Personality and Intellectual Abilities as Predictors of Intelligent Behavior

Abstract

This study examines the relationship between intellectual abilities and personality in predicting intelligent behavior operationalized as good decision making practices (Kahneman & Tversky, 1979). The purpose of this study is to examine individual difference influencing decision making by predicting consistency while changing the situational frames of problems. It was hypothesized that the relationship between intellectual abilities and decision making would be mediated or moderated by such factors. The 97 participants (85 were Bishop's university students) took tests for the factors being studied. The analysis of the data revealed no significant correlation between intellectual abilities and decision making; neither was there correlation between any personality factor and decision making or intelligence. It is suspected that the restricted population sample did not allow enough variance to show us any correlation. It is also possible that the decision making task did not have a sufficient number of items.

Key Words: Personality, Intelligence, Decision Making, Framing.

Personality and Intellectual Abilities as Predictors of Intelligent Behavior

Wechsler, the author of the Wechsler Adult Intelligence Scale (WAIS), argued that "general intelligence cannot be equated with intellectual abilities however broadly defined, but must be regarded as a manifestation of the personality as a whole" (Zachary, 1990). With this, Wechsler suggests that intellectual abilities are not perfect predictors of intelligence or intelligent behavior. Even more, Wechsler believed that the assessment of intelligence depended on both intellectual and non-intellectual factors, proposing that intelligence depends on personality factors. Wechsler, as quoted by Zachary, writes: "When our scales measure the non-intellective as well as the intellectual factors in intelligence, they will more nearly measure what in actual life corresponds to intelligent behavior" (1990), emphasizing the importance of non-intellective factors in the relationship. In another essay, Wechsler (1975) refers to a number of non-intellective factors related to a person's capacity to respond to his social, moral and aesthetic values; he mentions drive, persistence, and goal awareness as examples of those motivational and personality factors. The present study will explore the nature of the relationship between some non-intellective factors (particularly, personality, emotional intelligence and subjective well-being) intellectual abilities and intelligent behavior.

Intelligence tests, as their name suggests, measure intelligence. However, what aspect of intelligence (or the intelligent behavior that predicts intelligence) is being measured depends greatly and changes constantly based on the context in which intelligence tests are developed. The first intelligence test that was created was the Binet-Simon intelligence test, whose purpose was to make a distinction between those children who would benefit from normal schooling and those who would not (Gregory, 2007). Academic achievement was the "intelligent behavior" that this test and many future tests tried to predict. Years later, those studying intelligence realized

that intelligence could be used to predict not only academic achievement, but other forms of success in life. For once, the first time the United States used intelligence tests was for massive testing by army recruiters. The Alpha and Beta exams were created to discriminate soldiers according to their mental ability and to assign competent soldiers to higher ranks (Gregory, 2007). Intelligent behavior was transformed from academic achievement to life achievement. A review article by Neisser et al (1996) explored how useful the Intellectual Quotient (IQ) was and how IQ scores predict success in the real world. It accounts for one fourth of social status variance and one sixth of income variance. Even after controlling for parent's social economic status, variance accounted by IQ was still important. The correlation with job performance was .54, which resulted on 29% explained variance on job performance by IQ. They also report a correlation of -.17 between IQ scores and number of juvenile offenses after correcting for social class. Such a review of findings allow us to see that intelligence predicts success in the real world in terms of what we could call good decision making; yet, the authors reiterate that intelligent behavior can not be solely predicted by intellectual abilities; this is the argument that this study will explore..

One problem with these studies is that, as surveys, they do not control for other variables; this means that we cannot know whether the relationship between intellectual abilities and measures of life success exists due to external variables that are better predictors of success. In addition, it cannot be determined how such factors could affect the relationship between intellectual abilities and life success. This is the reason why it is necessary to look at other factors that correlate with intelligent behavior and explore their relationship, particularly examining personality, as Wechsler pointed out.

Clearly, we can think of people who are intelligent and yet engage in non-intelligent behavior such as driving drunk, making careless financial decisions, failing in their marriage, and others. They score high in intelligence tests, yet their high intelligence is not enough to predict good decision making or life success. This suggests that the relationship between intellectual abilities and intelligent behavior is not direct which allows us to consider that other factors might be mediating or moderating the relationship between intelligence and intelligent behavior.

The connection between intelligence and personality in terms of the Five Factor Model of personality has been explored by several authors. The Five Factor Model of personality (Costa & McCrae, 1987) describes personality as having five factors, the factors being dimensions of individual differences that consistently show themselves in actions, thoughts and feelings. These five factors are: Extroversion, which is the tendency towards positive feelings, excitement and friendliness; Neuroticism, which is the tendency to experience negative emotions (such as anxiety); Openness to Experience which is the disposition to pay attention to beauty, abstract ideas, and liberalism; Conscientiousness involves self-discipline, achievement-striving, and cautiousness, and finally, Agreeableness refers to qualities such as altruism, trust and compliance. Baker and Bichsel (2006) found that Openness to Experience correlates with Intelligence at different stages of life. Furnham et al (2007) state that Non-neurotic, Open, non-Conscientious Introverts achieve the highest intelligence test scores. A more extensive metanalysis by Ackerman and Heggestad (1997) showed that a significant correlation exists between intelligence tests and Neuroticism (negative correlation), Extroversion (positive correlation), and Openness to Experience (positive correlation). In another article, Chamorro-Prezumic and Furham (2006) explains that correlation between extraversion and IQ may be due to the types of tests used - extrovert do better in speeded tests, while introverts do better in

power tests. These articles present relationships between personality and intelligence. Yet, are we able to say that an intelligent introvert is better at displaying intelligent behavior? What about an intelligent conscientious person? We cannot tell what personality traits allow a person to behave more intelligently (as opposed to score better in an intelligence test). The idea that there is a relationship between intellectual abilities and intelligent behavior is not questioned; however, it is possible that this relationship is mediated or moderated by certain personality traits that allow a stronger manifestation of intelligent behavior. The aim of the present study is to examine the mediating or moderating effect of certain personality traits in the relationship between intelligence and personality.

This study is interested not only in personality as a non-intellective factor but also in other such factors that might predict intelligent behavior. It is for this reason that the predictive importance of Emotional Intelligence and Subjective Well-Being. Emotional was examined. Emotional Intelligence (EI) is defined as: "the ability to carry out accurate reasoning about emotions and the ability to use emotions and emotional knowledge to enhance thought" (Mayer, et al, 2008). This means that a person high in EI will be capable of understanding his emotions as well as those of others, and using his emotions to obtain what he needs or wants. The construct of EI allows the person to enhance his thoughts by joining emotions and intelligence. Therefore, a person whose thoughts have been enhanced by EI, and thus thinks better, would be able to translate this into intelligent behavior such as success in job performance and good peer relationships, which are measures of life success. Mayer et al (2008) report that children who score high on EI had better social skills such as cooperation and self control, and that EI correlated positively with relationship well-being for adults. In the work environment, EI perception of faces moderately correlated with organizational simulations of managerial

problems such as fact-finding, analyzing problems and decisions making. It also positively correlates with a consistent rise in work place effectiveness in professionals of diverse occupations.

Subjective well-being "is concerned mainly with how and why people experience their lives in a positive way, including both cognitive judgments and affective reactions" (Diener, 1984). It mainly concentrates on what leads people to evaluate their lives positively and to have a positive affect about it. The relationship between subjective well-being and intellectual abilities, as measured by IQ, was examined by Diener (1984) and he arrived at the conclusion that intellectual abilities and subjective well being had no relationship. This author found this strange since higher intelligence would lead to more resources, and resources are positively correlated with subjective well-being. Yet, it might be possible that intellectual abilities alone, without any action being taken, has no influence on the way a person sees and feels about his life. In other words, it is possible that taking an action using intelligence, or intelligent behavior, is what makes a person feel better about his life. Therefore, it would be more likely that intelligent behavior and the resources that it brings, rather than intelligence, would have a positive relationship with subjective well being. It is also possible that people who feel good about their lives want to remain in this state and therefore continue behaving intelligently. It is for this reason that this aspect will be examined in this study.

As mentioned earlier, Wechsler (1975) agrees that goal awareness is an important part of intelligence. It makes intuitive sense to think that a person capable of intelligent behavior does so by being aware of the array of possible behaviors that the person can display, and that intelligent behavior would result from choosing the option that shows the greatest benefit to the person and to the people around them. In other words, intelligent behavior requires the person to be

conscious of the choice of behaviors that can be displayed, as well as of the consequences of these choices, to a certain extent. After being conscious of choices and consequences, the person selects the best option. Wechsler (1975) agreed with the idea that intellectual factors involve "a capacity to asses excellence and worthwhileness of human aims and performance". If a person acts intelligently, he or she will be capable of making the best decision, according to the person's situation.

The Expected Utility Model states that a "rational decision maker will prefer the prospect that offers the highest expect[ed] utility" (Tversky & Kahneman, 1981), meaning that an intelligent person would be capable of always choosing the option that represents the greatest benefit to him or her. Yet, the expected utility model is unable to predict decision making under uncertain situations (Kahneman & Tversky, 1979), thus introducing the importance of taking the situation into consideration in decision making research. For this reason, Tversky and Kahneman established Prospect Theory which explores the biases, heuristics, rationality and irrationality of decision making. Since choices made under risky situations heighten the idea of what is most practical or beneficial, the introduction of prospect theory allows us to see decision making under risky situations as a reflection of intelligent behavior.

Prospect theory has three basic elements, value, decision weight and probability, and every decision has both value and loss or gain. What this means is that the option of putting money in a savings account with big punishment rates for withdrawing money has a high emotional value (such as a feeling of security) as well as high gain because of all the money that could be saved. The other option, putting money in a checking account has a medium value because it is less likely that the money will stay there, and also a lower gain because less money will be saved; on the other hand, the person could take out money at any point without

punishment rates, which adds value to this option. There have been several findings exploring the basic precepts of Prospect theory. Tversky and Kahneman (1979) found that the responses associated with losses are more extreme than with earnings; a person gives greater value to losing 20 dollars than to winning 20 dollars. They also found that small gains and loses are overvalued while big gains and loses are undervalued. It is for this reason that we feel that we save more money when buying something at $5 when it was originally prized at $7 than when we buy something at $50 that cost originally $70. Also, low probabilities are overweighted and moderate to high probabilities are underweighted. There are several consequences to the nature of the three main elements: while taking decisions we have loss-aversion, which means we want to avoid losses at all cost by avoiding risks. However, once a person is faced with unavoidable losses, the person is more willing to take risks because people underweight outcomes that are merely probable in comparison with outcomes that are certain. This is the certainty effect. In addition, people ignore components that are shared by all choices. This is called the isolation effect, and it leads to inconsistent preferences when the same choices are presented in different ways or frames. This leads to the most interesting finding of Prospect Theory, namely, that the framing of situations, acts, and contingencies is capable of making a person change his decision on what to do.

Tversky and Kahneman (1981) give an example that is worth examining. The percentages in parenthesis indicate the percentage of participants that chose that answer. Each problem was given to a different group of subjects.

Problem 8 (N = 183): Imagine that you have decided to see a play where admission is $10. As you enter the theater you discover that you have lost a $10 bill. Would you still pay $10 for a ticket for the play?

Yes (88%)   No (12 %)

Problem 9 (N = 200): Imagine that you have decided to see a play and paid the admission

price of $10 per ticket. As you enter the theater, you discover that you have lost the

ticket. The seat was not marked and the ticket cannot be recovered. Would you pay $10

for another ticket?

Yes (46%)   No (54%)

The authors explain that these results are due to psychological accounting. In the minds of the

people on the second frame the ticket would seem to cost $20, while in the minds of the people

on the first frame the ticket and the $10 bill are independent. Even though the two situations

were the same, many people felt a distinction between the situations.

Tversky and Kahneman explained how "the frame that is adopted is controlled partly by

the formulation of the problem and partly by norms, habits, and personal characteristics of the

decision maker" (1981), stating that personal characteristics are significant determinants of how

the frame of a situation affects a person. However, the authors' emphasis (as well as that of

others in the field) was to study the formulation or framing of the problems and how it affects

decision making. They theorized that the mental frame of people as they take decisions is

influenced by the framing or conception of acts, outcomes, and contingencies associated with a

particular choice, and thus a series of experiments and questions was created to see how different

frames (and different ways of framing problems) allowed for inconsistent choices, as seen in the

example above. When studying the phenomenon they obtained samples from every part of the

distribution, ignoring individual and personal characteristics that may influence the frame taken

by a person. It is the purpose of this study to investigate what are the personal characteristics that

may control the frame a person adopts. More specifically, this study will explore the relationship between intellectual abilities and such decision making problems.

Jones et al (1998) explain that the findings of Prospect Theory (particularly the importance of framing situations and consequences) is a throughout investigation of the irrationality of men and our lack of rational when making decisions. The authors explain that Prospect Theory reveals how controlled we are by the circumstances and situations in our every day life. However, there is no reference to those who are capable of resisting the frame, which may do so because they hold an underlying principle that guides their choices. After all, there wasn't a total reversal of opinions in the example given above. The guiding principle could allow them to be rational and consistent in their decision making process. This rationality is hypothesized to go beyond using intellectual abilities, and it involves non intellective factors, which is the reason why none intellective factors are included in this study. It will examine how the way in which intelligent behavior, reflected in decision making, is influenced by intellectual abilities, personality, EI and subjective well-being.

It makes sense to think that intellectual abilities are related to intelligent behavior, which in this case is decision making, because behaving intelligently requires the person to use intellectual abilities such as logic and memory. It was theorized that people who score higher on the intelligence test would be able to see the different frames that are presented about one problem, and be able to choose the best answer. Therefore we expected a positive relationship between intelligence tests and decision making measures. In respect to EI, knowing that it can enhance thoughts, it was believed that EI would have a positive effect on decision making; if emotions are purposeful and Emotional Intelligence leads a person to use emotions to their maximum utility, then higher EI would allow a person to make consistent decisions by

enhancing their capacity to think rationally and being less influenced by the frame. For this reason a measure of EI was included as a factor to predict intelligent behavior. We also expect to find a mediating effect of EI on Neuroticism. A measure of subjective well-being was also included because the relationship between feeling good with one's life and taking good decisions in the present is a relationship that has not been explored. It is possible that those who have made intelligent decisions before have higher life satisfaction, which in turn would drive them to continue making good decisions.

It is natural to think that Openness will certainly correlate with both intellectual abilities and with decision making. The relationship between decision making and Neuroticism was expected to be negatively correlated since anxious people should have a greater difficulty answering consistently and resisting the frame, if the question is capable of altering their emotions greatly (Chamorro-Premuzic & Furnham, 2006). However, it is possible that a person who scores high in EI can control his negative emotions, even if he is high on Neuroticism, and be consistent in his decisions. It is hypothesized that the relationship between Neuroticism and decision making could be affected by EI. We expected Conscientiousness to be positively correlated with Decision Making because conscientious people are respectful and careful, cautiously considering their options before taking any decision. This should make them better decision makers, and for this reason it should be positively correlated with decision making. The possible relationship between Extroversion, Agreeableness and decision making is unclear.

In summary, we expect a positive correlation between intellectual factors, subjective well-being, Emotional Intelligence, Openness to Experience, and Conscientiousness with good decision making. We expect a negative relationship between neuroticism and decision making.

We are not sure about how the other personality factors will relate to decision making. In order to see the hypothesized path diagram please refer to Figure 2.

<div align="center">Method</div>

Participants

97 participants (85 were current students at Bishop's University), volunteered to participate in this study. All participants were aged 18 or older; there were 28 male and 69 females. All participants had the chance to win one of four $10 gift certificates and those taking a psychology class could earn 1.5 bonus points towards most psychology classes. Of the 97 participants, two participants' data was removed because it was judged that their English level would lower their score in all tests, particularly the Wonderlic Personnel Test.

Materials

Several psychometric tests were employed in this study. The Wonderlic Personel Test (WPT) was used in order to measure intellectual abilities. This test has been shown to have high test-retest reliability at $r = .94$ with a time period of wait of 5.28 years average (Dodril, 1983), an internal consistency of $r = .88$ (Wonderlic, 1983), and a high predictability of the WAIS scores, with correlations ranging from .91 and .93 (Do drill, 1981). This is a highly timed test (12 minutes) containing 50 items similar to the following:

> - One number in the following series does not fit in with the pattern set by others. What should that number be? 1/2 1/4 1/6 1/8 1/9 1/12

The final score is achieved by subtracting the number of wrong answers from the total number of questions answered.

As a personality measure the IPIP-NEO short version was utilized. This test is a free, online, research based test that is accessible to anyone doing research. The test measures personality in terms of the well-established five traits, Extroversion, Openness to Experience,

Neuroticism, Agreeableness and Conscientiousness and it contains 120 items. The answers indicate how much a subject agrees with the statement as applied to him or her; the answers are in multiple-choice format ranging from "very inaccurate" to "very accurate". An example of such items is as follows:

-Believe in the importance of art

| Very Inaccurate | Somewhat Inaccurate | Neither Accurate nor Inaccurate | Somewhat Accurate | Very Accurate |

Some of the questions are framed positively, such as "[I] Make friends easily" while others are negatively framed, such as "[I] Try not to think about the needy". The scoring sheet described what items corresponded to what personality factor, and if the items were positively framed or negatively framed. This test revealed a total of five scores, one for every personality factor. The higher the score the more the person displayed the trait. Goldberg reports an alpha coefficient of $r = .84$ (1992) for the IPIP-NEO. As evidence of validity he reports that compared to other personality tests (such as the NEO Personality Inventory) the IPIP-NEO was the best predictor of risk avoidance and total health related practices (1999); also the scales of the IPI-NEO have a $r = .73$ correlation with the scales of the NEO Personality Inventory. Since the test has a good correlation (for research) with the well known NEO Personality Inventory and since the IPIP-NEO is free, this test was used for this study. In order to simplify scoring, the questionnaire was given separately from the answering sheet.

In order to measure decision making, a Decision Making task was created based on several problems written by Kahneman and Tversky (and other authors specialized on the framing effect). Kühnberg (1998) explored past experiments on the framing effect to determine whether it exists, and if so, what circumstances give rise to it. The results revealed that the most effective designs or questions for producing a framing effect are those that deal with the Asian

disease, gambling, or tax evasion. The bargaining and escalation of commitment designs produce middle effect sizes. Other designs such as game theory and clinical reasoning were shown to be ineffective in producing the desired effect. Accordingly, the designs or items of the dependent variable were chosen in accordance with their effectiveness at producing the framing effect. However, not all designs could be translated into a pencil and paper exam because their nature required group interaction. Therefore, it was attempted to choose effective and yet easily-performed items that could be executed by a single subject and whose answer could be written easily. In total there were 6 designs, which allowed for 12 items, since every problem had two frames. An example of the items is as follows:

Problem 3

Imagine that you are working for a company, and they have decided to reassign select workers to newer divisions. They give you the choice between two new divisions, and you can work in the division of your choice. The only differences between the new jobs and you old job is in terms social contact and the level of interest of the tasks. The following table summarizes the differences among the three jobs.

	Social Contact	Projects' Level of Interest
Present Job	Much social interaction	Projects are very boring
Job X	Limited contact with others	Projects are interesting
Job Y	Moderately sociable	Projects are mostly boring

Which job would you choose?

Problem 6

Imagine that as part of your professional training you were assigned to a part-time job. The training is now ending and you must look for employment. You consider two possibilities. They are like your training job in most respects except for the amount of social contact and the level of interest of the projects you will have to do. To compare the two jobs to each other and to the present one, you have made up the following table.

	Social Contact	Projects' Level of Interest
Present Job	Isolated for long stretches of time	Projects are challenging and engaging
Job X	Limited contact with others	Projects are interesting
Job Y	Moderately sociable	Projects are mostly boring

Which job would you choose?

When the person answered consistently to both items of the same problem framed differently, the person received one point. When the person didn't answer consistently, that is, they chose differently to the same problem framed differently, the person received zero points. The maximum score revealing absolute consistency is 6 while the minimum score revealing no consistency is 0. The items were chosen so that there would not be one right or most beneficial answer and in this way avoid judging why a person thinks that one decision is better than another one, and whether this judgment is correct or not. It is for this reason that consistency in decisions is the scoring method.

In order to measure Emotional Intelligence the Levels of Emotional Awareness (LEAS) was used. The test contains social scenes involving two characters, the person reading the test and some other person. All scenes elicit an emotional response and the subject must answer how the two people involved in the situation would feel. The short version, which contains 10 items, was used because of time restraint. An example of an item is as follows:

> You have been working hard on a project for several months. Several days after submitting it, your boss
> stops by to tell you that your work was excellent. How would you feel? How would your boss feel?

The answer to each scenario is rated from 0 to 5 based on the emotional deepness revealed in the answer, which ads up to a total maximum score of 50 in the case of the short version. The scoring of the items is based on the LEAS manual (Lane, 1991). The manual presents the criteria that must be met in order to classify words as containing a level 0, 1, 2, 3, or 4 in emotionality. For example, the word "uncertain" receives a score of 0, while the word "sympathy" obtains a score of 3. Myers et al (2008) report that it posses an alpha coefficient of $r = .81$ to .89. Lane et al (1990) correlated the total score of the LEAS with the Washington University Completion

Sentence Test (SCT), a measure of psychological maturity, and the Parental Description Scale, which measures the level of complexity in the representations of others. The authors found a significant positive correlation with both tests, indicating that those who have higher levels of maturity, and those who understand the complexity found in people score higher on the LEAS.

The General Well Being Scale or Schedule (GWB) was used to asses subjective well-being. This test contains 18 items, and there are six possible answers for each question ranging from 0 (all the time) to 5 (none of the time), al though some scores are reversed; the subject answers in accordance to how he has felt for the past month. Only items 15 to 18 have scores that range from 0 to 10. The test taps into different aspects of well-being such as depression, how rested the person is, and satisfaction with personal relationships. The participants are asked to choose the answer that best reflects how they have felt for the past months.

An example of an item is:

-13. Have you been feeling emotionally stable and sure of yourself?

0_All the time   1_Most of the time   2_A good bit of the time   3_Some of the time 4_A little of the time 5_None of the time

To score the GWB, the numbers chosen by the participants in each of the 18 items are added in order to give a global score that ranges from 0 to 110 points, where larger scores indicate greater well-being. Internal consistency for the GWB ranges from .90 to .94 and test-retest reliability ranging from .68 to .85, which is good enough for research (Taylor et al, 2003).

Procedure

Most subjects came into either the psychology lab or the library, even though some participated in their own home. Participants filled out the consent form and took the tests and scales in a counterbalanced order. In order to avoid fatigue subjects had the choice of taking a five minute break after every two tests, allowing for two breaks and three test periods. The

intelligences tests (WPT and EI) were given first in order to avoid the effect of subjects' fatigue on the intelligence tests. It is for this same reason that the decision making test was taken alone and in the second session. In the last block the LEAS and the GWB were given. To minimize the effect of order, the order of the tests within each period was counterbalanced. Then the debriefing form was given. For more details on the four counterbalanced conditions see Figure 1.

Results

A one way ANOVA was carried out over the four counterbalancing conditions in order to compare their decision making means score, and see whether there was any effect due to test order. The ANOVA revealed no significant mean difference, with an F value for condition of F $(3, 90) = .237$, $p = .871$. For means, standard deviations and number of participants please see Table 1.

Correlations were performed between the number of consistent responses on the Decision Making task (our dependent variable), and intellectual abilities, the five personality scores, EI and subjective well-being. All the correlations were run at an alpha level of .05. If personality, subjective well-being or emotional intelligence mediate the relationship between intelligence and decision making, we would expect a lower correlation in this relationship when controlling for the non-intellective factors. However, our results reveal that there was no significant relationship between the WPT (intellectual abilities test) and decision making task, $r (94) = .148$, $p = 0.150$. Also, the correlation between Emotional Intelligence and decision making was found to be non significant, $r (93) = -.11$, $p = 0.295$, as was the relationship between EI and intellectual ability, r $= .17$, $p = 0.099$. There was no significant correlation between the decision making task and the general well-being measure (GWB), $r (94) = -.066$, $p = 0.527$. The relationship between decision making and each personality factor was non significant; with Openness to Experience the

correlation is *r* (86) = .120, *p* = 0.253; the correlation with Neuroticism is *r* (86) = .055, *p* = 0.613. With Extroversion the correlation is *r* (86) = .042, *p* = 0.699, with Conscientiousness, *r* (85) = .078, *p* = 0.473 and with Agreeableness the correlation is *r* (86) = -.026, p= 0.811. The same is true of the relationship between the WPT and any of the five factors of personality. The correlation between the intellectual factor score and Openness is *r* (92) = .184, *p* = 0.085, with Neuroticism it is *r* (92) = .014, *p* = 0.893, and with Extroversion *r* (92) = .040, *p* = 0.702. The correlations with Conscientiousness and Agreeableness are *r* (91) = .079, *p* = 0.459 and *r* (92) = -.023, *p* = 0.825, respectively. For means, standard deviations and number of participants, please see Table 2.When looking at the Tolerance level which indicates how orthogonal or independent our variables are, it was found that all of them had fairly high Tolerance, ranging from .929 for the WPT scores to .724 for Conscientiousness. To see all the Tolerance values please refer to Table 3.

In order to see if there was any hidden effect, we partialed every one of our hypothesized mediating or moderating variables (EI, Openness to Experience, Neuroticism, and Conscientiousness) as the WPT scores were correlated with Decision Making. When controlling for EI, the correlation between Decision Making and WPT approached significance, *r* (90) = . 186, *p*= .075. When partialing Openness, the correlation between decision making and the Wonderlic showed almost no change, *r* (89) = .147, *p* = 0.164. Finally, when controlling for Neuroticism, the relationship between WTP and decision making became more significant, *r* (89) = .167, *p* = .113. However, none of the results were statistically significant.

Discussion

The ANOVA analysis allowed us to see that the order in which tests are given does not affect the results. With this assumption met we can continue interpreting the other results. It was

hypothesized that the scores of the intellectual ability test would positively correlate with the decision making task. However, no significant correlation was found, even though it was the correlation that was the closest to significance. It was also hypothesized that Openness to Experience and Conscientiousness would positively correlate with the decision making task, while Neuroticism would negatively correlate with the dependent variable. However, no significant correlation was found here either. Also, there was no significant correlation We also found no significant correlation between subjective well-being and the decision making task nor with the WPT. In the latter case, we replicated Diener's (1984) results. Concluding from the lack of significance in all of these correlations we could say that there is no mediating effect between decision making and our intelligence measures since mediation would require the non-intellective factors to correlate with the decision making and Wonderlic scores. Also, the high tolerance value of every factor indicates that no mediation occurs because they are clearly very independent from each other. It can also be concluded that there is no moderation between our variables since none of the variables are significantly or negatively correlated to begin with.

Understanding the results can be simplified by stating that there is no relationship between intelligence and personality in the prediction of intelligent behavior, and that intellectual abilities do not predict how consistently a person makes decisions. However this would be oversimplifying the results. Although the relationship between intellectual abilities and decision making is not significant, its correlation is the highest of those that were predicted ($r = .148$), which indicates that there is a positive trend in this direction. Also, one of the three personality variables that were hypothesized as being related to decision making, namely Openness, had higher correlations than the other personality factors with decision making ($r = .253$). These findings imply that maybe this study did not have enough participants or enough variability in

participants to get significance in the correlations. This makes sense because, as pointed out by Ackerman and Heggestad (1997), Openness to Experience positively correlates with Intellectual Abilities. However, in the present study, no such relationship was found, which indicates that there may have been a restriction of range due to the homogenous sample of undergraduate students. Also, Gallagher and Vella-Brodick (2008) report a high correlation between Emotional Intelligence and Subjective Well-Being. However, this study found no significant correlation. This also indicates that our population may have been too restrictive. Unfortunately, most of the participants were University students, who are very similar to each other in Intelligence, and even in certain personality traits. Therefore, it could be concluded that sampling might have influenced the results of the study, lowering variance and thus the correlation between variables.

Another problem with this study is the fact that Bishop's University has a great number of international students as well as French-speaking students. This becomes a problem particularly with the Wonderlic Personnel Test because it is a test that measures intellectual abilities and as such, some of the questions are culture and language bound; this means that only those whose mother tongue is English would know the answer. As such, people who do not know native English expressions had a lower score than they would have had in another intellectual abilities test; their intellectual ability score may not reflect their real score. Another criticism regarding the choice of intelligence test is that, as mentioned in the introduction (Chamorro-Prezumic and Furham, 2006), people who score low on Extroversion do worse in speed tests. If we consider that the WPT is a highly speeded test, and that a positive, yet non-significant correlation is found between WPT and Extroversion, we can understand that unfortunately introvert's score on the WPT is lower than their true score.

The other criticism refers to our dependent variable. By making it a decision making task, it was understood that this study was an exploration of how people make decisions and of the personal and situational variables that affect their choices. Additionally, our decision making task was testing the notion that people make choices partly based on their guiding values, motivations and cognitions. Those with certain personal factors, such as being high on Conscientiousness, and with a guiding principle would be more likely to take the same decision when a problem was presented under different frames (thus being faithful to their guiding principles) than those possessing a guiding principle but being low on Conscientiousness. However, if a person was high on Conscientiousness but had no underlying principle to explain his choice, it was assumed that the frame or situation would have a greater effect on him. Nonetheless, at no point were participants asked about their reasons for choosing one option over another. This was done in order to avoid judging their rational, and because it would be hard to distinguish situational reasons (caused by the frame) from personal reasons (such as values). However, without this information it is hard to know whether our dependent variable was measuring if people with a guiding principle could resist the frame. Since most questions were presented as possessing dichotomous answers, it is not possible to know why the participants took the decisions they did and if they chose based on a guiding principle. It is hard to know the exact reason why people choose as they do, and at times it might seem that they are behaving inconsistently but this is only because their underlying principle is unknown to outside observers. In this way, the dependent measure might not have been ideal to measuring consistency according to underlying values because the underlying principles were not being tested.

Another assumption in the decision making task is that that the reactions to decisions made on a piece of paper are similar to those faced in real life. However, this assumption may

not be correct; imagining oneself in a situation is not the same actually being in the situation. For example, one of the items asks participants to imagine that they were in a car accident and they are loosing and regaining consciousness constantly. The doctor tells them that there is a 40% chance that they will fall into a deep coma, and if this is the case, whether they would want to use life support or not. Even though this question in itself can arouse emotions similar to those that would be felt under the particular circumstance, the intensity of these emotions would not be the same. The decision the participants take in this problem does not represent a big loss nor does it have a big value (death) because in reality participants are not in that situation. Since the nature of the task is a paper exam, it may not accurately represent real life situations. This means that the decision making task may not posses ecological validity.

An additional criticism about the dependent variable is that it contained 12 items, or a total of 6 decisions and a maximum score of 6. However, 90 of the 95 participants scored 3 or more. This has two meanings. Firstly, the dependent variable didn't have enough variance in itself to catch the variability in subjects, or in other words, it had restriction of range. If more items would have been included there would have been more variance which would allow us to see a stronger relationship between our predicted factors and participants' consistency. The other issue that arises with having a high "low" score is that it means that many people are capable of resisting the frame when faced with the same situation framed differently. This would indicate that most people have an underlying reason for choosing what they do and it is possible that many of the changes in preference found in Prospect Theory research would not exist if more within-subjects experiments were performed. However, Kühberger (1998), in his meta-analysis on Prospect Theory, describes that the least frequently used within-subjects design had stronger framing effect than the most common between- subjects comparison. This effect was not

replicated, as described above. Yet, a replication could have existed if there had been two testing sessions separated by a somewhat-large time period, and if a different frame to each problem was presented at every session. In this way, participants would have vaguer memories about the items and their content than if they answered all items at the same time. This would have allowed us to distinguish between memory and acting (or not acting) upon values in the resistance of the frame.

Future research should try to improve the methodological problems described above since this will more likely reveal the real relationship between good decision making and intelligence, and if there is any personality factor influencing this relationship. Cattell (1987) once expressed that "a thing is a unity when its parts move together, change together, and respond together to some treatment or stimulation". Following this quote, it could be said that even though a person is composed of several parts such as two arms, two legs and one brain, this person is not counted as the sum of his or her parts but as a person, as a unity. The same is the case with our nature. Even though we are composed of intellectual abilities, personality, emotional intelligence and subjective well-being, when describing these parts in respect to ourselves we begin with the word "I", indicating that this pronoun is the essence that holds all other variables together. For this reason, it seems important to consider and remind ourselves that in order to understand ourselves, this "I" that only each individual knows, it is necessary to look globally at it, not just at its separate parts.

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Table 1

Means, Standard Deviations and Participant Numbers for Each Counterbalancing Condition

(see Figure 2)

Condition	n	M	SD
1	25	4.48	0.23
2	23	4.32	0.25
3	24	4.50	0.24
4	23	4.60	0.24

Table 2

Means, Standard Deviations and Participant Number for All Variables

	N	M	SD
WPT score	95	24.52	5.95
LEAS score	95	32.50	4.38
GWB	95	74.06	14.97
Openness	93	84.05	9.90
Neuroticism	93	65.43	10.22
Extraversion	93	83.00	12.03
Agreeableness	93	91.08	10.27
Conscientiousness	92	86.48	9.86
Decision Making	94	4.48	1.15

Table 3

Tolerance Value for Every Condition

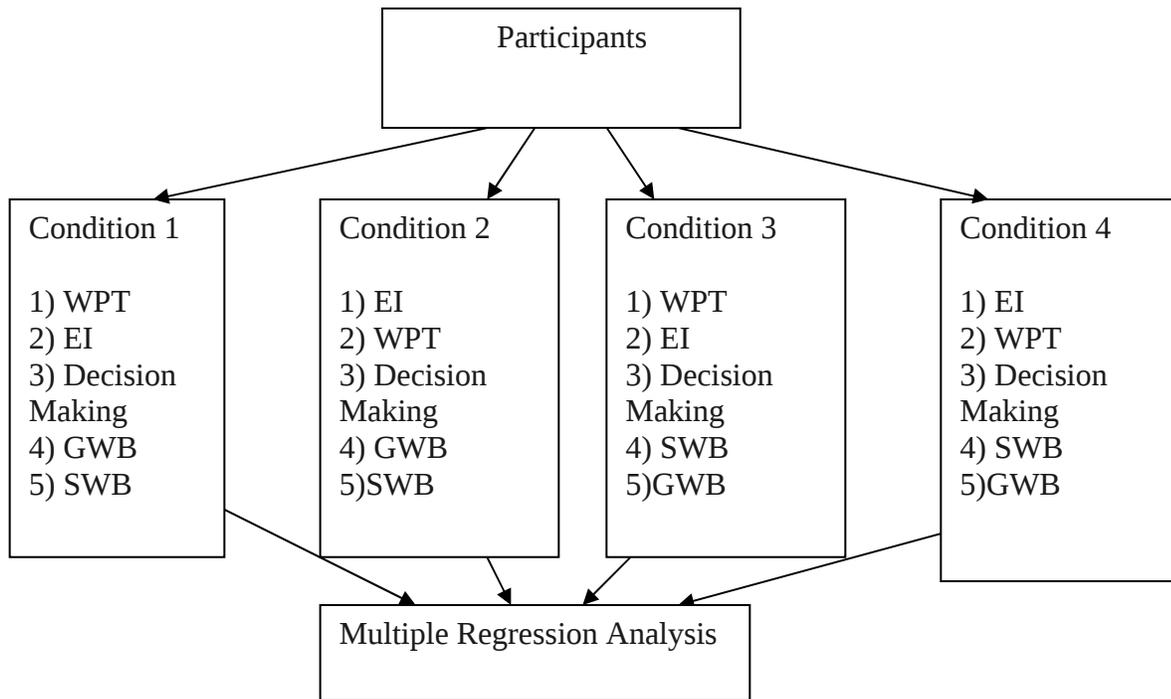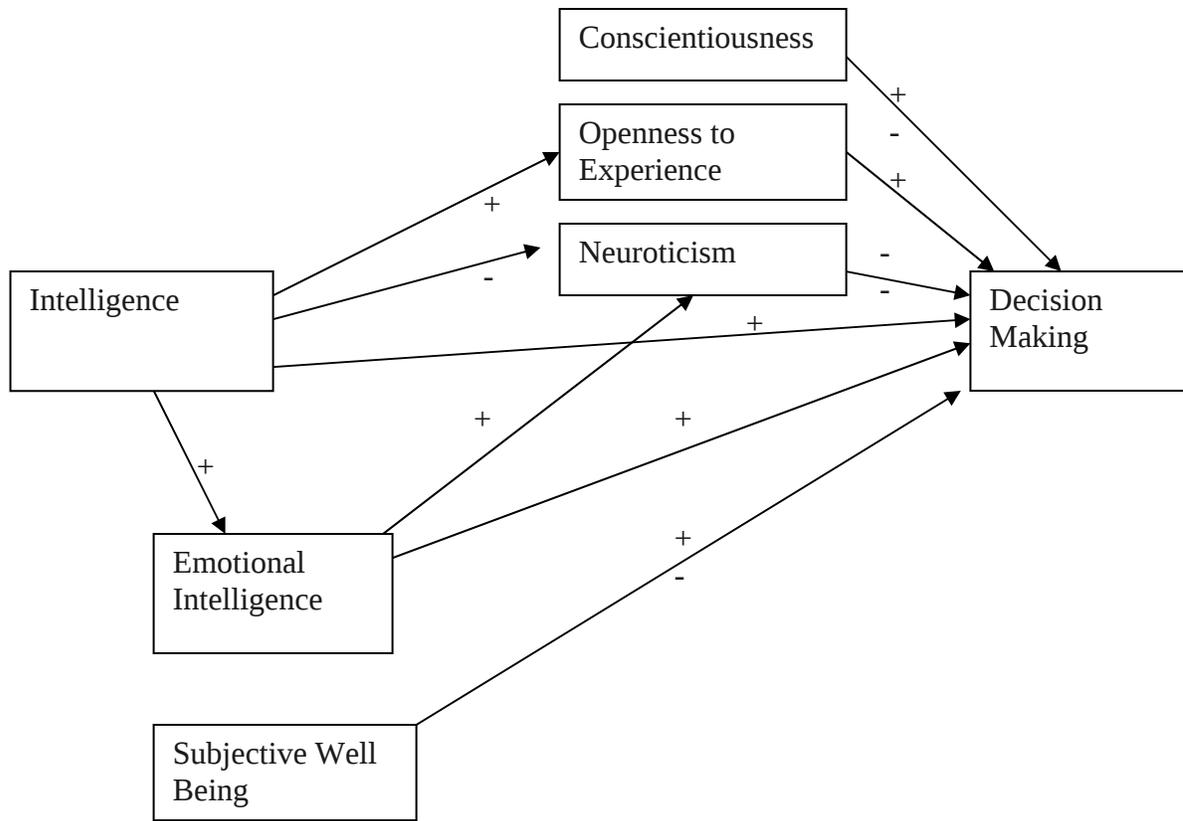| Variable	Tolerance
WPT	0.88
Openness	0.86
Conscientiousness	0.75
Agreeableness	0.76
Extraversion	0.91
Neuroticism	0.81
GWB	0.78
LEAS	0.90

Figure 1: Block diagram for counterbalancing conditions

Figure 3: Hypothesized path analysis diagram