

# CT60A7001 - Critical Thinking and Argumentation in Software Engineering

Kimmo Bordi

2016

Bruce Schneier: Liars and Outliers  
Presentation: Chapters 15 & 16



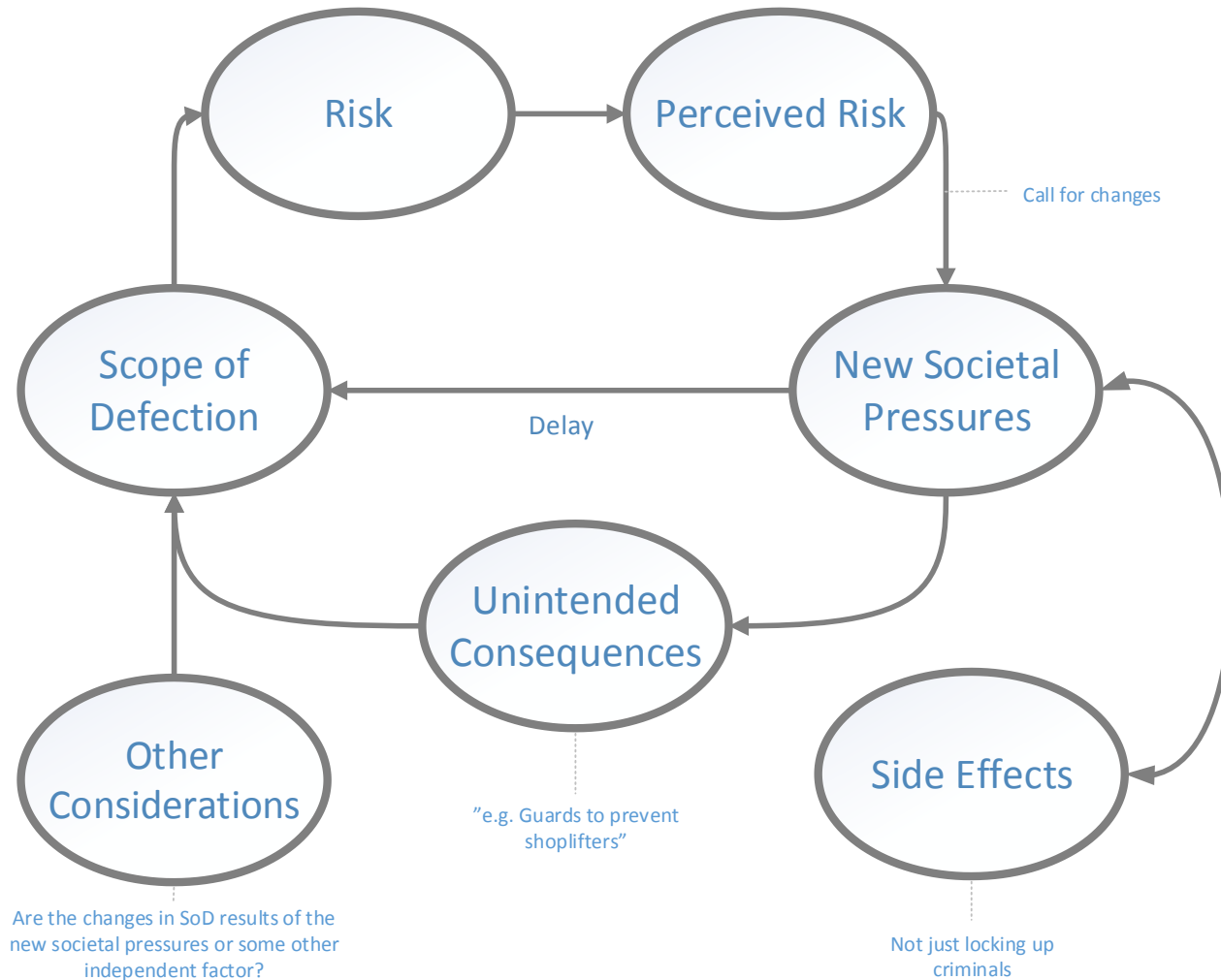
# Chapter 15: How Societal Pressures Fail

- Societal pressures – pressures that operate on the society as a whole
  - The interactions at the societal level are complex – we cannot reach an intimate level of trust
  - The goal is to achieve an acceptable level of cooperation
- No matter what, there will always be defectors
  - The societal pressures evolve to reflect the amount of defection we are willing to tolerate

# Chapter 15: How Societal Pressures Fail

- Implementing and managing societal pressures is not easy as there are so many variables, also the effects of implementing new laws and regulations are seen with a delay
  - Trade-off between costs and benefits
    - End results are hard to predict

# Chapter 15: How Societal Pressures Fail



# Chapter 15: How Societal Pressures Fail

- Misunderstanding the actor's reasons
- Misunderstanding the security interests
  - E.g. limiting trash by charging by the bin => burn the trash
- Misunderstanding the risks
  - Natural biases
- Costs of cooperation too high?
  - E.g. helping the police to solve a crime takes up your time
- Increasing the incentive to defect
  - E.g. "No Child Left Behind Act" caused teachers to fake scores

# Chapter 16: Technological Advances

- Technological advancements have allowed the "societies" become larger
  - Internet
- More people, more defectors
  - Also: Bad Apple Effect – "One Bad Apple Spoils the Bunch"
- New systems, new ways to defect...
  - More complexity, more flaws
- Technology brings new societal dilemmas in the future
  - Biometrics, genetic mapping, sensors everywhere/on everyone...

# Chapter 16: Technological Advances

- Defection becomes easier:
  - Attacks from a distance
  - ... At a large scale
  - ... Automated
  - ... By using tools that someone else has created
    - No knowledge required?
- The security gap:
  - Usually the defectors have the advantage of abusing the new technologies for their purposes in a more agile manner than the defenders

# Chapter 16: Technological Advances

- Technology has pushed all the data onto the Internet
- Social systems now vulnerable to technological attacks
  - E.g. electronic voting
- Well-established social systems now entangled with technology
  - Our conversations, photographs, and other data in the hands of corporations
- Technological solutions used at a global scale
  - Vulnerabilities have a huge impact



# Questions/Discussion

- Does the societal pressure feedback loop really work as intended, as often the societal pressures are actually implemented by a small group of people compared to the size of the society?
- Should we be worried about the fact that companies and institutions control more and more of our data? Technological advances can be used to alleviate this problem, e.g. encryption, but can we really trust in this? If this trust is already a problem, how about in the future, when the technology advances even more?