

# Student Checklist (1A)

This form is required for ALL projects.

1. a. Student/Team Leader: Ella Penson Grade: 12  
Email: ella.penson@yahoo.com Phone: 5164061077  
b. Team Member: \_\_\_\_\_ c. Team Member: \_\_\_\_\_
2. Title of Project: Examining the relationship Between Birth Order and Personality, and the Subsequent Influence of Complex Family Structure
3. School: Paul D. Schreiber High School School Phone: 7675941  
School Address: 101 Campus Drive, Port Washington NY, US
4. Adult Sponsor: Elizabeth Thomas Phone/Email: 51675941/etomas@portnet.org
5. Does this project need SRC/IRB/IACUC or other pre-approval? ☐ Yes ☒ No Tentative start date: 6/02/19
6. Is this a continuation/progression from a previous year? ☐ Yes ☒ No  
If Yes:  
a. Attach the previous year's ☐ Abstract and ☐ Research Plan/Project Summary  
b. Explain how this project is new and different from previous years on  
☐ Continuation/Research Progression Form (7)
7. This year's laboratory experiment/data collection:  
07/15/19 10/24/19  
Actual Start Date: (mm/dd/yy) End Date: (mm/dd/yy)
8. Where will you conduct your experimentation? (check all that apply)  
☐ Research Institution ☒ School ☐ Field ☒ Home ☐ Other: \_\_\_\_\_
9. List name and address of all non-home and non-school work site(s):  
Name: Long Island University  
Address: 720 Northern Blvd,  
Greenvale, NY 11548  
Phone/  
email: 2992900 /etomas@portnet.org
10. Complete a Research Plan/Project Summary following the Research Plan/Project Summary instructions and attach to this form.
11. An abstract is required for all projects after experimentation.

# Research Plan/Project Summary Instructions

A complete Research Plan/Project Summary is required for ALL projects and must accompany Student Checklist (1A).

1. All projects must have a Research Plan/Project Summary
  - a. Written prior to experimentation following the instructions below to detail the rationale, research question(s), methodology, and risk assessment of the proposed research.
  - b. If changes are made during the research, such changes can be added to the original research plan as an addendum, recognizing that some changes may require returning to the IRB or SRC for appropriate review and approvals. If no additional approvals are required, this addendum serves as a project summary to explain research that was conducted.
  - c. If no changes are made from the original research plan, no project summary is required.
2. Some studies, such as an engineering design or mathematics projects, will be less detailed in the initial project plan and will change through the course of research. If such changes occur, a project summary that explains what was done is required and can be appended to the original research plan.
3. The Research Plan/Project Summary should include the following:
  - a. **RATIONALE:** Include a brief synopsis of the background that supports your research problem and explain why this research is important and if applicable, explain any societal impact of your research.
  - b. **RESEARCH QUESTION(S), HYPOTHESIS(ES), ENGINEERING GOAL(S), EXPECTED OUTCOMES:** How is this based on the rationale described above?
  - c. Describe the following in detail:
    - **Procedures:** Detail all procedures and experimental design including methods for data collection. Describe only your project. Do not include work done by mentor or others.
    - **Risk and Safety:** Identify any potential risks and safety precautions needed.
    - **Data Analysis:** Describe the procedures you will use to analyze the data/results.
  - d. **BIBLIOGRAPHY:** List major references (e.g. science journal articles, books, internet sites) from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.

Items 1–4 below are subject-specific guidelines for additional items to be included in your research plan/project summary as applicable.

1. **Human participants research:**
  - a. **Participants:** Describe age range, gender, racial/ethnic composition of participants. Identify vulnerable populations (minors, pregnant women, prisoners, mentally disabled or economically disadvantaged).
  - b. **Recruitment:** Where will you find your participants? How will they be invited to participate?
  - c. **Methods:** What will participants be asked to do? Will you use any surveys, questionnaires or tests? If yes and not your own, how did you obtain? Did it require permissions? If so, explain. What is the frequency and length of time involved for each subject?
  - d. **Risk Assessment:** What are the risks or potential discomforts (physical, psychological, time involved, social, legal, etc.) to participants? How will you minimize risks? List any benefits to society or participants.
  - e. **Protection of Privacy:** Will identifiable information (e.g., names, telephone numbers, birth dates, email addresses) be collected? Will data be confidential/anonymous? If anonymous, describe how the data will be collected. If not anonymous, what procedures are in place for safeguarding confidentiality? Where will data be stored? Who will have access to the data? What will you do with the data after the study?
  - f. **Informed Consent Process:** Describe how you will inform participants about the purpose of the study, what they will be asked to do, that their participation is voluntary and they have the right to stop at any time.
2. **Vertebrate animal research:**
  - a. Discuss potential ALTERNATIVES to vertebrate animal use and present justification for use of vertebrates.
  - b. Explain potential impact or contribution of this research.
  - c. Detail all procedures to be used, including methods used to minimize potential discomfort, distress, pain and injury to the animals and detailed chemical concentrations and drug dosages.
  - d. Detail animal numbers, species, strain, sex, age, source, etc., include justification of the numbers planned.
  - e. Describe housing and oversight of daily care
  - f. Discuss disposition of the animals at the termination of the study.
3. **Potentially hazardous biological agents research:**
  - a. Give source of the organism and describe BSL assessment process and BSL determination.
  - b. Detail safety precautions and discuss methods of disposal.
4. **Hazardous chemicals, activities & devices:**
  - Describe Risk Assessment process, supervision, safety precautions and methods of disposal.
  - Material Safety Data Sheets are not necessary to submit with paperwork.

Ella Penson

## Examining the Relationship Between Birth Order and Personality, and the Subsequent Influence of Complex Family Structure

### **Research Plan**

#### **Rationale**

A debated question in research is that of difference in personality between siblings. As most siblings grow up in similar conditions and with similar resources, it is puzzling why they have such different personalities. This may be explained by the theories of birth order. The first born feels “dethroned” by the birth of the later siblings, which has a lasting effect on them. Further, the middle child and later children often feel ignored and neglected, helping form their psyche. These circumstances play a vital role in the development of the Big Five personality traits in people: openness, conscientiousness, extraversion, agreeableness and neuroticism (Adler, 1928). Studies have shown that first borns tend to score higher on levels of conscientiousness but lower on levels of openness, agreeableness, extraversion and neuroticism. The opposite is evident for later borns.

As time has progressed, complex familial structures have become increasingly normalized. These families include divorced parents, single parents and introduction of step siblings. It has been found that children in these complex families have higher levels of openness and extraversion as well as lower levels of conscientiousness (Zyrianova, Chertkova, & Pankratova, 2013). These trends in complex family subjects are more representative of later borns.

Many researchers look for indicators in early life of poor mental health and dangerous habits. Birth order may be an effective way to do so. Birth order has been correlated with higher neuroticism and reckless behavior in later borns. Studies have also found that later borns feel neglected and often perceive older siblings as harboring the favoritism of their caretakers which leads to increased rebellion (Sulloway, 1996). These theories may allow parents to analyze their children’s behavior and prompt them to monitor later borns with greater care. This may be useful to schools as well. If a counselor or educator at a school witnesses a child exhibiting these behaviors, the theories of birth order may provide more insight into why they are taking such actions.

In an ever-evolving modern America, complex family structures are becoming increasingly prevalent. If there is research on what the psychological effects on children could be, this would allow parents to be more equipped to predict behavior in their children. Theories such as those presented in this paper could allow parents to predict the detrimental effects of a complex family sooner and provide resources to their children. This may include more of their time, increased surveillance over their children to assure their wellbeing or providing someone to talk to such as a therapist or psychologist.

#### **Research Questions and Hypotheses**

## Questions

1. How does birth order influence personality within first borns and later borns?
2. Does being in a complex family alter the effects of birth order?

## Hypotheses

1. First borns will score significantly lower on the subscales of openness, extraversion and agreeableness, and neuroticism on the MBTI than later borns.
2. First borns will score significantly higher on the subscales of conscientiousness than later borns.
3. First borns in complex familial structures will exhibit qualities of later borns rather than of a typical first born.

## Procedures

In order to collect data, a two part survey will be administered through both Amazon's Mechanical Turk for \$0.05 compensation and through a shareable link. Participants will be invited to take the survey through Amazon's Mechanical Turk. Reviewal by a board is not necessary for the distribution of this survey as no identifiable information will be taken from participants. Moreover, joining Mechanical Turk requires participants to sign a release that allows their answers to be used in publications and studies. At the beginning of the survey, a brief informed consent paragraph will explain the purpose of the study and its impending submission to a nationwide competition. It will also state that all answers are anonymous. The demographic section of the survey will be utilized to gather information on each participant's family structure. This includes questions regarding gender, birth order position, and age. Only subjects above the age of 18 will be included in the study. Subjects will be asked who their primary guardians were, and if their caretakers separated or divorced while they were growing up. Further, the survey inquires about whether participants grew up in one home, or with step siblings.

The second part of the survey will be the *Myers-Briggs* personality inventory which serves to gather the personality type of each participant. The questionnaire produces results by examining the ways individuals prefer to use their perception and judgment. This, in effect, illustrates the differences in the Big Five personality traits in each person. The measure is composed of 70 items based on a two answer scale. From each prompt, participants will choose one of two answers that best describes themselves. An example of a prompt is, "Would you say you are more..." and examples of responses would be "serious and determined," or "easy-going." Overall, the survey should take at most 20 minutes.

There is minimal to no risk involved with this study.

## Data Analysis

This study will analyze whether there is a correlation between birth order and each personality trait. Data will be coded into Microsoft Excel. A multivariate linear regression

analysis will be performed for openness, conscientiousness, extraversion, agreeableness and neuroticism against birth order position

The second set of comparisons will be done solely on participants within complex familial structures. For this group, a One-Sample t-Test will be manipulated to assess the difference in means between complex family traits and the hypothesized trait results.

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