T rusting the Vote

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Trust the Vote

“The people have spoken…. the bastards!”

-Dick Tuck, 1966 California State Senate Concession Speech
Why is Voting so Difficult?

• Stakes are high
  – Presidency of a large nation
  – Budgets in the $100M
• Problems are not easily detected
  – Incomplete audit, by design!
• Experts vs. Electorate
  – New technology vs. Public audit
Helicopter Crash Delays Afghan Vote Count
Helicopter Sent to Pick Up Afghan Ballots in Remote Province Crash-Lands, Delaying Vote Count

Absentee ballots 'lost' in Florida
October 28, 2004 09:28 IST
Nearly 58,000 absentee ballots for the US presidential election may never have reached Florida's Broward County voters, who had requested them more than two weeks ago, election officials said.

Scavenged ballot box lids haunt S.F. elections
Erin McCormick, Chronicle Staff Writer
Monday, January 7, 2002
The Secret Ballot

- “Australian” Ballot
  - Australia in 1850s
  - UK in 1870s
  - US in 1888-1892: Grover Cleveland
- Critical for trust: prevents coercion
- Source of most complexity!
Voting Integrity
Polling Station Voting

- Cast as Intended?
  Butterfly Ballots in Florida

- Recorded as Cast?
  No Voter-Verifiable Audit Trail

- Tallied as Recorded?
  Equipment Audit and Certification
Internet Voting

- Cast as Intended?
- Viruses
- Recorded as Cast?
  Trusted Platform / Voter Verification
- Tallied as Recorded?
  Protocol Review and Auditing
- What about Coercion?
Absenteen Voting

Coercion problem is the same as Internet Voting
Cryptography & Universal Verifiability

Every step is observable.

Trust shifts from election officials to cryptographers.
• Voting is Difficult - Secret Ballot
• Transparency is Key
• Universal Verifiability is Possible
• Voting is not Commerce