

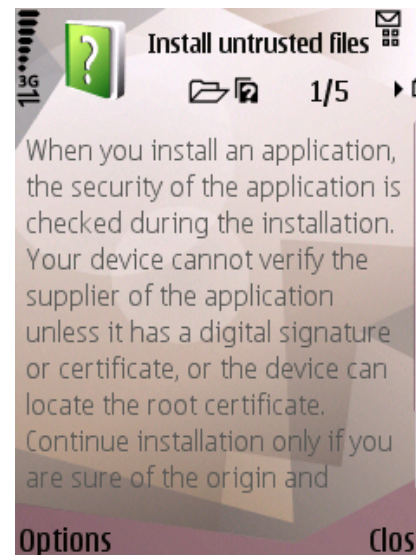
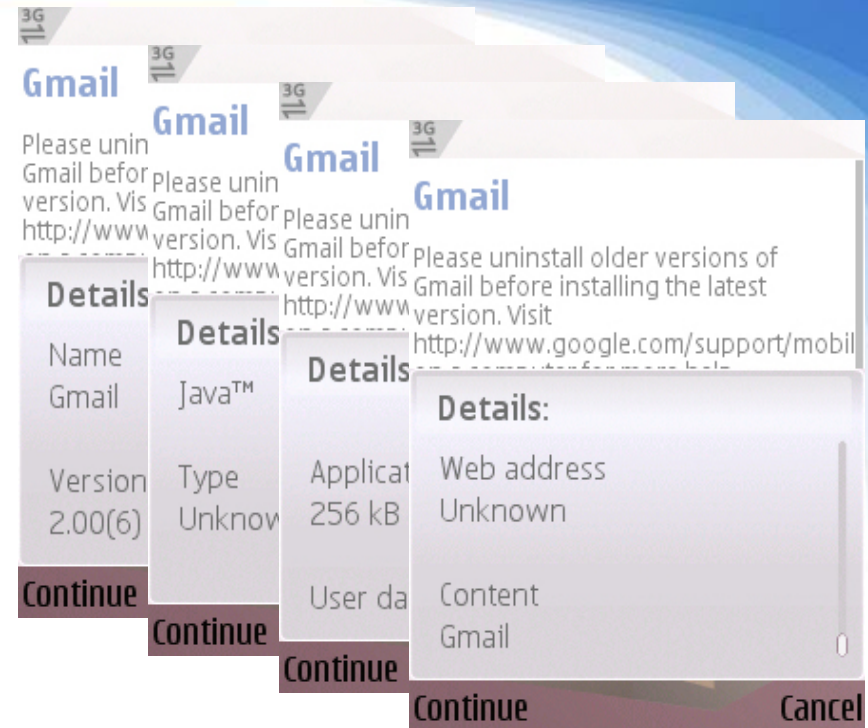
Security assessment by communities: fiction, or fact?

Andreas Heiner, Nokia Research Center

**Pern Hui Chia, Norwegian University
for Science and Technology**

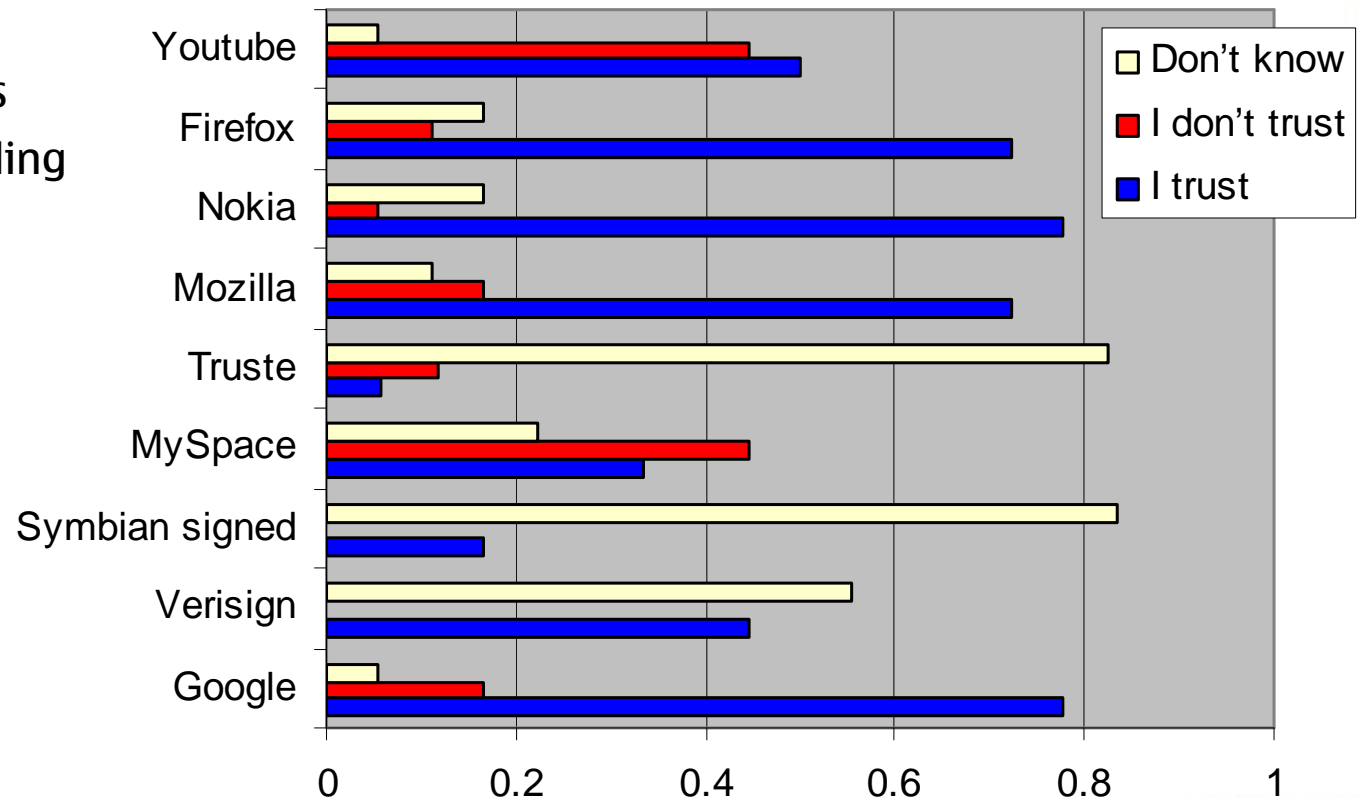
Problem space

- Capability model
 - Platform security
 - Code signing, or explicit consent
- Code signing
 - Certification costs
 - Distribution obstacle
 - Adverse selection
- Explicit consent: user
 - usability
 - Usefulness



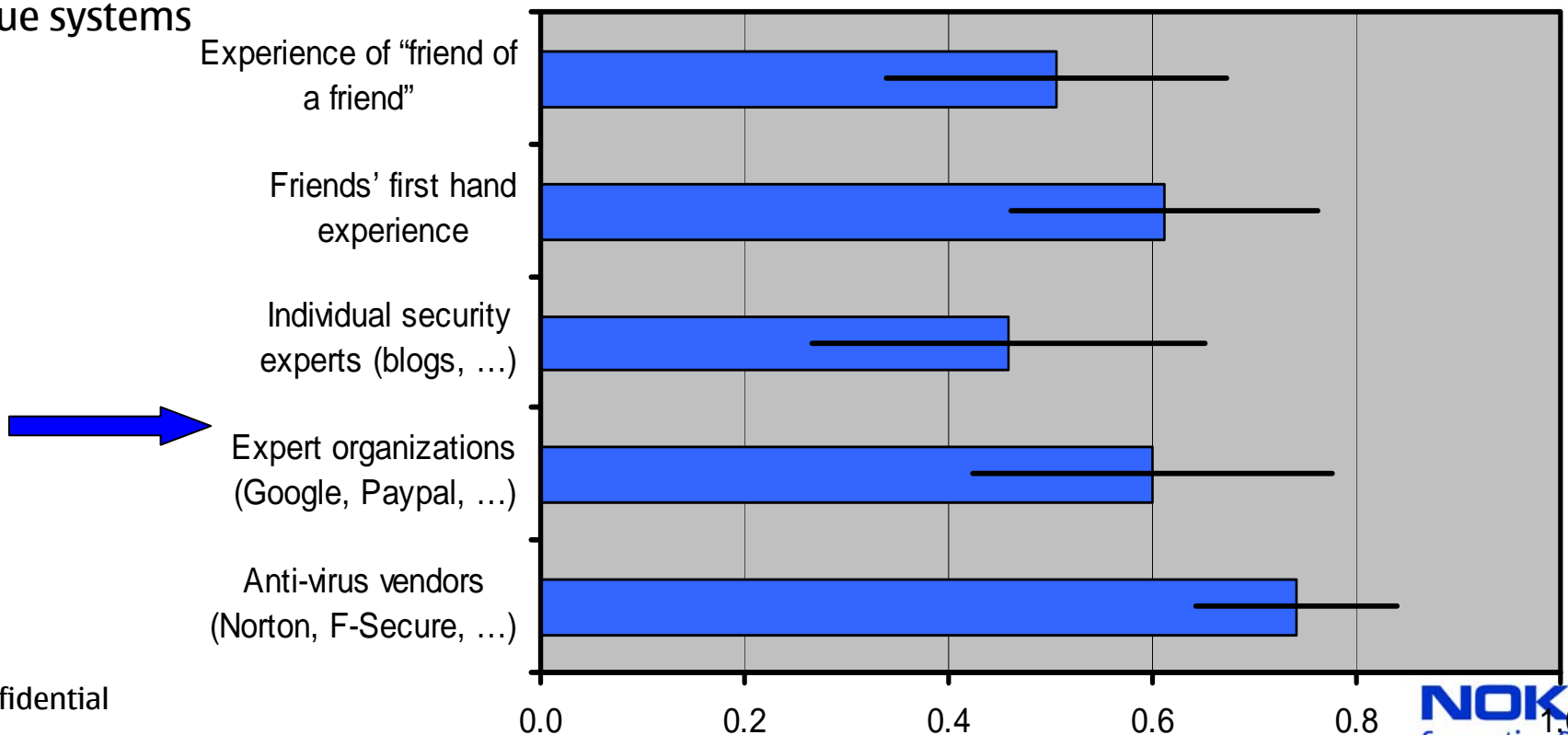
Security attitude of user

- Privacy
- Don't care
- Delegated
 - Data security vendors
 - Organizations (including known portals)



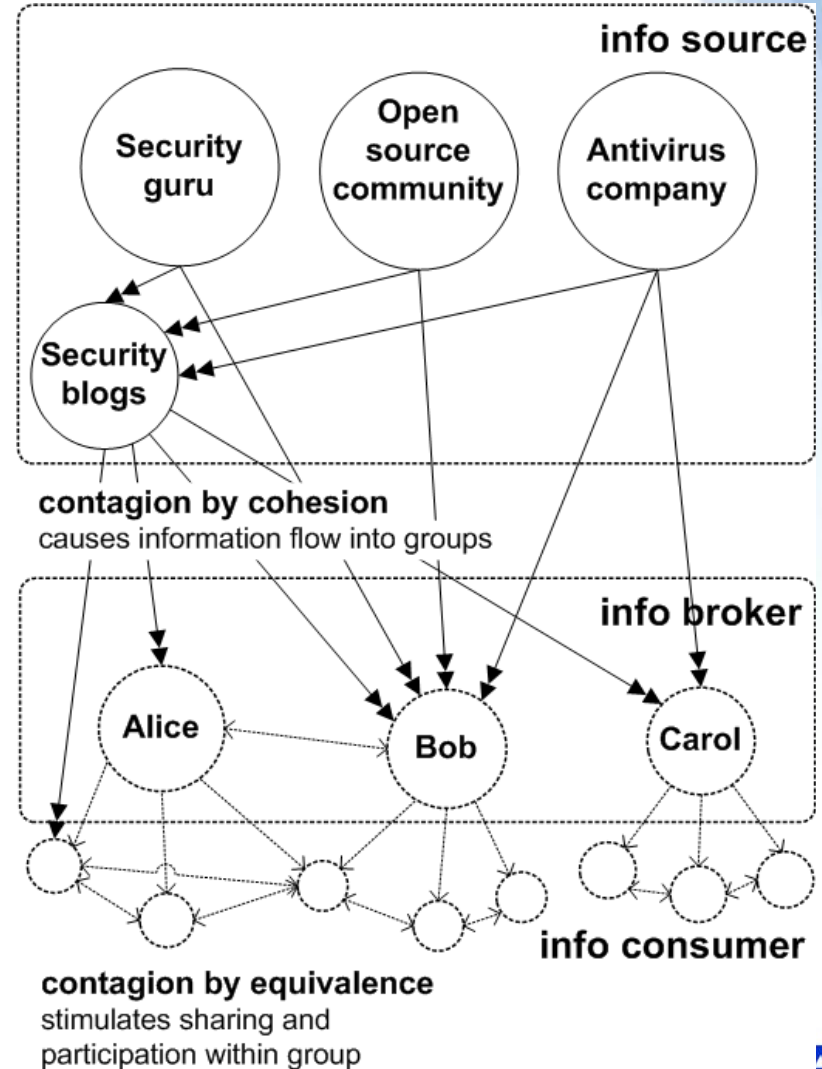
Security attitude of user

- Centralized experts
 - Sybil attack
- Social dimension
 - Value systems



Social networks?

- Opinion formation
 - Broadcasters
 - Influencers, brookers
 - reputable, oob trust
 - Direct friends
 - oob trust
- NOT entertainment social networks
- Future work
 - Large-scale user study (questionnaire)
 - Redesigned user interface
 - Dissemination of security information
 - Incentives for experts



Prototype for N810

The screenshot shows the 'secureinstall' application store interface. On the left is a vertical navigation bar with icons for home, people, applications, and a '+5' badge. The main area displays a list of applications:

- mediastreamer**: Media Streamer for Nokia Internet Tablets. Status: OK.
- mirage**: A fast and simple GTK+ Image Viewer. Status: Not certified (indicated by a red warning triangle).
- mmpc**: MMPC is a frontend for the Music Player Daemon from. Status: Not certified (indicated by a red warning triangle).
- mnotify**: Webmail notifier for Nokia N800/N810. Status: OK.
- mooo**: (partially visible)

Details for the selected 'mirage' application are shown on the right:

- Rating: 3.0 out of 5
- Status: **not certified** (in a red box)
- name: mirage
- version: 0.9.2-2
- size: 118.6 kB
- more info:
- 5 reviews:

At the bottom of the application list, there are icons for help, a folder, and settings. At the bottom of the screen, there are buttons for 'Rate' and 'Learn more'.

Prototype for N810

The screenshot shows a mobile application window titled "secureinstall". At the top, there is a status bar with icons for Bluetooth, settings, volume, Wi-Fi, battery, and a close button. Below the title bar, a warning message reads: "'mirage' is not certified and is considered harmful! You should cancel the installation". To the right of this message is an information icon and the text "Kill some monsters :)". Below the warning, there are five community review icons: "dora" (danger icon), "dolly" (3), "dan" (warning icon), "deer" (+4), and "duke" (+5). A red box labeled "not certified" is positioned above the app details. The details include: "name: mirage", "version: 0.9.2-2", "size: 118.6 kB", "more info:", and "5 reviews:". At the bottom of the window, it says "Step 1/4: What my community says" with a question mark icon, and "Back" and "Install" buttons.

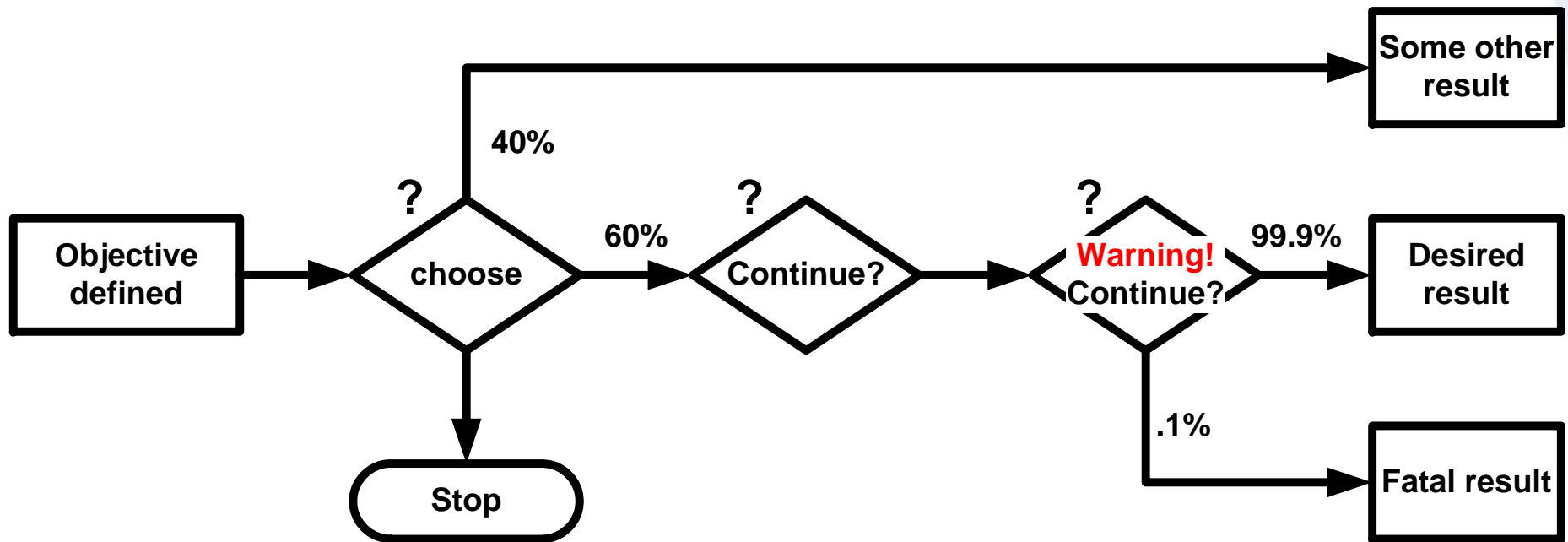
Company Confidential

Further reading

- The psychology of security (Ryan West) Communications of the ACM, April 2008/Vol 51 No 4 pg 34
- Usability of security, Peter Guttman (ref.)

Secure Installation

- Stepping back
 - How does a user go about software installation?



• Mess this up: pay the price

Secure Installation

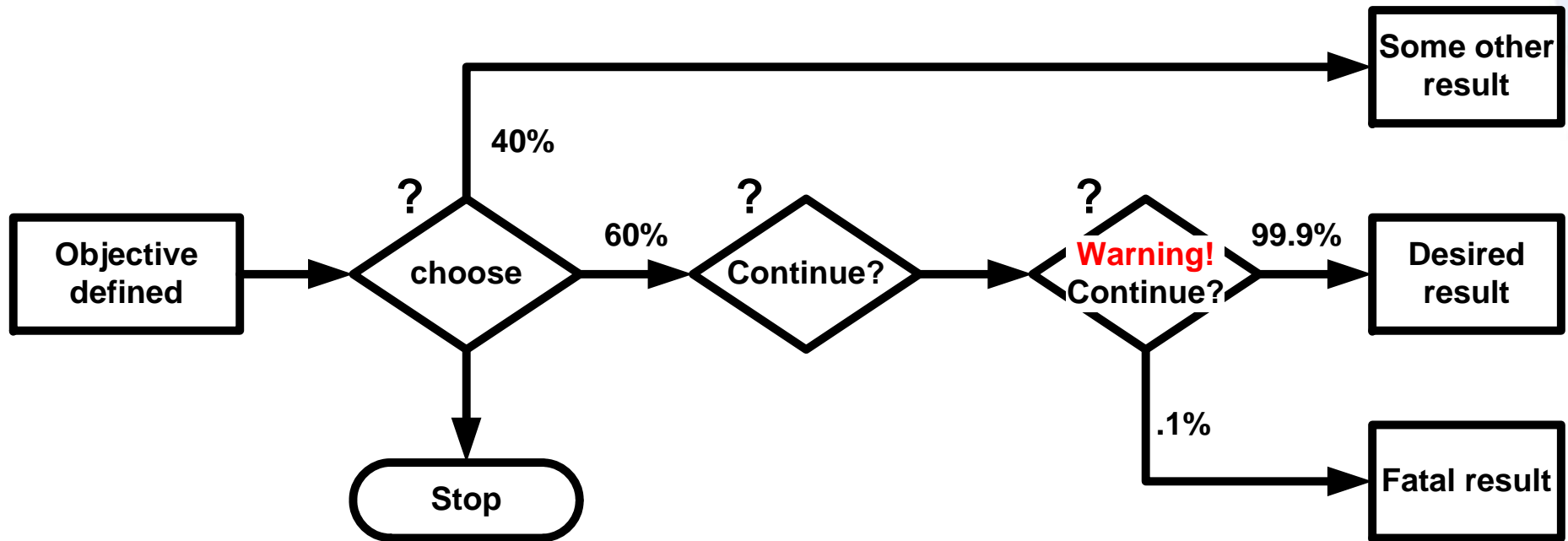
- Stepping back
 - How does a user go about software installation?

Mental processes

Controlled: choices, context-aware

Automated: repetition, context-driven

Cognitive bias



• Mess this up: pay the price