Lateralization of the Cerebral Hemispheres and Choice in Undergraduate Major

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Introduction
Lateralization of the cerebral hemispheres is currently a point of research that is still vague in the psychology world. The few theories available state that while the brain is engaged in one task, another task can also be simultaneously accomplished due to both tasks being carried out in designated areas of the brain. While several studies have documented various aspects of brain imaging in relation to a given task, this study examines the behavioral aspects. Specifically, this study examines whether or not this statement remains true in the aspect of personality.

My hypothesis states that students exhibit behaviors characteristic of one side of the brain (also known as "cerebral dominance") and might use these qualities to deal with everyday life. For example, a left brained student might be more analytical, math-oriented, and logical. A music student, on the other hand, might exhibit more emotions, creativity, and disorganization. Results revealed that overall, the differences are marginal, but on a specific basis, music and math students used this unique cerebral dominance for certain aspects of their lives.

Methods
Participants consisted of N = 60 undergraduate students from various math and music classes at East Central University. Students were asked to complete a self-rating questionnaire consisting of 56 items, divided into two sections:

Section 1: Personality Characteristics
Section 2: Behavioral Characteristics

Each section consisted of a series of statements relating to either the student's personality characteristics (i.e. "I am inventive") or behavioral characteristics (i.e. "I am usually late to appointments"). Students were asked to rate how well each statement applied to them. Unbeknownst to the participants, each individual question was coded with a label that categorized their answer into either a right or left brained characteristic.

Results
Independent t-tests revealed that there were significant differences between music and math majors along specific characteristics rather than the two groups as a whole. Differences are as follows, where "L" means the question was coded as Left Brained, and "R" for Right Brained.

Personality (Table 1)

| Question | Math Majors | Music Majors | t (60) | p  
|----------|-------------|--------------|-------|---
| (Q.1) "I rely on logic to make most decisions." | 3.79 | 4.21 | 2.398 | .020
| (Q.2) "I am artistic." | 3.54 | 4.06 | 2.529 | .014
| (Q.3) "I am a risk-taker." | 1.64 | 3.00 | 4.038 | .000
| (Q.4) "I am stimulating." | 2.79 | 3.34 | 2.183 | .033
| (Q.5) "I am visionary." | 2.33 | 3.17 | 2.262 | .037
| (Q.6) "I would rather write a report than a poem." | 1.64 | 3.00 | 2.316 | .024

Behavioral (Table 2)

| Task       | Math Majors | Music Majors | t (60) | p  
|------------|-------------|--------------|-------|---
| Essay Questions (Q.2) | 2.151 | 2.79 | 2.354 | .022
| Report (Q.7) | 3.39 | 3.90 | 4.038 | .000
| Words (Q.13) | 4.06 | 3.31 | 2.151 | .035
| Logical (Q.1) | 1.64 | 3.00 | 4.038 | .000
| Artistic (Q.12) | 3.79 | 4.21 | 2.398 | .020
| Risk-taking (Q.18) | 2.90 | 3.34 | 2.183 | .033
| Stimulating (Q.20) | 3.90 | 3.93 | 2.316 | .024
| Visionary (Q.23) | 3.34 | 3.86 | 2.262 | .037

Discussion
These results suggest that there is no significant difference in cerebral domination between math and music majors, and that the major of these students could not be predicted based on this personality inventory. However, findings suggest that, contrary to previous ideas, personality characteristics of math students might be more flexible than once believed, and that music students employ a significant amount of left-brained characteristics into their lifestyle.

Left brained: analytical, logical, organized.
Right brained: creative, impulsive, emotional