Abstract

This study aims to investigate the relationship between risk taking and cognitive styles. Understanding risk behavior is an important endeavor for the field of psychology, and an accomplishment that can aid society in many ways. Through comprehending the reasons behind risk behaviors, better ways to identify and prevent health hazards can be established. Previous studies have suggested that risky behavior is linked to certain types of cognition. Furthermore, studies on decision-making behavior have concluded that the decision-making process is dependent and indicative of the decision makers’ cognitive style. Moreover, other studies on risk taking have found that mental visualization aids the decision making process by raising individuals’ awareness of their surroundings and the outcomes of their choices, and by helping them make intelligent decisions instead of ones that are based on speculation. This study will be based on Riding and Cheema’s (1991) theory that individuals can be classified along two primary dimensions of cognitive style: holist-analytic and verbal-imagery. Peterson et al. (2005) measure, the Verbal-Imagery Cognitive Styles Test (VICS) and Extended Cognitive Styles Analysis – Wholistic-Analytic (E-CSA-WA), will be employed to classify individuals according to cognitive style. The Cognitive Appraisal of Risky Activities (CARE) will be used to assess risk behavior and tendencies. We will examine a simple random sample of one hundred participants to determine whether certain types of thinkers are more likely to engage in risk taking than others; through an ANOVA statistical analysis, we will compare the risk taking tendencies of the four cognitive style profiles. It is hypothesized that by having mental images of the event and possible outcomes, and through analyzing the experience in parts as opposed to a whole, analytic-imagers will be the group least likely to engage in risk behavior.
**Project Description**

Through the study of cognitive psychology, this project aims to further our understanding of risk behavior and decision making. Though it may seem obvious that decision making is directly related to the way an individual thinks, there has not been much research done on the particulars of this study: the correlation between cognitive styles and risk behavior. The main expected outcome for this study is to find variance on CARE scores among the four cognitive styles of Riding and Cheema. Analytic-imagers are expected to have the lowest CARE score (least likely to engage in risk) and the holistic-verbalizers are expected to have the highest scores. Through studying cognition and risk behavior, we hope to better understand the causalities of dangerous behavior in adolescents. Precisely, we are interesting in seeing how cognitive styles might relate to impulsivity - in this case acting recklessly. These findings could be applied for the betterment of prevention campaigns, by improving our understanding of how to target young adults to deter them from dangerous behavior. Furthermore, it could broaden our psychological understanding of who engages in hazardous events, and promote a more educated method of treatment (i.e. helping verbalizers produce mental images when making decisions).

**Methods**

**Participants:**

This study aims to obtain a simple random sample of one hundred Fordham University young adults (ages 18-22). Participants have been and will continue to be obtained from the Fordham Psychological Research Student Poll. Additionally, through the use of flyers and social media we hope reach a broader range of students, to increase diversity and obtain the desired amount of participants.

**Materials:**

Through the use of laptop computers and printed questionnaires, participants will be given a battery of exams comprised of two tests:

The first will be the **Verbal-Imager Cognitive Styles (VICS) & Extended Cognitive Styles Analysis-Wholist-Analytic (E-CSA-WA) test.** The VICS & E-CSA-WA aims categorize individuals along two spectrums (Verbal-Imager and Wholist-Analyst), based on response times to computerized questions. This test takes approximately 20 minutes to administer, consists of
three computerized subtests, and classifies individuals into four cognitive style profiles: wholist-verbalizer, analytic-verbalizer, wholist-imager, and analytic-imager.

- **Subtest one, VICS (25-30 mins): Assesses verbalizer-imager dimension.**
Participants are presented with 232 stimuli, one at a time, over two sub-tasks. Half of the items pertain to the conceptual category (Verbal task) while the other half describe the appearance of items (Imager task).

For the Verbal task, participants are asked to determine whether two objects are man-made or natural, with the options of Yes, No, Mixed. Questions are presented both in word form and picture form. Please see Figure 1 and Figure 2, below, as an example:

![Figure 1](image1)

![Figure 2](image2)

For the Imager task, participants are asked to determine whether or not item X is bigger than item Y in real life, with the options of Yes, No, Equal. Again, items are presented both in verbal and picture form. Please refer to figures 3 and 4, on the next page, for an example.
It is assumed that reaction times and accuracy for each of the two types of questions will vary according to cognitive style; where imagers will have faster reaction times and more accurate answers to questions about object size, and verbalizers will have faster reaction times and more accurate answers to questions about the construction of an object. Based on these reaction times, participants will be categorized as one or the other.

- Subtest two, E-CSA-WA (15 mins): Assesses wholist-analytic dimension
Participants are presented with 80 stimuli, over two sub-tasks. Half of the items require comparing objects as wholes (Wholist task) while the other half require analyzing an object by parts (Analytic task).
For the Wholist task, fourty pairs of complex geometric figures are presented. Participants are asked to compare each pair and determine whether they are the same. It is assumed that wholist thinkers will have faster reaction times and better accuracy.
For the Analytic task, participants are presented with a complex geometric shape and a simple shape (40 times). They are asked to determine whether the simple shape is contained within the complex one. Because this requires dismembering a complex shape and analyzing it by parts, it is assumed participants who fall under the analytic category will have a faster response time. Based on their response times, participants are classified on the wholist-analytic dimension.

The VICS & E-CSA-WA will be administered to student participants by one of two researchers during the study visit.

We are interested in assessing cognitive styles because of research indicating a relation between cognitive styles and risk behavior. Studies on risk taking have found that mental visualization aids the decision making process by raising individuals’ awareness of their surroundings and the outcomes of their choices, and by helping them make intelligent decisions instead of ones that are based on speculation. Moreover, research suggests that the Wholist/Analytic dimension is based on field dependence/independence - where wholists are said to consider a situation in its entirety, having a good perspective of the possibilities and outcomes; whereas analytics will perceive a situation as a collection of parts and will often only consider or focus on a few of these parts.

Participants are tested by answering questions that are both conceptual and abstract in nature or about an object’s appearance. It is assumed that imagers will have faster response time for appearance questions because representation of the object will be readily available in mental images. On the other hand, it is assumed that verbalizers will have faster response times on conceptual questions because they cannot be represented in visual form.

The second test will be the Cognitive Appraisal of Risky Activities (CARE). This test aims to assess the risk taking of adolescents and young adults based on outcome expectancies. Through a series of self-report questions (paper form), the test is a measurement of risk behaviors such as substance use, unsafe sex, and aggressive behavior. CARE also assesses more socially accepted risky behavior such as sky-diving, skipping class, and high-risk sports.
All tests will take place in the Fordham University Psychological Research laboratory, located on 557 Fordham Rd., Bronx, NY. This location was selected because it is free of noise and distractions. Participants will be tested on an individual basis by the primary researcher.

**Procedures:**

Fordham University students will be recruited from the Fordham University Psychological Research Student Poll as well as through the use of flyers and social media (Facebook). They will be asked to participate for a recompense of $10.00. Students will be asked to come to the lab based on theirs and the researchers’ availability. Upon arrival, the purpose and procedures of the two tests will be explained to the students. They will then be given a laptop computer to complete the VICS & E-CSA-WA and will receive a printed copy of the CARE. Participants will begin with the VICS, then continue with the CARE, and lastly answer a few general demographic questions. After completing both tests, participants will be debriefed to ensure there are no negative repercussions of the tests. At this point, they will receive their recompense in the form of a monetary gift card (Visa gift card). Once all participants have taken the tests, their scores on both the VICS and CARE will be tabulated and analyzed for variance using an ANOVA statistical test.
Bibliography


Budget and Budget Justification

Participant recompense……………….. $1,000.00

The expected cost of this study is $1,000.00, which will be used for the sole purpose of recompensing individuals for their participation. In order to obtain statistically significant results, it is of uttermost importance to obtain a large participant poll. To do so, I plan to offer individuals ten dollars each as recompense for their participation. All participants will be guaranteed this amount, raising the appeal for participation because personal gains are promised, as opposed to a raffle or no recompense at all.

Outcomes

This study will serve as my Psychology Honors Thesis and my greatest undergraduate research project. I hope it assists me in future endeavors, such as applying to graduate school and furthering my knowledge and understanding of the fields of cognitive and social psychology. Moreover, I hope to get this research published in a journal, as that would be a significant academic achievement. If I am chosen as a recipient of the Fordham College at Rose Hill Undergraduate Research Grant, I will look forward to participating in the Fordham Undergraduate Research Symposium, where I will be delighted to share my findings with fellow peers, professors, and academics. The Research Symposium will be a great venue to learn from fellows’ work, and make connections for future research projects. I would also be honored to present my work at a regional and/or national level, because as an undergraduate student this would be a prestigious opportunity that could serve as my inception in the field of academic research. Again, the possibility of networking with high-achieving peers as well as meeting experts of my fields of interest would be an invaluable experience.