Turning the World Upside Down
Threat Modeling a Constitution

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Security and the Law

- How law effects security vs. security of law – how the law breaks
- Law is a collection of competing interests
- Romans tried to build rational law
- Leibniz tried again in the 17th C.
- Successfully reformed medieval law
- Still not truly logical
Law is Ugly

- Law is still ugly, by code standards
- The U.S. Code is tens of millions of words

- Why should hackers try?
  - Hubris
  - Systems are systems
Iceland is Pretty

…but it’s got a smoking hole where its economy used to be.

• Began replacing constitution in 2010
• National Forum by lottery
• Constitutional Assembly began work in May
  • Agile process with week-long sprints
  • Running behind schedule
  • Comments via FaceBook and web forum
Icelandic Law is Odd

- Individual defense in court is taken seriously
- Literal interpretation of text beats case law
- Law becomes more code-like
- A constitution is self-contained and tractable
- Easier to analyze law with write access
How this Crazy Thing Started

• Met Smári McCarthy in October
• Real work started in December
• Started working in May
• 20-person hackathon this weekend
• Entirely unaffiliated amateur process
Four Part Project

- Translation
- Textual Analysis
- Design Review
- Threat Modeling
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- Crowdsourcing an English translation
- External visibility
- Spanish, Greek, Arabic translations later
Four Part Project

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- Complexity and reading level statistics
- Weasel words
- Boolean structure analysis
- Unbound variable checks
  - 19 terms in the current draft
- Higher-level ambiguous statements analysis
- Deconstruction into predicate phrases
Four Part Project

- Translation
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- Fast and expedient, but informal and limited
### Four Part Project

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- Constructing a formal threat model
- Built around work on the Trike project
- Most direct application of security techniques to law
The Trike Threat Modeling Method

- A tool for building formal models of processes and implementations
- Usually business processes and software
- Can be any systems with actors and assets
- Best tool for complex adversarial processes
- Makes smart people smarter
A Separation of Powers Bug

• Particular concern

• Three-branch parliamentary democracy

• Supreme court has seven members except when it has another eight

• Parliament gets to pick who supplements when ruling on constitutionality of law

• Encapsulates what TMs are good at
• Threat modeling uniquely suited to solving Leibniz's problem

• What other systems can we work on?

• Go break something different
Project Wiki:  http://bit.ly/mOcqDo
Trike Project:  http://octotrike.org

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