

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 17<sup>th</sup> 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

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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

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- Fast and expedient, but informal and limited

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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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