# The Hard(er?) Problems

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# 'Four' Box Model

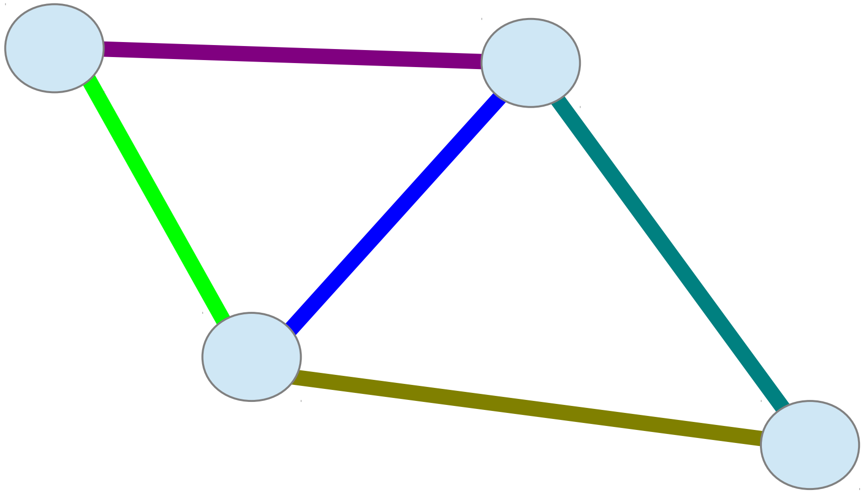
| | Overt | Covert |
|---|---|---|
| Traffic | | Increase Work Factor |
| Meta | | |
| Content | Make Attack Visible | Prevent Compromise |

# Blocking Constraints

- Usability
  - Security must not require extra effort
    - [And can't make sending insecure email harder]
  - Security must make sense
    - User has to think they understand what is going on
- Business model
  - Infrastructure must have a business model
- Viral Marketing
  - Chicken and egg problem before critical mass

# Defeating Traffic Analysis?

- Routers must see routing information
  - Can't protect at IP layer
  - How about
    - encrypting hop by hop
    - Flood fill all lit fiber with encrypted bits



# Message Security

- Asynchronous is harder than Synchronous
  - Recipient can't provide keys in-band

- Email Problems:

  1 Send encrypted email to people we know well

  2 Send encrypted email to a stranger

  - Don't insist that we solve 2 to solve 1!

# The Trust Problem

- Can't be solved without infrastructure
  - Can we fuse PGP and S/MIME trust models?
  - Can we do better?
  - Work factor analysis
  - What should the work factor be?
    - GDP of adversary x 100 years
    - Global military budget / Number of Internet users