

Referee Report on:

“Do Less-Violent Technologies Result in Less Violence? A Theoretical Investigation Applied to the Use of Tasers by Law Enforcement”

Summary

This paper models a simple law enforcement game. A criminal (the decision to commit a crime is exogenous) decides whether to resist arrest and the enforcer decides what enforcement technology to use. The decision is simultaneous. The criminal gets some benefit from resisting but also faces costs that increase with the violence of the enforcement technology. The enforcer obtains an increasing payoff from using a more violent technology but also faces a liability cost if the criminal resists. If there is resistance, the liability cost is increasing in the violence of the technology.

Using this basic model, the paper then compares the equilibrium in a situation in which the enforcer has only two types of technology (very violent, not violent), versus the situation in which he has three (adding a medium violent technology). Not that surprisingly, sometimes adding the medium violent technology leads the enforcer to use it instead of the not violent technology while other times it leads him to use it instead of the more violent technology. So, the net effect on violence (and the incentive to resist arrest) varies with the parameters.

Assessment

While modeling the effects of changes in law enforcement techniques by looking at how it changes the incentives of enforcers and criminals is worthwhile, I am not sure I find this particular model that helpful or plausible. First, I don't like the assumption that the enforcer's payoff from using a more violent technology is higher even if there is no resistance. The main benefit of using the more violent technology seems like it should be greater probability of successful arrest. But, if there is no resistance, then the probability of success must be one. This seems to be the key assumption that drives all the results in the paper. Because the enforcer likes to use more violent technologies if there is no resistance and less violent ones if there is resistance (in the model), we get that the choice of technology is driven by the probability of resistance. That is, higher probability of resistance leads to less violent technologies used. I very much doubt this is empirically true. (I can't imagine if one asked police how they would respond to the situations in which they thought the probability of resistance was high that they would say they would put away their guns and use their hands instead.)

Second, at the broadest level, the results are not that illuminating. Since, in the model the Taser is an intermediate-violence technology (not a less violent technology), it isn't that

surprising that we get either more or less violence. The deriving the precise conditions under which each should happen is of some value, if convincing. But, because of my earlier concerns about the plausibility of the enforcer's payoff function, I don't find these results convincing.

Smaller Comments

Proposition 1 should have $\gamma_P=1$ in the second line, not zero.

Conclusion

The project is an interesting one, but I would encourage the author to rethink the model.