

The Coronavirus and the Prisoner's Dilemma - Log Cabin Democrat (Conway, AR) - March 21, 2020 - page 1

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The Prisoner's Dilemma is the most famous model in game theory. It provides a lens that reveals patterns of behavior that might not be obvious without the model. It can also help us make sense of how people are acting during the coronavirus and suggest ways to get better outcomes.

In the model, all people act in their own-self-interest, but the result is an outcome that makes all of the decision makers worse off compared to another possible outcome.

The dilemma is that people will not get to this better outcome on their own; to get there, they need to be forced into this superior outcome. In the stereotypical example, two criminals are caught near a crime scene.

The police separate them and each suspect has an incentive to provide evidence against his partner. The result is that both criminals testify against each other and they both get moderately severe penalties. The dilemma is that if they both refused to talk to the police, the police would only have enough evidence to give them both very light prison sentences. The criminals never get to this outcome because they cannot cooperate. Gangs and the mafia are a way for criminals to overcome the prisoner's dilemma. These organizations enforce cooperation by killing their members who talk to the police, which ironically makes both criminals in my example better off since they would only get light prison sentences.

The model has many applications outside of the criminal justice system. The coronavirus has put many people in situations that can be characterized as prisoner's dilemmas. First, shoppers in a grocery store face a prisoner's dilemma. Each shopper has an incentive to hoard toilet paper and canned goods.

The result is a store with depleted shelves. The shoppers would be better off if they agreed not to hoard since the result is that the store would have the supplies that they needed at the time they need them, rather than the bare shelves we see today. Unfortunately, shoppers have an incentive to cheat on this arrangement and we end up with empty shelves. Of course, relying on mafia enforcement of an agreement not to hoard is not appropriate and just silly, but we would all gain from some type of enforcement mechanism. In this case, the store can set limits on how much toilet paper or canned goods a person can buy. This rule will seem inconvenient but it will leave us with a store that has the items that we need.

Social distancing is another prisoner's dilemma. I do not want to engage in social distancing myself, but I would agree to do so if everyone else agreed to do so. The problem is that people have an incentive to cheat on this arrangement, leaving us all worse off. In this case, social pressure might be the best way to enforce a cooperative agreement. If people start to shame those who do not practice social distancing, then it might encourage everyone to act in a way that slows the spread of the virus.

Purchasing limits can reduce hoarding and social shaming can encourage social distancing. These solutions to the prisoner's dilemma problems posed by the coronavirus can make us collectively better off.