



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Rafael S. Cosman</b>	<b>Project Number</b> <b>J0306</b>
<b>Project Title</b> <b>Effects of Age and Gender on the Prisoner's Dilemma</b>	
<b>Abstract</b> <b>Objectives/Goals</b> To study the effects of age and gender on choices in the Prisoner's Dilemma game. <b>Methods/Materials</b> 137 students (age 10-17) were offered candy rewards in a Prisoner's Dilemma-type game. 32 pre-adolescents (age 10-11) and 105 adolescents (age 12-17) were tested; this included 55 boys and 82 girls. Each subject could 'defect' (take a candy for him/herself) or 'cooperate' (allow the other player to take two candies). Subjects were not told the other player's choice, but they were told the other player's gender. Each subject's choice was used as the other player's choice in the next subject's game. Results were compiled in contingency tables, which were assessed with a chi-square test. Significance was determined at the 5% level. <b>Results</b> Pre-adolescents were slightly more likely than adolescents to defect (66% vs. 48%), but the result was not significant at the 5% level. Girls were slightly less likely to defect overall, but this effect was insignificant. Among adolescents, a significantly lower percentage of subjects defected when playing against girls than when playing against boys (38% vs. 59%, $p=.0265$ ). <b>Conclusions/Discussion</b> These results support the idea that adolescents of both genders think girls are more likely than boys to be generous to them. This idea is supported anecdotally by comments of several of the test subjects, who said they trusted girls more than boys. As a rule, people are more likely to be generous towards a person they believe will reciprocate the generosity. Possibly younger children are less concerned with these ideas of trust and reciprocity, and simply want to end up with more candy.	
<b>Summary Statement</b> In a Prisoner's Dilemma-type game in which 137 people participated, adolescents of both genders trusted girls more than boys.	
<b>Help Received</b> Mother helped type report and arrange posterboard; father helped type application.	