



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

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<b>Project Title</b> <b>The Science of Strategy: Does Information Affect Cooperation in the Prisoner's Dilemma?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this experiment was to identify how information such as age, gender, familial status, and criminal record affected whether or not a "prisoner" in a Prisoner's Dilemma simulation would choose to cooperate with or betray the opposing "prisoner". <b>Methods/Materials</b> A survey was created describing an altered form of the classic Prisoner's Dilemma scenario. The questions asked a participant to either "cooperate" or "defect" and provided information regarding some of the opposing player's character traits, such as age, gender, familial status, income, and criminal record. The survey also asked the participant for demographics such as age, gender, and income. Answers from 146 respondents, aged 12-60+ were analyzed based on both the respondents' and other players' demographics. <b>Results</b> Overall, participants chose to cooperate about 65% of the time and defect the remaining 35%. Males were about 6% more likely than females to defect. Both genders were about 14% more likely to cooperate with females. Against criminals, females defected about 61% of the time while males defected only 54%. When the participant's children were with them, both genders defected about 45% of the time. <b>Conclusions/Discussion</b> The hypothesis was partially correct, although the impact of positive, negative, and neutral information was substantial, participants were not always more likely to cooperate with the same gender. Rather, both genders tended to trust the females more often. Because the Prisoner's Dilemma appears often in modern society, analyzing people's responses to it could help create ideal strategies for navigating such situations in ordinary circumstances.	
<b>Summary Statement</b> This project attempts to determine how certain information affects people's choices in a Prisoner's Dilemma situation.	
<b>Help Received</b> Teacher provided supervision and helped set up survey; Mother and Father helped distribute survey to older participants.	