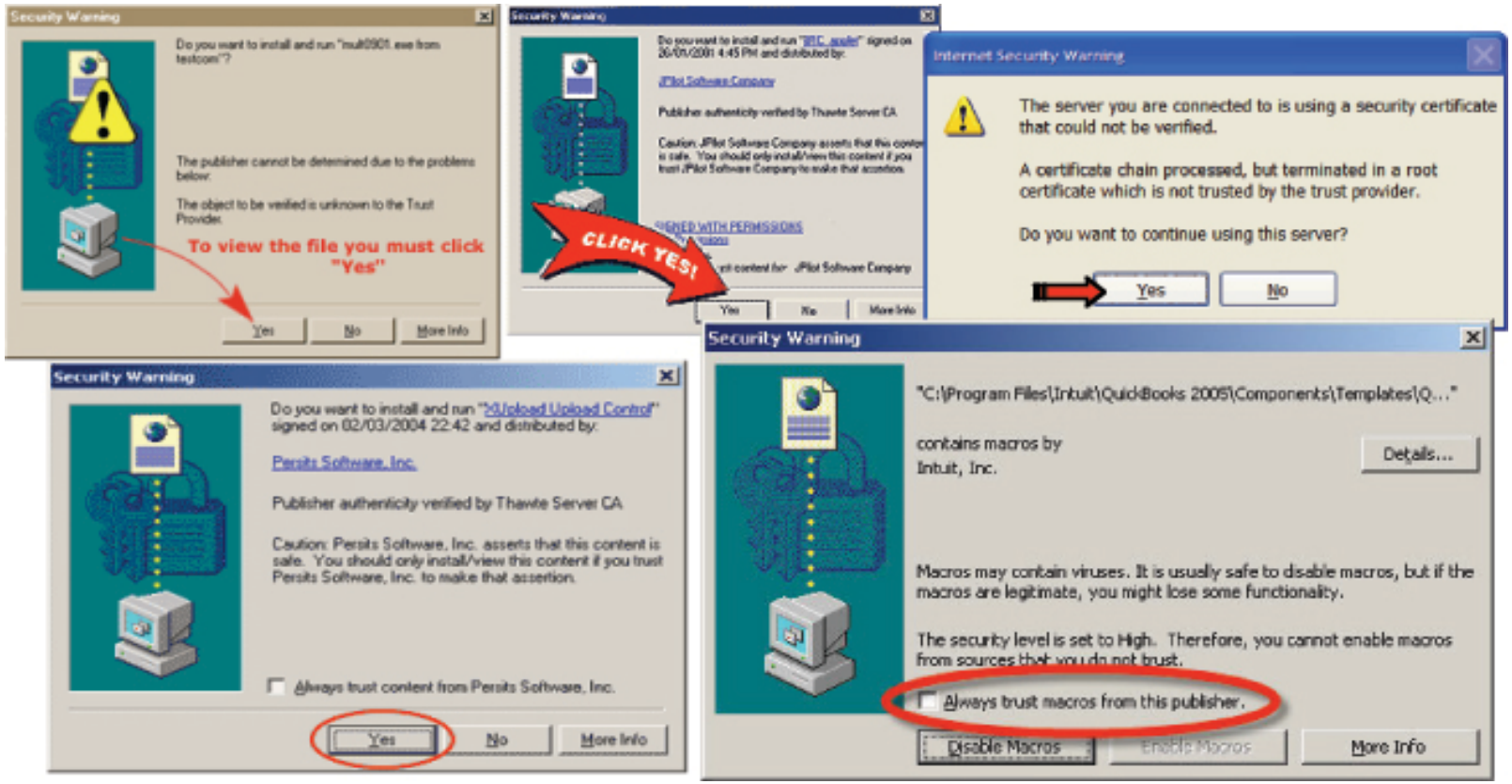
Risk Communication as Security Interaction in the IoT

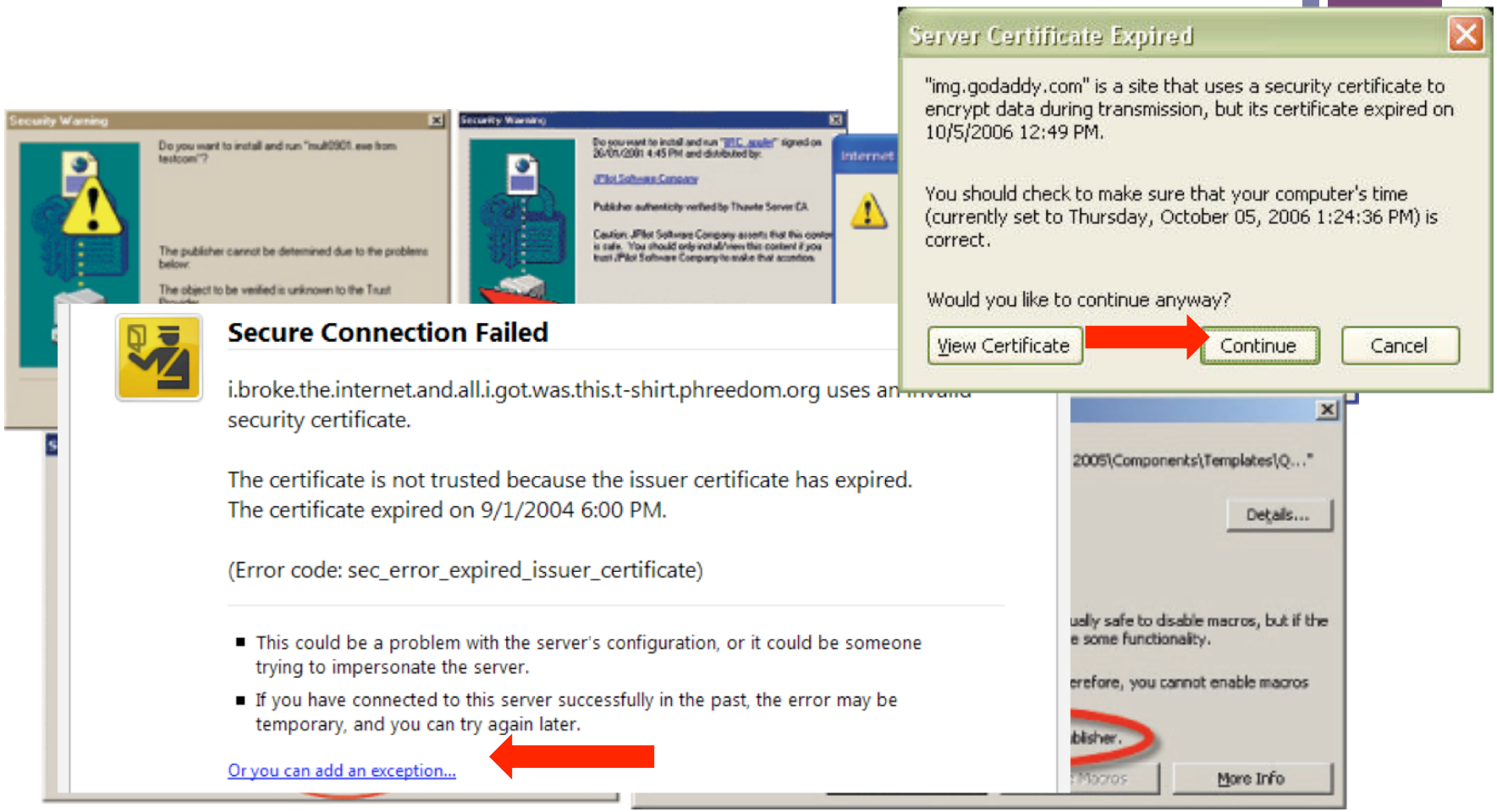
Unpacking the Future of IoT
17 August 2017
Salish, WA
L Jean Camp

Security Interaction

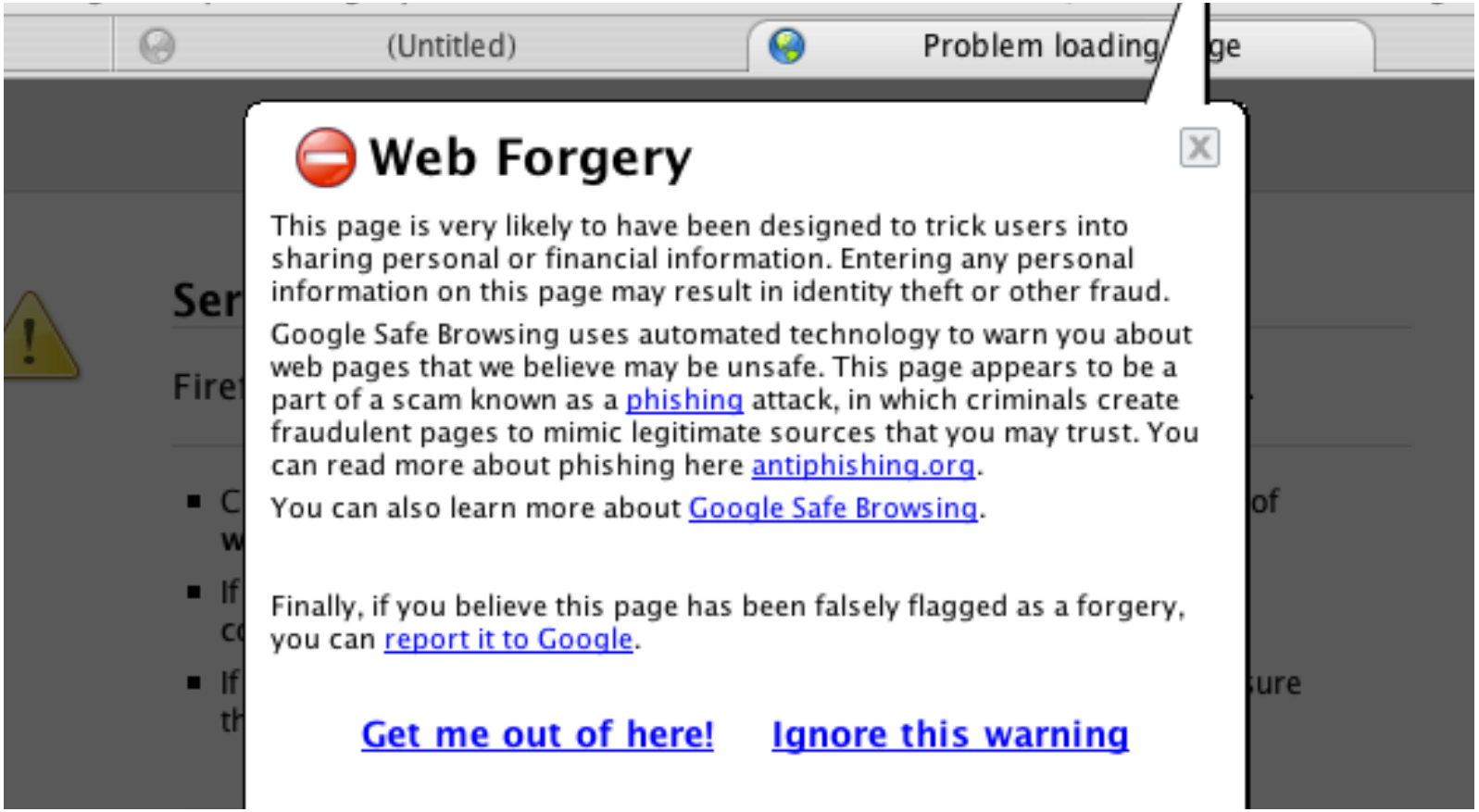


Helpful Advice

Improved Security Interaction



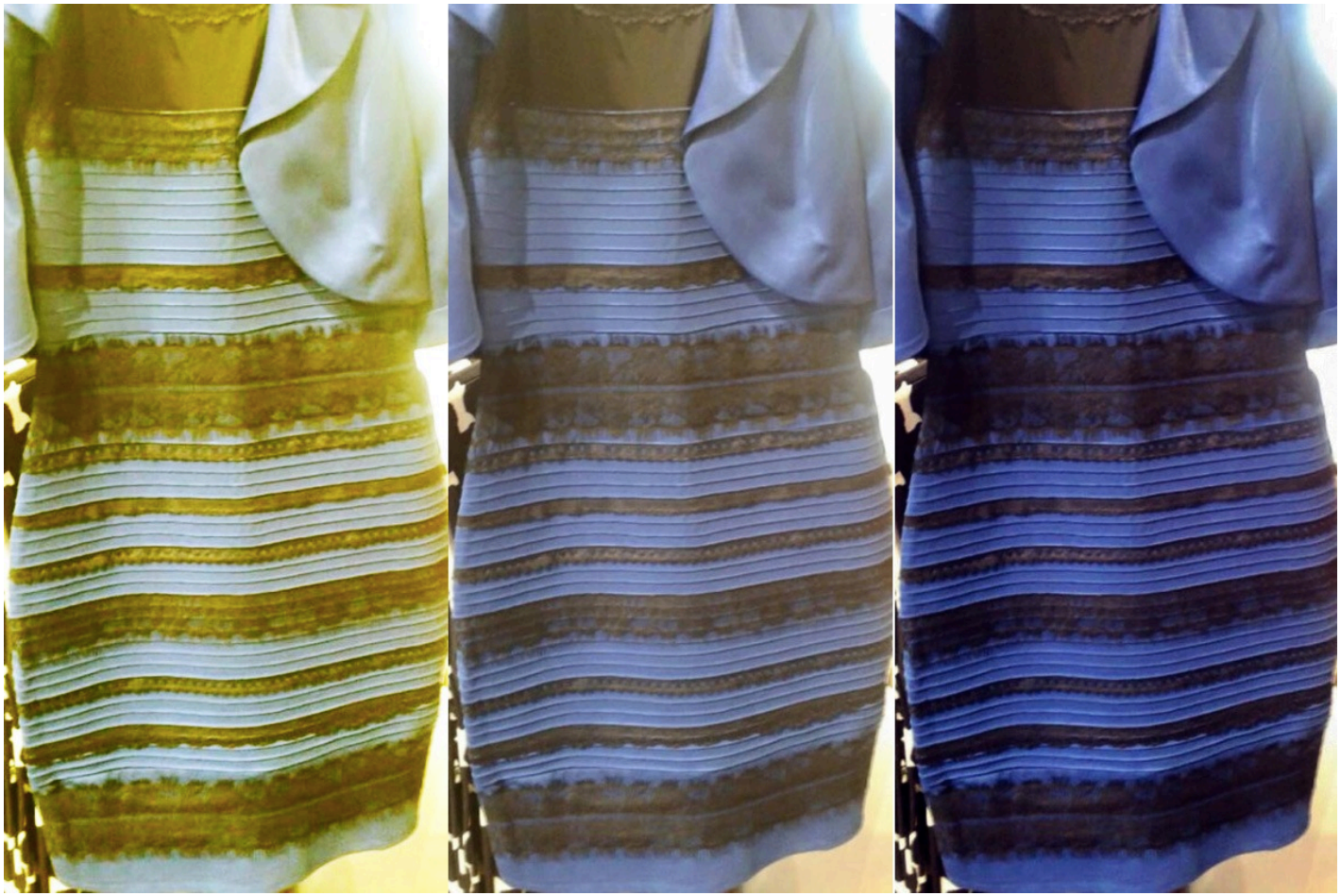
Better Risk Communication



People Are Saying

YOU MAKE NO SENSE!!!
GET OUT OF MY WAY!!!

Consider Other People's Perspectives



One problem, three views: incentives, usability, or risk communication?

Personalize Security

Risk Communication

Mental Models

- Simplify
- Identify
- Reify
- Rectify

Design for Humans Requires Designing for Humans

Design for Humans Requires Designing for Humans

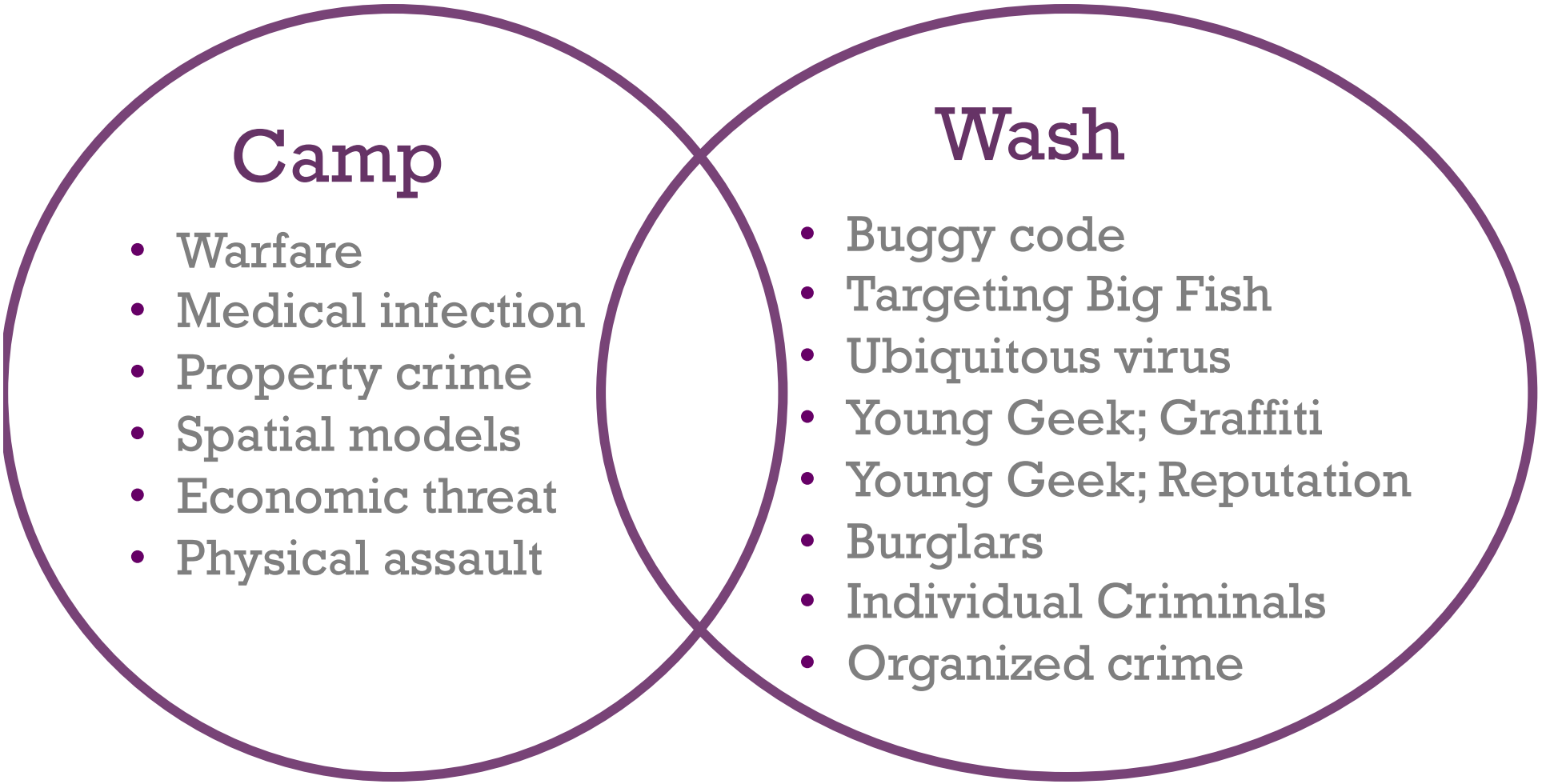
Smoking is a factor which contributes to lung cancer. Most cancers that start in lung, known as primary lung cancers, are carcinomas that derive from epithelial cells. Depending on the type of tumor, so-called paraneoplastic phenomena may initially attract attention to the disease. In lung cancer, these phenomena may include Lambert-Eaton myasthenic syndrome (muscle weakness due to auto-antibodies), hypercalcemia, or syndrome of inappropriate antidiuretic hormone (SIADH). Tumors in the top (apex) of the lung, known as Pancoast tumors, may invade the local part of the sympathetic nervous system, leading to changed sweating patterns and eye muscle problems (a combination known as Horner's syndrome) as well as muscle weakness in the hands due to invasion of the brachial plexus.

Design for Humans Requires Designing for Humans

Simplify

- Change behavior
- By being helpful
- Make it Easy

Simplify with Mental Models



Mental Models Make Stories

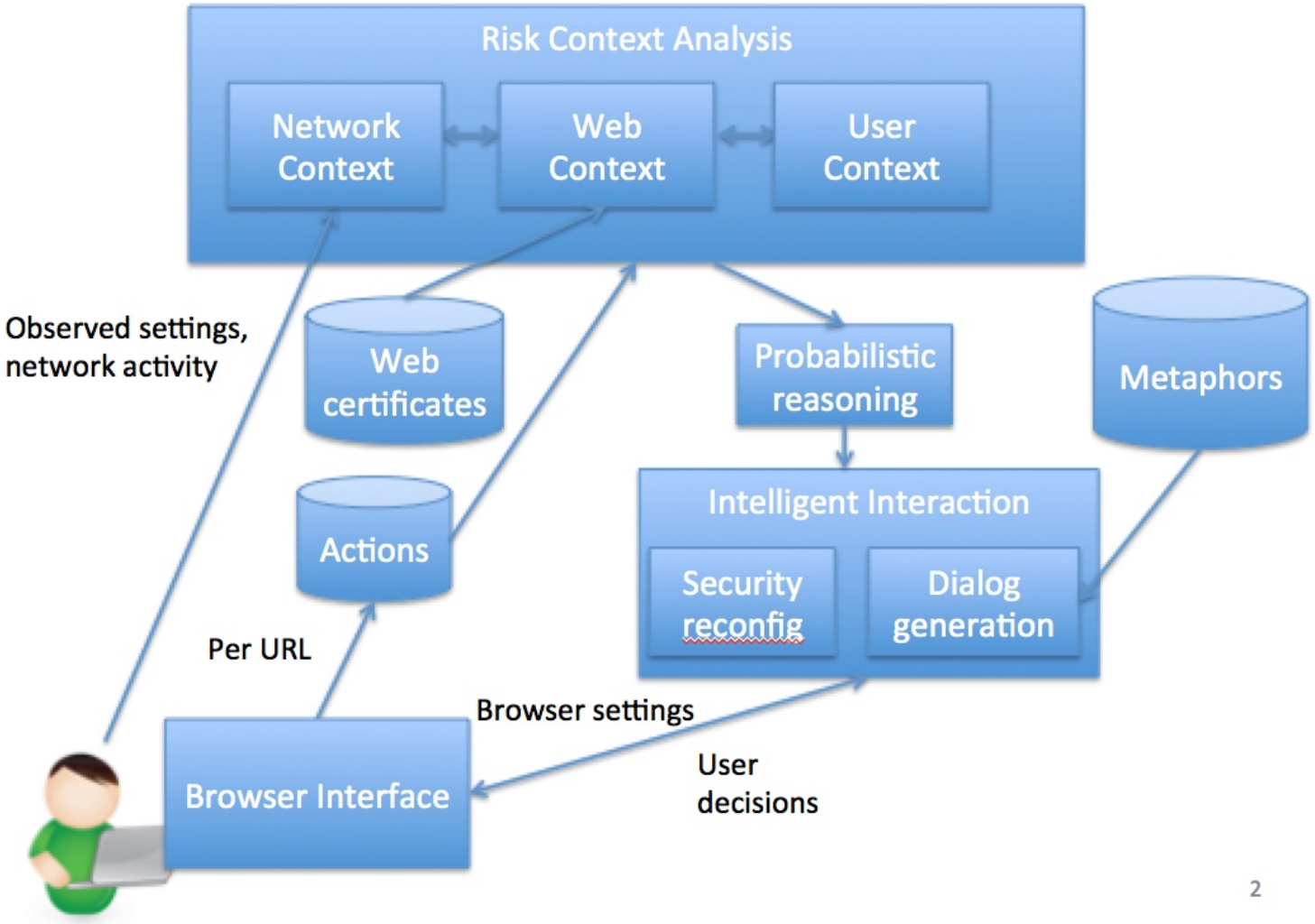
- Warfare
- Medical infection/ virus
- Graffiti
- Safe spaces
- Stealing money/ economic threat
- Physical assault

Simplify the Mental Model

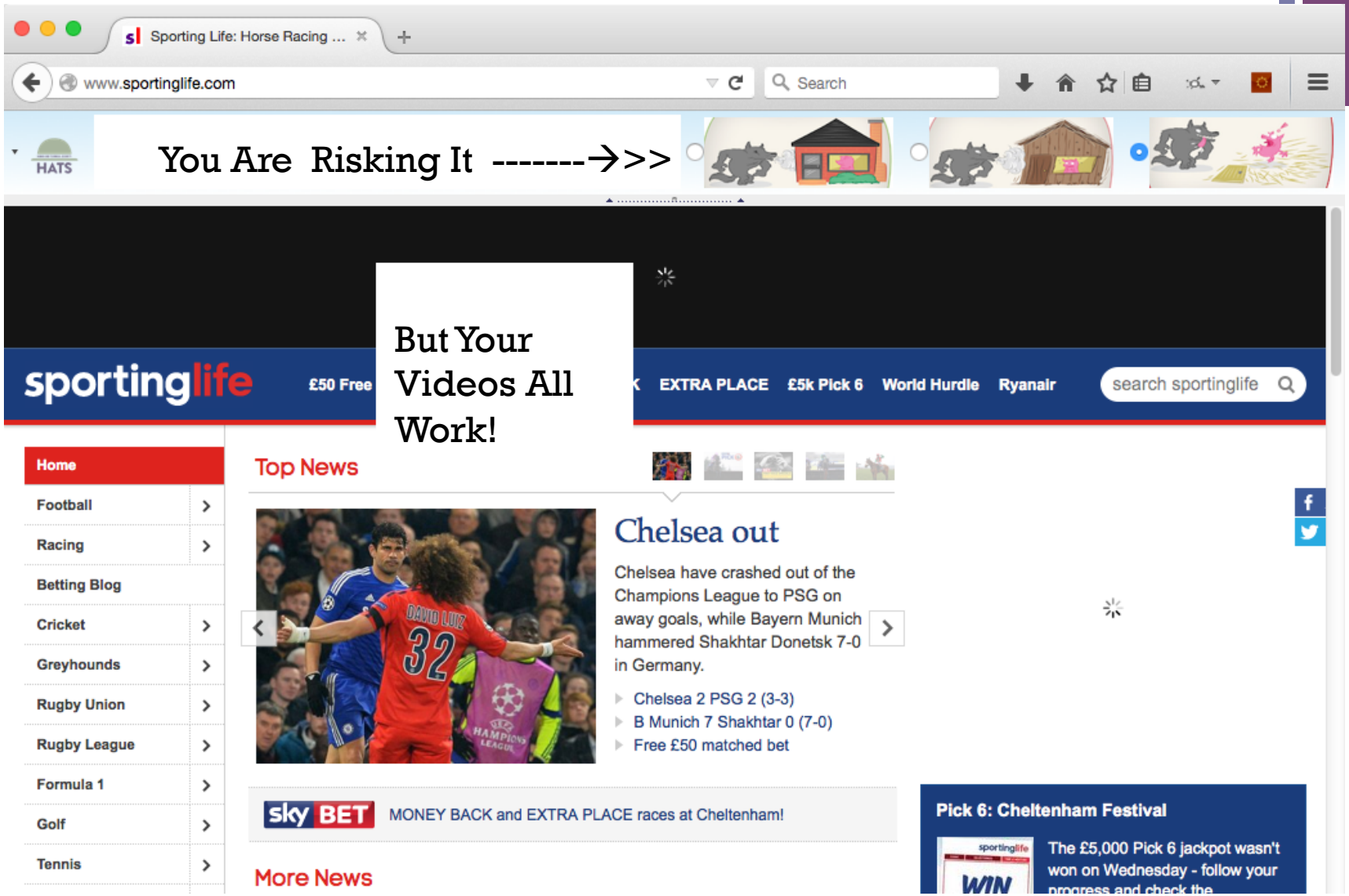
Simplify, Reify with Mental Models

Video https://www.youtube.com/watch?v=j7zcuDfqRrg

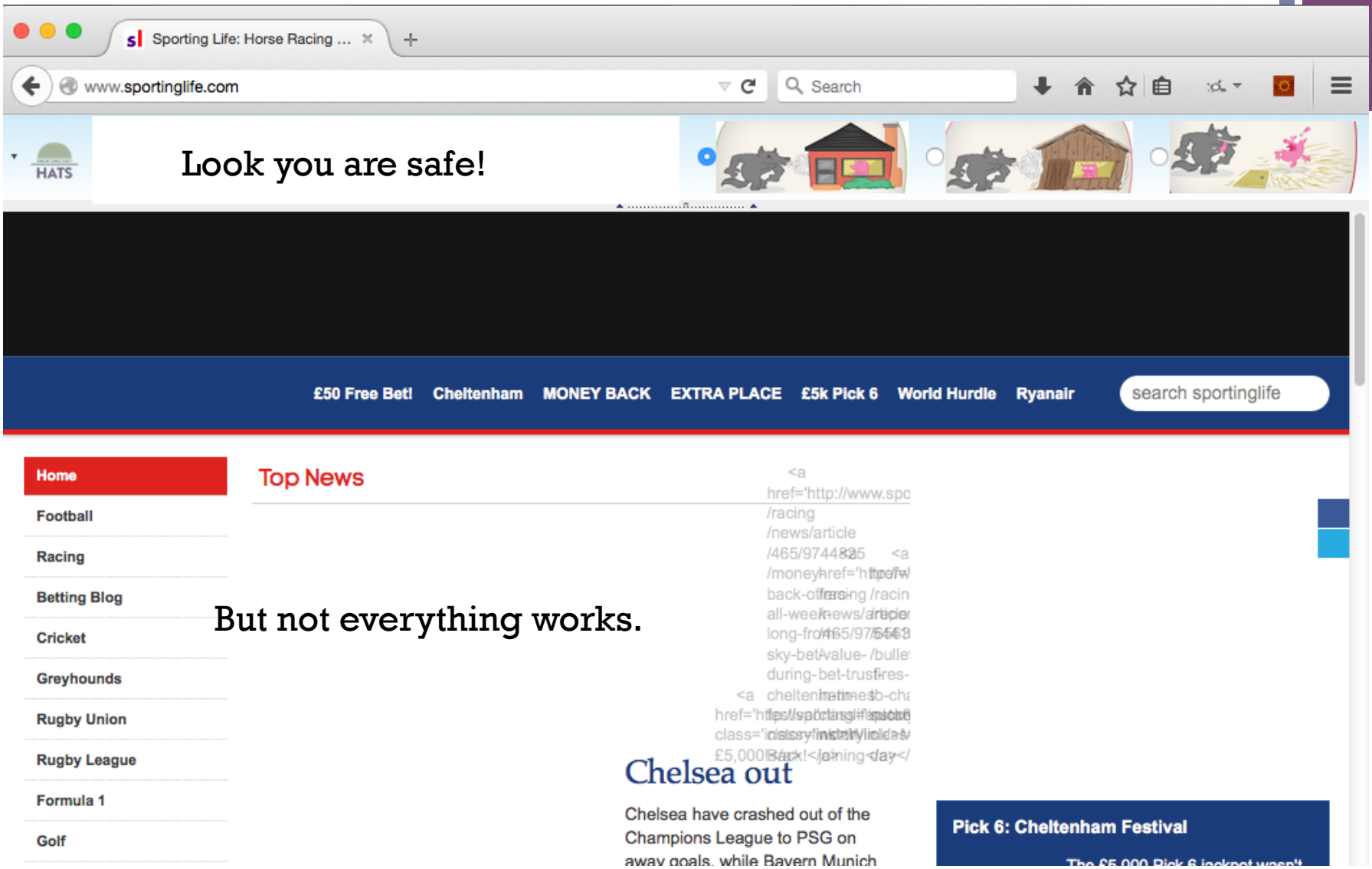
Risk as Multidimensional



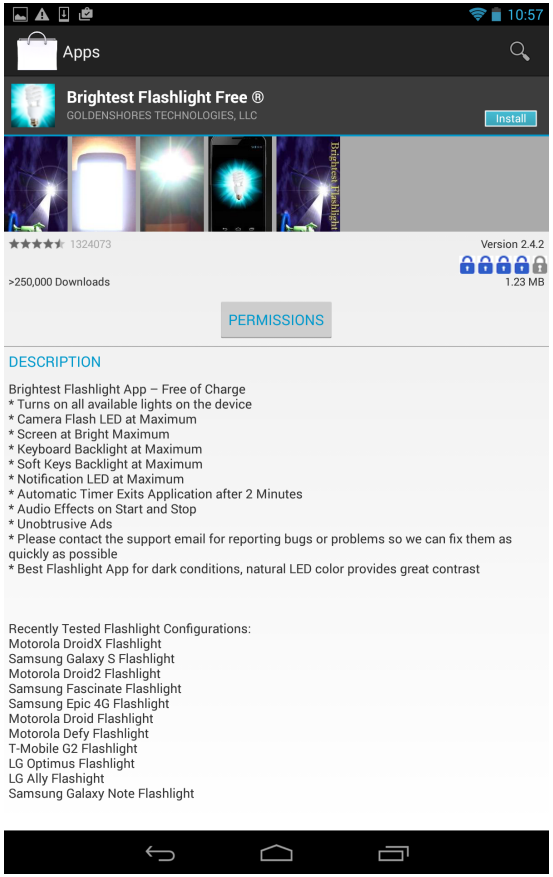
Identify, Reify



Identify, Reify, Rectify



Mobile Security Interaction

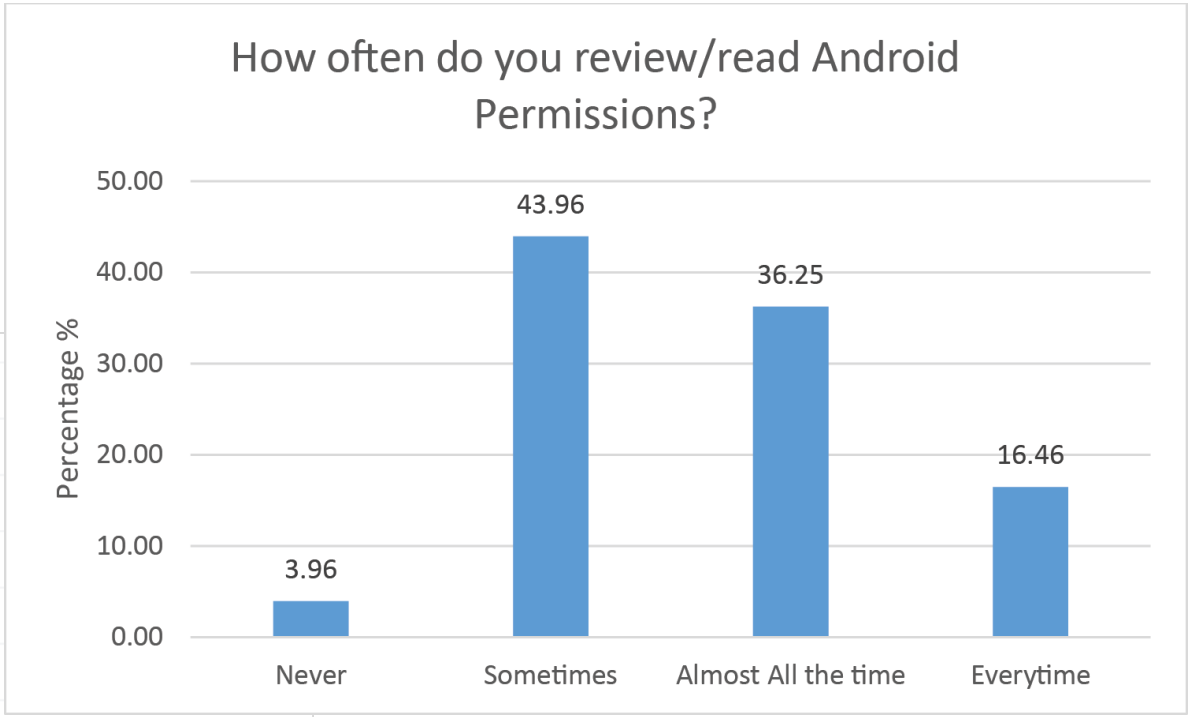


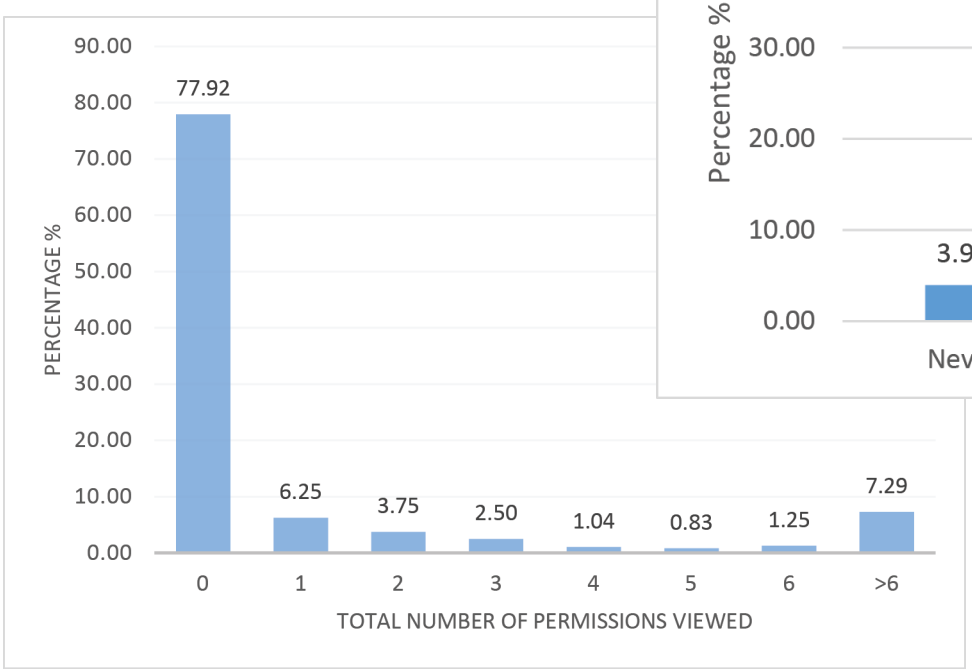
PERMISSIONS

DESCRIPTION

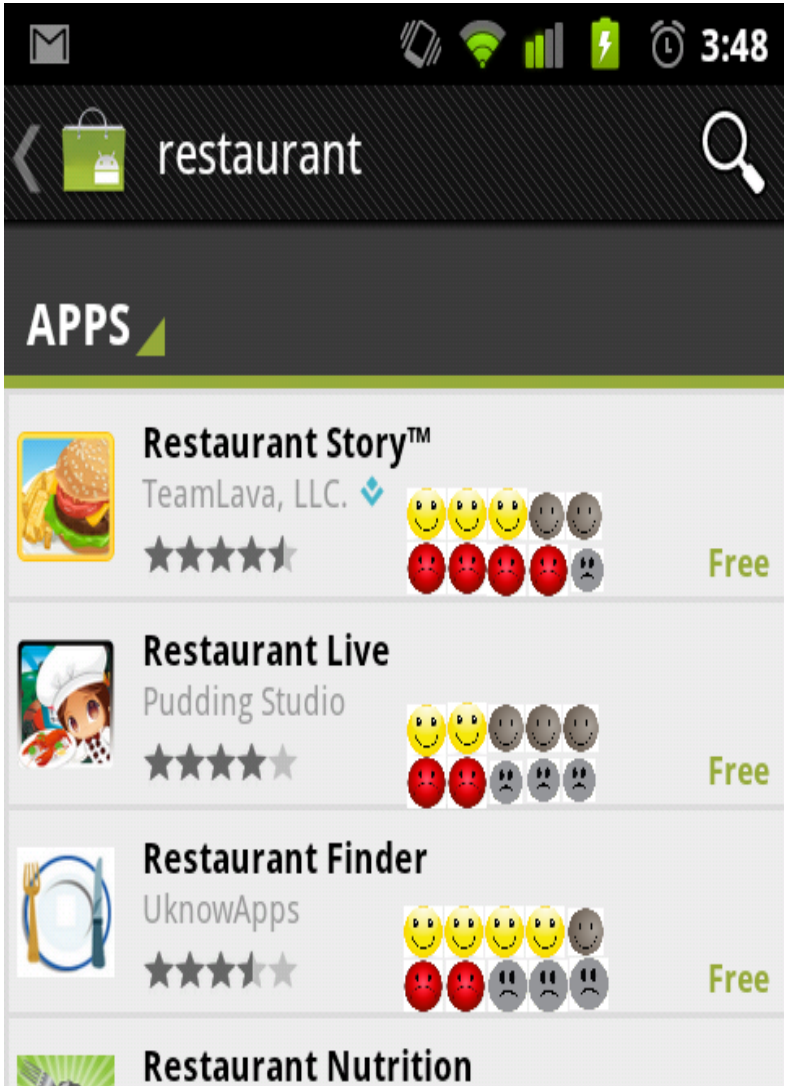
Brightest Flashlight App – Free of Charge
* Turns on all available lights on the device
* Camera Flash LED at Maximum
* Screen at Bright Maximum
* Keyboard Backlight at Maximum
* Soft Keys Backlight at Maximum
* Notification LED at Maximum
* Automatic Timer Exits Application after 2 Minutes
* Audio Effects on Start and Stop
* Unobtrusive Ads
* Please contact the support email for reporting bugs or problems so we can fix them as quickly as possible
* Best Flashlight App for dark conditions, natural LED color provides great contrast

Rectify: Make Intentions Actionable



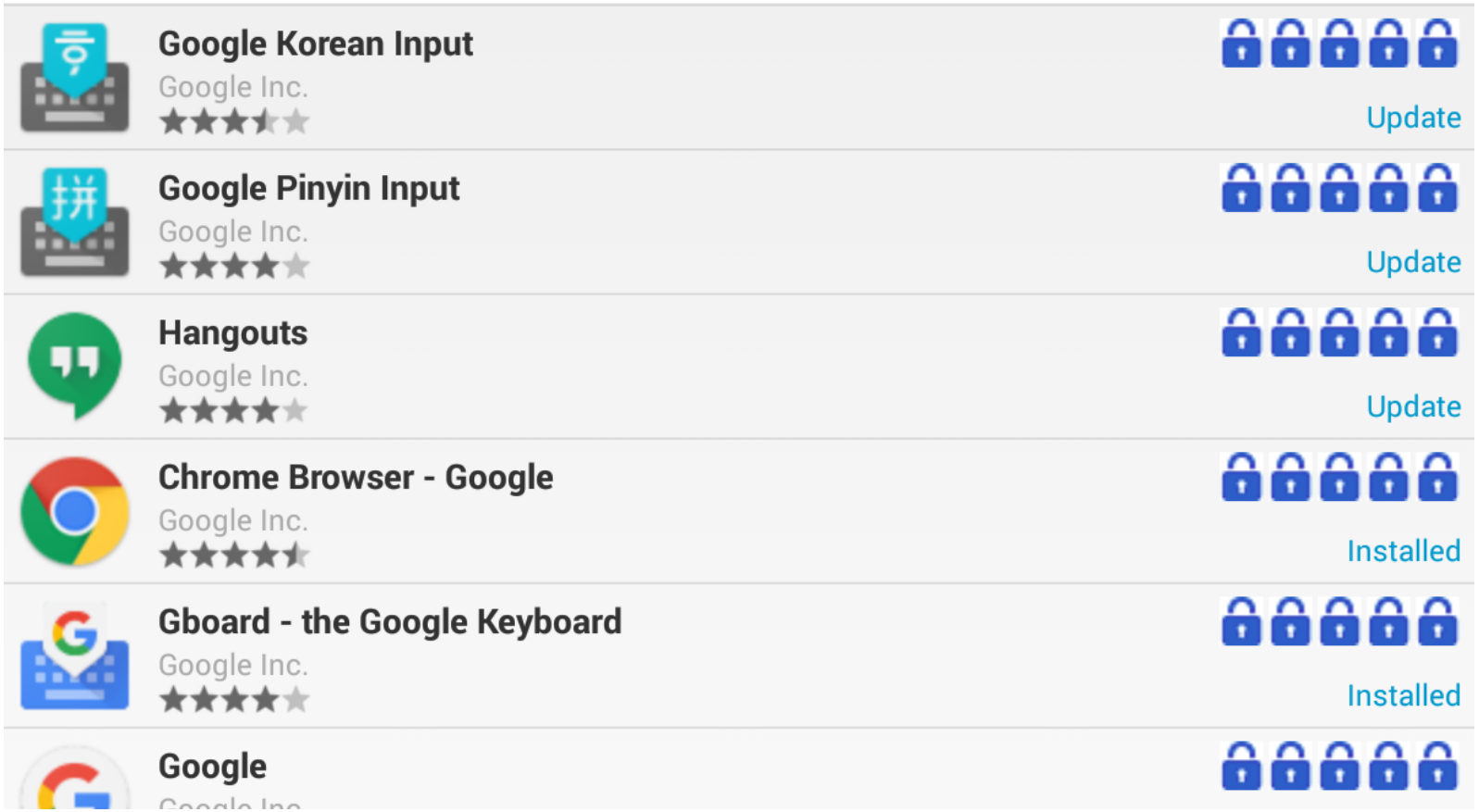


Simplify: Android Risks & Benefits

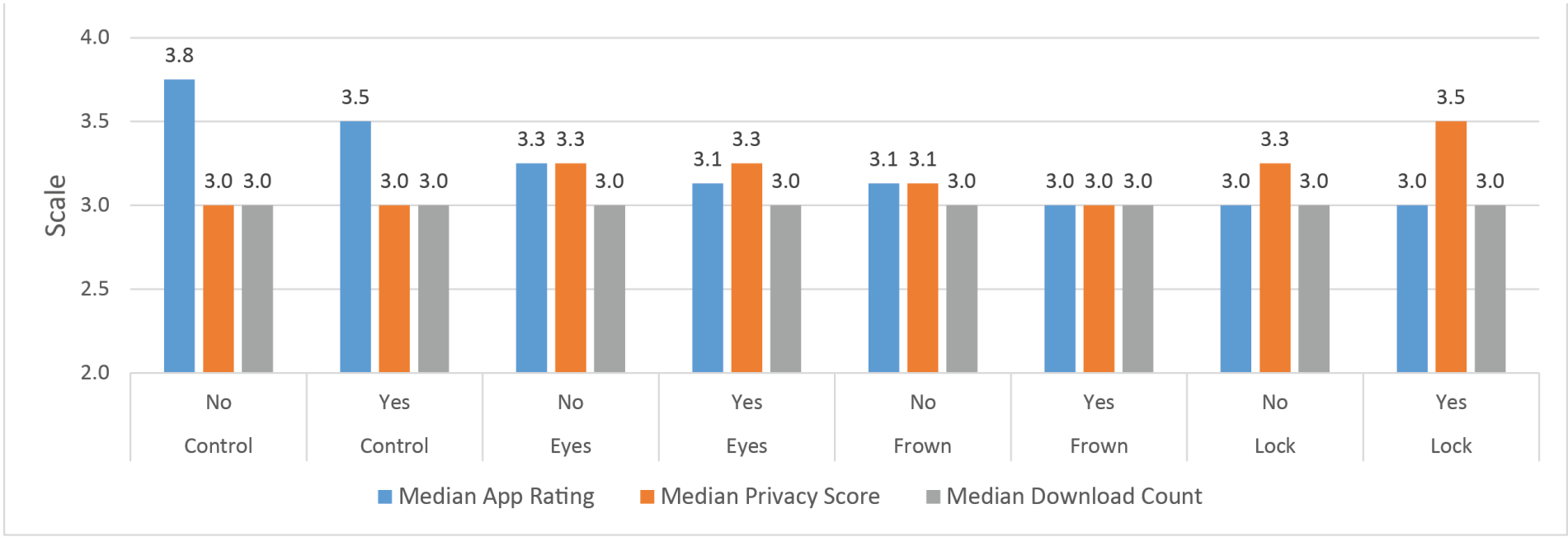


Also used locks and eyeballs

Simplify: Aggregate Ratings



Rectify


4.0
3.5
3.0
2.5
2.0
Scale
3.8
3.0 3.0
3.5
3.0 3.0
3.3 3.3
3.0
3.1
3.3
3.0
3.1 3.1
3.0
3.0 3.0 3.0
3.0
3.3
3.0
3.0
3.5
3.0
No Control
Yes Control
No Eyes
Yes Eyes
No Frown
Yes Frown
No Lock
Yes Lock
Median App Rating
Median Privacy Score
Median Download Count

Mental Models

- Simplify
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- Reify
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