**Experiment**

To test my hypothesis, I conducted a survey of thirty individuals between the ages of fifteen and nineteen years of age. All of the subjects had varying degrees musical training. All subjects were literate.

The survery had two objectives. One was to find any relationship between a subject's degree of hand dominance and heriditary factors such as the dominant cerebral hemisheres of his parents and artistic ability of his parents. The other was to find any evidence that shows the relationship of ages of musical training and reading ability on the brain, including influencing dominance of either hemisphere, which largely can affect one's ability to learn certain subjects such as math and English.

The first part of the survey was a handedness test. Handedness is linked to the side of the brain which is usually most dominant. For most people, the dominant hand is the hand used for writing. However, there are degrees of dominance; some only favor a hand. For example, many use one hand for writing and another for throwing a ball. The following questions were used to find the dominant hand of the subject as well as the degree of dominance of that hand:

1. Which hand do you write with?

2. Draw a profile of a face. Which way does it face?

3. Draw a circle. Did you draw it clockwise or counterclockwise?

4. Clasp your hands behind your back. Which hand grasped the other?

5. Fold your arms across your chest. Which set of fingers are visible?

The first question was used to determine which hand is likely to be dominant. The next four questions were used to determine the degree of dominance for that hand. If a person is strongly right-handed, he or she would give the following responses (all responses would be opposite for left-handed subjects):

1. Right

2. Left

3. Counterclockwise

4. Right hand grasped left

5. Right hand's fingers

Judging from the subject's number of "typical" responses to the last four questions, dominance could be determined as follows:

4 of 4 = extremely dominant

3 of 4 = highly dominant

2 of 4 = moderately dominant

1 of 4 = only tends to favor hand

0 of 4 = other hand was originally dominant

Since the point of the experiment is to find the effects of musical training on the two cerebral hemispheres, it was necessary to know a few other factors that might affect a subject's degree of dominance. The next part of the survey asked questions about the subject's heredity:

1. Which hands are dominant for your parents?

2. Do your parents have any special artistic abilities, such as singing, drawing, painting, or musical abilities?

Many studies have been conducted concerning handedness and one's parents' dominant hands, and many have been inconclusive. This experiment compared the degree of dominance versus the dominant hands of one's parents. Each degree of dominance was compared graphically with the phenotypes of parents. The second question also served the purpose of showing whether artistic ability could influence the degree of dominance for an individual. The number of parents who had special abilities (two, one, or none) for each subject was also compared graphically with the degree of dominance of that subject.

The next set of questions served to find the effect that musical training has on an individual's ability to learn diverse academic subjects. The two hemispheres of the brain often control different aspects of learning. Musical training, no doubt, has effects on the brain and its ability to learn other concepts using language and mathematics. Subjects were asked to respond to the following questions:

1. What do you feel is your strongest school subject?

2. What do you feel is your weakest school subject?

3. At what age were you able to read simple stories such as Cat and the Hat?

4. At what age did you receive your first musical training?

The first two questions give data about which school subjects young adult musicians excel in. Percentages of which school subjects come most easily to trained musicians can then be derived. Ages of reading proficiency and ages of musical training were also collected. The questions look for a relationship between ages of training and the effect it had on the subject's abilities to learn certain things, thus using different hemispheres of his or her brain.

One main concern is the time gap in a musician's life between the age he learns to read and recognize words and the age he first receives some form of musical training. The object is to compare the time difference to the kind of subject (particularly English and math) a muscian excels in and discover some kind of trend.

The last part of the analysis compares a subject's degree of dominance and his or her strongest subject. This analysis will be used to find a connection between the degree of diversity between one's cerebral hemispheres and his or her ability to learn two drastically different subjects such as math and English.