

Monopoly is a Bad Institutional Structure

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Key Features of Institutional Structure

- Fragmentation
 - Addressed in recommendations 1, 2, 6, 7, 11, & 12
- Lack of oversight
 - Addressed in recommendations 1, 6, 7, & 9, 11
- Dependence
 - Addressed in recommendation 4
- Monopoly
 - Unaddressed

Twofold Monopoly

- Monopoly in forensic examinations
 - Evidence is sent to one lab. The probability that another lab will examine the same evidence is low
- Monopoly in interpretation
 - Test and interpretation are given by one lab

Monopoly in Forensic Examinations

- Problem
 - Errors may go undetected
 - Fraud may go undetected
- Solution
 - Random, independent, multiple examinations
- Why the solution works
 - If each examiner has a 5% chance of error, the chance a majority of three will err $< 1\%$ ($= 0.75\%$)
 - A chain is only as strong as its weakest link; a net may be stronger than any of its knots.

Monopoly in Interpretation

- Problem
 - False interpretations may go unchallenged
 - Alternative hypotheses may go unexamined
- Solution
 - Defense right to forensic-science expertise
- Why the solution works
 - Experts on each side tend to look at it from that side, catching errors the other side misses
 - Letting one bias be a check against another

The two solutions are complementary

- To institute redundant examinations we need to separate test and interpretation
- Case managers, forensic advisors to police investigators, and forensic advisors to defense attorneys will have all case information and apply an integrative, problem-solving intelligence to the cases they work on.
- Examiners will be shielded from domain-irrelevant information

Eliminating Monopoly is Cost Saving for the Criminal Justice System

- Errors are expensive
- Forensic examinations are cheap
- Only a fraction of evidence would be subject to redundant testing
- Reorganization is required, not lots of new capital
- Forensic science is a bargain for the criminal justice system, and we need more of it

Research Science

- Research science is all about replication and rival interpretations
- Structural redundancy
 - The results of any one lab may be challenged by any other
- Rival interpretations
 - It takes a theory to beat a theory

Research Science and Forensic Science

- Random, independent, multiple, forensic examinations creates structural redundancy
- A defense right to forensic-science expertise creates rival interpretations
- Together these two anti-monopoly measures will make the organization of forensic science more perfectly resemble the organization of research science

Concluding Remarks

- Forensic science today is monopolistic
- Monopoly is not science
- Science is not a monolithic univocal truth machine
- Science is all about replication and rival interpretations
- Random, independent, multiple examinations plus defense experts will make forensic science resemble research science