



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

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Project Title Left in a Right-Handed World: The Acquisition of Ambidexterity	
Abstract	
Objectives/Goals To determine if left-handed people become more ambidextrous than right-handed people due to their need to adapt to our right-handed world.	
Methods/Materials Twenty subjects of varying ages, ten right-handed and ten left-handed, completed an assembly task using both their dominant and non-dominant hands. The assembly task consisted of a pegboard with 15 holes, 15 golf tees, 15 metal nuts, 15 wooden beads, and 30 metal washers. These materials were placed into each hole in a specific pattern using only one hand. The subjects were timed until all 15 holes were completed. After one hand was done, the participants repeated the exact task using their other hand. To prevent a learning curve, the first participant started with their dominant hand and then used their non-dominant hand. The next person started with their non-dominant hand and then finished with their dominant hand. This pattern continued throughout the testing. The amount of ambidexterity a person showed was determined by the amount of time difference between completing the task with their dominant and non-dominant hand.	
Results Results initially showed that right-handed subjects, on an average, were slightly more ambidextrous than left-handed subjects by .04 seconds. When the data was broken down by age groups, it showed that the right-handed children were more ambidextrous than the left-handed children by 2.44 seconds, but left-handed adults were more ambidextrous than right-handed adults by 8.5 seconds. This suggested that left-handed people are more ambidextrous than right-handed people, but it takes a period of time to acquire their ambidexterity.	
Conclusions/Discussion The overall average shows the right-handed participants being slightly more ambidextrous than the left-handed participants. However, the data suggests that left-handed people are really more ambidextrous than right-handed people, but their ambidexterity develops over a period of time. Becoming ambidextrous then would be a result of left-handed people adapting their behaviors to our right-handed world. A larger sample of subjects with correlating ages would be necessary to prove the suggested trend that left-handed ambidexterity directly increases with age.	
Summary Statement Left-handed people become more ambidextrous than right-handed people over a period of time due to their adaptation of tasks in a right-handed world.	
Help Received Mother helped type.	