

Tableau 10, Part 2

From polls to bombs

The Poisson distribution flits in

Prelude to a discovery

On the proper size of a jury



Williams v. Florida, 1970

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[A] jury of twelve is neither more reliable as a fact-finder, more advantageous to the defendant, nor more representative of the variety of viewpoints in the community than a jury of six. — Justice William Rehnquist, *Burch v. Louisiana*, 1979

What principles should govern the size of a jury?

Condorcet's jury theorem (1785)

If each member of a voting group is more likely than not to make a correct decision, then the probability that a majority vote yields the right decision increases with the size of the group.

Nicolas, Marquis de Condorcet



A risk principle

The proof of the crime of the accused ought to have a high degree of probability that the citizens have less dread of errors in judgment, if the accused be innocent and condemned, than of his new attempts and those of the unhappy ones whom the example of his impunity encourages, if he was guilty and absolved.

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Two questions

Given a jury size and a conviction threshold:

- ◆ What is the probability that a guilty person is acquitted?
- ◆ What is the probability that an innocent person is convicted?

Poisson's two-parameter jury model
