

Birth order; investigating its effects on personality, empathy, achievement and perceived academic performance.

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Submitted in partial fulfilment of the requirement of the Bachelor of Arts degree (Psychology Specialization) at DBS School of Arts, Dublin.

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March 2012

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Acknowledgements:

First of all I would like to take the opportunity to thank my supervisor Dr. John Hyland for his constant patience and help throughout this year, and for his continued support and kindness for the duration of this project.

I would also like to thank Michael Nolan for his help with instrumentation queries with this research study. Special thanks must also be mentioned to the students who took time to participate in this study, as well as the lecturers in DBS who allowed me to use their class time to carry out this project.

A very special thank you to my amazing friends and classmates who kept me motivated throughout this project.

Finally, to my parents, Rose and T.G., and to my brother Glenn, who have provided me with constant encouragement for the last three years, and without whom this would not have been possible.

Abstract:

Order of birth was first most notably used by Alfred Adler as a basis for predicting the characteristic behaviour of individuals. The current study aims to extend this stream of research by exploring links between birth order and associated psychological variables; achievement, personality, empathy, and perceived academic performance. This study utilised a convenience sample of students at Dublin Business School. A battery of measures including the Eysenck Personality Questionnaire, Multi-dimensional Emotional Empathy Scale, Perceived Academic Performance Scale, and Achievement scale were used. Analysis of the data concluded that no difference was found to exist between birth order and the investigated variables; however a clear significant correlation was found to exist between Need for Achievement and Perceived Academic Performance.

Chapter One:

Introduction

INTRODUCTION

Order of birth was first most notably used by Alfred Adler as a basis for predicting characteristic behaviour of individuals (Greenberg, Guerino, Lashen, Mayer & Pisowski, 1963). Adler stated that the greatest portions of ‘problem children’ are eldest children. He believes that later in life they resent authority and leadership of others. The youngest child, according to Adler, is generally spoiled. They cannot decide on any strong ambition because they want to excel in every aspect of their lives. Adler’s thought on the only child is that although they have no siblings, their rivalry takes the form of their father – they are in competition for the attention of mother. According to Adler, the only child wants to be the centre of attention all the time. However, Adler’s views are dated and have come up against scrutiny in the scientific discipline of psychology.

The current study investigates whether Adler’s view that birth order effects one’s development holds true to the modern family in Ireland. Using a sample of 122 third-level students in Ireland, the study will determine what relationship, if any, exists between order of birth, personality type, levels of empathy, need for achievement and perceived academic performance.

Birth Order

Since Adler’s work on birth order, many more studies have been carried out in the field of psychology, all yielding different results. Schachter (1959) found that firstborns showed more fear of physical pain and were made anxious more easily than later born

children; this would suggest that considerable personality differences exist between firstborns and later borns (as cited by MacDonald, 1971).

Paulhus, Trapnell and Chen (1999) found that later-borns must resist the “higher status” of first-borns as they seek alternative ways to distinguish themselves in the eyes of their parents. As a result of this, they develop an adult character marked by an “empathetic interpersonal style, a striving for uniqueness, and political views that are both egalitarian and antiauthoritarian”. In other words, they are ‘born to rebel’. The results of this study were consistent with previous evidence that firstborns are more achieving and that later borns are more rebellious. Firstborns were nominated as most conscientious and most achieving compared with other siblings. In contrast, later borns were more frequently described as most liberal, agreeable and rebellious (Paulhus et al., 1999).

Butcher and Case (1994) investigated the influence of siblings on the education of men and women born between 1920 and 1965 in the United States. Their study examined the effect of the structure of a boy or girl's siblings on that child's educational attainment. They found that women's educational choices were systematically affected by the sex composition of her siblings, and that men's choices were not. Women raised only with brothers had received significantly more education than women raised with any sisters. It can be seen clearly in this study that the family environment you are part of effects opportunities available to you. In recent times, the family unit in Ireland is becoming smaller – this may play a role in the fact that 60% of young people continue on to third-level education compared with a few decades ago. Therefore the relevance of this study can be questioned in modern times as education and job opportunities are equal for males and females.

Birdsall (1991) predicted greater expenditure on later-born children, due to family income increasing and older siblings becoming financially independent. However, it is

important to note that firstborns do not have to initially compete for their parents' time and attention (in Argys, Rees, Averett & Witoonchart, 2006). Interaction between siblings also may be a way that birth order can affect child behaviour and subsequent achievement. For instance, older siblings could act as positive role models; their achievements may be adopted as goals and their failures may serve as cautionary examples.

Zajonc (1976) suggests that older siblings partly replace parents in providing some quality time with an adult figure; this benefits the firstborns because they have the opportunity to be teachers from an early age. Both the financial and the time resources that parents devote to their children differ with birth order – it's not possible for parents to treat their firstborn and second-born child the same. The firstborn receives parental investments before the second child arrives; the investment in the last born continues after the firstborn is fully grown and self-sufficient (as cited by Gugl & Welling, 2010).

Argys, Rees, Averett and Witoonchart (2006) provide the strongest evidence to date that birth order is related to measurable behaviours. From their sample, they conclude that adolescents with older siblings are more likely to have used tobacco, alcohol, and marijuana, and are more likely to have had sexual intercourse than their firstborn counterparts. The findings of this study supports the view that parents play a role in birth order behaviour; there is an idea that parents spend less time and energy supervising their younger offspring. This may be due to them having less time to invest in them. In addition, they found that later-born children are especially prone to risky and delinquent behaviours, compared to second-born children. The fact that birth order impacts behaviour suggests that where one falls in one's family influences one's personality and life decisions (Argys et al., 2006). The review will now explore the role that birth order plays in one's personality.

Personality

There has been extensive interest in the individual differences that exist in personality, and how personality is analysed, understood and defined. All personality psychologists use the term 'personality' to refer to "psychological qualities that contribute to an individual's enduring and distinctive patterns of feeling, thinking, and behaving" (Pervin & Cervone, 2010, p.8). It is assumed that there are considerable individual differences in personality and that these differences will be revealed by difference of behavior and in reaction in a given situation (Eysenck, 1994, p. 8 as cited by Shalabi & Nodoushan, 2009).

Personality also refers to stable internal factors or traits which underlie consistent individual differences in behaviour. These internal factors, according to Eysenck, are called traits (Shalabi & Nodoushan, 2009). It is expected that any given individual will behave in a reasonably consistent manner on different occasions. Eysenck (1994) believes that our everyday experience indicates that most people have non-extreme personalities, and he claims that this view is supported by personality research (as cited by Shalabi et al., 2009).

Eysenck and Eysenck (1975, 1982) identified two original personality factors that were labelled Introversion-Extroversion and Stability-Neuroticism. An additional personality factor was later added labelled Normality-Psychoticism (Eysenck & Eysenck, 1985). Those scoring high on Extroversion are perceived to be extroverts, while those with low scores are perceived to be introverts. This dimension is related to impulsivity and sociability, where extroverts can be characterised as being very sociable, active, assertive, carefree, optimistic, and venturesome. Introverts are characterised to be the opposite of these traits. Similarly, those respondents scoring high on Neuroticism are perceived to be more anxious, shy, a worrier, suffer from feelings of guilt, and be more depressed than those with low scores. This dimension is additionally concerned with the emotional liability and reactivity of the

respondent. In addition, those scoring high on the Psychoticism trait are perceived to be more aggressive, uncaring, unfriendly, odd and hostile. This personality trait has also been labelled Normality where the respondents with low scores are perceived to have a 'normal personality'. These individuals would express more emotions than those high in Psychoticism (Eysenck & Eysenck, 1975 as cited by Ryckman, 2008). This study will extend previous research by investigating if there is a significant difference across the sample between a particular birth order and a certain personality trait. Previous research suggests that there will be an association between these variables.

Nyman (1995) carried out a study to identify birth order personality attributes. The information was obtained by asking subjects to list three words that described the characteristics of each birth position, and then to rate each descriptive word in terms of positive or negative connotation.

The eldest birth position was viewed as dominant-aggressive, a quality that reflects both strength and weakness (Nyman, 1995). Qualities of independence, intelligence, ambition, responsibility, caring and friendliness were also emphasised. The eldest was the only birth position with few negative characteristics. The eldest male was seen as self-centred and spoiled, whereas the eldest female was seen only as spoiled. Nurturance and responsibility rated high for first-born females, whereas dominance and independence were used to describe the males. Sociableness, thoughtfulness, responsibility, ambition, and independence were identified with the middle birth position. Negative attributes included being insecure, confused, neglected and rebellious for both males and females. The middle birth position was the only one that did not include 'spoiled' in its profile, and it was the only position that was labelled as 'neglected/overlooked'.

The positive qualities of the youngest birth position included sociableness and thoughtfulness. With the youngest birth position there was a considerable increase in negative descriptive terms compared with the eldest and middle positions. Youngest children were seen as spoiled, dependent, irresponsible, rebellious and immature (Nyman, 1995). Independence, ambition, sociableness, dominance, responsibility, thoughtfulness, and intelligence were the positive qualities associated with the only child position. In this category, the negative qualities that seemed to resemble those attached to the youngest child position (Nyman, 1995).

Eysenck and Eysenck (1968) suggested that the two personality factors of extroversion and neuroticism could have an association with prejudice. There has been some suggestion that these dimensions of personality could directly predict or explain prejudiced attitudes and indirect discrimination towards certain out-groups. Cullen, Wright and Alessandri (2002) stated that individuals who expressed higher levels of prejudicial attitudes would be more likely to exhibit higher levels of neurotic tendencies. This proposed relationship stems from the notion that the neurotic individual is more likely to experience a wide variety of unfavourable or negative effects such as anger, embarrassment and anxiety. In addition, the dimension of extroversion could also predict and explain prejudice directly and discrimination indirectly. It is thought that extroverts are more out-going and sociable, and would be less likely to ascribe to social pressures. In other words, extroverts would tend to be less conservative, less prejudiced and discriminative, and have more interaction with various social groups (Eysenck, 1967, as cited by Ryckman, 2008).

Studies show that there is a relationship between personality and learning. Busch (1982) and Strong (1983) found, using the Eysenck Personality Inventory (EPI), that

extrovert learners are sociable, lively and active, and introvert learners are quiet and prefer non-social activities. Strong (1983) found that extroverted children learned faster.

Extroversion and introversion are terms used to measure two styles; extrovert characters tend to be gregarious, while the introverted tend to be private. Extroverts are sociable, like parties, have many friends and need excitement in everything they do; they are sensation seekers and are lively and active. Extroverts will easily be distracted from studying. Introverts are quiet, prefer reading rather than meeting people and talking to others, have few but close friends and usually avoid excitement (Eysenck & Chan, 1982, p.154, as cited by Ellise, 1994, p.520, as cited by Shalabi & Nodoushan, 2009). The current study will add to previous literature on personality and birth order, and will determine from the sample any connections that may exist between these variables.

Empathy

Empathy is a variable not commonly used in psychological research, so it is important to define what it denotes in this particular study. “Empathy refers to a change in emotional state that results from contemplating someone else’s emotional state and experiencing an emotion that is similar in quality to the emotion experienced by another person” (Waxler, Frye, Goldsmith & Davidson, 2009, p. 1210). A study carried out by Derety and Monguchi (2007) found that there are several individual characteristics that are expected to be associated with greater empathic ability; for example, the tendency to be more introspective and reflective, as well as emotive flexibility (as cited by Waxler et al., 2009). Eisenberg’s (1994) results suggest that our ability to experience positive emotion may relate to our ability to experience empathy (in Waxler et al., 2009).

Social constraints have determined how individuals express or conceal their feelings in certain situations. Hence, to one brought up in other social conventions, the physical signs may not give the clues necessary to interpret correctly others intentions or their perceptions of the situation. In any individual's judgement of how he/she would feel in a given situation, there is the whole background schema of the individual's self-concept and beliefs about what the outside world expects of the individual. Thus, in attempting to enter emotionally into the situation of another, the individual has to discard some of the reactions 'natural' or customary for the individual. Otherwise there is not empathy but simply projection of the individual's own reactions. Consequently, to experience empathy in some situations, it would seem that the individual must be capable of a cognitive awareness of how he/she differs from those observed (Sutherland, 1986).

Previous studies examining empathy show that women score significantly higher than men on the emotional aspects of empathy. It is therefore expected that similar results will be attained in this study's sample. Davis (1996) believes that this is because emotional responsiveness is generally not socially encouraged for men and does not fit their gender role stereotypes. It is also possible that men are simply less aware of their emotional reactions or are reluctant to admit them (as cited by Skoe, 2010). However other studies (e.g., Davis, 1996; Eisenberg et al., 2005) found that while women scored significantly higher than men on emotional empathy, this is not necessarily replicated on cognitive empathy (as cited by Skoe, 2010).

Interpersonal relationships are fundamental to a meaningful human existence. Empathy is considered a 'cognitive' quality, rather than an 'affective' attribute that characterizes the concept of sympathy (Hojat, Gonnella, Manigone, Nasca, Veolski, Erdman, Callahan & Magee, 2002). Like any other personal quality, empathy varies among individuals. Therefore, one group may possess more or less empathy than another group,

depending on developmental, experiential, social, educational, and other external factors (Hojat et al., 2002). Based on the psychoanalytic and evolutionary theory of parental investment, women are believed to develop greater care-giving attitudes toward their offspring than men (Trivers, 1972 as cited by Hojat et al., 2002).

Research carried out by Stotland and Walsh (1963) found that later borns empathise more than first and only borns. Stotland and Dunn (1962) also found that later borns identify more with other people, which is consistent with the finding that later born children appear to empathise more and evaluate their abilities more in line with those of others. Stotland and Walsh's (1963) study also suggests that the later born children sympathise more with others in the sense that they are attracted to another person who has suffered anxiety. Schachter (1959) reports that, when anxious, first and only borns turn to others. This reaction may be a socially oriented defence against anxiety, while identification, empathizing, and sympathy may be the typical reaction of later borns when they are not personally threatened (as cited by Stotland & Walsh, 1963). The results of the current study will be compared with previous findings between order of birth and levels of empathy. These will be compared with personality type also.

Academic Performance and Achievement

Black, Devereux and Salvanes (2005) examined the effects of birth order on educational achievement, using a Norwegian population, and found that earlier birth position was associated with a significantly greater number of years in education (as cited by Fergusson, Horwood & Boden, 2006). There was a similar finding in a study by Spota and

Paulson (1995) in a sample of adolescents, which found a relationship between earlier birth order and school achievement (as cited by Fergusson et al., 2006).

Marjoribanks (2001) believes this is due to the fact that any family has a given set of resources, and with increasing family size, families have decreasing resources to provide for the education and development of children (as cited by Fergusson et al., 2006). However, the study by Fergusson et al., (2006) found that increasing birth order was associated with declining achievement independent of family size. They found that earlier-born individuals were more likely to follow a path that led to gaining educational qualifications at the secondary and tertiary level. These findings are consistent with the literature on the relationship between birth order and educational and career achievement, which has generally found that earlier-born individuals tend to outperform later-born individuals in academic settings and in some employment outcomes. It is expected that this current study will show a similar pattern in birth order on levels of achievement and perceived academic performance.

Phillips and Phillips (2000) found that first-borns attributed somewhat more responsibility for their good performance to factors internal to themselves. This finding fits with previous research which, taken together, presents a profile of first-born and only children as having a greater sense of personal responsibility, being more achievement-oriented and more serious, and being less socially oriented than later-borns.

Both Bradley (1968) and Ivancevich, Matleson and Gamble (1987) have noted that firstborns are over-represented in occupations characterised by higher educational levels and more competitive professional requirements. Additionally, Phillips, Long & Bedeian (1990) found higher Type A (coronary-prone) scores among first-borns compared to later-borns. All these findings suggest possible associations between family experiences, occupation, self-appraisal and stress level.

A study on medical students by Chamorro-Premuzic and Furnham (2005) investigated the effects of personality on academic performance, and found that the personality trait 'conscientiousness' is a predictor of academic success in undergraduates.

A 1995 study by Travis and Kohl indicated that birth order affected the educational outcomes of respondents who had experienced a comfortable family background during their grown-up years. In middle-class families, the parent's resource allocation decisions tended to favour first-borns within multiple-child families, followed by last-borns and then children in other sibling positions. This study concluded that there is evidence of a strong relationship between sibling order and educational attainment.

Sutton-Smith (1964) suggested that the first-born is trained within the family to prefer the parent surrogate role (as cited by Chemers, 1970) and to assume task-oriented leadership positions both with younger siblings and outside the family (Pfouts, 1980). In contrast, later borns tend to be more dedicated to sociability and to peer relations than to task achievement (Chemers, 1970 as cited by Pfouts, 1980).

According to Zajonc and Markus (1975), the first born has the double advantage in large, closely-spaced sib hoods of initially experiencing greater interaction with parents than later-borns experience at the same age, and as the family expands, serving as mentor to younger children. There is scattered evidence that fathers are more actively engaged in the childbearing process with firstborns than with later borns (e.g., Henry, 1957) and that firstborns identify with father more strongly (Hamid, 1970). It has also been reported that firstborns tend to have closer affectional ties with grandparents and other kin (Rossi, 1965). In view of these findings, it seems reasonable to assume that greater interaction with adult family members may help to explain why first borns develop faster as infants (Bryant & Davis, 1974); walk, talk and read at an earlier age (Price, 1969 as cited by Pfouts, 1980).

However, the first borns advantage may be modified or even reversed in families with wide-age spacing in which later borns have the intellectual advantage of living in an environment enriched by interaction with mature siblings and parents (Pfouts, 1980).

Pfouts' (1980) sample showed clear birth-order differences consistent with previous literature. The California Test of Personality, parents' reports, and teachers' reports were in agreement that the first-born males as a group were serious, responsible, reserved, dependent, sensitive, and competitive; the younger group (second born males) as a group were sociable, easy going, athletic, imaginative, and independent. These results suggest that first-born males are overachievers and second-born males tend to perform according to ability. The findings of this study point to first borns' overachievement in the academic sphere. When first born sons scored significantly higher on the Slosson IQ Test (1963) than their younger brothers, they also performed better in school, as would be expected. However, when the second born sons scored significantly higher on the Slosson, their less able first born brothers still did as well academically, contrary to expectations. Therefore in this present study, it will be expected that the students who are the eldest in their family score themselves as having a higher sense of achievement and perceived academic performance than their younger siblings.

According to McKenzie (1989), it is generally acknowledged that extroversion correlates negatively with success in higher education, but that the relationship between neuroticism and achievement is not so clear. McKenzie suggested that an interaction between neuroticism and a high degree of superego development was positively related to academic success (as cited by Diseth, 2003). In a study of the relation between personality and academic achievement, Musgrave-Marquart, Bromley, and Dalley (1997) found significant

positive correlations between grade point average (GPA) and conscientiousness, openness and neuroticism. Whereas conscientiousness and openness were expected to predict GPA, the correspondence with neuroticism was surprising and incompatible with other findings (as cited by Diseth, 2003). DeFruyt and Mervielde (1996) found a significant negative relationship between neuroticism and academic success among male students. Furthermore, they observed an expected positive relationship between achievement and conscientiousness, but also an unexpected negative correlation between openness and achievement among female students (as cited by Diseth, 2003). Wankoski (1969) reported that extroversion inhibited academic success. A possible explanation is that extroverts tend to be more interested in extra-curricular activities (as cited by Diseth, 2003) than educational or academic achievements.

Research by Bradley (1968) has shown that there is a significant majority of firstborns among college students. Schachter (1959) and Altus (1966) found the same relationship to hold among graduate students. This led them to claim that birth order was related to academic achievement, which is one of the relationships that will be tested in this study. Other research (Dubro, Freedman & Bedrosian, 1969) found a significant proportion of firstborns among a large sample of middle managers in America's 500 largest manufacturing corporations. The birth order phenomena reported in this previous research appears even more interesting in view of the fact that the educational level of managers far exceeds that of the general population by virtue of the fact that business organisations recruit future managers mainly from a population of college graduates. The birth order variable is a more complex phenomenon than it has been given credit for, since it apparently has a direct positive relationship with educational achievement (as cited by Dubro & Freedman, 1971). Experimental data has shown that firstborns tend to engage in conforming social behaviour (Asch, 1956; Becker et al., 1966; Sampson & Hancock, 1967; Warren, 1966). To succeed in a

university setting apparently requires a type of social behaviour that emphasises adaptation to a set of academic and administrative rules and regulations. Previous research showed that many firstborn managers (Dubro et al., 1969) tended to remain at middle management level. Those results, however, make no provision for educational achievement of the various managers in the sample. It has been found that firstborns tend to comply with the demands of the group significantly more often than later borns. Research in education has found that there are a significant number of firstborns among college graduates and graduate students (as cited by Dubro & Freedman, 1971).

Jenkin, Houlihan and Jackson (1970) found that firstborns were characterised by higher IQ scores as compared to later borns. The effects of birth order was found to be the greatest in large families, with differentiation between firstborns and later borns decreasing with decreasing family size.

Present Study

The current study will be measuring personality using the Eysenck Personality Questionnaire (1991), so it will be interesting to see if there will be a relationship between birth order and each of these categories. Gender will also be analysed with each variable, and it is expected that similar to previous studies, females will show higher levels of empathy than males.

No previous study has been carried out looking at these variables, so it is unique on many levels, as well as no previous research involving an Irish sample on the variable of birth order that has been found. Previous studies have looked at birth order in relation to personality, empathy and achievement, but did not look at their links with each other, or in relation to gender and perceived academic performance. This study seeks to find out whether these variables are related to each other and how significant this relationship is.

Findings from this study could have a strong impact on education; from a young age, the child's place in the family may influence their need for achievement and academic performance. The findings may also have an effect on the family setting; results could help parents understand their child's behaviour, and realise that even though their children were all raised in the same environment by the same people, that each child will be distinct from their siblings because of their birth order. This could also be a benefit for the family when dealing with the rebellious stages that most adolescents tend to pass through.

This study hopes to contribute to the current research within the area of birth order in families in Ireland. It hopes to develop a deeper understanding of the impact of birth order on personality, empathy, achievement and perceived academic performance, and to finally provide new insights into a neglected part of psychological research.

Hypotheses

The first research hypothesis (H1) is that there will be a significant difference between birth order categories in relation to personality subscales. It is hypothesised that particular personality types will be significantly correlated with different birth orders.

The second hypothesis (H2) states that there will be a difference between birth order categories in relation to level of empathy; the prediction being that first born children will have lower levels of empathy than later born children.

The third hypothesis (H3) is that there will be a significant difference between birth order categories in relation to need for achievement; the hypothesis predicts that firstborns will exhibit higher levels of need for achievement than later borns.

The fourth hypothesis (H4) is that there will be a statistically significant relationship between perceived academic performance and achievement.

Chapter Two:

Methodology

Materials and Instrumentations

A choice of three questionnaires were compiled into a booklet and administered to the participants of the study, who were then requested to complete the questionnaire. The cover page of the questionnaire included the instructions for completing the survey, as well as the terms of anonymity and the option to withdraw from participation at any time (Appendix 1). The first page of questions consisted of questions relating to the demographic information of the participants, including gender, age, their birth order in their family and type of study (full-time/part-time students). There was also a question to ascertain the participants' perceived academic performance. The questionnaires used for this study included the Eysenck Personality Questionnaire Revised short form (EPQRF) (Eysenck & Eysenck, 1991); the Multi-Dimensional Model of Emotional Empathy (Caruso & Mayer, 1998), and a Need for Achievement questionnaire (Shia, 1998) (see Appendix). In compliance with the ethical code of conduct of the Psychological Society of Ireland (PSI), a cover sheet was attached to the end of the questionnaires which contained a list of contact numbers for the participants' information. Another instrument used in this study was a statistical package for social science (SPSS Version 18 for Windows), which in turn necessitated the use of a computer to input the data and analyse it. With regard to the questionnaires themselves, pens were used to fill in each booklet.

Eysenck Personality Questionnaire (1991)

Personality was measured using the Eysenck Personality Questionnaire Revised short form (EPQRF) (Eysenck & Eysenck, 1991). This is a 48-item inventory which measures four subscales, Extroversion, Neuroticism, Psychoticism, and a lie scale. Extroversion is concerned with how people behave socially. People high in extroversion will be lively, outgoing, and highly sociable (Ryckman, 2008). An example of a question measuring

extroversion is 'Do you enjoy meeting new people?' (Q.11) or 'Can you get a party going?' (Q.48). If a person scores low in extroversion, they are said to be introverted. Individuals who score highly on the neuroticism scale tend to be more anxious, nervous and insecure than those who score low on the scale (Ryckman, 2008). Neuroticism is thus a measure of emotional stability. An example of a question on neuroticism is "Does your mood often go up and down?" (Q.1) or 'Are you an irritable person?' (Q9). The third of Eysenck's personality factors is psychoticism. Psychoticism is associated with anti-social traits such as opposition to social norms, egocentricity and aggressiveness (Ryckman, 2008). The question 'Would you like other people to be afraid of you?' (Q.39) measures psychoticism. The lie scale in this questionnaire detects to what extent participants are responding in a socially desirable manner, although this scale wasn't taken into account in this particular study. Participants answer either 'yes' or 'no' to each question. Each 'yes' answer receives a score of 1, and 'no' receives a score of 0. Participants can then be assigned a rating of up to 12 for each scale.

Multi-Dimensional Emotional Empathy Scale (1998)

In this study, empathy was measured using the Multi-Dimensional Emotional Empathy Scale (Caruso & Mayer, 1998). This scale was devised in 1998 to develop a new measure of empathy suitable for use with adolescents and adults, which could yield scores measuring multiple dimensions of emotional empathy (Caruso & Mayer, 1998, p. 6). The empathy scale consists of thirty items such as 'the suffering of others deeply disturbs me' (Q. 6). Six negatively-worded items were included in the scale in order to reduce response bias (e.g., 'I rarely take notice when other people treat each other warmly'). The scale includes positive as well as negative emotional situations (e.g., 'Being around happy people makes me

feel happy, too'). A five-point response scale was used; where 1 was 'Strongly Disagree' and 5 was 'Strongly Agree' (The complete scale is included in the Appendix). The six negatively-worded items were first reverse-scored and then a total empathy scale was computed by adding all 30 items and computing a mean.

Internal consistency for all scores was computed using coefficient alpha. The alpha reliability for the total 30-item scale scores was .88 (mean = 3.63, SD = 0.57). The subscales measured in this scale are: suffering, positive sharing, responsive crying, emotional attention, feel for others and emotional contagion. The mean of these subscales is computed to find a general empathy scale, with the highest attainable score of 150.

Need for Achievement Subscale (1998)

The Need for Achievement section of the study is a subscale of the Intrinsic Academic Motivation Questionnaire (Shia, 1998). The subscale consisted of ten statements, which participants rated themselves on a 7-point Likert scale (1 = Strong Disagree, 7 = Strongly Agree). An example of a statement measuring need for achievement is 'I have high expectations of myself' (Q.5). Two of the items in the subscale were negatively scored in order to reduce response-bias, e.g., 'I wait till the last minute to complete my assignments' (Q.7). The full scale is included in the Appendix. Internal consistency for all scores was computed using coefficient alpha. The alpha reliability for the total 30-item scale scores was only .583, which must be taken into account when analysing the results of this study.

Participants:

There were a total of 122 respondents involved in this research who successfully completed the questionnaire. Of these 122, twenty-seven were male and ninety-five were female. The sample consisted of psychology students between the ages of 18 and 52 from Dublin Business School. Both part-time and full-time students took part in the study, and the students were obtained from both the BA Psychology Programme and the Higher Diploma Psychology Programme in Dublin Business School. The participants took part in the study on a purely voluntary basis.

Design:

A cross-sectional survey design was used for this study. It can be described as a quantitative methodology. The study involved third-level students completing a series of questionnaires within a 10-15 minute period during class. The criterion variables in the study were empathy, need for achievement and perceived academic performance. The predictor variables were personality and each participant's order of birth in their family.

Procedure:

Initially collecting the data began by contacting lecturers in DBS and requesting a small period of their class time to administer the questionnaires to their class. The questionnaires were then personally administered to the students involved in the study. The respondents then completed the questionnaires, which took approximately 10-15 minutes. The lecturer was present during the completion of the questionnaires. The participants' completed the questionnaires and personally returned them.

Prior to the completion of the questionnaires, the instructions were read out, and these indicated the anonymous nature of the study. The importance of honest and quick responses to the questions was stressed to the participants, as was the option that was afforded to them of refraining from answering any questions or of completely withdrawing from participation at any time. All participants who took part in this study did so on a purely voluntary basis; not one participant was forced to complete the questionnaire. The participants' were administered the questionnaires during the months of January and February 2012; each questionnaire was completed and collected during the same period. After the questionnaires were collected, all of the participants and each lecturer were thanked for their time and cooperation in this study. Subsequent to the retrieval of the data, it was organised and input into a computer using the statistical package for social science (SPSS Version 18 for Windows) and then it was subject to computer calculations and later analysed.

Chapter Three:

Results

All data were coded for descriptive and inferential analysis in SPSS Version 18. Descriptive statistics, such as means and standard deviations were calculated, as well as Cronbach's alpha to examine the reliability of the scales. Afterwards, correlations between selected scales and subscales were carried out to examine the relationships between variables measured.

The descriptive statistics provide background information on the participants in the study. Of the 122 participants, 27 were male (22.1%) and 95 were female (77.9%). The participants gave information on their order of birth in their family. The sample contained 35 eldest children (28.7%), 33 neither eldest nor youngest children (27%), 43 youngest children (35.2%), 9 only children (7.4%) and 2 participants who labelled themselves as 'Other' (1.6%).

The participants ranged in age from 18 to 52. The mean age of the sample was 26.25, with a standard deviation of 7.524. The mode was 21. The study used a representative sample of DBS Psychology students, 79 full-time students and 43 part-time students.

Participants were asked to rate their levels of Perceived Academic Performance by indicating if they considered their performance to be 'Poor', 'Below Average', 'Average', 'Above Average' or 'Very Good'. When carrying out the analysis it was decided to combine the first three groups ('Poor', 'Below Average' and 'Average') to form the group 'Average and below'. Forty-one of the participants rated their performance as 'Average and Below' (33.6%), sixty participants considered themselves 'Average' (49.2%), and just twenty-one participants considered their academic performance to be 'Very Good' (17.2%).

As previously mentioned, all respondents completed a questionnaire booklet containing general demographic questions, the Eysenck EPQ-R (1991), the Multi-Dimensional Model of Emotional Empathy (Caruso & Mayer, 1998); and a Need for Achievement questionnaire (Shia, 1998). Presented in the table below are descriptive statistics and psychometric information from the administration of these measures.

Table 1 – *Descriptive statistics and Psychometric Information for Instrumentation*

	N	Minimum	Maximum	Mean	Standard Deviation
Total Psychoticism	122	.00	8.00	2.77	1.84
Total Extroversion	122	.00	12.00	8.86	3.18
Total Neuroticism	122	.00	12.00	6.37	3.28
Total Empathy	120	56.00	147.00	116.99	14.22
Total Achievement	121	29.00	64.00	50.25	7.12
Valid N (listwise)	120				

As can be seen from the Table 1 above, the mean score for each subscale of the EPQ-R (1991) is reported. The highest score attainable for each subscale is 12. Therefore, it is observed that this particular sample showed low levels of psychoticism; the mean score was 2.77 (SD = 1.84). Also, it can be seen from Table 1 that the mean score on the extroversion subscale is 8.86 (SD = 3.18). This illustrates that levels of extroversion are generally high among the respondents. Furthermore, Table 1 outlines the mean score on the Neuroticism subscale of the EPQ-R (1991) which was 6.37 (SD = 3.28). Moreover, the results from Table 1 indicate that the mean score on the Multi-Dimensional Model of Emotional Empathy

(Caruso & Mayer, 1998) was 116.99 (SD = 14.22). The highest attainable score on this scale is 150; therefore we can conclude that this sample shows relatively high levels of empathy. The total need for achievement score can also be seen in Table 1; the highest possible score on this scale is 70. The mean score of the sample is 50.25 (SD = 7.12). Therefore the participants in this study showed moderately high levels of need for achievement.

Hypothesis 1

In regards to the first aim of the study, a one-way Analysis of Variance was carried out to explore the first hypothesis that there would be a statistically significant difference between birth order and personality type. A one-way analysis of variance found there was no significant difference between birth order and levels of psychoticism. The Tukey HSD test indicated that the mean score was statistically not significant ($F(4, 117) = .323, p > 0.05$). It is interesting to note, that although not significant, there is slightly higher levels of psychoticism shown among eldest children, which seems to decrease among middle and youngest children in the sample (See Figure 1).

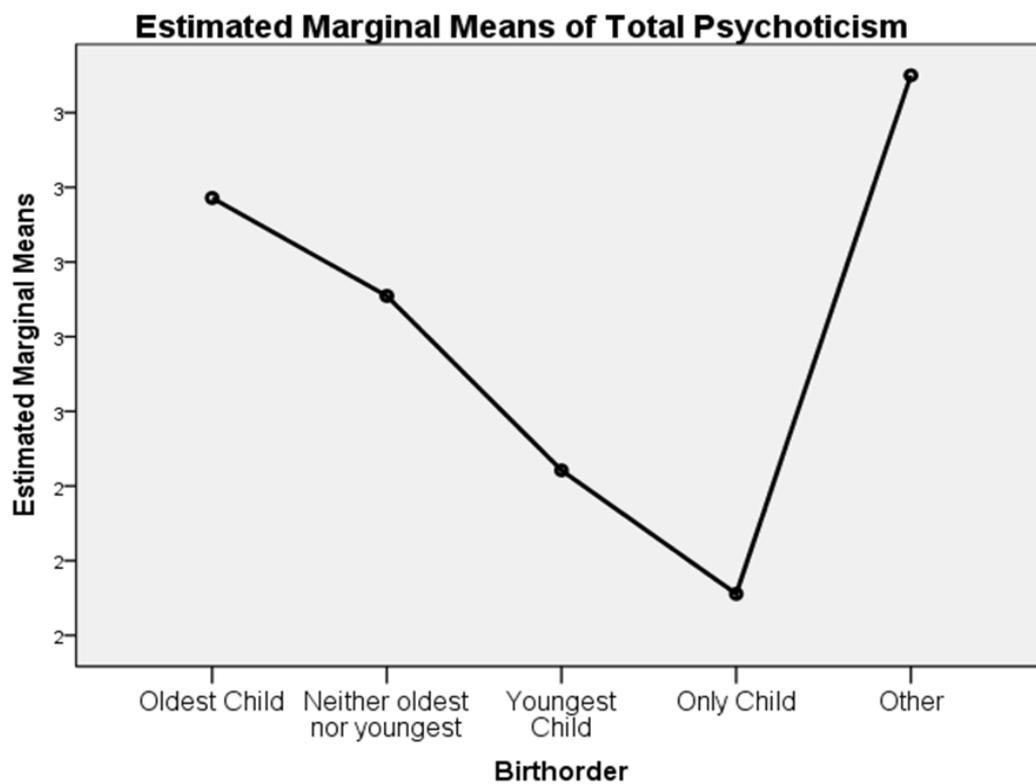


Figure 1 – Profile plot indicating the slightly higher levels of psychoticism among eldest children compared with other categories.

A one-way analysis of variance was carried out to investigate the difference between birth order and levels of extroversion. The Tukey test indicated that the mean score was not statistically significant ($F(4, 117) = .565, p > 0.05$) with no statistically significant difference between mean scores.

A one-way analysis of variance was conducted to explore the difference between birth order and levels of neuroticism. The Tukey test indicated that the mean score was not statistically significant ($F(4, 117) = .445, p > 0.05$) with no statistically significant difference between mean scores. Although it is not statistically significant, it can be observed that there is a higher level of neuroticism among only children, with the youngest children showing the least amount of neuroticism in the sample, which is consistent with previous literature.

The various analyses of variance carried out on all of the Eysenck personality characteristics of psychoticism, extroversion and neuroticism shows that in this sample, there is no statistically significant difference between personality type and birth order, which is contrary to findings in previous literature. Therefore we must reject H1, that there would be a difference between personality subscales and birth order, and retain the null hypothesis.

Hypothesis 2

A one way analysis of variance was carried out to investigate H2, the relationship between birth order and levels of empathy. The Tukey test indicated that the mean score was not statistically significant ($F(4, 115) = .627, p > 0.05$).

Therefore we reject H2, the hypothesis that there will be a difference between birth order and empathy, and we retain the null hypothesis. This finding, too, is contrary to previous

literature which found that younger children display higher levels of empathy than their older siblings. Although not statistically significant, in this particular sample, the only child category showed the highest levels of empathy.

Hypothesis 3

H3, the difference between birth order and need for achievement was explored using a one way analysis of variance. The Tukey test indicated that the mean score was not statistically significant ($F(4, 116) = .847, p > 0.05$) with no statistically significant difference between mean scores.

Therefore, the outcomes from this particular sample oppose findings discussed in other studies. Thus we reject H3, the hypothesis that there would be a greater correlation between higher levels of achievement for firstborns rather than later born children; we consequently retain the null hypothesis. Although not statistically significant, a slightly higher level of achievement was observed among only children compared with other categories.

Hypothesis 4

To investigate H4, the relationship between perceived academic performance and need for achievement, a one way analysis of variance was carried out. The Tukey test indicated that the mean score was statistically significant ($F(2, 118) = 0.0, p > 0.01$, partial eta squared = .143). This test shows that there is a strong correlation between perceived academic performance and need for achievement. This can be seen in Figure 2 below.

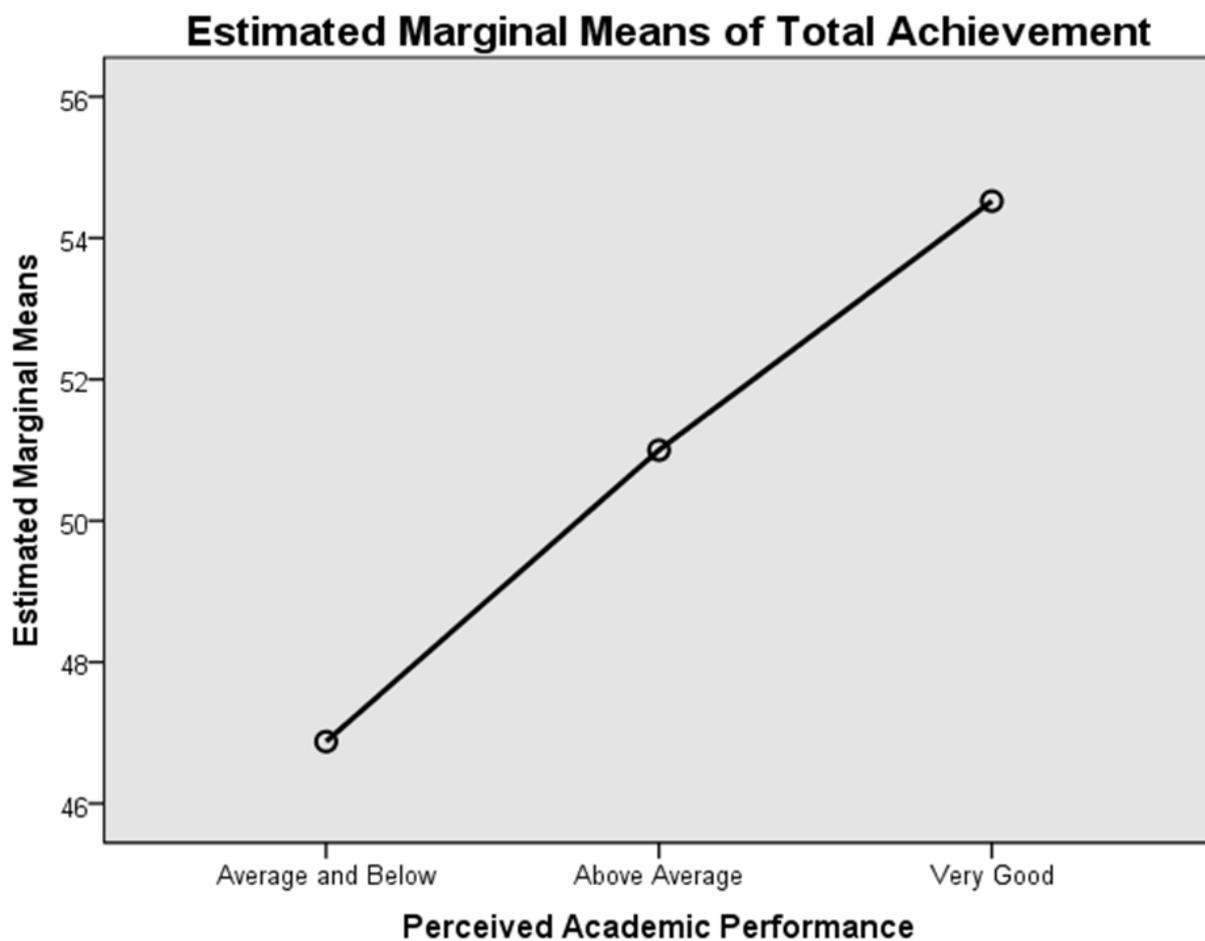


Figure 2 – Profile plot indicating the significant relationship between perceived academic performance and need for achievement

Illustrated in Table 2 below are the significant relationships found when Pearson's correlations were conducted extroversion and neuroticism.

Table 2 – *Pearson's Correlations of Extroversion and Neuroticism on the EPQ-R Scale*

Correlations			
Scales		Total Extroversion	Total Neuroticism
Total Extroversion	Pearson Correlation	1	-.305
	Sig. (2-tailed)		.001
	N	122	122
Total Neuroticism	Pearson Correlation	-.305	1
	Sig. (2-tailed)	.001	
	N	122	122

As can be seen from Table 2 above, there is a statistically significant negative correlation between levels of extroversion and levels of neuroticism, both scored on the EPQ-R (1991) (Pearson's $R = -.305$, $p < 0.01$). This means that high scores on extroversion are associated with low scores on neuroticism.

Table 3 – *Pearson's Correlations of Psychoticism on the EPQ-R Scale and Empathy on the Multi-Dimensional Model of Emotional Empathy*

Correlations			
Scales		Total Psychoticism	Total Empathy
Total Psychoticism	Pearson Correlation	1	-.268
	Sig. (2-tailed)		.003
	N	122	120
Total Empathy	Pearson Correlation	-.268	1
	Sig. (2-tailed)	.003	
	N	120	120

A Pearson's correlation was also carried out between the variables of Psychoticism from the EPQ-R scale (Eysenck & Eysenck, 1991) and empathy levels from the Multi-Dimensional Model of Emotional Empathy (Caruso & Mayer, 1998). As can be seen from Table 3 above, there is a statistically significant negative correlation between levels of psychoticism and levels of empathy (Pearson's $r = -.268$, $p < 0.01$). This means that high scores of psychoticism is related to low scores of empathy.

Table 4 – *Pearson's Correlations of Psychoticism on the EPQ-R Scale and Achievement from the Need for Achievement subscale.*

Correlations			
Scales		Total Psychoticism	Total Achievement
Total Psychoticism	Pearson Correlation	1	-.315
	Sig. (2-tailed)		.000
	N	122	121
Total Achievement	Pearson Correlation	-.315	1
	Sig. (2-tailed)	.000	
	N	121	121

As can be seen from Table 4 above, there is a statistically significant negative correlation between levels of psychoticism and need for achievement (Pearson's $r = -.315$, $p < 0.01$). This means that high scores of psychoticism indicate lower levels of a need for achievement.

Chapter Four:

Discussion

The main aim of this study was to identify any differences that exist among eldest, middle, youngest and only children in relation to personality type, empathy levels, need for achievement and perceived academic performance. Previous research has suggested that each person's unique place in their family have a huge influence on the person they are. Abundant research has shown that siblings that are raised together are enormously different from one another - almost as different as people plucked randomly from the general population (Plomin & Daniels, 1987, as cited by Sulloway, 1995) Birth order has been studied in psychological research for decades, and continues to be used to attempt to explain behaviours of children in the family environment. For example, Argys et al., (2006) found that birth order is related to behaviour, as adolescents with older siblings are more likely to engage in 'risky' behaviour than their firstborn counterparts. Their findings supports Paulhus et al.'s (1999) study which concluded that first born children are more achieving and that later borns are more rebellious. Paulhus et al. (1999) also suggested that later borns develop an adult character, marked by an empathic interpersonal style. However, no study looking at birth order and empathy alone has been carried out since Stotland and Walsh's (1963) study, which found that later borns empathise more than first and only borns.

In recent years, studies on birth order have tended to focus on how it impacts the educational settings. Black, Devereux and Salvanes (2005) found that earlier birth position was associated with a significantly greater number of years in education. They concluded that later-born children are less likely to gain educational qualifications, prestigious jobs and high salaries. These findings are consistent with the literature on the relationship between birth order and educational and career achievement, which has generally found that earlier-born individuals tend to outperform later-born individuals in academic settings and in some employment outcomes. Phillips et al., (2000) examined the relationship between birth order

and achievement, and suggested that there is a possible interrelationship between familial experiences, occupational selection, self-appraisal and stress level.

While a relatively large number of studies have looked at birth order in relation to personality traits and achievement, this is the first study of its kind to focus on empathy and perceived academic performance on top of these variables. No known birth order studies have been carried out on an Irish population, and it is also important to point out that as a variable, empathy has been under-investigated in psychological research. No previous research focussing on empathy has been found to have been carried out on an Irish population, which was one of the main reasons for including it in this study.

Birth order and personality type

The first hypothesis in the current study proposed that there would be a significant difference between order of birth and personality type. Previous research suggested that later born children would be more extroverted than earlier born children. This hypothesis was not supported. An ANOVA was carried out on each subscale of personality – extroversion, psychoticism and neuroticism – and none were found to be significant. This contradicts previous research which found there to be differences in personality. The results, although not significant, did show slightly lower levels of extroversion among eldest children compared with the other birth orders. However, this could be due to the fact that the sample consisted of psychology students, which may be a sample that could be found to have relatively high levels of extroversion compared to the general population. Therefore in order to get a good indication of possible personality traits among the general public it is important that a sample more representative of the general population be utilised. Also worth mentioning, although not significant, is that eldest children in this sample appeared to show

slightly higher levels of psychoticism than respondents of other birth orders. It is important to note, however, that as a general sample, the participants overall showed very low scores of psychoticism ($M = 2.77$, $SD = 1.84$).

As far back as 1963, differences in personality between eldest, middle, youngest and only children have been noticed and investigated in psychological research. Greenberg et al., (1963) concluded that the youngest child is significantly more emotionally stable than the eldest. The socialisation hypothesis states that firstborn and only children are more highly socialised than later borns, at least in the sense that they tend to conform more to the expectations of an adult or authority figure (in MacDonald, 1971). This hypothesis is not supported in the current study, as there were no significant differences found between personality and birth order. Therefore, we can retain the null hypothesis.

Birth order and Empathy

To date, relatively few studies have assessed the relationship between birth order and empathy levels; in fact, very few recent psychological studies have been found to investigate empathy as a variable at all. An ANOVA test revealed that there was no significant difference between birth order and levels of empathy. This finding does not support previous literature which concluded that younger born children tend to show higher levels of empathy than first and only born children (Stotland & Walsh, 1963). As an overall sample, the group in this study showed high levels of empathy ($M = 116.99$, $SD = 14.22$), but there were no significant differences. Also, contrary to previous research, there was no significant difference found between levels of empathy between men and women (Male empathy mean = 113.74; female empathy mean = 117.94). Rogstad and Rogers (2008) stated that on population level, empathy has been observed to differ by gender; women on average are more empathic than

men (as cited by Saarnio, 2010). One possible reason that the gender divide was not significant in this particular sample may be due to the participants involved. Harton and Lyons (2003) found that psychology students reported more concern for others and a tendency to take other peoples' perspectives than non-psychology students. Another possibility is that taking psychology courses may lead students to feel more empathy. Therefore the finding that this particular sample did not show significant differences in empathy for gender or birth order may be attributed to their common interest in helping others.

Birth Order and Need for Achievement

Previous literature that was mentioned at the beginning of this study discusses how a person's rank in their family influences their level of achievement in life. Most of the studies concluded that first born and only children completed more years of schooling than those in other birth order positions (Travis & Kohl, 1995). This finding could be due in part to the fact that large families' resources cannot allow all children to receive high levels of education, which leaves the eldest child with the greatest advantage of experiencing education than younger siblings. In the current study, an ANOVA found no significant difference between birth order and need for achievement. Therefore the null hypothesis is retained. It was expected that respondents from the eldest children category would display higher levels of achievement. Again, it is possible that the particular sample used in the study influenced this outcome. As DBS is a private third level college, there may be high levels of extrinsic motivation which impacts the students' need for achievement. It would be recommended that future research use a broader sample of respondents so that findings could be generalised to the overall population.

Need for achievement and perceived academic performance

An ANOVA carried out between need for achievement and perceived academic performance found that there was a statistically significant relationship between these variables ($F(2, 118) = 0.0, p > 0.01, \text{partial eta squared} = .143$). This finding was expected in the current study, and means we can accept the fourth hypothesis, H4, that there is a statistically significant relationship between perceived academic performance and need for achievement; that is, the higher one rates their perceived academic performance, the higher they score on the Need for Achievement subscale (Shia, 1998). Participants rated their perceived academic performance by choosing from five options: 'Poor', 'Below Average', 'Average', 'Above Average', or 'Very Good'. When conducting the statistical analysis, it was decided to combine the first three options (Poor, Below Average and Average) into one group, renamed 'Average and below'. This was due to low numbers of respondents selecting the low ratings, making it difficult to conduct analysis on them. The significance of these findings will now be discussed.

Significance of findings

The purpose of this research project was to see if birth order had any influence on people's personality, empathy, need for achievement and perceived academic performance. From analysing the results, we can conclude that none of the hypotheses involving birth order are significant. The only hypothesis supported was the relationship between perceived academic performance and need for achievement. Although this finding was to be expected, it adds more support to previous research. This outcome can be applied to educational settings. More studies should be carried out involving these variables in order to ascertain how these findings can be applied beneficially in academic situations.

Although none of the birth order hypotheses were significant in the current study, the findings still have implications in the home environment. Previous research on birth order differences show how younger children tend to be more rebellious and engage in more risky behaviour (e.g., Argys et al., 2006). As previously mentioned, Plomin and Daniels (1987) describe how different each person is to their sibling (in Sulloway, 1995). Although not significant, personality differences can be seen among different birth order categories in this sample. All of these findings can help parents to understand how and why their children act the way they do in comparison to their siblings. Knowledge about birth position preferences and trait patterns may allow family members to deal more openly and effectively in efforts to experiment with role prescriptions, sibling rivalry and relationship compatibilities (Nyman, 1995).

Throughout the preparation, administration and reflection of the study, several strengths, weaknesses and limitations have been found, which will be discussed in the following section.

Strengths and Limitations of the Current Study.

After conducting this research and analysing the results, it is unfortunate to conclude that there are many weaknesses of the current study. These limitations should be taken into account when considering the results.

First of all, the sample that was utilised in the study consisted of only 122 respondents. With a sample so small, it is difficult to generalise any findings to the population as a whole. As well as the size of the sample, it consisted solely of DBS undergraduate psychology students; this is not an adequate representation of the population. As previously mentioned, this may be the reason that empathy scores were relatively high, and there was no significant differences found between gender or birth order. Therefore it would be recommended that future research use a larger, more general and randomised sample in order to get a more adequate idea of what influence birth order has in relation to these variables, if any.

Secondly, for future research it would be beneficial to establish how many siblings each respondent has and what the age gaps are between each child. This was shown to impact findings in Argys et al.'s (2006) study, which highlighted the importance of birth spacing. They found that having a sibling who was four or more years older is associated with a larger impact on risky behaviour than having a sibling who was zero to three years older. Similarly, gaining knowledge on the sex composition of each respondent's siblings would be constructive for future research into the birth order question.

Similarly, it is necessary to take into account the fact that in modern Ireland, the nuclear family is becoming rare, and the number of children growing up among step-siblings and being raised in single-parent families is on the increase. This makes it difficult to apply any general findings to each family. For example, if for the first few years of his life, a person

was an only child, but then gains step-siblings both older and younger than him in later life, does he consider himself to be a middle child or an only child? These are problems that are present in this current area of research, and are constantly evolving.

Another weakness of the current study that can be rectified in future research is the question of ethnic and cultural family differences. Previous birth order personality studies, like this one, have largely ignored cross-cultural issues. The data was obtained from third level students in Ireland, and did not ask participants to provide information on their ethnicity. It would be interesting to see if birth order differences exist in other cultures, and how they differ from Irish society. It would also be interesting to acknowledge what differences, if any, exist among cultures in relation to other psychological variables such as empathy, personality, achievement and perceived academic performance.

Another difficulty faced in conducting this study was in the research stage; it was problematic to find previous studies which focussed on variables similar to the ones utilised in the present study. Although this can be seen as a strength of the study as it is unique, it also made it challenging to form hypotheses; as can be seen from the results, most of the hypotheses had to be rejected, meaning the null hypothesis was retained for three of the four hypotheses. This was difficult in particular for birth order, as a lot of the research found was old, and therefore difficult to apply to our modern society. Empathy on the other hand seems to be a relatively under investigated variable, making this study the first of its kind to explore its relationship to birth order, personality, achievement and perceived academic performance.

The final weakness of this study involves the psychometric testing utilised to measure need for achievement. The Need for Achievement questionnaire is a subscale of the Intrinsic Academic Motivation Questionnaire (Shia, 1998). When the Cronbach's alpha test for reliability was carried out using SPSS Version 18 for Windows, it found its reliability to only

be .583, which is relatively low in internal reliability. However, the other scales used (Eysenck Personality Questionnaire Revised (Eysenck & Eysenck, 1991) and the Multi-Dimensional Model of Emotional Empathy (Caruso & Mayer, 1998)) were both found to be high in internal reliability. Perhaps future studies should apply a more suitable measure of need for achievement in order to gain a more reliable insight into these variables.

Along with these limitations, the study does present with strengths. As previously mentioned, this research is unique in both the variables it uses and the sample it employs. It provides a distinctive insight into innate personality traits and what effect birth order has on them. The questionnaires utilised in the study did not take a long amount of time to fill out, meaning there was no great inconvenience to the participants involved. Another strength of the study is that the personality and empathy questionnaires both had high levels of reliability. The sample itself, although limited to DBS psychology students, was a relatively large group with a wide age range (between 18 and 52 years). Similarly, the sample was not known to the researcher, which limits the possible effects of experimenter bias.

In conclusion, this study set out to discover what influence one's order of birth in their family has on their personality, levels of empathy, need for achievement and perceived academic performance. Personality was measured using the Eysenck Personality Questionnaire Revised (1991); empathy was measured using the Multi-Dimensional Model of Emotional Empathy (Caruso & Mayer, 1998); and need for achievement was measured using a subscale from the Intrinsic Academic Motivation Questionnaire (Shia, 1998). The questionnaires were administered to 122 DBS Psychology undergraduate students. It was found that there was no statistically significant difference between order of birth and personality, order of birth and empathy and order of birth and achievement. However an

ANOVA found that there was a statistically significant relationship between perceived academic performance and need for achievement.

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Appendices

Dear Participant,

I am conducting research on the relationship between order of birth, achievement, and other associated psychological variables.

Please take your time to answer all questions. There is no right or wrong answer and answers will be kept anonymous. Your questionnaire answers will be merged with those from other people. Your answers will not be traced back to you, and you will not be asked to give your name or identification details. *You have the right to withdraw at any stage during the completion of this survey.*

All you have to do is complete the questionnaire, which will take about 10-15minutes.

If you have any questions regarding this research please do not hesitate to ask.

Thank you for your interest in attitudinal research.

Please answer the following questions.

What is your age? _____

What is your sex? (Please circle)

Male

Female

Please circle the type of study which applies to you:

Full-Time

Part-Time

Please circle which of the following options best describes your order of birth in your family:

Oldest Child

Neither oldest nor youngest child

Youngest Child

Only Child

Other

How would you rate your overall academic performance? (Please circle)

Very poor

Below Average

Average

Above Average

Very good