



**CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY**

<b>Name(s)</b> <b>Christopher M. Mangum</b>	<b>Project Number</b> <b>S0316</b>
<b>Project Title</b> <b>Eyeing Autism</b>	
<b>Abstract</b> <b>Objectives/Goals</b> This experiment is to determine if males and females think differently. Moreover, it is to test if women can empathize better than men can, and as a result men are better at systemizing. If men prove to be worse at empathizing, this can account for why four out of five cases of autism are male. Autism is a neurological disorder in which the two spectrums of the brain, empathizing and systemizing, are unbalanced. In autistic people the brain cannot empathize, but systemizes extraordinarily well. I plan to prove that autism is just an extreme of the average male brain. <b>Methods/Materials</b> By giving an exam that requires the test taker to use empathy, I will be testing the test taker's ability to empathize. The test is taken from Essential Difference by Baron - Cohen and the answers were provided in the book. The test taker will have four choices for what emotion a pair of eyes is portraying. It is a 25 question exam. They will mark their answers on scantrons, which will be graded by machine. The materials needed are human subjects, number 2 pencils, the test from Essential Difference by Baron - Cohen, and an answer key. <b>Results</b> The data shows that there is a relationship between gender and the ability to empathize. The females averaged 18.62% higher than the males. Forty-four females, approximately 58%, missed five or less questions on the exam. Only three males missed five or less questions. The average score for women was a 77.5% while men scored an average 58.8%. The data collected overwhelmingly proved that the average man cannot empathize as well as the average female. The results support my hypothesis. <b>Conclusions/Discussion</b> Men have an inherent mental deficiency when it comes to empathizing. There are two major divisions in the brain, the left and the right hemispheres. The left hemisphere is the side humans store language and empathizing skills. The right side is where the majority of spatial cognition and systemizing occurs. If a person is poor at empathizing it can be determined that he or she exceeds in systemizing. My results show that men are much better at systemizing. The average male's predisposition to a systemizing brain accounts for why so many males develop autism while females rarely develop the disorder. Men are more likely to develop autism because this neurological disorder is an extreme version of the average male's brain.	
<b>Summary Statement</b> My project is to meant to determine if autism is an extreme version of the average male's brain.	
<b>Help Received</b> None	