the influence of ethnicity should be taken into account when the correlation is determined between the dependent and independent variables.

Military rank as possible covariate

Since the frequency of the Candidate Officer group was very high in relation to the other rank groups, it was decided to investigate the possibility of combining some groups into one or two categories. The Kruskal-Wallis test, which is a nonparametric-test was used to establish whether the means of the various rank groups differ significantly. It is important to note that when the Kruskal-Wallis test is utilised the significance level is based on the asymptotic distribution of a test statistic. The asymptotic significance is based on the assumption that the data set is large. If the data set is small or poorly distributed, this may not be a good indication of significance (George & Mallery, 2000).

The first category that was tested was that of non commissioned officers (NCO's) which included the ranks rifleman to Warrant Officer class one. The results indicated that a significant difference exist for the Feeling (.045) subscales, see Table 26. When the means of the various ranks were analysed it was found that the Warrant Officer class one had a much lower mean for Feeling than the other groups, but a higher mean for Thinking. The complete result tables are displayed in Appendix M.

Table 26: Kruskall-Wallis for Thinking and Feeling

	Feeling
Chi-Square	9.737
Df	4
Asymptotic Significance	.045**

** Correlation is significant at the < 5 % level (2-tailed)

When conducting the Kruskall-Wallis on the preference using the various combinations of type preference, no significant differences were identified.

Even though the frequencies of the various groups were low it was decided to combine group 3 and four. The next category would consist of group 5 and 6 and the last category would consist of group 7.

Next, the means of the officer group (second lieutenant to major) was compared. It was discovered that no significant difference exist and these groups were subsequently categorised together (see Appendix N).

When comparing the means of the senior officer groups it was found that a significant difference exists for the NF temperament (see Appendix O). When the means were analysed it was found that the single mean that differs is that of the last group, namely major general. This group consisted of a single profile. It was contemplated to omit this participant from the research, but it was decided that for the sake of thoroughness the results should be included. It was further decided that the category would consist of groups 13, 14, 15 and 16.

Subsequently a one-way analysis of variance (ANOVA) was conducted to determine the possibility that rank, according to the new categories may be a covariate. The results indicated a significant difference for the EI scale, as displayed in Table 27. The complete results are displayed in Appendix P.

Table 27: ANOVA for rank and type preference as continuous data

	*	Sum of Squares	Df	Mean Square	F	Sig.
EI	a	1860.489	7	265.784	2.123	.044
	b	20530.790	164	125.188		
	Total	22391.279	171			

* a = Between groups

  b = Within groups

The results in Table 28 indicate that a significant difference may also exist for Thinking, Feeling and the EN quadrant.

Table 28: ANOVA for rank and type preference as separate groups

		Sum of Squares	df	Mean Square	F	Sig.
Thinking	a	707.683	7	101.098	2.614	.014
	b	6380.641	165	38.671		
	Total	7088.324	172			
Feeling	a	241.302	7	34.472	2.331	.027
	b	2440.166	165	14.789		
	Total	2681.468	172			
Quadrant - EN	a	.855	7	.122	2.354	.026
	b	8.567	165	5.192E-02		
	Total	9.422	172			

Through this process of statistical analysis it was found that rank could be a covariate. As a result the findings of the correlations between the dependant and independent variables would have to be interpreted with great care.

Level of formal education

The one way analysis of variance (ANOVA) was applied to test for the differences between the means of the various personality factors in relation to the single independent variable, qualification (Howell, 1989, p220). The results indicated that a significant difference appear to exist for the SN scale as indicated by Table 29. The complete results are displayed in Appendix Q.

Table 29: ANOVA for type preference presented as continuous data and qualification

		Sum of Squares	df	Mean Square	F	Sig.
SN	a	619.241	2	309.620	3.400	.036
	b	15481.811	170	91.069		
	Total	16101.052	172			

Feeling	a	97.971	2	48.985	3.223	.042
	b	2583.497	170	15.197		
	Total	2681.468	172			

These results imply that should a correlation exist between the outcome of the role-plays and the Sensing and Intuition subscales, the influence of the qualification held by the individual should be taken into account, since it appears to be a covariate of type preference.

RESULTS OF STATISTICAL ANALYSIS

As explained previously, the Pearson Product-moment method of correlation was applied to each postulation individually. The results of the statistical analysis are provided in this chapter, while the complete correlation tables are provided in Appendix R. The discussion and interpretation of the results will be provided in Chapter 7.

H_1 : There is no significant correlation between the type preference of the MBTI presented as continuous data and the profit made in negotiation.

No indication was found of correlations between any of the personality subscales and the outcome of the first or second role-plays. Even the combined profit indicated no significant correlations.

These results imply that the first postulation can be accepted as correct under these particular conditions and using this particular sample.

H_2 : There is no significant correlation between the type preference of the MBTI presented as separate groups and the profit made in negotiation.

No indication was found of correlations between type preference presented as separate groups and the outcome of either the first or the second role-plays. The combined profit also indicated no significant correlations.

These results imply that the second postulation can be accepted as correct under these particular conditions and using this particular sample.

H_3 : There is no significant correlation between the temperaments of the MBTI and the profit made in negotiation.

The statistical analysis produced no indication of significant correlations between the various temperaments and the outcome of either the first or the second role-plays. Furthermore no significant correlations were found between temperament and the average of profit obtained.

The third postulation can therefore be accepted as correct under these particular conditions and using this particular sample.

H_4 : There is no significant correlation between the attitudes of the MBTI and the profit made in negotiation.

No indication was found of correlations between the attitudes of the MBTI and the outcome of either the first or the second role-plays. The combined profit also indicated no significant correlations.

These results imply that the fourth postulation can be accepted as correct under these particular conditions and using this particular sample.

H_5 : There is no significant correlation between the functions of the MBTI and the profit made in negotiation.

Through Pearson's product-moment method of correlation it was established that no correlation exist between the functions of the MBTI and the profit made in negotiation. This implies that this particular postulation can be accepted, for these conditions.

H_6 : There is no significant correlation between the quadrants of the MBTI and the profit made in negotiation.

Once again no correlations were established, implying the acceptance of this postulation under these specific conditions.

H_7 : There is no significant correlation between the attitudes of the MBTI and the profit made in negotiation.

In order to prove this postulation, Pearson's product-moment method of correlation was once again applied to the data, but indicated no correlations with any of the role-plays or the average profit obtained. This implies that this postulation can also be accepted.

CONCLUSION

Through the methods of research conducted and by utilising Pearson's product-moment method of correlation it would appear that no correlations exist between the various methods of interpreting the type preference and the various role-plays used to determine success in negotiation. This implies that all the postulations care accepted as true for the conditions applying to this study. It would therefore appear that no correlation exist between personality as described by the MBTI and negotiation.

CHAPTER 7: DISCUSSION OF DATA AND CONCLUSION

> "That all things are changed, and that nothing really perishes, and that the sum of matter remains exactly the same, is sufficiently certain".
>
> Francis Bacon

The previous two chapters have provided the method applied in gathering the data needed to fulfil the aim of the study and were used to report the findings of the process. All indications exist that the established postulations should be accepted, implying that no relation exist between personality and negotiation. This does not imply that the aim of the study was not obtained, since the results could be interpreted in various ways.

In this particular chapter these results will be discussed, including speculations regarding the reasons for the findings. The chapter will also provide the limitations of the study that were identified, along with suggestions for future, research attempting to reach a similar or related aim.

DISCUSSION OF DATA

Type preference presented as continuous data

None of the subscales of the MBTI indicated a correlation with the outcome of negotiation. That implies that all the subscales indicated an equal facility in terms of the success in negotiation.

Type preference of the MBTI presented as separate groups

The separate groups of the MBTI subscales did not render any correlations with the outcome of negotiation. As discussed in chapter 5, Thorne and Gough (1991, p8) warn that this may be the case because "type preference presented as separate groups tend to provide redundant results." An alternative is however that there truly is no

correlation between the variables. This implies that the outcome obtained by each separate group is similar to the rest and that no particular group obtained higher results.

MBTI Temperaments

In terms of the theory of temperaments, specific mention was made of the Artisan temperament, which appears to be the "natural negotiator" and "will negotiate anything" (Steward, 1990). This research however indicated no correlation between the MBTI temperaments and the outcome of negotiation. This therefore implies that the artisan, may not be more skilled in negotiation than any of the other temperaments. This particular finding needs verification through further research.

MBTI Attitudes

In the discussion of the combinations of the attitudes it was postulated that the rational decision-maker (IP) might be more successful than some of the other combinations. This postulation was disproved through the statistical analysis. Various explanations could be provided. The first is that the role-plays may not have extracted enough dynamics for any particular combination to really use the strengths associated with the attitude. The second is that the decisions that needed to be made were not complex enough for the individual to rely on the particular strengths associated with the combination. The third possibility is that all the combinations of the attitudes are equal in terms of facility of negotiation.

MBTI Functions

As explained in chapter 5 the combination of functions that were used separately were those two, not included in the temperaments. These two functions appear to have no correlation with the outcome of negotiation and the two functions used as part of the temperaments (NT and NF) also indicated no correlations. The discussion of the combinations of functions provided in chapter 2 speculated on which combination may be more effective in negotiation. These speculations were based on the different skills

associated with each combination, such as objective, impersonal decision-making (ST) or humanistic analysis of implications (SF). These findings could be the result of the degree of skill displayed by each combination in terms of applying its strengths during the process.

MBTI Quadrants

In terms of the four quadrants the results of the statistical analysis indicated no correlation with the outcome of negotiation. It was speculated in chapter 2 that the strength of the ES quadrant, which concerns practical implementation, may benefit the skill in negotiation. The role-plays used in this study however only focused on the face-to-face phase and did not take into consideration that follow-up actions needed to confirm the success of the outcome. Therefore, it could be speculated that even though similar results were indicated for all the quadrants, the ES may be more effective in the long term. The reasoning process and methods of persuasion were not measured in the study. This implies that the results obtained by the various type preferences may appear to be similar, but in fact the reasoning process followed by each was quite unique and assisted in the process.

Dominant Functions

As explained in chapter 2, it was deemed important to explore the dominant functions because of the characteristic behaviour associated with each as well as the association with the inferior function. The fact that no correlations were indicated by the various functions implies that each approach is effective for those using it. The results could however also be contributed to the diminished levels of tention experienced by participants, in relation to that of a real life situation. Although Erasmus and van Dyk indicated that an element of pressure always exists whenever participants are subjected to role-plays (Erasmus & v Dyk, 1999, p221). The presence of some level of tention was also established through individual and group discussions with participants. Participants described feelings of discomfort and physiological reactions such as dryness of the mouth and increased perspiration. The pressure may however still not

have been enough to elicit the distinctive behaviour required.

INTEGRATION OF RESULTS WITH LITERATURE

In Chapter 4 the inconclusive research of Rubin and Brown was discussed, including a discussion of the assumptions for these findings (Lewicki & Litterer, 1985, p260). One of the propositions was that the group may have been too homogeneous in nature. The current research differs in the sense that the participants were certainly not homogeneous, but differed in terms of age, gender, years of experience in the military as well as ethnicity.

The other two explanations provided by Lewicki and Litterer may however apply to this research (Lewicki & Litterer, 1985, p260). This implies firstly that the structural variables in negotiation might be so strong that personality may only be visible in certain phases of negotiation, without influencing the eventual outcome of the process significantly in favour of a specific type. Secondly it could imply that certain personality types may only influence the process under specific conditions and that the research methodology did not provide this opportunity.

Similarly the research conducted by Hermann and Kogan also indicated no significant correlation between any particular personality element and negotiation outcome (Lewicki et al, 1994, p327). Though the present research differs from that of Hermann and Kogan in the sense that the no method of forced choice was applied to participants, almost identical results were still obtained.

The model of Interpersonal Orientation developed by Rubin and Brown (1975, p194) appears to have (at least at face value) similarities with the TF scale of the MBTI. Thus it would imply that a correlation should exist for that particular scale. The absence of any significant correlations could therefore support the view of Lewicki and Litterer (1985, p265) that the selection of the original variables by Rubin and Brown were not conducted in a scientifically sound manner. Another possibility is however that the number of participants indicating a preference for the Feeling scale may not have been

large enough to result in a significant correlation.

The abovementioned explanations seem also to apply to the work of Rotter, who proposed that the level of interpersonal trust held by an individual would influence the outcome of negotiation (Lewicki et al. 1994, p336).

Richard Christie (Lewicki & Litterer, 1985, p 317) assumed that people who are skilled at manipulation would be better negotiators. Similarly, Le Pool (1987, p11) identified a number of qualities of a successful negotiator. The results indicated by the current research however question those assumptions because negotiation outcome appears not to be as easily predictable. Negotiation outcomes appears to be more complicated than simply stating that if conditions A and B exist that outcome C will follow naturally, or stated differently; if the person is a good manipulator and has a specific personality type, the negotiation outcome will be favourable.

In contrast to the inconclusive results and propositions of previous authors as well as the current research, Gist, Stevens and Bandura (Lewicki et al. 1994, p338) found a positive correlation between perceived self-efficacy and negotiation outcome. It would therefore seem that more attention should perhaps be given in negotiation training to the belief system of individuals and accompanying levels of goal setting, rather than focussing on personality types, personality differences or personality similarities.

The absence of any significant correlations between negotiation outcome and the different MBTI scales and subscales implies furthermore that the suggestions made by Anastasi (1993) are also questionable. His suggestions may have an impact on the flow of communication or may make the negotiator more comfortable, but may not have any significant influence on the actual outcome of the process.

Conclusion

Perhaps the most obvious interpretation could be that theorists tend to make too much of the concept of personality and the relevance thereof in negotiation. According

to face value it would appear that the outcome of the negotiation should be influenced by the personalities of the individuals involved, but in truth other variables may have a larger impact. In the spirit of the exploring nature of the study, correlations were also determined between the outcome of negotiation and the various moderating variables. No correlations were discovered in terms of these variables either. If there are then no correlation between the outcome of negotiation and either personality or the moderating variables, then perhaps the concepts influencing the outcome of the process, are more related to the process itself, such as level of planning, type of techniques used, timing.

Another possible explanation that exists is that each type preference has a unique approach to negotiation. Those people with a particular preference use it with ease a facility in negotiation, because that is what they are most experienced in. This implies that even though the types may negotiate differently from one another, people follow the approach that is the most optimal according to their type preference.

If this is the case, then perhaps Anastasi's approach may be more appropriate. Anastasi discusses the possible strong and weak points of each type without promoting a single best approach to the process. Perhaps this example should be followed in terms of negotiation training, where personality is used to merely promote self-understanding and communication styles.

LIMITATIONS OF THE STUDY

One of the most prominent limitations may be the restrictive range of profiles present in the population. This implied that the majority of the profiles showed a preference for Sensing, Thinking and Judging.

The role-play utilised may not have included sufficient room for negotiation, because an economics based model was applied in order to determine the outcome. A wider range of reactions may have been possible if the scenarios could have included a relational based model and also the level of perceived satisfaction.

The intervention was applied to all participants, irrespective of the part "played" in the role-play. This implies that no control group was used to verify the results. For the purpose of this study the absence of a control group, may have sufficed, because the aim was not to evaluate the effectiveness of the intervention, but to assess the impact of personality. In this sense the intervention was only included as a practical aspect in order to obtain the data required for the research and had no bearing on the aim of the study.

POSSIBLE FURTHER RESEARCH

Future researchers may consider including a control group. Requesting the control group to participate as a particular character in the role-plays could assist in establishing uniformity. One may also consider including participants from different organisations in order to include a broader spectrum of type preferences.

One of the most important changes that could be considered for future research is the method utilised to evaluate negotiation. This could imply using real life negotiation situations. This is however a difficult option, because negotiation situations are seldom identical and obtaining entrance to these processes may be extremely limited. This would imply difficulty to generalise and compare individuals or groups. Another option would be to increase the number and type of role-plays utilised. The role-plays could be more diverse in terms of issues negotiated, size of the teams and positions held by the various parties. Different types of situation may elicit different results from the various types. The results may indicate that certain types fare better under specific conditions.

More importantly the role-plays could involve a variety of methods for evaluating the success of the outcome, such as the type of relationship maintained after the process, the relative value of the aspects that were negotiated and the degree of perceived satisfaction of the various participants. The assessment of the perception of satisfaction may create the need to involve an element of qualitative research.

In this particular research the role-plays were characterised by a relatively friendly

atmosphere. This atmosphere could be attributed to the relative importance associated to the outcome for the participants and the type of topics negotiated. In a more stressful environment the dynamics of the role-play may be enhanced, which may lead to different behavioural patterns and varying success rates. A factor that could therefore be included in future research is the amount of pressure placed on participants. By increasing the relative importance of the outcome, the perception of pressure could be attained and consequently the potential for conflict could be enhanced.

Future research could also be based on the postulation that each type utilises a style or behaviour in negotiation that is most suited for their particular type preference. With this postulation in mind the type preference of the participants could be determined beforehand. The behaviour of each category could then be analysed to determine the unique style or approach. Alternatively or consecutively, the participants within each type could ranked according to success in negotiation. The behaviour of the more successful and less successful (within each type) could be compared in order to assist each type to develop the style of negotiation that is most suited for their particular type preference.

As mentioned earlier in this chapter, the MBTI temperaments could be the topic for further research in term of the influence on negotiation, since the artisan is believed to possess a natural ability to negotiate. Since this particular postulation was disproved in this study, it could lay the foundation for further investigation.

Researchers could also consider exploring the effect of the combinations of the various type preferences in a negotiation situation. Teaming different type preferences as opponents in order to analyse the results could indicate that specific types are more successful when negotiating with others who have a similar type preference. The opposite could of course also be true. For example it may be found that Introverts negotiate better when faced with an opponent who also has a preference for Introversion, or the opposite could be true that Introverts negotiate better with Extraverts.

CONCLUSION

According to this study there appears to be no relation between personality, based on the theory of the Myers-Briggs Type Indicator and the outcome of negotiation. These results are attributed to two factors namely the role-plays used and the uniqueness of each personality type.

The extent of the role-plays used in the research appears to be the predominant factor creating a weakness in the research process. This is due to the restrictive nature of the role-plays. Even though participants had the freedom to react according to their own judgement, there still existed restrictions. These restrictions were important in order to create uniformity – an aspect important for the statistical analysis. Future research should however involve more diverse types of role-plays that would stimulate more dynamic behavioural patterns. This might lead to different results.

The results could also be attributed to the uniqueness of each type. It is postulated that the various subscales and combinations each has it's own unique approach to negotiation. These approaches may be different, but that does not imply that the one is more skilled than the other.

It can therefore be said that the research within the parameters of this sample and using these methods appears to be inconclusive. It however creates the foundation for a number of further studies, utilizing related concepts, samples and methods.

REFERENCES

Abella, K.T. (1986). Building successful training programs - a step-by-step guide. Massachusetts Addison-Wesley Publishing Company, Inc.

Allport, G.W. (1921). Personality and character, Psychological Bulletin, 18, 442 – 444.

Allport, G. W (1967). A history of psychology - an autobiography. In E.G. Boring and G. Lindzey. (Ed.), A history of psychology. 5. New York: Appleton-Century-Crofts.

Anastasi, T. (1993). Personality negotiation. New York: Sterling Publishing Company, Inc.

Anstey, M. (1991). Negotiating conflict - insights and skills for negotiators and peacemakers. Kenwyn: Juta and Co, Ltd.

Bailey, K.D. (1987). Methods of social research. Third ed. New York: The Free Press.

Beeld team, (2000). Bittersoet vryheid – Monique wag besorg in Manila (Bitter sweet freedom – Monique waits worried in Manila) Beeld, 28 August, 171064.

Benfari, R. (1991). Understanding your management style - beyond the Myers-Briggs Type Indicators. New York: Lexington Books.

Berens, L.V. and Nardi, D. (1999). The 16 sixteen personality types - descriptions for self-discovery, Huntington Beach, California:Telos Publication.

Bergh, Z.C. and Theron, A.L. (1999). Pshychology in the work context. Johannesburg: International Thomson Publishing (Southern Africa), Pty.Ltd.

Bontempo, R.N. (1990). Behavioral decision theory and the negotiation process - effects of agenda and frame. Unpublished doctoral Thesis, University of Illinois, Urbana Campaign.

Brock, S.A, (1997). Type in practical influence situations: Consulting, teamwork, Managing, Selling, Living Effectively with others. In proceedings of the eleventh Biennial International Conference of the Association for Psychological Type.

Brownsword, A.W. (1987). It Takes All Types. San Anselmo: Baytree Publication Company, for HRM Press, Inc.

Buckley, R and Caple, J. (1990). The Theory and Practice of Training. London: Kogan Page.

Cairns, L. (1996). Negotiation Skills in the Workplace - A Practical Handbook. London: Pluto Press.

Cattell, R.B. (1946). Description and measurement of personality. Yonkers-on- Hudson, New York: World Book.

Churchman, D. (1995). Negotiation – process, tactics and theory. Lanham, Md: University Press of America.

Creswell, J.W. (1994). Research design - qualitative and quantitative approaches, Thousand Oaks: Sage Publications.

Crookall, D. (1987). Simulation - gaming in the Late 1980's. In proceedings of the 17th International Conference of the International Simulation and Gaming Association. (pp.187 – 192). Pergamon Press: Oxford.

De Beer, J. (1997). South African Myers-Briggs Type Distribution – a comparative study. Unpublished doctoral Thesis, Johannesburg; Rand Afrikaans University.

De Beer, J. (1998). The South African MBTI Database - some perspectives. In proceedings of the Southern African Association for Psychological Type Conference. Johannesburg: APT.

Deutsch, M. and Krauss, R.M. (1962) Studies in interpersonal bargaining. Journal of Conflict Resolution, 6, 52.

Erasmus, B.J. and van Dyk, P.S. (1999). Training management in South Africa. 2nd ed. Johannesburg: Thomson Publishing.

Fitzgerald, C. R. and Kirby, L. K. (Eds) (1997). Developing leaders - research and applications of psychological types and leadership development. Palo Alto, CA: Davies Black Publishing.

Fowler, A. (1990). Negotiation skills and Strategies. Devon: Short Run Press Ltd.

Freund, J.C. (1992). Smart Negotiating - how to make good deals in the real world : New York: Simon & Shuster.

George, D. and Mallery, P. (2000). SPSS for Windows step by step – a simple guide and reference. 9.0 Allyn and Bacon.

Guy, V. And Mattock, J. (1991). The new international manager - an action guide for cross-cultural business. London: Kogan Page.

Hall, L. (ed). (1993). Negotiation - strategies for mutual gain. London: Sage Publications.

Hall, C.S. and Lindzey, G. (1970). Theories of personality. 2nd ed. New York: John Wiley & Sons, Inc.

Hammer, A.L. (ed). (1997). MBTI applications – a decade of research on the Myers-Briggs Type Indicator. Palo Alto, California: Consulting Psychologists Press, Inc.

Harding, R.L. (1988). Preparing for multicultural negotiations - some black perspectives. Unpublished research report submitted to the faculty of Business Administration, University of the Witwatersrand, Johannesburg.

Howell, D.C. (1989). Fundamental statistics for the Behavioral Sciences. 2nd ed. Boston: PWS-Kent Publishing Company.

Huffman, K. Vernoy, M. and Vernoy, J. (1997). Psychology in action. 4th ed. New York: John Wiley & Sons, Inc.

Huysamen, G.K. (1993). Metodologie vir die sosiale en gedragswetenskappe. (Methodology for the social and behavioural sciences). Halfweghuis: Southern Boekuitgewers.

Huysamen, J.J. (1999). Proposed diploma in negotiation skills. (Internal document to the South African Army). Chief Directorate Army Strategy and Planning/302/2.

Jacobi, J. (ed). (1971). Psychology of C.G. Jung – an anthology of the writings of C.G. Jung. London: Routledge & Kegan Paul of New York.

Johnson, R.A. (1993). Negotiation basics. London: Sage Publications.
Jones, E.E. (1999). In Gilbert, D.T., Fiske, S.T. and Lindzey, G. (Eds). The handbook of Social Psychology. 4th ed. Boston: The McGraw-Hill Companies, Inc.

Jordaan, J. and Jordaan W. (1989). Mens in konteks (Man in context). 2nd ed. Isando: Lexicon Publishers.

Keirsey, D and Bates, M. (1984). Please understand me. 5th ed. Del Mar: Prometheus Nemesis Book Company.

Kerlinger, F.N. (1986). Foundations of behavioural research. 3rd ed. Orlando: Florida.

Knowles, E. (Ed). (1999). The Oxford dictionary of quotations. 5th ed. New York: Oxford Universtity Press.

Kramer, R.D. and Messick, D.M. (Eds). (1995). Negotiation as a social process. London: Sage Publications.

Krebs Hirsh, S, (1992). MBTI - team building program - leader's resource guide. Palo Alto: Consulting Psychology Press, Inc.

Kumar, R, (1989). Affect, cognition and decision making in negotiation - an analysis of American and Japanese business negotiations. Unpublished thesis at the Faculty of the Graduate School of Business Administration, New York University.

Le Poole, S. (1987). Never take no for an answer - a guide to successful negotiation. London: Kogan Page, Ltd.

Leritz, L. (1987). No-Fault Negotiation. New York: Warner Books.

Lewicki, R.J. and Litterer, J.A. (1885). Negotiation - readings, exercises and cases. Illinois: Richard D. Irwin, Inc.

Lewicki, R. J. and Hiam, A. and Olander K.W. (1996). Think before you speak - the complete guide to strategic negotiation. New York: John Wiley and Sons, Inc.

Louw, D.A. (1982). Inleiding tot die psigologie. (Introduction to the pshycology). 2nd ed. Johannesburg: Lexicon Printers.

Luce, R.D. and Raiffa, H. (1957). Games and decisions- introduction and critical survey. Columbia University Bureau of applied Social Research. XIX, 509.

Maier, N.R.F. and Verser, G.C. (1982). Psychology in industrial organisations. 5th ed. Boston: Houghton Mifflin Company.

Mayo, G.D. and DuBois, P.H. (1987). The complete book of training - theory, principles and techniques. San Diego: University Associates, Inc.

McBurney, D.H. (1994). Research methods, 3ʳᵈ ed., Pacific Grove, California: Brooks/Cole Publishing Company.

McGillicuddy, N.B., Pruitt, D.G. and Syna, H. (1984). Perceptions of firmness and strength in negotiation. Personality and Social Psychology Bulletin. 10, 1, 105.

Meyer, W.F. Moore, C. and Viljoen, H.G. (1988). Persoonlikheidsteorieë - van Freud tot Frankl. (Personality theories – from Freud to Frankl). Johannesburg: Lexixicon Distributors.

Mills, H.A. (1991). Negotiate - the art of winning. Hants, England: Gower Publishing Company Limited.

Morris, C.G. (1990). Psychology – an introduction. 7ᵗʰ ed. New Jersey: Prentice Hall.

Myers, I.B. and McCaully, M.H. (1987). Manual: a guide to the development and use of the Myers-Briggs Type Indicator. 3ʳᵈ ed. Palo Alto, California: Consulting Psychologist Press.

Myers, I.B. and Myers, P.B. (1980). Gifts differing - understanding personality type. Palo Alto, California: Davies-Black Publishing.

Nagy, M. (1991). Philosophical issues in the psychology of C.G. Jung, New York: State University of New York.

Nierenberg, G.I. (1981). The art of negotiating. New York: Simon and Schuster, Inc.

Nieumeijer, L. and Pottas, C. (1992). Onderhandeling - 'n fyn kuns. (Negotiation – a fine art). Pretoria: J.L. van Schaik.

Papalia, D.E. and Olds, S.W. (1988). <u>Psychology - international student edition</u>. 2nd ed. New York: McGraw-Hill Book Company.

Pervin, L.A. and John, O.P. (1999). <u>Handbook of Personality - Theory and Research</u>, 2nd ed. New York: The Guilford Press.

Pruitt, D.G. and Carnevale, P.J. (1993). <u>Negotiation in Social Conflict</u>. Buckingham: Open University Press.

Quenk, N.L. (1996). <u>In the grip - our hidden personality</u>. Palo Alto, California: Consulting Psychologists Press, Inc.

Raiffa, H. (1982). <u>The Art and Science of Negotiation</u>. Cambridge, Massachusetts: The Belknap Press of Harvard University Press.

Raser, J.R. (1969). <u>Simulation and society - an exploration of scientific gaming</u>. Boston: Allyn and Bacon.

Rubin, J.Z. and Brown, B.R. (1975). <u>The social psychology of bargaining and negotiation</u>. New York: Academic Press.

Scott, B. (1981). <u>The skills of negotiation</u>. Vermont, USA: Gower Publishing Company.

Shapiro, R.M. and Jankowski, M.A. (1998). <u>The power of nice - how to negotiate so everyone wins, especially you</u>. New York: John Wiley & Sons, Inc.

Silberman, M.L. (1990). <u>Active training - a handbook of techniques, designs, case examples and tips</u>. New York: Lexington Books.

South African Army electronic data-base of personnel records, dated 17 November 2000, Pretoria.

Spector, B.I. (1977). Negotiation as a psychological process. Journal of Conflict Resolution. 21, 1, 609 – 618).

Spoelstra, H.I.J. (1998). Negotiation Package for South African National Defence Force Trainers. Unpublished training notes. Pretoria: Spoelstra and Associates.

Spoelstra, H.I.J. and Pienaar, W.D. (1991). Negotiation - theories, strategies and skills, 2nd ed, Kenwyn: Juta and Co. Ltd.

Steward, V. (1990). The David solution – how to reclaim power and liberate your organisation. Hants, England: Gowar Publishing Company Limited.

Thorne, A. and Gough, H. (1991). Portraits of Type – an MBTI research compendium. Palo Alto, California: Consulting Psychologists Press.

Ury, W. and Fishers, R. (1981). Getting to yes - negotiating agreement without giving in. London: Hutchinson.

Ury, W. (1991). Getting past no - negotiating with difficult people. London: Business Books Limited.

van Rooyen, J. and de Beer, J. (1995). Myers-Briggs Type Indicator - training manual, 3rd ed. Unpublished notes. Johannesburg: Jopie van Rooyen and Partners (cc).

van Rooyen, J.H. (1997). Organisation Character and the managerial team type. Unpublished masters thesis. University of the Witwatersrand.

Warschaw, T. A. (1980). Winning by negotiation. New York: McGraw-Hill Book Company.

Winter, D.G., John, O.P., Steward, A.J., Klohnen, E.C. and Duncan, L.E. (1998). Traits and motives - toward an integration of two traditions in personality research. Psychological Review. 105.

Young, O.R. (1975). <u>Bargaining - formal theories of negotiation</u>. Chicago: University of Illinois Press.

Zeisset, R.M. (1996). <u>Statistics and measurement – an introduction for MBTI users</u>. 2nd ed. Gainesville, Florida: Centre for Applications of Psychological Type.

APPENDIX A: PRISONER'S DILEMMA

Instructions

For ten consecutive rounds, the Red Team will choose either an A or a B, and the Blue Team will choose either an X or a Y. The score for each team in a round is determined by the choice of teams, in accordance with the following payoff schedule:

AX - Both teams win 3 points
AY - Red team loses 6 points; Blue team wins 6 points
BX - Red team wins 6 points; Blue team loses 6 points
BY – Both teams lose 3 points

Score Sheet

Round	Choice – Red	Choice – Blue	Score – Red	Score - Blue
1				
2				
3				
4				

Teams are given the choice to negotiate with one another

Round	Choice – Red	Choice – Blue	Score – Red	Score - Blue
5				
6				
7				
8				

Teams are given the choice to negotiate with one another

Round	Choice – Red	Choice – Blue	Score – Red	Score - Blue
10				
Total score				

APPENDIX B: PARKER- GIBSON ROLE - PLAY

CONFIDENTIAL INFORMATION TO PARKER

The Parkers own a house at 43 Willow Street. Ten years ago they paid R20 000 for a 100 square meter parcel that is located between their house and the home of the Gibsons. The specific parcel is a little less that 50% of the half acre minimum lot size required by the local zoning board. The Parkers purchased the piece of land thinking that they might use it for a tennis court, but never got around to building one.

Now the Parkers have decided to move to the coast, having received a generous retirement package. They were lucky enough to find a private buyer for the residence. Because they got a good price and do not have to pay an estate agent, they are making a larger profit than expected. The only drawback is that the buyer is not interested in the extra piece of land, seeing no real use for it. At the most the buyer will be willing to pay an additional R15 000 (over and above the negotiated price for the house) for the parcel. This is less than the Parkers paid for the parcel a decade ago, but lacking any other bidders they would have to accept. It would make no sense to hang on to this land once they live a thousand kilometers away.

The Parkers have tried to do better by approaching the Moore's who live to the north and who's plot borders on the half plot and thus might have some for it. They were not interested. Their last hope is the Gibsons who live immediately to the West. As it happens, when the Parkers first acquired the plot they asked the Gibsons whether they are interested in splitting the plot with them, but they declined.

There are no bad feelings between the two families, but they have had little social or professional contact over the years. Bob Gibson is a teacher at the local high school and his wife, Jackie, is a part-time bookkeeper. They may still not be interested in the plot, but there

is no harm in asking. Perhaps they might be persuaded of the value in adding yard space or getting a bit of buffer between them and their new neighbours.

- In this negotiation you are to assume the role of one of the Parkers. Your goal is to sell the half-lot for as much as possible. Any deal you make with the Gibsons must be more than the R15 000 offer that the recent buyer of your home has already made. You should regard R15 000 as an absolute minimum. Try hard to do much better. Remember that the Parkers paid more for it ten years ago and have had upkeep and taxes through the years.

- It is true that real estate value generally dropped in the first part of the 1990's but have rebounded somewhat in recent years. That fact provides little help here, however, as this is a unique piece f property. There really is no "fair market value".

- You are only interested in a straight cash deal. Do not complicate matters by arranging seller financing, or introducing other issues or options.

CONFIDENTIAL INFORMATION TO THE GIBSONS

The Gibsons own a house at 39 Willow Street. They have been approached by their neighbours to the east, the Parkers, and asked whether they would be interested in buying the half-lot that sits between their homes.

The particular parcel consists of 100 square meter, a bit than 50% of the half-acre minimum building requirement set by the local zoning prescriptions. The Parkers purchased the lot ten years ago for about R20 000. In fact, at the time the Parkers asked the Gibsons if they were interested in sharing the plot with them, but the Gibsons declined. The Parkers however never used the land for much. There are no hard feelings between the two families, but they have had little social or professional contact over the years.

The Gibsons are use to spending their money economically -Bob is a teacher at the local high school and Jackie is a part-time bookkeeper- but recently they received a modest inheritance from an aunt. They plan to use some of the money to expand their small house and have already spoken to an architect and contractor about the plans. Ideally, they would like to build a new kitchen and lounge to the east, but their house is situated too close to the existing property border. Acquiring the half-lot from the Parkers would completely solve this problem. Without the parcel, the Gibsons would have to expand in another direction, but this would be very costly and not produce as attractive a house.

The Parkers' enquiry came as a pleasant surprise. (They live in a small town; perhaps the Parkers got hold of their plans.)

They do not want to be exploited financially. Taking their bank account into consideration, as well as their construction alternatives, the Gibsons' have set a firm maximum of R40 000 for the half-lot. If the Parkers insist on more, they will have to pass on the deal. They would naturally prefer to pay much less than the R40 000, if possible, as they have plenty of other good uses for the money.

They were advised them that there is really no "fair market" for this parcel. It is unique and has value only to the immediate parties.

- In this negotiation, you are to assume the role of one of the Gibsons.

- Your goal is to buy the half-lot for as little as possible. The R40 000 maximum they have stipulated is an absolute upper limit. Every rand you can shave from this amount represents an improved result.

- You are only interested in a straight cash deal. Do not complicate matters by arranging seller financing or introducing other issues or options.

APPENDIX C: INHERITANCE ROLE-PLAY

CONFIDENTIAL INSTRUCTIONS TO SELLER

Shortly before you were to immigrate to Canada you received the sad news that your favourite aunt has passed away and that you are the sole heir of her estate. Your aunt died unexpectedly and consequently all her affairs were not in order. According to the bank manager she left you with dept of R15 000, this was even after her house and furniture have been sold. The only item of any value is a large antique Chinese vase.

You do not have the financial means to pay the R15 000 and your only hope is to sell the Chinese vase to raise the cash. The cost and risk to transport the vase to the nearest city, where an art dealer can be found, is not worth the effort and would be too time consuming. In fact you have not even been able to convince any dealer to travel all the way to Timbuktu to give you an indication of the value of the vase. Your only other option is to sell the vase locally.

According to your limited knowledge and discussions you had with your aunt over the years, you have calculated that you would be able to sell the vase for at least R15 000. You loved your aunt very much and would have preferred to have something to remind you of her. You realize that under your present circumstances you cannot keep the vase, but believe that it would be a viable option to sell it for a profit and then use the money to payoff her dept and to buy something special in honour of her, once you reach Canada.

Through the local grapevine you were brought into contact with a person who is interested in the vase. You will meet this person shortly and try to reach an agreement on the price. This deal has to be finalized before you leave for Canada and you want to conclude a simple cash transaction.

CONFIDENTIAL INSTRUCTIONS TO BUYER

Your mother has died recently and you inhered an amount of R40 000 from her. You and your spouse agreed that you do not want to spend the money on every-day household expenses, but would prefer to buy something of lasting value, in honour of her memory.

A well-known and respected old lady of your community has recently died unexpectedly. You did not know her very well but she was a close friend of your mother. Your mother always told you about a beautiful antique Chinese vase owned by this lady. Your mother always admired the vase and said more than once that she would love to have one just like it.

Through the local grapevine you heard that the children of the old lady cannot keep the vase and is looking for a buyer. The moment you heard that the vase was for sale you realize that you simply must have it. It will be something very precious and will always remind you of your mother.

You have available the money left to you by your mother and that this vase is probably worth a lot more, but you are not sure. Nevertheless you would obviously not like to spend all the money on a single item and would like to keep as much of the money as possible.

APPENDIX D: INTERNAL CONSISTENCIES FOR THE MBTI FORM G

Description of sample	Gender	N	EI	SN	TF	JP
Total Form G data bank	M, F	32 671	82	84	83	86
Males		15 791	82	84	82	86
Females		16880	82	84	79	86
Traditional junior high school student	M, F	232	79	73	78	86
Traditional high school student	M, F	608	84	83	80	87
Adult high school dropout	M, F	378	77	86	84	84
Adult high school graduate	M, F	1260	82	84	84	85
Traditional college student	M, F	11 908	82	81	82	86
Non-traditional age college student	M, F	1 708	83	84	85	92
Adult college graduate	M, F	5 584	83	89	86	88
Age groupings						
9-14	M, F	441	78	73	78	84
15-17	M, F	3 948	82	82	80	86
18-20	M, F	11 052	82	81	81	85
21-24	M, F	2 917	81	83	84	86
25-29	M, F	2 609	80	85	84	85
30-39	M, F	4 807	83	88	85	87
40-49	M, F	2 852	83	89	86	87
50-59	M, F	1 603	82	90	86	88
60+	M, F	520	83	88	85	88

(Myers & McCaully, 1985, p166)

APPENDIX E: INTERNAL CONSISTENCY OF CONTINUOUS SCORES BASED ON COEFFICIENT ALPHA

Description of sample	Gender	N	EI	SN	TF	JP
Massachusetts high school	M	379	78	77	64	78
	F	400	83	74	70	81
Long Island University	M	399	76	75	74	84
	F	184	78	80	71	81
MBTI data bank	M, F	9216*	83	83	76	80
IPAR data bank	M	100	82	85	82	84
	F	100	74	82	78	84

* (n = 288 of each type)

(Myers & McCaully, 1985, p167)

APPENDIX F: COMPARISON OF INTERNAL CONSISTENCY OF TYPE CATEGORIES

Description of sample		Gender	N	EI	SN	TF	JP
Massachusetts: Twelfth grade students							
General course	Phi Rtet	M	100	61 78	54 77	49 66	73 88
College preparatory	Phi Rtet	M	100	69 88	65 81	58 76	75 91
College preparatory	Phi Rtet	F	100	57 74	66 83	60 80	79 93
National merit finalists	Phi Rtet	M	100	72 88	69 87	62 80	67 84
College Students							
Brown University freshmen	Phi Rtet	M	100	55 74	73 88	75 90	58 76
Pembroke College freshmen	Phi Rtet	F	100	65 81	64 83	67 84	68 84
Michigan State University: Student teachers							
Males	Phi Rtet	M	64	79 92	73 89	67 83	78 92
Females	Phi Rtet	F	136	68 86	70 86	62 84	71 86

Notes: Decimals omitted. All data based on Form F. Phi indicates split-half reliabilities computed by applying Spearman-Brown Prophecy Formula to Phi coefficients. Tet indicates split-half reliabilities computed by applying Spearman-Brown Prophecy Formula to Tetrachoric coefficients. (Phi coefficients tend to yield low estimates of true values and Tetrachoric coefficients tend to yield high estimates of true values) (Myers & McCaully, 1985, p171).

APPENDIX G: TEST - RETEST PRODUCT - MOMENT CORRELATIONS OF CONTINUOUS SCORES FOR FORM G

Description of sample	Interval	Gender	N	EI	SN	TF	JP
1979 Form G study	7 weeks	M	32	79	84	48	63
		F	24	86	87	87	80
1979 sex differences study	5 weeks	M	24	77	93	91	87
		F	36	89	85	56	89
Mood manipulation study using Form F	5 weeks						
- Depressed mood		M, F	117	82	87	78	81
- Elated mood		M, F	38	87	82	80	77
- Control group		M, F	40	79	85	71	84
		M, F	39	81	91	83	81
Sub-scores study	5 weeks			86	85	77	89
-Phrase questions				82	79	63	86
-Word-pair questions		F	62	77	78	72	84
-Split-half: X Items				82	86	66	85
-Split-half: y Items				75	78	70	86
Instruction manipulation	4 weeks		128				
- Standard – standard		M, F	40	93	80	89	88
- Vocational – vocational			40	90	85	89	83
- Standard – vocational			48	87	75	79	88

Notes: Decimals omitted

(Myers & McCaully, 1985, p172)

APPENDIX H: TEST - RETEST, AGREEMENT OF TYPE CATEGORIES

Description of sample	N	Sex	Interval	% of agreement in categories				% categories unchanged				
				EI	SN	TF	JP	4	3	2	1	0
Seventh grade students	77	M, F	12 months	75	74	73	79	39	Na	Na	Na	Na
Amherst class of 1963	126	M	14 months	76	87	75	77	37	44	16	4	0
Wesleyan freshmen	56	M	8 months	84	88	79	75	47	39	14	2	0
Auburn University sophomores	329	M,F	2 years	74	71	73	77	31	39	22	7	0
Howard University	433	M, F	2 months	Mean agreement 85%				53	35	10	2	0
Mississippi State University mood manipulation study	177	M, F	5 weeks	81	89	83	84	48	37	13	0	0
				76	84	79	82	43	34	22	0	0
				89	92	88	84	56	42	2	0	0
Mississippi State University Subscores study	62	F	5 weeks	86	77	79	89	47	Na			
-Phrase questions												
-Word-pair questions				81	84	76	90	48				
-Split-half: X items				84	76	84	90	50				
-Split-half: y items				87	84	86	92	53				
				81	77	86	89	50				
University of New Mexico	121	M, F	2.5 years	68	77	77	74	36	39	19	6	0

Description of sample	N	Sex	Interval	% of agreement in categories				% categories unchanged				
				EI	SN	TF	JP	4	3	2	1	0
Medical students												
University of New Mexico	91	M, F	21 months	80	81	76	69	42	33	20	4	1
University of Utah	125	M, F	44 months	75	76	69	83	33	40	25	2	0
St Mary's Hospital	120	M, F	4.5 years	72	66	68	66	24	37	29	8	0
Elementary teachers	94	M, F	6 years	83	89	90	90	61	na			

Notes: All data based on Form F. By chance, 6.25% are expected to remain the same in all four categories; 25% to change one category; 37.5% to change two categories; 25% to change three categories and 6.25% to change all four categories.

(Myers & McCaully, 1985, p172)

APPENDIX I: AGE AS POSSIBLE COVARIATE

Correlation between age and MBTI scales as continuous data

	EI	SN	FT	JP
Pearson Correlation	-.143	-.038	.074	.195 ***
Sig. (2-tailed)	.061	.618	.335	.010

Correlation between age and MBTI subscales preferences as separate groups

	E	I	S	N	F	T	J	P
Pearson Correlation	-.125	.144	.055	.089	.149	-.042	.211	-.171
Sig. (2-tailed)	.100	.059	.470	.243	.051	.582	.005 ***	.024** *

Correlation between age and MBTI Temperaments

	NF	NT	SP	SJ
Pearson Correlation	.058	.098	-.158	.008
Sig. (2-tailed)	.452	.201	.038**	.913

Correlation between age and MBTI Attitudes and Functions

	IJ	IP	EP	EJ	ST	SF
Pearson Correlation	115	-.149	-.076	-.027	-.072	-.022
Sig. (2-tailed)	.132	.051	.319	.728	.343	.775

Correlation between age and Quadrants

	IS	IN	ES	EN
Pearson Correlation	.081	-.033	-.156**	.192**
Sig. (2-tailed)	.291	.665	.040	.011
N	173	173	173	173

Correlation between age and Dominant functions

	S	N	T	F
Pearson Correlation	.89	-.015	-.129	.092
Sig. (2-tailed)	.247	.847	.091	.229
N	173	173	173	173

APPENDIX J: INDEPENDENT SAMPLES TEST FOR GENDER AS COVARIATE

Comparison of means for gender for MBTI scales as continuous data

	Equal variance	Levene's Test for equality of variance		t-test for Equality of Means						
		F	Sig	t	df	Sig. 2-tailed	Mean diff	Std Error Diff	95% Confidence Interval	
									Lower	Upper
EI	Assumed	.442	.507	-1.48	170	.141	-3.2	2.16	-7.46	1.07
	Not			-1.417	50.07	.163	-3.2	2.26	-7.73	1.33
SN	Assumed	.228	.633	.849	171	.397	1.56	1.83	-2.06	5.17
	Not			.872	54.4	.387	1.56	1.79	-2.02	5.13
TF	Assumed	8.152	***.005	3.138	171	***.002	5.7	1.82	2.11	9.28
	Not			2.69	44.7	***.010	5.7	2.12	1.43	9.97
JP	Assumed	1.97	.163	2.28	171	***.024	4.38	1.93	.58	8.18
	Not			2.12	48.5	**.039	4.38	2.07	.23	8.54

***	Correlation is significant at the 0.01 level (2-tailed)
**	Correlation is significant at the 0.05 level (2-tailed)

Group Statistics for MBTI scales expressed as continuous data

	*Gender	Mean	Std. Deviation	Std. Error Mean
EI	1	-.45	11.23	.96
	2	2.74	12.08	2.04
SN	1	10.93	9.76	.83
	2	9.37	9.35	1.58
TF	1	12.36	8.99	.77
	2	6.66	11.7	1.98
JP	1	13.36	9.92	.84
	2	8.97	11.16	1.89

*1: Male	-	N = 138	
2: Female	-	N = 35	

Comparison of means for gender sub scales expressed as separate groups

	Equal variance	F	Sig	t	df	Sig. 2-tailed	Mean diff	Std Error Diff	95% Confidence Interval	
									Lower	Upper
E	Assumed	1.66	*.20	-.817	171	.415	-.91	1.11	-3.1	1.29
	Not			-.753	48	.455	-.91	1.21	-3.33	1.52
I	Assumed	2.772	*.098	1.337	171	.183	1.52	1.14	-.72	3.76
	Not			1.199	46.66	.236	1.52	1.27	-1.03	4.07
S	Assumed	.256	.614	.893	171	.373	1.02	1.14	-1.23	3.27
	Not			.883	51	.381	1.02	1.15	-1.29	3.33
N	Assumed	.041	.840	-.928	171	.355	-.76	.82	-2.38	.86
	Not			-.999	58.16	.322	-.76	-.76	-2.29	.76
T	Assumed	7.507	***.007	3.114	171	***.002	3.69	1.19	1.35	6.03
	Not			2.717	45.46	***.009	3.69	1.36	.96	6.43
F	Assumed	4.616	**.033	-3.111	171	***.002	-2.27	.73	-3.71	-.83
	Not			-2.729	45.69	***.009	-2.27	.83	-3.94	-.6
J	Assumed	2.95	.088	2.150	171	**.033	2.07	.96	.17	3.97
	Not			1.991	48.17	.052	2.07	1.04	-2.04	4.16
P	Assumed	3.274	.072	-2.376	171	**.019	-2.37	1	-4.34	-.40
	Not			-2.189	47.92	**.034	-2.37	1.08	-4.55	-.19

Levene's Test — t-test for Equality of Means

Group statistics for sub scales expressed as separate groups

	*Gender	Mean	Std. Deviation	Std. Error Mean
Extraversion	1	12.95	5.7	.48
	2	13.86	6.53	1.1
Introversion	1	13.41	5.76	.49
	2	11.89	6.91	1.17
Sensing	1	19.19	6.00	.51
	2	18.17	6.11	1.03
Intuition	1	8.18	4.43	.38
	2	8.94	3.92	.66
Thinking	1	18.38	5.93	.5
	2	14.69	7.46	1.26
Feeling	1	5.7	3.66	.31
	2	7.97	4.56	.77
Judging	1	20.41	4.94	.42
	2	18.34	5.63	.95
Perception	1	7.06	5.11	.44
	2	9.43	5.87	.99

Comparison of means for gender for Temperaments

	Equal variance	F	Sig	t	df	Sig. 2-tailed	Mean diff	Std Error	Lower	Upper
		Levene's Test		t-test for Equality of Means					95% Confidence Interval	
NF	Assumed	20.96	.0	-2.23	171	**.025	-7.12	3.14	-.13	-9.20
	Not			-1.451	37.12	.155	-7.12	4.91	-.17	2.82
SJ	Assumed	13.19	.0	2.097	171	**.037	.15	7.38	9.10	.30
	Not			1.810	45.04	.077	.15	8.55	-1.74	.33
NT	Assumed	1.601	.207	-.646	171	.519	-3.46	5.35	-.14	7.10
	Not			-.583	46.96	.562	-3.46	5.93	-.15	8.47
SP	Assumed	1.387	.241	-.598	171	.551	-2.77	4.64	-.12	6.38
	Not			-.534	46.43	.596	-2.77	5.20	-.13	7.69

Group statistics for Temperaments

	*Gender	Mean	Std. Deviation	Std. Error Mean
NF	1	1.45E-02	.12	1.02E-02
	2	8.57E-02	.28	4.80E-02
SJ	1	.84	.37	3.13E-02
	2	.69	.47	7.96E-02
NT	1	7.97E-02	.27	2.31E-02
	2	.11	.32	5.46E-02
SP	1	5.80E-02	.23	2.00E-02
	2	8.57E-02	.28	4.80E-02

Comparison of means for gender for Attitudes and Functions

	Equal variance	F	Sig	t	df	Sig. 2-tailed	Mean diff	Std Error	Lower	Upper
		Levene's Test		t-test for Equality of Means					95% Confidence Interval	
IJ	Assumed	28.64	.00	2.53	171	.012	.24	9.33	5.18	.42
	Not			2.668	56.47	.010	.24	8.85	5.89	.41
IP	Assumed	13.42	.00	-1.87	171	.064	-7.81	4.19	-.16	4.56
	Not			-1.373	40	.177	-7.81	5.69	-.19	3.68
EP	Assumed	14	.00	-1.925	171	.056	-9.21	4.78	-.19	2.32
	Not			-1.465	40.86	.150	-9.21	6.29	-.22	3.49
EJ	Assumed	1.42	.235	-.931	171	.353	-8.72	9.36	-.27	9.76
	Not			-914	51.4	.365	-8.72	9.54	-.28	.10
ST	Assumed	26.57	.00	3.803	171	.00	.29	7.64	.14	.44
	Not			3.186	43.89	***.003	.29	9.12	.11	.47
SF	Assumed	35.02	.00	3.194	171	***.002	-.18	5.78	-.3	-7.05
	Not			-2.363	40.12	**.023	-.18	7.82	-.34	-2.67

Group statistics for Attitudes and Functions

	*Gender	Mean	Std. Deviation	Std. Error Mean
Attitude - IJ	1	.52	.50	4.27E-02
	2	.29	.46	7.75E-02
Attitude - IP	1	3.62E-02	.19	1.60E-02
	2	.11	.32	5.46E-02
Attitude - EP	1	5.07E-02	.22	1.87E-02
	2	.14	.36	6.00E-02
Attitude - EJ	1	.40	.49	4.18E-02
	2	.49	.51	8.57E-02
Function - ST	1	.83	.37	3.18E-02
	2	.54	.51	8.54E-02
Function - SF	1	7.25E-02	.26	2.21E-02
	2	.26	.44	7.50E-02

Comparison of means for gender for Quadrants

		Levene's Test		t-test for Equality of Means						95% Confidence	
	Equal variance	F	Sig	T	Df	2-tailed	Mean diff	Std Error		Lower	Upper
IS	Assumed	30.69	.000	2.294	171	**.023	.21	9.34		2.99	.40
	Not			2.422	56.59	**.019	.21	8.85		3.71	.39
IN	Assumed	2.405	.123	-.789	171	.431	-3.50	4.43		-.12	5.25
	Not			-.679	44.90	.501	-3.50	5.15		-.14	6.88
ES	Assumed	1.208	.273	-1.156	171	.249	-.11	9.38		-.29	7.67
	Not			-1.137	51.51	.261	-.11	9.54		-.30	8.31
EN	Assumed	9.853	.002	-1.606	171	.110	-7.08	4.41		-.16	1.62
	Not			-1.236	41.18	.223	-7.08	5.73		-.19	4.49

Group statistics for Quadrants

	*Gender	Mean	Std. Deviation	Std. Error Mean
Quadrant - IS	1	.50	.50	4.27E-02
	2	.29	.46	7.75E-02
Quadrant - IN	1	5.07E-02	.22	1.87E-02
	2	8.57E-02	.28	4.80E-02
Quadrant - ES	1	.41	.49	4.20E-02
	2	.51	.51	8.57E-02
Quadrant - EN	1	4.35E-02	.20	1.74E-02
	2	.11	.32	5.46E-02

Comparison of means for gender for Dominant functions

		Levene's Test			t-test for Equality of Means						95% Confidence	
	Equal variance	F	Sig	T	Df	2-tailed	Mean diff	Std Error			Lower	Upper
S	Assumed	5.505	.020	.979	171	.329	9.28	9.48			-9.43	.28
	Not			.984	53	.330	9.28	9.43			-9.63	.28
N	Assumed	30.15	.000	-2.753	171	.007	-.11	4.14			-.20	-3.22
	Not			-1.846	38	.073	-.11	6.17			-.24	1.10
T	Assumed	19.55	.000	1.683	171	.094	.16	9.29			-2.70	.34
	Not			1.770	56.2	.082	.16	8.83			-2.062	.33
F	Assumed	34.82	.000	-2.986	171	.003	-.14	4.53			-.22	-4.582
	Not			-2.031	38.24	.049	-.14	6.66			-.27	-4.45

Group statistics for Dominant functions

	*Gender	Mean	Std. Deviation	Std. Error Mean
Dominant - S	1	.49	.50	4.27E-02
	2	.40	.50	8.40E-02
Dominant - N	1	2.90E-02	.17	1.43E-02
	2	.14	.36	6.00E-02
Dominant - T	1	.44	.50	4.24E-02
	2	.29	.46	7.75E-02
Dominant - F	1	3.62E-02	.19	1.60E-02
	1	.17	.38	6.46E-02

APPENDIX K: HOME LANGUAGE AS COVARIATE

Kruskal Wallis test for continuous scores

	EI	SN	TF	JP
Chi-Square	9.438	2.905	6.893	11.573
Df	9	9	9	9
Asymp. Sig.	.398	.968	.648	.238

Kruskal Wallis test for separate groups

	E	I	S	N	T	F	J	P
Chi-Square	7.026	11.069	4.088	4.153	4.722	7.325	11.411	12.090
Df	9	9	9	9	9	9	9	9
Asymp. Sig.	.634	.271	.906	.901	.858	.603	.249	.208

Kruskal Wallis test for Temperaments

	NF	SJ	NT	SP
Chi-Square	.000	3.709	6.283	6.402
df	9	9	9	9
Asymp. Sig.	1.000	.929	.711	.699

Kruskal Wallis test for Attitudes and Functions

	IJ	IP	EP	EJ	ST	SF
Chi-Square	11.009	7.661	5.799	11.065	3.126	4.937
df	9	9	9	9	9	9
Asymp. Sig.	.275	.569	.760	.271	.959	.840

Kruskal Wallis for Quadrants

	IS	IN	ES	EN
Chi-Square	1.225	2.645	.530	5.195
df	1	1	1	1
Asymp. Sig.	.268	.104	.467	.023

Kruskal Wallis test for Dominant Functions

	Dominant - S	Dominant - N	Dominant - T	Dominant - F
Chi-Square	10.695	.000	7.856	13.272
df	9	9	9	9
Asymp. Sig.	.297	1.000	.549	.151

APPENDIX L: DIFFERENCES BETWEEN MEANS FOR ETHNICITY

Independent Samples Test for type preference on a continuous scale

		Levene's Test for Equality of Variances		t-test for Equality of Means							
	Equal variances	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff	Std. Error Diff	95% Confidence Interval of the Difference		
										Lower	Upper
EI	assumed	5.669	.018**	.061	170	.951	.11	1.76		-3.36	3.58
	not			.060	147.56	.952	.11	1.79		-3.43	3.65
SN	assumed	10.231	.002***	-.817	171	.415	-1.21	1.48		-4.13	1.71
	not			-.79	133.859	.431	-1.21	1.53		-4.24	1.82
TF	assumed	5.734	.018**	-.229	171	.819	-.35	1.51		-3.32	2.63
	not			-.222	137.119	.825	-.35	1.55		-3.42	2.72
JP	assumed	2.371	.125	-.467	171	.001***	-5.29	1.53		-8.3	-2.28
	not			-3.406	149.910	.001***	-5.29	1.55		-8.36	-2.22

Group Statistics

	* Ethnicity	Mean	Std. Deviation	Std. Error Mean
EI	1	.26	12.73	1.44
	2	.15	10.32	1.06
SN	1	9.95	11.41	1.29
	2	11.16	8	.82
TF	1	11.01	11.46	1.30
	2	11.36	8.33	.85
JP	1	9.56	10.94	1.24
	2	14.85	9.12	.94

```
*   1: White community       N = 78
    2: Coloured community    N = 95
```

Independent Samples Test for type preference as separate groups

	Equal variance	Levene's Test for equality of variance F	Sig	t-test for Equality of Means t	Df	Sig. 2-tailed	Mean diff	Std Error Diff	95% Confidence Interval Lower	Upper
E	Assumed	4.606	.033**	.016	171	.987	1.47	.90	-1.76	1.79
	Not			.016	149.2	.987	1.47	.92	-1.79	1.82
I	Assumed	6.128	.014**	.059	171	.953	5.45	.92	-1.77	1.88
	Not			.058	145.3	.954	5.45	.94	-1.81	1.92
S	Assumed	6.616	.011**	-.625	171	.533	-.58	.92	-2.39	1.24
	Not			-.609	142.6	.543	-.58	.94	-2.44	1.29
N	Assumed	9.225	.003**	.805	171	.422	.53	.66	-.78	1.84
	Not			.779	135.6	.437	.53	.68	-.82	1.89
T	Assumed	9.205	.003**	.163	171	.871	.16	.98	-1.78	2.10
	Not			.157	131.9	.875	.16	1.02	-1.86	2.18
F	Assumed	4.178	.042**	.323	171	.747	.20	.60	-1.00	1.39
	Not			.316	145.2	.752	.20	.62	-1.03	1.42
J	Assumed	4.258	.041**	-3.450	171	.001	-2.63	.76	-4.13	-1.12
	Not			-3.372	145.1	.001	-2.63	.78	-4.17	-1.09
P	Assumed	1.495	.223	3.389	171	.001	2.69	.79	1.12	4.25
	Not			3.348	155.0	.001	2.69	.80	1.10	4.27

Group Statistics

	* Ethnicity	Mean	Std. Deviation	Std. Error Mean
Extraversion	1	13.14	6.47	.73
	2	13.13	5.35	.55
Introversion	1	13.13	6.77	.77
	2	13.07	5.37	.55
Sensing	1	18.67	6.84	.77
	2	19.24	5.27	.54
Intuition	1	8.63	5.08	.57
	2	8.09	3.63	.37
Thinking	1	17.72	7.64	.87
	2	17.56	5.25	.54
Feeling	1	6.27	4.44	.50
	2	6.07	3.52	.36
Judging	1	18.55	5.59	.63
	2	21.18	4.42	.45
Perception	1	9.01	5.53	.63
	2	6.33	4.88	.50

* 1: White community   N = 78
  2: Coloured community   N = 95

Independent Samples Test for Temperaments

	Equal variance	F	Sig	T	df	Sig. 2-tailed	Mean diff	Std Error	Lower	Upper
		Levene's Test		t-test for Equality of Means					95% Confidence Interval	
NF	Assumed	29.64	.000	2.536	171	.012**	6.41	2.53	1.42	.11
	Not			2.297	77.00	.024**	6.41	2.79	8.52	.12
SJ	Assumed	45.63	.000	-3.235	171	.001***	-.19	5.86	-.31	-7.39
	Not			-3.116	130.1	.002***	-.19	6.08	-.31	-6.922
NT	Assumed	13.07	.000	1.763	171	.080*	7.56	4.29	-9.03	.16
	Not			1.698	129.4	.092*	7.56	4.45	-1.25	.16
SP	Assumed	1.688	.196	.649	171	.518	2.43	3.75	-4.96	9.82
	Not			.637	150.3	.525	2.43	3.81	-5.10	9.96

Group Statistics

	*Ethnicity	Mean	Std. Deviation	Std. Error Mean
NF	1	6.41E-02	.25	2.79E-02
	2	.00	.00	.00
SJ	1	.71	.46	5.20E-02
	2	.89	.31	3.17E-02
NT	1	.13	.34	3.81E-02
	2	5.26E-02	.22	2.30E-02
SP	1	7.69E-02	.27	3.04E-02
	2	5.26E-02	.22	2.30E-02

T-test for Attitudes and Functions

	Equal variance	F	Sig	t	df	Sig. 2-tailed	Mean diff	Std Error	Lower	Upper
		Levene's Test		t-test for Equality of Means					95% Interval	
IJ	Assumed	.320	.572	-.296	171	.768	-2.27	7.672	-.17	.13
	Not			-.296	164.6	.768	-2.27	7.67	-.17	.13
IP	Assumed	1.673	.198	.645	171	.520	2.20	3.41	-4.53	8.93
	Not			.633	148.3	.528	2.20	3.48	-4.67	9.07
EP	Assumed	20.62	.000	2.176	171	.031**	8.38	3.85	7.77	.16
	Not			2.063	113.8	.041**	8.38	4.06	3.31	.16
EJ	Assumed	2.241	.136	-.760	171	.448	-5.75	7.56	-.21	9.18
	Not			-.762	165.7	.447	-5.75	7.55	-.21	9.15
ST	Assumed	15.72	.000	-1.992	171	.048**	-.13	6.35	-.25	-1.13
	Not			-1.953	148.4	.053*	-.13	6.47	-.25	1.46
SF	Assumed	.305	.582	-.275	171	.783	-1.32	4.80	-.11	8.16
	Not			-.277	167.4	.782	-1.32	4.78	-.11	8.11

Group Statistics

	*Ethnicity	Mean	Std. Deviation	Std. Error Mean
IJ	1	.46	.50	5.68E-02
	2	.48	.50	5.15E-02
IP	1	6.41E-02	.25	2.79E-02
	2	4.21E-02	.20	2.07E-02
EP	1	.12	.32	3.64E-02
	2	3.16E-02	.18	1.80E-02
EJ	1	.38	.49	5.54E-02
	2	.44	.50	5.12E-02
ST	1	.71	.46	5.20E-02
	2	.83	.38	3.86E-02
SF	1	.10	.31	3.46E-02
	2	.12	.32	3.30E-02

Comparing the means for MBTI quadrants

	Levene's Test for equality of variance			t-test for Equality of Means							
	Equal variance	F	Sig	t	df	Sig. 2-tailed	Mean diff	Std Error Diff	95% Confidence Interval		
									Lower	Upper	
IS	Assumed	3.091	.081*	-1.107	171	.270	-8.452	7.63	-.24	6.61	
	Not			-1.109	165.4	.269	-8.45	7.62	-.23	6.59	
IN	Assumed	11.19	.001**	1.634	171	.104	5.82	3.56	-1.21	.13	
	Not			1.562	122.6	.121	5.82	3.72	-1.55	.13	
ES	Assumed	2.012	.158	-.727	171	.468	-5.52	7.59	-.21	9.47	
	Not			-.728	165.6	.468	-5.52	7.58	-.20	9.45	
EN	Assumed	23.61	.000	2.308	171	.022	8.15	3.53	1.18	.15	
	Not			2.167	104.9	.032	8.15	3.76	6.93	.16	

Group Statistics

	*Ethnicity	Mean	Std. Deviation	Std. Error Mean
IS	1	.41	.50	5.61E-02
	2	.49	.50	5.16E-02
IN	1	8.97E-02	.29	3.26E-02
	2	3.16E-02	.18	1.80E-02
ES	1	.40	.49	5.58E-02
	2	.45	.50	5.13E-02
EN	1	.10	.31	3.46E-02
	2	2.11E-02	.14	1.48E-02

Comparing the means for Dominant Functions

	Equal variance	Levene's Test for equality of variance F	Sig	t-test for Equality of Means t	df	Sig. 2-tailed	Mean diff	Std Error Diff	95% Confidence Interval Lower	Upper
S	Assumed	.000	.986	.009	171	.993	6.75	7.67	-.15	.15
	Not			.009	164.4	.993	6.75	7.67	-.15	.15
N	Assumed	35.6	.000	2.756	171	.006***	9.20	3.34	2.61	.16
	Not			2.547	91.29	.013**	9.20	3.61	2.03	.16
T	Assumed	10.79	.001***	-1.875	171	.062	-.14	7.48	-.29	7.37
	Not			-1.886	167.6	.061	-.14	7.44	-.29	6.57
F	Assumed	6.679	.011**	1.276	171	.204	4.76	3.73	-2.60	.12
	Not			1.234	133.9	.219	4.76	3.86	-2.87	.12

***   Correlation is significant at the 0.01 level (2-tailed)
**   Correlation is significant at the 0.05 level (2-tailed)

Group Statistics

	* Ethnicity	Mean	Std. Deviation	Std. Error Mean
Dominant - S	1	.47	.50	5.69E-02
	2	.47	.50	5.15E-02
Dominant - N	1	.10	.31	3.46E-02
	2	1.05E-02	.10	1.05E-02
Dominant - T	1	.33	.47	5.37E-02
	2	.47	.50	5.15E-02
Dominant - F	1	8.97E-02	.29	3.26E-02
	2	4.21E-02	.20	2.07E-02

*   1: White community   N = 78
    2: Coloured community   N = 95

APPENDIX M: COMPARING THE MEANS OF NON-COMMISSIONED OFFICERS

Kruskal-Wallis results for MBTI preference expressed as continuous data

	EI	SN	TF	JP
Chi-Square	4.926	2.091	10.654	5.422
df	4	4	4	4
Asymp. Sig.	.295	.719	.031	.247

Mean tables for MBTI preference as continuous data

	Rank	N	Mean Rank
EI	3	5	24.8
	4	8	17.88
	5	5	12.2
	6	10	15.60
	7	5	15.40
	Total	33	

	Rank	N	Mean Rank
SN	3	5	16.00
	4	8	14.06
	5	5	15.00
	6	10	19.30
	7	5	20.10
	Total	33	

	Rank	N	Mean Rank
TF	3	5	10.7
	4	8	11.5
	5	5	18.2
	6	10	18.9
	7	5	27.1
	Total	33	

	Rank	N	Mean Rank
JP	3	5	10.1
	4	8	19.19
	5	5	16.5
	6	10	15.7
	7	5	23.5
	Total	33	

Kruskal-Wallis results for MBTI preference as separate sets

	E	I	S	N	T	F	J	P
Chi-Square	4.219	5.088	3.681	4.636	9.183	9.737	6.806	4.850
df	4	4	4	4	4	4	4	4
Asymp. Sig.	.377	.278	.451	.327	.057	.045	.146	.303

Mean tables for MBTI preference as separate sets

	Rank	N	Mean Rank
E	3	5	24.30
	4	8	17.88
	5	5	13.10
	6	10	15.80
	7	5	14.60
	Total	33	

	Rank	N	Mean Rank
I	3	5	9.40
	4	8	16.13
	5	5	22.60
	6	10	18.05
	7	5	18.30
	Total	33	

S	3	5	15.90
	4	8	14.38
	5	5	14.20
	6	10	17.60
	7	5	23.90
	Total	33	

N	3	5	17.30
	4	8	21.44
	5	5	19.40
	6	10	15.40
	7	5	10.40
	Total	33	

T	3	5	10.90
	4	8	11.94
	5	5	18.50
	6	10	18.75
	7	5	26.20
	Total	33	

F	3	5	22.70
	4	8	22.19
	5	5	17.10
	6	10	14.85
	7	5	7.20
	Total	33	

J	3	5	9.90
	4	8	18.38
	5	5	17.40
	6	10	15.20
	7	5	25.10
	Total	33	

P	3	5	24.10
	4	8	14.63
	5	5	17.70
	6	10	17.70
	7	5	11.60
	Total	33	

Kruskal-Wallis for Temperaments

	NF	SJ	NT	SP
Chi-Square	2.960	4.149	3.045	5.600
df	4	4	4	4
Asymp. Sig.	.565	.386	.550	.231

Mean tables for MBTI preference as separate sets

	Rank	N	Mean Rank
NF	3	5	18.80
	4	8	17.56
	5	5	18.80
	6	10	15.50
	7	5	15.50
	Total	33	

	Rank	N	Mean Rank
SJ	3	5	13.90
	4	8	16.38
	5	5	13.90
	6	10	18.85
	7	5	20.50
	Total	33	

	NT	3	5	16.00
		4	8	16.00
		5	5	19.30
		6	10	17.65
		7	5	16.00
		Total	33	

SP	3	5	19.80
	4	8	16.50
	5	5	16.50
	6	10	16.50
	7	5	16.50
	Total	33	

Kruskal-Wallis results for Attitudes and Functions

	IJ	IP	EP	EJ	ST	SF
Chi-Square	5.181	.000	5.600	2.327	3.278	2.869
df	4	4	4	4	4	4
Asymp. Sig.	.269	1.000	.231	.676	.512	.580

Mean tables for MBTI preference for Attitudes and Functions

	Rank	N	Mean Rank
IJ	3	5	9.80
	4	8	18.88
	5	5	19.70
	6	10	18.05
	7	5	16.40
	Total	33	

	Rank	N	Mean Rank
IP	3	5	17.00
	4	8	17.00
	5	5	17.00
	6	10	17.00
	7	5	17.00
	Total	33	

	Rank	N	Mean Rank
EP	3	5	19.80
	4	8	16.50
	5	5	16.50
	6	10	16.50
	7	5	16.50
	Total	33	

	Rank	N	Mean Rank
EJ	3	5	21.40
	4	8	15.63
	5	5	14.80
	6	10	16.45
	7	5	18.10
	Total	33	

	Rank	N	Mean Rank
ST	3	5	14.90
	4	8	15.31
	5	5	14.90
	6	10	18.20
	7	5	21.50
	Total	33	

	Rank	N	Mean Rank
SF	3	5	18.30
	4	8	19.13
	5	5	15.00
	6	10	16.65
	7	5	15.00
	Total	33	

Kruskal-Wallis results for quadrants

	IS	IN	ES	EN
Chi-Square	3.516	3.471	5.111	2.667
df	4	4	4	4
Asymp. Sig.	.475	.482	.276	.615

Mean tables for MBTI preference as separate sets

	Rank	N	Mean Rank
IS	3	5	10.80
	4	8	17.81
	5	5	17.40
	6	10	19.05
	7	5	17.40
	Total	33	

	Rank	N	Mean Rank
IN	3	5	16.00
	4	8	18.06
	5	5	19.30
	6	10	16.00
	7	5	16.00
	Total	33	

	Rank	N	Mean Rank
ES	3	5	22.40
	4	8	16.63
	5	5	12.50
	6	10	15.80
	7	5	19.10
	Total	33	

	Rank	N	Mean Rank
EN	3	5	18.80
	4	8	15.50
	5	5	18.80
	6	10	17.15
	7	5	15.50
	Total	33	

Kruskal-Wallis results for Dominant functions

	S	N	T	F
Chi- Square	1.933	3.125	.320	8.533
df	4	4	4	4
Asymp. Sig	.748	.537	.988	.074

Mean tables for Dominant functions

	Rank	N	Mean Rank
S	3	5	13.10
	4	8	16.81
	5	5	16.40
	6	10	18.05
	7	5	19.70
	Total	33	

	Rank	N	Mean Rank
N	3	5	16.50
	4	8	18.56
	5	5	16.50
	6	10	16.50
	7	5	16.50
	Total	33	

	Rank	N	Mean Rank
T	3	5	16.30
	4	8	17.13
	5	5	16.30
	6	10	17.95
	7	5	16.30

	Rank	N	Mean Rank
F	3	5	22.10
	4	8	15.50
	5	5	18.80
	6	10	15.50
	7	5	15.50
	Total	33	

APPENDIX N: COMPARING THE MEANS OF JUNIOR OFFICERS

Kruskal-Wallis results for MBTI preference expressed as continuous data

	EI	SN	FT	JP
Chi- Square	2.679	3.080	4.655	1.628
df	2	2	2	2
Asymp. Sig	.262	.214	.098	.443

Mean tables for MBTI preference as continuous data

	Rank	N	Mean Rank
EI	10	5	8.4
	11	8	13.68
	12	5	10.08
	Total	22	

	Rank	N	Mean Rank
SN	10	5	12.4
	11	8	13.23
	12	5	7.58
	Total	22	

	Rank	N	Mean Rank
TF	10	5	6.1
	11	8	13.55
	12	5	12.25
	Total	22	

	Rank	N	Mean Rank
JP	10	5	14
	11	8	9.82
	12	5	12.5
	Total	22	

Kruskal-Wallis results for MBTI preference expressed as separate sets

	E	I	S	N	T	F	J	P
Chi-Square	2.360	1.883	1.657	3.144	3.570	5.115	1.666	1.684
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.307	.390	.437	.208	.168	.077	.435	.431

Mean tables for MBTI preference as separate sets

	Rank	N	Mean Rank
E	10	5	8.60
	11	11	13.55
	12	6	10.17
	Total	22	

	Rank	N	Mean Rank
I	10	5	14.30
	11	11	9.73
	12	6	12.42
	Total	22	

	Rank	N	Mean Rank
S	10	5	11.30
	11	11	13.05
	12	6	8.83
	Total	22	

	Rank	N	Mean Rank
N	10	5	10.80
	11	11	9.68
	12	6	15.42
	Total	22	

T	10	5	6.70
	11	11	13.00
	12	6	12.75
	Total	22	

F	10	5	16.70
	11	11	8.91
	12	6	11.92
	Total	22	

J	10	5	13.90
	11	11	9.77
	12	6	12.67
	Total	22	

P	10	5	8.40
	11	11	12.91
	12	6	11.50
	Total	22	

Kruskal-Wallis for comparison of means between Temperaments

	NF	SJ	NT	SP
Chi- Square	.ooo	2.825	2.667	.875
df	2	2	2	2
Asymp. Sig	1.000	.244	.264	.646

Mean tables for temperaments

	Rank	N	Mean Rank
NF	10	5	11.50
	11	11	11.50
	12	6	11.50
	Total	22	

	Rank	N	Mean Rank
SJ	10	5	13.00
	11	11	12.00
	12	6	9.33
	Total	22	

	Rank	N	Mean Rank
NT	10	5	11.00
	11	11	11.00
	12	6	12.83
	Total	22	

	Rank	N	Mean Rank
SP	10	5	10.50
	11	11	11.50
	12	6	12.33
	Total	22	

Kruskal-Wallis results for Attitudes and Functions

	IJ	IP	EP	EJ	ST	SF
Chi- Square	.278	.000	.875	.227	5.120	4.433
df	2	2	2	2	2	2
Asymp. Sig	.870	1.000	.646	.893	.077	.109

Mean tables for Attitudes and Functions

	Rank	N	Mean Rank
IJ	10	5	12.60
	11	11	11.00
	12	6	11.50
	Total	22	

	Rank	N	Mean Rank
IP	10	5	11.50
	11	11	11.50
	12	6	11.50
	Total	22	

	Rank	N	Mean Rank
EP	10	5	10.50
	11	11	11.50
	12	6	12.33
	Total	22	

	Rank	N	Mean Rank
EJ	10	5	11.40
	11	11	12.00
	12	6	10.67
	Total	22	

	Rank	N	Mean Rank
ST	10	5	8.40
	11	11	14.00
	12	6	9.50
	Total	22	

	Rank	N	Mean Rank
SF	10	5	15.10
	11	11	9.50
	12	6	12.17
	Total	22	

Kruskal-Wallis results for Quadrants

	IS	IN	ES	EN
Chi-Square	.747	2.667	.278	.000
df	2	2	2	2
Asymp. Sig.	.688	.264	.870	1.000

Mean tables for MBTI for Quadrants

	Rank	N	Mean Rank
IS	10	5	13.10
	11	11	11.50
	12	6	10.17
	Total	22	

	Rank	N	Mean Rank
IN	10	5	11.00
	11	11	11.00
	12	6	12.83
	Total	22	

	Rank	N	Mean Rank
ES	10	5	10.40
	11	11	12.00
	12	6	11.50
	Total	22	

	Rank	N	Mean Rank
EN	10	5	11.50
	11	11	11.50
	12	6	11.50
	Total	22	

Kruskal-Wallis results for Dominant functions

	S	N	T	F
Chi-Square	.278	.000	3.133	2.119
df	2	2	2	2
Asymp. Sig.	.870	1.000	.209	.347

Mean tables for Dominant Functions

	Rank	N	Mean Rank
S	10	5	12.60
	11	11	11.00
	12	6	11.50
	Total	22	

	Rank	N	Mean Rank
N	10	5	11.50
	11	11	11.50
	12	6	11.50
	Total	22	

	Rank	N	Mean Rank
T	10	5	8.00
	11	11	13.00
	12	6	11.67
	Total	22	

	Rank	N	Mean Rank
F	10	5	13.90
	11	11	10.50
	12	6	11.33
	Total	22	

APPENDIX O: COMPARISON OF MEANS FOR SENIOR OFFICERS

Kruskal-Wallis results for MBTI preference expressed as separate sets

	E	I	S	N	T	J	P
Chi-Square	3.800	2.314	.600	2.250	6.034	1.412	1.000
df	3	2	1	2	3	2	1
Asymp. Sig.	.284	.314	.439	.325	.110	.494	.317

It is important to note that there are not enough valid cases to perform the Kruskal-Wallis Test for Feeling. No statistics were therefore computed.

Mean tables for MBTI preference as separate sets

	Rank	N	Mean Rank
E	13	2	2.50
	14	1	1.00
	15	1	5.00
	16	1	4.00
	Total	5	

	Rank	N	Mean Rank
I	13	5	4.60
	14	1	4.00
	16	1	1.00
	Total	7	

	Rank	N	Mean Rank
S	13	5	3.60
	14	2	5.00
	Total	7	

	Rank	N	Mean Rank
N	13	2	1.75
	15	1	2.50
	16	1	4.00
	Total	4	

	Rank	N	Mean Rank
T	13	7	5.29
	14	2	8.50
	15	1	11.00
	16	1	1.00
	Total	11	

	Rank	N	Mean Rank
J	13	6	5.75
	14	2	3.25
	15	1	4.00
	Total	9	

	Rank	N	Mean Rank
P	13	1	1.00
	16	1	2.00
	Total	2	

Kruskal-Wallis results for Temperaments

	NF	SJ	NT	SP
Chi-Square	10.000	4.388	3.452	.000
df	3	3	3	3
Asymp. Sig.	.019	.223	.327	1.000

Mean tables for Temperaments

	Rank	N	Mean Rank
NF	13	7	5.50
	14	2	5.50
	15	1	5.50
	16	1	11.00
	Total	11	

	Rank	N	Mean Rank
SJ	13	7	6.43
	14	2	8.00
	15	1	2.50
	16	1	2.50
	Total	11	

	Rank	N	Mean Rank
NT	13	7	6.07
	14	2	4.50
	15	1	10.00
	16	1	4.50
	Total	11	

	Rank	N	Mean Rank
SP	13	7	6.00
	14	2	6.00
	15	1	6.00
	16	1	6.00
	Total	11	

Kruskal-Wallis results for Attitudes and Functions

	IJ	IP	EP	EJ	ST	SF
Chi-Square	1.881	.571	10.000	2.423	4.388	.000
df	3	3	3	3	3	3
Asymp. Sig.	.597	.903	.019	.489	.223	1.000

Mean tables for Attitudes and Functions

	Rank	N	Mean Rank
IJ	13	7	6.64
	14	2	6.25
	15	1	3.50
	16	1	3.50
	Total	11	

	Rank	N	Mean Rank
IP	13	7	6.29
	14	2	5.50
	15	1	5.50
	16	1	5.50
	Total	11	

	Rank	N	Mean Rank
EP	13	7	5.50
	14	2	5.50
	15	1	5.50
	16	1	11.00
	Total	11	

	Rank	N	Mean Rank
EJ	13	7	5.57
	14	2	6.75
	15	1	9.50
	16	1	4.00
	Total	11	

	Rank	N	Mean Rank
ST	13	7	6.43
	14	2	8.00
	15	1	2.50
	16	1	2.50
	Total	11	

	Rank	N	Mean Rank
SF	13	7	6.00
	14	2	6.00
	15	1	6.00
	16	1	6.00
	Total	11	

Kruskal-Wallis results for Quadrants

	IS	IN	ES	EN
Chi-Square	1.881	.571	1.706	6.071
df	3	3	3	3
Asymp. Sig.	.597	.903	.636	.108

Mean tables for Quadrants

	Rank	N	Mean Rank
IS	13	7	6.64
	14	2	6.25
	15	1	3.50
	16	1	3.50
	Total	11	

	Rank	N	Mean Rank
IN	13	7	6.29
	14	2	5.50
	15	1	5.50
	16	1	5.50
	Total	11	

	Rank	N	Mean Rank
ES	13	7	5.79
	14	2	7.75
	15	1	5.00
	16	1	5.00
	Total	11	

	Rank	N	Mean Rank
EN	13	7	5.29
	14	2	4.50
	15	1	10.00
	16	1	10.00
	Total	11	

Kruskal-Wallis results for Dominant Functions

	S	N	T	F
Chi-Square	1.301	4.762	2.423	.571
df	3	3	3	3
Asymp. Sig.	.729	.190	.489	.903

Mean tables for Dominant functions

	Rank	N	Mean Rank
S	13	7	6.36
	14	2	6.75
	15	1	4.00
	16	1	4.00
	Total	11	

	Rank	N	Mean Rank
N	13	7	5.79
	14	2	5.00
	15	1	5.00
	16	1	10.50
	Total	11	

	Rank	N	Mean Rank
T	13	7	5.57
	14	2	6.75
	15	1	9.50
	16	1	4.00
	Total	11	

	Rank	N	Mean Rank
F	13	7	6.29
	14	2	5.50
	15	1	5.50
	16	1	5.50
	Total	11	

APPENDIX P: MILITARY RANK AS COVARIATE

ANOVA for type preference as continuous scores

	*	Sum of Squares	df	Mean Square	F	Sig.
EI	a	1860.489	7	265.784	2.123	.044
	b	20530.790	164	125.188		
	Total	22391.279	171			
SN	a	769.613	7	109.945	1.183	.315
	b	15331.439	165	92.918		
	Total	16101.052	172			
TF	a	1293.659	7	184.808	1.986	.060
	b	15352.260	165	93.044		
	Total	16645.919	172			
JP	a	648.821	7	92.689	.869	.532
	b	17590.254	165	106.608		
	Total	18239.075	172			

* a = Between groups
  b = Within groups

ANOVA for type preference as separate scores

		Sum of Squares	df	Mean Square	F	Sig.
Extravert	a	443.873	7	63.410	1.911	.071
	b	5474.069	165	33.176		
	Total	5917.942	172			
Introvert	a	456.513	7	65.216	1.862	.079
	b	5778.816	165	35.023		
	Total	6235.329	172			
Sensing	a	268.375	7	38.339	1.062	.391
	b	5958.573	165	36.113		
	Total	6226.948	172			

Intuition	a	177.808	7	25.401	1.372	.220
	b	3054.747	165	18.514		
	Total	3232.555	172			
Thinking	a	707.683	7	101.098	2.614	.014
	b	6380.641	165	38.671		
	Total	7088.324	172			
Feeling	a	241.302	7	34.472	2.331	.027
	b	2440.166	165	14.789		
	Total	2681.468	172			
Judging	a	172.220	7	24.603	.928	.486
	b	4372.774	165	26.502		
	Total	4544.994	172			
Perception	a	147.445	7	21.064	.730	.647
	b	4763.561	165	28.870		
	Total	4911.006	172			

ANOVA for Temperaments

		Sum of Squares	df	Mean Square	F	Sig.
NF	a	.739	7	.106	4.231	.000
	b	4.117	165	2.495E-02		
	Total	4.855	172			
SJ	a	.727	7	.104	.660	.706
	b	25.978	165	.157		
	Total	26.705	172			
NT	a	.748	7	.107	1.361	.225
	b	12.952	165	7.849E-02		
	Total	13.699	172			
SP	a	.141	7	2.016E-02	.327	.941
	b	10.159	165	6.157E-02		
	Total	10.301	172			

ANOVA for Attitudes and Functions

		Sum of Squares	df	Mean Square	F	Sig.
IJ	a	2.328	7	.333	1.345	.232
	b	40.805	165	.247		
	Total	43.133	172			
IP	a	.225	7	3.210E-02	.638	.724
	b	8.307	165	5.035E-02		
	Total	8.532	172			
EP	a	.508	7	7.260E-02	1.124	.351
	b	10.659	165	6.460E-02		
	Total	11.168	172			
EJ	a	1.034	7	.148	.594	.760
	b	41.001	165	.248		
	Total	42.035	172			
ST		1.207	7	.172	.981	.447
		29.001	165	.176		
		30.208	172			
SF		1.045	7	.149	1.552	.153
		15.868	165	9.617E-02		
		16.913	172			

a = Between Groups
b = Within Groups

ANOVA for Quadrants

		Sum of Squares	df	Mean Square	F	Sig.
IS	a	1.766	7	.252	1.011	.425
	b	41.159	165	.249		
	Total	42.925	172			
IN	a	4.939E-02	7	7.056E-03	.124	.997
	b	9.373	165	5.680E-02		
	Total	9.422	172			
ES	a	3.184	7	.455	1.916	.070
	b	39.163	165	.237		
	Total	42.347	172			
EN	a	.855	7	.122	2.354	.026
	b	8.567	165	5.192E-02		
	Total	9.422	172			

ANOVA for Dominant Functions

		Sum of Squares	df	Mean Square	F	Sig.
Dominant - S	a	1.674	7	.239	.952	.468
	b	41.459	165	.251		
	Total	43.133	172			
Dominant - N	a	.547	7	7.816E-02	1.615	.134
	b	7.985	165	4.839E-02		
	Total	8.532	172			
Dominant - T	a	1.929	7	.276	1.139	.341
	b	39.932	165	.242		
	Total	41.861	172			
Dominant - F	a	.595	7	8.502E-02	1.445	.190
	b	9.705	165	5.882E-02		
	Total	10.301	172			

APPENDIX Q: LEVEL OF EDUCATION AS POSSIBLE COVARIATE

ANOVA for type preference as continuous scores

	*	Sum of Squares	df	Mean Square	F	Sig.
EI	a	129.757	2	64.878	.493	.612
	b	22261.523	169	131.72		
	Total	22391.279	171			
SN	a	619.241	2	309.62	3.4	.036
	b	15481.811	170	91.069		
	Total	16101.052	172			
TF	a	461.771	2	230.886	2.425	.092
	b	16184.148	170	95.201		
	Total	16645.919	172			
JP	a	289.127	2	144.564	1.369	.257
	b	17949.948	170	105.588		
	Total	18239.075	172			

* a = Between Groups
  b = Within Groups

ANOVA for type preference as separate scores

		Sum of Squares	df	Mean Square	F	Sig.
Extravert	a	88.184	5	17.637	.505	.772
	b	5829.758	167	34.909		
	Total	5917.942	172			
Introvert	a	182.108	5	36.422	1.005	.417
	b	6053.221	167	36.247		
	Total	6235.329	172			
Sensing	a	460.202	5	92.040	2.665	.024
	b	5766.746	167	34.531		
	Total	6226.948	172			

		Sum of Squares	df	Mean Square	F	Sig.
Intuition	a	254.549	5	50.910	2.855	.017
	b	2978.006	167	17.832		
	Total	3232.555	172			
Thinking	a	24.580	5	4.916	.116	.989
	b	7063.743	167	42.298		
	Total	7088.324	172			
Feeling	a	85.403	5	17.081	1.099	.363
	b	2596.065	167	15.545		
	Total	2681.468	172			
Judging	a	72.714	5	14.543	.543	.743
	b	4472.280	167	26.780		
	Total	4544.994	172			
Perception	a	83.848	5	16.770	.580	.715
	b	4827.158	167	28.905		
	Total	4911.006	172			

ANOVA for Temperaments

		Sum of Squares	df	Mean Square	F	Sig.
NF	a	.116	5	2.320E-02	.817	.539
	b	4.739	167	2.838E-02		
	Total	4.855	172			
SJ	a	.348	5	6.961E-02	.441	.819
	b	26.357	167	.158		
	Total	26.705	172			
NT	a	.250	5	4.997E-02	.620	.684
	b	13.450	167	8.054E-02		
	Total	13.699	172			
SP	a	.179	5	3.575E-02	.590	.708
	b	10.122	167	6.061E-02		
	Total	10.301	172			

ANOVA for Attitudes and Functions

		Sum of Squares	df	Mean Square	F	Sig.
IJ	a	1.272	5	.254	1.015	.411
	b	41.861	167	.251		
	Total	43.133	172			
IP	a	9.377E-02	5	1.875E-02	.371	.868
	b	8.438	167	5.053E-02		
	Total	8.532	172			
EP	a	.189	5	3.773E-02	.574	.720
	b	10.979	167	6.574E-02		
	Total	11.168	172			
EJ	a	.880	5	.176	.714	.614
	b	41.155	167	.246		
	Total	42.035	172			
ST	a	.998	5	.200	1.141	.341
	b	29.210	167	.175		
	Total	30.208	172			
SF	a	.439	5	8.770E-02	.889	.490
	b	16.475	167	9.865E-02		
	Total	16.913	172			

ANOVA for Quadrants

		Sum of Squares	df	Mean Square	F	Sig.
IS	a	.306	1	.306	1.227	.270
	b	42.619	171	.249		
	Total	42.925	172			
IN	a	.145	1	.145	2.671	.104
	b	9.277	171	5.425E-02		
	Total	9.422	172			

		Sum of Squares	df	Mean Square	F	Sig.
ES	a	.130	1	.130	.529	.468
	b	42.216	171	.247		
	Total	42.347	172			
EN	a	.285	1	.285	5.326	.022
	b	9.137	171	5.343E-02		
	Total	9.422	172			

ANOVA for Dominant Functions

		Sum of Squares	df	Mean Square	F	Sig.
Dominant - S	a	1.442	5	.288	1.156	.333
	b	41.690	167	.250		
	Total	43.133	172			
Dominant - N	a	.427	5	8.535E-02	1.759	.124
	b	8.105	167	4.853E-02		
	Total	8.532	172			
Dominant - T	a	.157	5	3.143E-02	.126	.986
	b	41.704	167	.250		
	Total	41.861	172			
Dominant - F	a	.602	5	.120	2.073	.071
	b	9.699	167	5.808E-02		
	Total	10.301	172			

APPENDIX R: RESULTS OF STATISTICAL ANALYSIS

Correlation between negotiation outcome and MBTI scores as continuous data

Role-play 1

	EI	SN	TF	JP
Pearson Correlation	-.141	-.128	-.008	-.141
Sig. (2 tailed)	.064	.094	.919	.064

Role-play 2

	EI	SN	TF	JP
Pearson Correlation	-.060	.006	-.023	-.077
Sig. (2 tailed)	.431	.935	.759	.313

Average profit

	EI	SN	TF	JP
Pearson Correlation	-.108	-.080	-.004	-.142
Sig. (2 tailed)	.158	.293	.960	.063

Correlation between negotiation outcome and MBTI scores as separate sets

Role-play 1

	E	I	S	N	T	F	J	P
Pearson Correlation	-.127	.082	-.108	.122	.144	.012	-.130	.144
Sig. (2 tailed)	.096	.284	.156	.109	.058	.879	.088	.058

Role-play 2

	E	I	S	N	T	F	J	P
Pearson Correlation	-.034	.066	.020	.035	-.003	.028	-.088	.064
Sig. (2 tailed)	.653	.387	.789	.651	.964	.710	.252	.404

Average profit

	E	I	S	N	T	F	J	P
Pearson Correlation	-.100	.102	-.054		.038	.012	-.148	.130
Sig. (2 tailed)	.191	.180	.482		.616	.873	.052	.089

Correlation between negotiation outcome and Temperament

Role-play 1

	NF	SJ	NT	SP
Pearson Correlation	-.033	-.146	.140	.090
Sig. (2 tailed)	.664	.055	.067	.238

Role-play 2

	NF	SJ	NT	SP
Pearson Correlation	-.030	-.039	.069	.025
Sig. (2 tailed)	.698	.606	.364	.744

Average profit

	NF	SJ	NT	SP
Pearson Correlation	-.037	-.113	.144	.057
Sig. (2 tailed)	.631	.138	.058	.453

Correlation between negotiation outcome and Attitudes and Functions

Role-play 1

	IJ	IP	EP	EJ	ST	SF
Pearson Correlation	-.010	.119	.142	-.094	-.109	.038
Sig. (2 tailed)	.900	.120	.063	.221	.154	.621

Role-play 2

	IJ	IP	EP	EJ	ST	SF
Pearson Correlation	-.023	.085	-.029	.012	-.010	-.033
Sig. (2 tailed)	.764	.265	.702	.872	.897	.663

Average profit

	IJ	IP	EP	EJ	ST	SF
Pearson correlation	-.052	.114	.062	-.008	-.072	-.013
Sig. (2 tailed)	.493	.135	.418	.915	.344	.860

Correlation between negotiation outcome and Quadrants

Role-play 1

	IS	IN	ES	EN
Pearson Correlation	-.044	.137	-.024	.007
Sig. (2 tailed)	.564	.071	.757	.927

Role-play 2

	IS	IN	ES	EN
Pearson Correlation	-.029	.068	.000	-.005
Sig. (2 tailed)	.704	.375	.999	.943

Average profit

	IS	IN	ES	EN
Pearson Correlation	-.088	.137	.019	.010
Sig. (2 tailed)	.251	.072	.807	.891

Correlation between negotiation outcome and Dominant Functions

Role-play 1

	S	N	T	F
Pearson Correlation	-.016	.149	-.078	.055
Sig. (2 tailed)	.830	.050	.309	.474

Role-play 2

	S	N	T	F
Pearson Correlation		-.013	.012	.030
Sig. (2 tailed)		.862	.879	.699

Average profit

	S	N	T	F
Pearson Correlation	-.052	.092	.013	-.003
Sig. (2 tailed)	.493	.229	.862	.968
N	173	173	173	173