Impulsivity and its Relationship with Extraversion and Self Esteem In College Students

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Abstract

The present study investigated the possible relationships between impulsivity, self-esteem and extraversion and aimed to identify a difference across age groups in each using a quantitative mixed method design. The Eysenck Personality Questionnaire-Revised, Rosenberg Self-Esteem Scale and Barratt Impulsiveness Scale were administered to 104 college students, 61 aged 18-25 and 43 aged 26+. The results found the 18-25 group to have significantly higher extraversion and impulsivity levels than the 26+ group and no significant difference with self-esteem levels. Positive significant relationships were established between impulsivity and extraversion as well as extraversion and self-esteem showing that as one rises or falls so does the other. A negative significant relationship between self-esteem and impulsivity showed as one falls the other rises and vice versa.
**Introduction**

Personality types, for example, extraversion, have been found to have relationships with specific personality traits as well as self esteem levels in individuals (Slee & Rigby, 1993). Individuals are exactly that, individual. People vary in many ways such as in thoughts and behaviours. Personality traits are talked about daily as individuals are often described by the characteristics, or traits, that they are known for displaying like moodiness and helpfulness. Researchers who take the trait theory approach to personality consider traits to be the largest and most significant element of personality. Cervone & Pervin (2008), define a personality trait as the consistent patterns to the way an individual behaves, thinks and feels, for example if a person is thoughtful, they are so across time and scenarios.

**Extraversion**

H.J Eysenck developed a biologically based theory of personality traits centred on 3 main traits, extraversion, neuroticism and psychoticism (Eysenck & Eysenck, 1985). These three personality types as well as a lie subscale on the Eysenck Personality Questionnaire-Revised (Eysenck & Eysenck, 1985) combine as one of the most widely used self-report measures in research. Extroversion is an enjoyment or a need for people and if an extroverted individual is not around people they can feel isolated and lonely (Keirsey & Bates, 1978). Around 75% of the population is extroverted (Bradway, 1964 as cited by K Keirsey & Bates, 1978).

**Impulsivity**

A highly recognised trait of personality is impulsivity. Impulsivity can be viewed as a person’s compliance to be part of new, unique, varied and intense situations which is part of the sensation seeking feature of personality (Zuckerman, 1994 as cited by Cooper, 2010). People will often say a person is impulsive or has an impulsive personality if they take part in a few of the more common impulsive behaviours. An example of impulsivity is impulse buying, which is purchasing something unplanned and without thinking. A more extreme
example would be getting up in the morning and deciding to go sky-diving. Acting impulsively is acting inappropriately to what the situations suggests (Evenden, 1995). If severe impulsivity persists into late adulthood it is usually classed an attention deficit/hyperactivity disorder (ADHD) (Diniz et al., 2007).

**Self Esteem**

Self esteem is another aspect of personality. It is how an individual views themselves attitude wise as in if they are positive of negative towards themselves (Baron et al., 2009). It can be high, medium or low. Excessively high or low levels can be emotionally and socially harmful. Too high self esteem can lead to social dominance and a sense of entitlement, too low self esteem can create feelings of social anxiety and low social skills and confidence (McLeod, 2012).

**Self Esteem and Extraversion**

Self esteem levels, whether they are high, medium or low are often related to personality traits, correct or not. For example it is sometimes assumed that if a person likes or wants to stay in on their own at a weekend that there must be a reason, that maybe they are self conscious or have low self esteem. This may not be true about every individual who likes staying in , however low self esteem has been linked with introversion, which is favouring being alone and preferring solitary activity the opposite of which is extraversion and has been linked to higher levels of self esteem (Slee & Rigby, 1993).

Watson et al (2002) have a study of global self esteem and personality. Three individual studies conducted establish that self esteem strongly negatively correlated with neuroticism, meaning that low self esteem has a relationship with high neuroticism levels and high self esteem has a relationship with low neuroticism levels. The study also identified a moderate relationship between self esteem and extraversion, meaning that high self esteem levels have a relationship with high extraversion levels and low self esteem has a relationship with low
extraversion levels. Watson et al (2002) came to similar results as most other studies such as Slee & Rigby (1993), with high self esteem and extraversion having a connection. Watson et al (2002) arrived at their results through their study which aimed to find a relationship with global self esteem and structural models of personality across three studies. Slee & Rigby (1993) came to these same conclusions by taking use of Eysenck’s factors of extraversion, neuroticism and psychoticism and self esteem to identify tendencies of bullying. They used male primary school children who completed the junior versions of self report measures.

**Impulsivity and Self Esteem**

Some studies such as Dickman, (1990) distinguish impulsivity as two separate factors, dysfunctional impulsivity, which is acting without thinking when it needs to be thought through and functional impulsivity which is acting without thinking when it is beneficial to do it. Others further breakdown impulsivity into motor, non planning and attentional impulsivity (Diniz et al., 2007). The Barratt Impulsiveness Scale (Patton et al, 1995) measures impulsivity this way. Motor impulsivity is how regular or spontaneous an individual’s daily activities are, non planning impulsiveness is how carefully an individual thinks before an event or occurrence, finally attentional impulsiveness is how easily an individual can keep paying attention without becoming distracted (Patton et al, 1995).

The majority of the research on impulsivity and self esteem relationship’s focus point is around self harm and addiction and how a lack of self esteem leads to more impulsive decisions and a lack of thinking things through (Hawton,1999), none having real relevance to the current study. From what was researched impulsivity can be linked with self defeating behaviour in individuals with excessively high self esteem, or narcissists. It has also been found that a strong positive relationship is present between narcissism or excessive self esteem and impulsivity (Vazire & Funder, 2006). This relationship was identified through their study which aimed to identify impulsivity’s affect on behaviour of individuals with high
self esteem. The information here is therefore contradictory as both low and high self esteem are correlating with high impulsivity.

**Extraversion and Impulsivity**

When the trait of extraversion is broken down, impulsiveness is identified as a factor in its make up (Carrigan, 1960 as cited by Eysenck & Eysenck, 1978).

Previous studies of personality traits and impulsivity such as Eysenck & Eysenck, (1978) have identified positive relationships between both impulsivity and extraversion and impulsivity and psychoticism. To arrive at this conclusion they conducted a study aimed at measuring impulsiveness, venturesomeness and empathy against extraversion, psychoticism and neuroticism using the Eysenck Personality Questionnaire and around 1100 adults to complete it.

Campbell & Heller (1987) also used the Eysenck Personality Questionnaire, taking the results from each individual of the three traits identified that extraversion correlated highly with the trait of sociability but not with the trait of impulsivity. To identify this Campbell & Heller (1987), through their study, aimed to assess’ correlation between extraversion, impulsivity and social ability with sensation seeking and introversion, using a number of measures including the EPQ. This then contradicts the results of Eysenck & Eysenck, (1978). Taking from the few specific study's looking for a relationship between extraversion specifically, as well as the other two traits of neuroticism and psychoticism, with impulsivity (Eysenck & Eysenck, 1977; Whiteside & Lynam, 2001) actually found strong correlations between psychoticism and impulsivity and a weaker one with extraversion and impulsivity. To arrive at their individual conclusions firstly Eysenck & Eysenck (1977) study, which aimed to find where impulsivity fitted in the makeup of personality, was obtained by three questionnaire studies. The three personality traits of extraversion, neuroticism and psychoticism as well as a lie subscale along with impulsiveness were measured and compared. Whiteside & Lynam (2001)
arrived at their conclusions by aiming to use a structural model of personality to understand impulsivity. They achieved this by using the Five Factor Model of Personality and a number of measures of impulsivity including the Barratt Impulsiveness Scale.

**Age: Extraversion, Self Esteem and Impulsivity**

Previous studies on extraversion across ages found extraversion levels decrease from late adolescence to late 20s and drop again slightly after reaching 50 (Viken et al, 1994). The study aimed to find a difference with extraversion and neuroticism from the age range of 18-59 using 1500 twins tested twice at 6 after a six year gap.

A prior study of self esteem in Irish students aged 10-17 made known that the younger the age of the participant the higher the self esteem when compared to that of those who were entering adolescence (Nic-Gabhainn & Mullan, 2003). The study arrived at these conclusions as they identified the norms for a specific population, the Irish youth’s, self esteem levels by using self esteem scores from the Rosenberg Self-Efficacy Scale.

Studies of age and impulsivity such as Albert et al, (2008), found that impulsivity declines after the age of ten, similarly to self esteem. There is a period in adolescence however that a person is likely to take part in riskier situations, it is expected to occur as this is the period when an individual has less self control due to immaturity. Albert et al, (2008) came to their findings through their study which aimed to identify age differences in sensation seeking and impulsivity. To do so they used a sample of 936 and administered self report measures for each of the variables they were researching.

**Problems with the Research**

The research discussed has identified a number of gaps or inconsistencies for which the data from this current study could help fill or aid in the clarification of previous data.

Incompatible evidence has been found in the research for extraversion and impulsivity. Eysenck & Eysenck, (1977) identified weak relationship between the two whereas the later
study of Eysenck and Eysenck. (1978) found a strong relationship, which is a complete alteration from the original study's data. A further study from Campbell & Heller (1987) found no significant relationship between impulsivity and extraversion, agreeing with the neither of the previous studies. The problem with the research here is the conflicting results. The current study would firstly attempt to identify with only one of these studies and in turn hope to provide a better understanding of the proposed relationship.

Research of self esteem and extraversion does not have such contradictions; they are agreed that extraversion has a relationship with high self esteem. Both Watson et al (2002) and Slee & Rigby (1993) came to that conclusion. As there is no obvious problem with contradicting theories in the research the current study would work on expanding the knowledge of the field and attempt to offer a clearer understanding.

Whilst there are no contradictions in the research of self esteem and impulsivity, the research is not especially extensive. Of those which are relevant, Vazire & Funder, (2006) found a strong positive relationship between excessive high self esteem and impulsivity. The current study would look into this further by adding its research and results the pre-existing studies and aid in obtaining more of an understanding of the topic.

**Aim of the Study**

The purpose of the present study is to examine the personality trait of extraversion and the relationship between it and both impulsivity and self esteem and in turn the relationship linking impulsivity and self esteem themselves. The current study also hopes to identify which, if any, factors of impulsivity, motor, attentional and non planning impulsivity, have relationships with self esteem and extraversion.

The current study also assess the age of participants and the variables, extraversion, impulsivity and self esteem to identify any differences across age groups. Viken et al, (1994) study of extraversion levels and the differences across age levels, identified that across an
individual’s 20s their extraversion levels decline. The current study will identify, through two age brackets if the decline occurs with college students.

Nic-Gabhainn & Mullan (2003), observed that the younger the individual the higher the self esteem up until adolescence. The current study looks at the years following, college age students as well as mature college students, to identify if the self esteem levels continue to decrease or if they increase and if so at what point. If self esteem levels do differ across the ages in the college situation i.e. a difference in mature students, the current study will identify it. Then it will be adding to the previous research out there in an aim to make it more complete.

Albert et al (2009), found adolescence is the key time for impulsivity to occur due to a lack of maturity. College students are in some ways expected to be mature, but yet are still seen as immature in other ways. This study will add to the existing data by looking at data from college students.

A convenience sample of 100 students will be dispensed a simple pen and paper questionnaire and be asked to complete it. The use of college students will provide a high response rate with little excluded data, creating a more extensive study. The study will add and improve previous research. The number of participants will ensure, firstly more chance of high return on the data and secondly more accurate data.

Overall this study aims to clarify contradicting research as well as add to the research previously available in the area.

This study is based on several hypotheses.

It is hypothesised that there will be a significant difference amongst age groups and self esteem.
It is hypothesised that there will be a significant difference amongst age groups and extraversion.

It is hypothesised that there will be a significant difference amongst age groups and impulsivity.

It is hypothesised that there will be a significant relationship between impulsivity and extraversion.

It is hypothesised that there will be a significant relationship between extraversion and self esteem.

It is hypothesised that there will be a significant relationship between impulsivity and self esteem.
Method

Participants

A convenience sample of 104 college student from Dublin Business School was used for the research. 61 were aged between 18 and 25, the final 43 were aged 26 and above. The sample consisted of 31 males and 73 females. 64 were full time students and 40 were part time students. These students were recruited through gaining individual access to classes by obtaining permission from lecturers. The students who participated were all over 18 and were able to give informed consent.

Design

This study’s design is a quantitative mix method design. It used both a correlational design and a quasi-experimental design. The independent variable was the age of the participant and the dependent variables are the impulsivity, extroversion and self esteem levels. The age variable here makes it between groups design. The age variable is grouped in two sets, the aged 18-25 group and the aged 26+ group. Participants were assigned to one of these groups by falling into a category due to age. The predictor variable is the impulsivity levels and the criterion variables are self esteem and extroversion levels. This is between participants design

Materials

Three paper and pencil, self administered questionnaires were given to each participant as part of a questionnaire booklet. As well as the questionnaires the booklet consisted of a cover page (Appendix A) explaining what was being handed to them and a demographic page (Appendix B), asking participant’s age, gender and study type.

The first questionnaire was the Rosenberg Self Esteem Scale (Rosenberg, 1989) (Appendix C). Cronbach’s alpha for various samples have been found to lie between the ranges of .77 to .88 (Blascovich & Tomaka, 1993). The scale is a 10 statement questionnaire
which asses self esteem levels through measuring your general feelings towards yourself. These statements are both positive and negative.

“On the whole, I am satisfied with myself” and “At Times, I think I am no good at all” (Rosenberg, 1989).

After reading these statements, participants circle strongly agree (SA), agree (A), disagree (D) or strongly disagree (SD), depending on how they felt.

The second questionnaire was the Eysenck Personality Questionnaire-Revised (Eysenck & Eysenck, 1985) (Appendix D). The reliability for which has been shown through a Cronbach’s alpha scores between .80 and.90 (Weiner & Craighead, 2010). The questionnaire uses 48 questions to measure three aspects of personality, neuroticism, psychoticism and extraversion as well as a lie subscale. Each of these subscales can be totalled to a score out of 12. Different questions within the questionnaire look to evaluate different personality traits. A question for extraversion would be

“Are you a talkative person?” (Eysenck & Eysenck, 1985).

And a question for neuroticism would be:

“Does your mood often go up and down?” (Eysenck & Eysenck, 1985).

Participants are asked to circle YES or NO depending if they agree or disagree.

The final questionnaire was the Barratt Impulsiveness Scale (Patton et al., 1995) (Appendix E). The scale is a measure of impulsiveness with 3 subscales attentional impulsivity makes up 8 questions, motor impulsivity made up 11 questions and non-planning impulsivity also made up 11 questions, the higher the mark the higher the impulsivity. The scale has A Cronbach’s Alpha run through this study had a reliability statistic score of .84. It consists of 30 statements which asses different areas of impulsivity for attentional impulsiveness there are statements such as:

“I don’t pay attention” (Patton et al., 1995).
For motor impulsivity there are statements such as:

“I do things without thinking” (Patton et al., 1995).

For non-planning impulsivity there are statements such as:

“I Plan Tasks Carefully” (Patton et al., 1995).

Participants were asked to read these statements and circle either 1, 2, 3 or 4 corresponding to rarely/never, occasionally, often and almost always. They were asked to answer quickly and honestly.

Procedure

Participants were asked to take part in the study during a brief introduction given to them in which it was explained the study was completely voluntary and that they did not have to take part if they didn’t want to. The criteria for talking part were explained, being, participants had to be over 18 and capable of giving informed consent. It was explained that full and complete anonymity was being provided, thus withdrawal was not possible after consent was given and that no individual results could be given only the overall ones of the study. It was explained to tick the permission box if they wanted to take part and if they don’t to just hand back the booklet blank or incomplete. Participants were then left to complete the questionnaire booklet which took on average, 10 minutes. When completed these booklets were then collected from the participants. A debrief was then given as to the full purpose of the study as none was given beforehand as to not influence and responses given. It was then reiterated to the participants to use the help line given, the Samaritans, on the final page of the booklet (Appendix F), if they were affected by any of the content in the questionnaire booklet. Participants were asked if they had questions about the process and if they had they were answered. Finally participants were thanked for their time and participation.
## Results

**Table 1: Descriptive Statistics for Psychological Measures**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>7.09</td>
<td>3.45</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Self Esteem</td>
<td>20.41</td>
<td>5.23</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>63.78</td>
<td>11.51</td>
<td>40</td>
<td>113</td>
</tr>
</tbody>
</table>

**Descriptive Statistics**

104 participant’s results were analyzed. 31 males and 73 females were in the sample. 61 were aged between 18 and 25, the final 43 were aged 26 and above. There were 64 full time students and 40 part time students. Table 1 shows the mean score for extraversion as 7.09 (SD=3.45). The highest score possible here was 12, the highest score achieved being 11 with the lowest achieved 0. The samples score was relatively high as the mean is closer to the highest possible score than to the lowest. The mean score for self esteem (as seen in Table 1) was also fairly high at 20.41 (SD=5.23) with a minimum score of 10 and a maximum score of 30. The lowest score possible here was 0 and the highest 30 so the minimum score was higher than the lowest possible. Table 1 shows the mean score for impulsivity at 63.78 (SD=11.51) with a minimum score of 40 and a maximum score of 113. The mean score was only slightly above average as the highest possible score here is 120 with the lowest at 30, meaning the sample had slightly above average impulsivity levels.

**Inferential Statistics**

The data was identified to violate some of the assumptions of parametric tests such as it was skewed, not normally distributed, so non-parametric tests were run. A series of Mann-Whitney U tests as well as Spearman’s Rho’s were used. The results from the Mann-Whitney
U tests are in Table 2 below and the results from the Spearman’s Rho’s are in Table 3 and Table 4.

Table 2: Mann-Whitey U Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean Rank</th>
<th>z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Esteem</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>61</td>
<td>53.39</td>
<td>-357</td>
<td>.721</td>
</tr>
<tr>
<td>26+</td>
<td>43</td>
<td>51.24</td>
<td>-357</td>
<td>.721</td>
</tr>
<tr>
<td>Extraversion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>61</td>
<td>58.18</td>
<td>-2.307</td>
<td>.021</td>
</tr>
<tr>
<td>26+</td>
<td>43</td>
<td>44.44</td>
<td>-2.307</td>
<td>.021</td>
</tr>
<tr>
<td>Impulsivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>60</td>
<td>59.91</td>
<td>-3.175</td>
<td>.001</td>
</tr>
<tr>
<td>26+</td>
<td>43</td>
<td>40.97</td>
<td>-3.175</td>
<td>.001</td>
</tr>
</tbody>
</table>

P is significant at .05 level

A Mann-Whitney U test was used to test the hypothesis that there will be a significant difference amongst the age groups 18 to 25 and 26+ and their self esteem levels. The 18 to 25 years old group had a mean rank of 53.39 in contrast to those in the 26+ group who had a mean rank of 51.24. The Mann-Whitney U revealed the different age groups, 18 to 25 and 26+ did not differ significantly (z = -.357, p=.721). The null hypothesis was accepted.

A second Mann-Whitney U test was run to test the hypothesis that there would be a significant difference in extraversion levels between age groups 18 to 25 and 26+. The 18 to 25 group had a mean rank of 58.18 and the 26+ group had a mean rank of 44.44. The Mann-Whitney U test showed significant difference between the groups (z = -2.307, p= .021). The null hypothesis was rejected. This suggests that the younger the person the higher the extraversion levels.

A final Mann-Whitney U test was used to test the hypothesis that there will be a significant difference in impulsivity levels between the two age groups, 18 to 25 1nd 26+. The 18 to 25 year olds group had a mean rank of 59.91 and the 26+ group had a mean rank of 40.97.
Through the running of the Mann-Whitney U test a significant difference was found between the groups impulsivity levels. \((z = -3.175, p=.001)\). The null hypothesis was rejected. This suggests that the participants of the younger group are more impulsive than those in the older age group.

Table 3: *Correlation Table, Spearman’s Rho*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Impulsivity</th>
<th>Self Esteem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulsivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self Esteem</td>
<td>-.200*</td>
<td></td>
</tr>
<tr>
<td>Extraversion</td>
<td>.227*</td>
<td>.305**</td>
</tr>
</tbody>
</table>

* Significant at .05 level  
** Significant at .01 level

Table 3 above shows the results from the Spearman’s rho used to test the hypothesis that there will be a significant relationship relating impulsivity and extraversion identified a weak positively significant relationship between the two variables \((\text{rho (103)} = .227, p=.021)\). Therefore the null hypothesis is rejected. This then suggests that as impulsivity levels rise so do extraversion levels and as impulsivity levels fall so do the extraversion levels.

A second Spearman’s rho, the results of which are shown in table 3, used to test the hypothesis that there will be a significant relationship between extraversion and self esteem recognized a moderate positive significant relationship between them \((\text{rho (104)} = .305, p=.002)\). Therefore the null hypothesis is rejected. This relationship suggests that as one variable level goes up, the extraversion, so does the self esteem levels and that if one variable level goes down so does the other.

The third Spearman’s rho seen in table 3 above used to test the hypothesis that there will be a significant relationship between self esteem and impulsivity found a weak negative significant relationship between these variables \((\text{rho (104)} = -.200, p=.043)\). The null
hypothesis is rejected. This relationship suggests as impulsivity levels rise the self esteem levels fall, and as impulsivity levels fall self esteem levels rise.

More specific analysis was then done with the three factor breakdown of impulsivity, being, motor, non planning and attentional impulsivity ant their relationship with extraversion and self esteem to further examine the hypotheses that there will be a significant relationship between impulsivity and extraversion and there will be a significant relationship between impulsivity and self esteem. The results are shown in table 4 below.

Table 4: Correlation Table: Spearman’s rho, Impulsivity Breakdown.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Attentional Impulsivity</th>
<th>Motor Impulsivity</th>
<th>Non-Planning Impulsivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>.051</td>
<td>.292**</td>
<td>.216*</td>
</tr>
<tr>
<td>Self Esteem</td>
<td>-.271**</td>
<td>-.012</td>
<td>-.137</td>
</tr>
</tbody>
</table>

* Significant at .05 level  
** Significant at .01 level  

Table 4 above shows that a spearman’s rho identified a weak negative significant relationship between self esteem and attentional impulsivity (rho (104) = -.271, p=.005). The null hypothesis is rejected. As self esteem levels rise attentional impulsivity levels fall and as self esteem levels fall attentional impulsivity rises. Spearman’s rho correlations in table 4 also found no significant association between motor impulsivity and self esteem levels (rho (104) =-.012, p=.908) and no significant association with non planning impulsivity and self esteem (rho (103) = -.137, p=.169). In both cases the null hypothesis was accepted.

A Spearman’s rho correlation seen in table 4 found a weak positive significant relationship with extraversion and motor impulsivity (rho (104) =.292, p=.003). The null hypothesis is rejected. The more extraverted the participant the more motor impulsiveness and the less extraverted, in other words introverted the less motor impulsiveness.
Table 4 demonstrates a Spearman’s rho correlation also identified a weak positive significant relationship with extroversion and non planning impulsivity (rho (103) = .216, p=.028). The null hypothesis is rejected. This means as extroversion levels rise so does the amount of non planning impulsiveness and as it falls so does non planning impulsivity. A final Spearman’s rho, table 4, found no significant association with extraversion and attentional impulsivity (rho (104) =.051, p=.608).
Discussion

The current study attempted to identify relationships between impulsivity and extraversion, impulsivity and self esteem and a relationship between extraversion and self esteem. The study also aimed to identify a difference amongst age groups and impulsivity levels, extraversion levels and self esteem levels. In general the study intended to add to previous research and clarify contradictory research.

The findings of the study identified a significant difference between the two age groups, 18 to 25 and 26+ and their levels of extraversion. The 18 to 25 group had higher results, thus higher extraversion levels than those in the 26+ group. It can therefore be said that the younger the individual the more extroverted they are likely to be. This then supported the hypothesis of there being a significant difference amongst age groups and extraversion. A significant difference was also found between the age groups and impulsivity levels. The younger group, 18 to 25 again showing the higher levels suggesting the younger the individual the higher the likelihood they will be more impulsive than those in the 26+ group. These results support the hypothesis of a significant difference amongst age groups and impulsivity. No significant difference was found between age groups and self esteem. This therefore did not support the hypothesis of a significant relationship across age groups and self esteem.

The hypothesis of a significant relationship between impulsivity and extraversion is supported by the results of the study as a weak positive significant relationship was identified. This suggests that an individual who has high impulsivity is also likely to have high extroversion and an individual with lower impulsivity is likely to be less extroverted.

The hypothesis of a significant relationship between extraversion and self esteem was also supported through the identification of a moderate positive significant relationship between the two. This relationship implies that an individual who suffers from low self
esteeem is likely to be introverted or lack extroversion and an individual who has high self esteem will be more extroverted.

The final hypothesis of a significant relationship between impulsivity and self esteem was supported to as a weak negative significant relationship was identified. The relationship implies that an individual with low self esteem will have a high level of impulsivity and a person with high self esteem will lack impulsivity.

The study planned to further investigate the two hypotheses of relationships between impulsivity and extraversion and impulsivity self esteem by using the factor breakdown of impulsivity into attentional impulsivity, motor impulsivity and non planning impulsivity. Attentional impulsivity is the factor of impulsivity centred on an individual’s capability to remain focused, whether it is on a task given to them or what they are currently doing at that time. It also refers to their thought process and whether or not it is often interrupted or if they can keep it on track (Patton et al., 1995). Motor impulsivity is the factor of impulsivity which considers how likely the individual will act irrationally or as the mood takes them or are they more likely to stick to a known pattern of behaviour (Patton et al., 1995). Non planning impulsivity is the factor of impulsivity which gauges the individual’s ability to take on mental challenges as well as their ability to plan things ahead of time by thinking actions or behaviours all the way through (Patton et al., 1995).

A weak negative significant relationship was identified between self esteem and attentional impulsivity and no significant relationship between both motor impulsivity and non planning impulsivity with self esteem. This shows that the significant relationship between impulsivity and self esteem that was found is actually with attentional impulsivity alone. A weak positive relationship was found between extraversion and both motor impulsivity and non planning impulsivity. No significant relationship was found between extraversion and attentional impulsivity. This suggests the relationship identified between
impulsivity and extraversion is between motor and non planning impulsivity and not attentional impulsivity.

Previous studies of self esteem have linked low self esteem with introversion and in turn linked high self esteem with extroversion (Slee & Rigby, 1993). The results from this study support this research as it too identified this relationship as having moderate significance. The current study differs from Slee & Rigby (1993) as they were looking at extraversion and self esteem in terms of bullying tendencies, the study also used a different age category to the current study as they used male primary school children. As they used school children their study was also conducted using the junior versions of the self report measure whereas the current study used individuals 18 and over who completed the Eysenck Personality Questionnaire, (Eysenck & Eysenck, 1985) and the Rosenberg Self-Esteem Scale, (Rosenberg, 1989) but still came to the same conclusions. Watson et al (2002) study’s results were also supported as they too had come to the conclusions of self esteem having a moderate relationship with extraversion. Overall the current study's results were supportive of the previous research and will add to it for future research.

The research on self esteem and impulsivity focuses mostly on its application to problems such as addiction and self harm, these studies have discovered however that a lack of self esteem can bring about impulsive decisions (Hawton, 1999). The current study identified a negative significant relationship which confirms those findings. The study's negative relationship means that as self esteem fall’s impulsivity rises, the opposite is also true. This then suggests that a person with low self esteem, who takes a negative attitude towards themselves, is more likely to act impulsively. The study cannot however back previous study from Vazire & Funder (2006) which identified that narcissists; individuals with very high self esteem, tend to be impulsive. The current study is therefore not relevant to this research as it comes to different conclusions, it does not confirm a relationship between
high self esteem and impulsivity. The current study is therefore creating further contradictory research as it agrees with the study’s which suggest a negative relationship and opposes the study’s that suggest a positive relationship between impulsivity and self esteem.

Prior studies of extraversion and impulsivity have found positive relationships between them. The Eysenck & Eysenck (1977; 1978) were such studies. The current study also identified a positive significant relationship between impulsivity and extraversion, whilst similar results were achieved, the sample used in the current study is more specific as it looks at college students only. Other studies such as Campbell & Heller (1987) produced contracting results by finding no correlation between impulsivity and extraversion. The study is still relevant to the others which also found a relationship with impulsivity and extroversion and adds to the already present research whilst still opposing the studies that found no relationship.

The past research regarding changes in extraversion across ages found that they decrease after the late 20’s (Viken et al., 1994). The current study also identified that the younger age group, 18 to 25, showed significantly higher extraversion levels than those in the 26+ group agreeing with the Viken et al (1994) study. The current study matches the previous research well as the cut off point was also the late 20’s at 25 suggesting that this is the general age where extraversion begins to decline. There may be a number of reasons for this decline, a suggestion may be that after the age of 18 a sense of freedom may be assumed leading to more extraverted actions for the first few years of this “newfound freedom”. Another suggestion that could be put forward about the decline in extraversion is that as an individual ages they may be becoming more comfortable, settling, and begin to have no need for extraverted activities. This study and the previous research are in agreement that the younger the individual the more extraverted they are.
Age and self esteem studies have identified that the younger the participant the higher the self esteem (Nic-Gabhainn & Mullan 2003). Whilst the younger group, 18 to 25, had higher self esteem scores in this study than the older group, 26+ the difference was found not to be significant. Nic-Gabhainn & Mullan (2003) identified the difference between age and self esteem with participants in the age bracket of 10 to 17 year olds, the current study looked at 18 year olds and up. This may then suggest that the decline in self esteem becomes less severe after reaching 18 years of age hence why the difference was not significant. Whilst this research does not support the previous research it could still considered to be adding to the research and could be viewed as a continuing of it. Though this study found no significance it does not negate the results of previous studies.

Studies of age and impulsivity identified that impulsivity declines with age (Albert et al., 2008). The current study's result also found a significant difference which showed that younger individuals were prone to more impulsive tendencies. The Albert et al (2008) study used 10 to 30 year olds for the study and identified a period in adolescence where impulsivity peaks due to it being a time where an individual seeks excitement and lacks self control. This may explain the significant difference between the current study's 18 to 25 group and the 26+ group. The 18 to 25 age group are just falling into this impulsive period suggested by Albert et al (2008), proposing a reason for the higher scores as the participants in this period would be subject to unsuccessfully controlled thoughts and behaviours.

The current study chose to conduct further analysis of the hypothesis of significant difference between impulsivity and extraversion as well as impulsivity and self esteem, which had already shown to be significant, using the three factor breakdown of the Barratt Impulsiveness Scale (Patton et al., 1995).

From this breakdown it was only attentional impulsivity that showed no significant relationship with extraversion, whilst non planning impulsivity and motor impulsivity did.
Taking the relationship between non planning impulsivity extraversion, an extroverted individual is likely to have less self control than an introverted individual according to it. Extroverts like to spend their time around people (Keirsey & Bates, 1978) in groups where unplanned activities and behaviours are bound to occur; perhaps this could be the reason for increased non planning impulsivity as the decisions made are not solely down to the individuals but instead take influence from the group or the people around them. The relationship with extraversion and motor impulsivity, which is essentially a person’s spontaneity, could be explained by an extroverts want to experience everything around the and be surrounded by people (Keirsey & Bates, 1978), motor impulsivity would aid an individual here as it gives them the capabilities or want to go be around friends and new people.

The present study identified a relationship between self esteem and the impulsivity factor of attentional impulsivity. No relationships were found with non planning impulsivities and motor impulsivity and self esteem. The relationship that was identified was negative. An individual with low self esteem can have feelings of anxiety about themselves (McLeod, 2012). These individuals, according to the current study are also attentional impulsive, meaning they are bad at keeping their attention on one task without becoming distracted and can also suffer from being cognitively unstable, hence the impulsive actions (Patton et al., 1995). The participants with high self esteem, who scored low attentional impulsivity, creating the significant relationship, are good at keeping their attention on the task at hand. As discussed the research on impulsivity and self esteem focuses on issues such as self harm caused by low self esteem and high impulsivity (Hawton, 1999), the relationships here further supports this study.

The current study faced several limitations. Firstly the sample chosen for the study was exclusively college students. Selecting from only college student participants created
results restricted to them, meaning that they are not applicable to a more general population. The sample may not be representative of the population so applying it would be difficult. The individual participants state of mind or emotions were not taken into account. If a participant was in a particular emotional mood, their answers may be different to those that would have been given on a day when they are not in that mood. This may have affected their results. The measures used were three standardised tests, the Rosenberg Self-Esteem Scale (Rosenberg, 1989), the Eysenck Personality Questionnaire-Revised (Eysenck & Eysenck, 1985) and the Barratt Impulsiveness Scale (Patton et al., 1995). The answers of which are all preset, for example the Eysenck’s Personality Questionnaire-Revised (Eysenck & Eysenck, 1985) which is made up of simple yes or no answers. Individuals can also feel that their answers lie in the middle of the scale or that they act one way on certain days and another on a different day. Not taking these into account is not providing an all-round investigation as they may be influencing the results. The current study looked for a relationship between age impulsivity, extraversion and self esteem. A weakness here is that the age groups sizes were not equal. The 18 to 25 group had 61 participants and the 26+ group only had 43. By increasing the size of the 26+ group to be equal with the 18 to 25 group more accurate results would be produced and a significant relationship with self esteem may be identified similarly to Nic-Gabhainn & Mullan (2003) who found Self esteem was higher in the younger individual.

As well as weaknesses the current study also has a number of strengths. As the study was an anonymous questionnaire study it is free from bias. There was no involvement with the participants individually and there was no way knowing which questionnaire was filled in by whom so the results were not in any way affected. It has been previously discussed that as the study used a sample of only college students it can’t be applied to the general population, it can however be applied to the general college population. Again, though not applicable to the general population it is an easily replicable study the Rosenberg Self-Esteem Scale
(Rosenberg, 1989), the Eysenck Personality Questionnaire-Revised (Eysenck & Eysenck, 1985) and the Barratt Impulsiveness Scale (Patton et al., 1995) are all standard questionnaires with high reliability and validity which have been used in generalised research, thus replicating the current study with a more general sample is possible. A final strength of the study is that a number of significant relationships were identified between extraversion and impulsivity, extraversion and self esteem as well as self esteem and impulsivity. Also relationships were identified between self esteem and attentional impulsivity, extraversion and motor impulsivity as well as extraversion and non planning impulsivity. Significant differences between age and impulsivity and age and extraversion were also found. These significant results are adding to previous research and make attempt to clarify contradictory results.

In regards to future research in relation to the current study, there are a number of options. An increase of sample size from the 104 used in the current study to a larger number would be beneficial. A larger sample size would be expected to produce more appropriate results that match the behaviour of the whole group more accurately. Different measures, either replacing or in addition to the three used, the Rosenberg Self-Esteem Scale (Rosenberg, 1989), the Eysenck Personality Questionnaire-Revised (Eysenck & Eysenck, 1985) and the Barratt Impulsiveness Scale (Patton et al., 1995), such as additional questionnaires to measure impulsiveness such as in the Whiteside and Lynam, (2001) study. The current study whilst looking at age differences between impulsivity, extraversion and self esteem only divided the age variable into two groups, 18 to 25 and 26+. If the groups were further subdivided for example into five groups, 18 to 25, 26 to 30, 31 to 40, 41 to 50 and 50+ a more specific analysis could be conducted to identify exactly where the significant differences are and the relationship between.
The results of this study produced results consistent with most of the hypotheses suggested. The only one not confirmed is that of a significant difference amongst age groups in their self esteem levels. The implications of the current study's findings are, that it is adding to the previous studies of relationships and differences, it has attempted to clarify contradictory research, whilst presenting a new perspective. The study has contributed to the understanding of impulsivity, extraversion and self esteem as well as showing that there is always a potential need for further research on each topic as well as their individual relationships. Future developments in the fields of impulsivity, self esteem and extraversion research, whether for example, with improved testing measures will again provide more endorsement for future research.
References


Appendix

Appendix A: Questionnaire Booklet: Cover page

My Name is Brogan Synnott-Smith and I am a Final Year Student at DBS. I am Completing my final year project as part of my BA (Hons) Degree.

The questionnaire is completely anonymous so please answer honestly and don’t think to long about your answers.

As anonymity is provided, you may not receive your individual data back but for results of the overall study please feel free to contact me via email:

YOU MUST BE 18 TO COMPLETE THIS QUESTIONAIRE

The questionnaire should take around 15 minutes to complete.

Thank you for your time.

Brogan.
Appendix B: Questionnaire Booklet: Demographics Page

PLEASE TICK THE APPROPRIATE BOX.

DO YOU GIVE YOUR CONSENT TO TAKE PART IN THIS STUDY:  YES

AGE:  18-25  26+

GENDER:  MALE  FEMALE

STUDY:  FULL TIME STUDENT  PART TIME STUDENT
Appendix C: Questionnaire Booklet: Rosenberg Self-Esteem Scale (Rosenberg, 1989)

Below is a list of statements dealing with your general feelings about yourself.

If you strongly agree with the statement circle SA.
If you agree with the statement circle A.
If you disagree with the statement circle D.
If you strongly disagree with the statement circle SD.

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>On the whole, I am satisfied with myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>At times, I think I am no good at all.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I feel that I have a number of good qualities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I am able to do things as well as most other people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I feel I do not have much to be proud of.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I certainly feel useless at times.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I feel that I'm a person of worth, at least on an equal plane with others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I wish I could have more respect for myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>All in all, I am inclined to feel that I am a failure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I take a positive attitude toward myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix E: Questionnaire Booklet: Barratt Impulsiveness Scale (Patton et al., 1995)

Read each statement and circle either 1, 2, 3 or 4, on the right side of this page. Do not spend too much time on any statement. Answer quickly and honestly.

<table>
<thead>
<tr>
<th>Rarely/Never</th>
<th>Occasionally</th>
<th>Often</th>
<th>Almost Always/Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I plan tasks carefully.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>I do things without thinking.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>I make-up my mind quickly.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>I am happy-go-lucky.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>I don’t “pay attention.”</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>I have “racing” thoughts.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>I plan trips well ahead of time.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>I am self controlled.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>I concentrate easily.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>I save regularly.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>I “squirm” at plays or lectures.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>I am a careful thinker.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>I plan for job security.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>14</td>
<td>I say things without thinking.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>I like to think about complex problems.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>I change jobs.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17</td>
<td>I act “on impulse.”</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>18</td>
<td>I get easily bored when solving thought problems.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>I act on the spur of the moment.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>I am a steady thinker.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>21</td>
<td>I change residences.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>22</td>
<td>I buy things on impulse.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>23</td>
<td>I can only think about one thing at a time.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>24</td>
<td>I change hobbies.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>25</td>
<td>I spend or charge more than I earn.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>26</td>
<td>I often have extraneous thoughts when thinking.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27</td>
<td>I am more interested in the present than the future.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>28</td>
<td>I am restless at the theatre or lectures.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>29</td>
<td>I like puzzles.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>30</td>
<td>I am future oriented.</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Appendix F: Questionnaire Booklet: Helpline Page

Thank you for completing the questionnaire.

If this Questionnaire has raised any issues or affected you in any way please contact:

The Samaritans by phone  : +353 1 6710071

Or online  : www.samaritans.org

THANK YOU FOR YOUR TIME.