

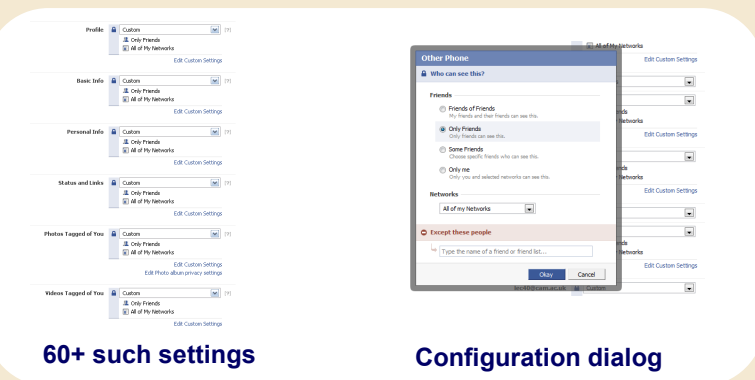
Confidence in Privacy through End User Programming

Luke Church, Jonathan Anderson, Joseph Bonneau, Frank Stajano



UNIVERSITY OF CAMBRIDGE
Computer Laboratory

Facebook's Privacy UI



60+ such settings

Configuration dialog

The direct manipulation style results in a UI that is highly *Diffuse_{CD}* and *Viscous_{CD}*

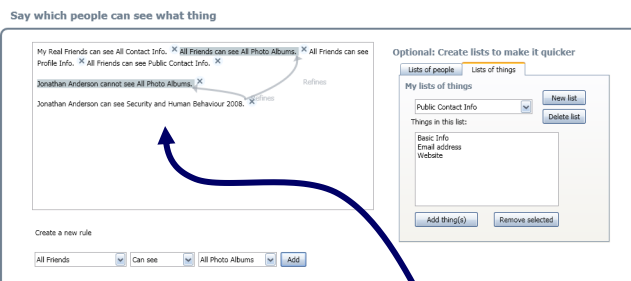
The UI has poor *Role Expressiveness_{CD}* and support for *Abstraction_{CD}*, high *Hidden Dependencies_{CD}* and *Premature Commitment_{CD}*

This gives a questionable User Experience.

(Terminology, technique from [2])

Privacy Stories UI

Reconceptualise as programming, an example of [1]



Dependency highlighting editor

Results visualiser with 'why questions' support

Equivalence class visualiser

A **programming-like** UI, with explicit support for *Abstraction_{CD}*, visualisation to provide feedback and **testing tools** to enhance confidence.

The pilot study showed **higher self-reported confidence**, but some residual difficulties with abstraction handling. The interface does approximately as well as Facebook's but scales better. The **attentional cost is still too high**.

A positive indicator: one technically naïve user **repurposed** the security tool for **presentation of self**.

More work remains to be done, but first indicators are encouraging

[1] Church, L. and Whitten, A. 2009. Generative Usability: Security and User Centered Design beyond the Appliance, NSPW '09

[2] Green, T. and Petre, M. 1996. Usability Analysis of Visual Programming Environments: A 'Cognitive Dimensions' Framework, JVLIC



William Gates Building
15 JJ Thomson Avenue
Cambridge UK CB3 0FD

<http://www.cl.cam.ac.uk/>