Privacy Seminar

2. Privacy: an overview

Jaap-Henk Hoepman

Digital Security (DS)
Radboud University Nijmegen, the Netherlands
@xotoxot // jhh@cs.ru.nl // www.cs.ru.nl/~jhh
Dan Perjovschi
what is privacy according to you?
Dimensions

- Relational privacy
- Informational privacy / self determination
- Locational/spatial privacy
- Corporeal privacy
- The right to be let alone
- Privacy spheres
Don’t confuse these concepts!
7 types of privacy

- privacy of
  - the person,
  - behaviour and action,
  - personal communication,
  - data and image,
  - thoughts and feelings,
  - location and space, and
  - association (including group privacy).

Finn, R.L., Wright, D., and Friedewald, M.: Seven types of privacy. CPDP 2012
Clarke, R.: Introduction to Dataveillance and Information Privacy, and Definitions of Terms, 1997
Different definitions

- The right to be let alone
  - [Warren & Brandeis, 1890]

- Informational self-determination: The right to determine for yourself when, how and to what extend information about you is communicated to others
  - [Westin, 1967]

- The freedom from unreasonable constraints on the construction of one’s identity
  - [Agre & Rottenberg, 2001]

- Contextual integrity: the right to prevent information to flow from one context to another
  - [Nissenbaum, 2004]
Contextual integrity

[FIDIS project]
Privacy invasions

Collect

Surveillance
Interrogation

Process

Disseminate

Aggregation
Identification
Insecurity
Secondary Use
Exclusion

Breach of confidentiality
Disclosure
Exposure
Increased availability
Blackmail
Appropriation
Distortion

Invade/Use

Intrusion
Interference

Privacy

Computing (1950-)
- Searching becomes efficient
- Data kept forever

Networking (1980-)
- Data sharing becomes easy
- Data accessible on-line

“Network effect”
Different types of data/information

- **Volunteered**
  - What you reveal *explicitly* when asked

- **Observed**
  - What you reveal *implicitly* by your behaviour

- **Inferred**
  - What is derived from other data about you

[World Economic Forum Report Personal Data: The Emergence of a New Asset Class]
Data vs Metadata

- Metadata (= Behavioural data)
  - Condensed (information rich, easy to process)
  - More ”true” (judge a man not on what he says but on what he does)
Searching for the right metaphor

orwell / big brother

chandler / little sister

kafka / the trial
You’ve got nothing to hide

Fokke & Sukke
worden met de dag paranoïder

“Aan de bewoners van dit pand”

Hoe weten ze dat nou weer??
Have you!!??
Wrong assumption

The point is not that there is data that is apriori “wrong” or illegal

(as seen by the “sender”)

The point is that “innocent” data can (later) be used wrongly

(by the current “receiver”)

Why is privacy important
“Privacy is essential for freedom, democracy, psychological well-being, individuality and creativity”

Moral basis for data protection

- prevention of information-based harm
  - Like guns, information may kill people

- prevention of informational inequality
  - The “market” of information
  - Non-discrimination

- prevention of informational injustice
  - Spheres of privacy must be protected

- respect for moral autonomy.
  - People change

Topic

- location privacy; roadpricing, ov chipkaart
- rfid privacy
- identity management
- electronic voting
- electronisch patient records (the dutch system)
- smart metering/smart grids
- search engine privacy
- profiling; behavioural advertising
- social networks
- cloud computing
Resources

- **Websites**
  - [https://www.eff.org/](https://www.eff.org/)

- **Books**
  - Ilija Trojanow, Juli Zeh “Aanslag op de vrijheid”, de Geus, 2010
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 6</td>
<td>&quot;Course overview&quot;, and &quot;Legal perspective&quot;, by Merel Koning.</td>
</tr>
<tr>
<td>February 13</td>
<td>&quot;Privacy: an overview&quot; by Jaap-Henk Hoepman.</td>
</tr>
<tr>
<td>February 20</td>
<td>Basic techniques, by Jaap-Henk Hoepman.</td>
</tr>
<tr>
<td>February 27</td>
<td>Data protection law and online marketing, Frederik Zuiderveen Borgesius, UvA</td>
</tr>
<tr>
<td>March 6</td>
<td>The Value of Privacy, Marc van Lieshout, TNO</td>
</tr>
<tr>
<td>March 13</td>
<td>Martijn Terpstra, Marc Tijssen: Anonymous communication</td>
</tr>
<tr>
<td>March 20</td>
<td>Yazan Badin, Herson Esquivel: Censorship prevention</td>
</tr>
<tr>
<td>March 27</td>
<td>(blocked for possible surprise lecture)</td>
</tr>
<tr>
<td>April 3</td>
<td>(no lecture)</td>
</tr>
<tr>
<td>April 10</td>
<td>(no lecture)</td>
</tr>
<tr>
<td>April 17</td>
<td>Bart Smits, Maikel Zweerink: Identity management</td>
</tr>
<tr>
<td>April 24</td>
<td>Manon de Vries, Wouter Bokslag: Electronic voting</td>
</tr>
<tr>
<td>May 1</td>
<td>Bas van der Zandt, Wietze Beukema: Smart metering</td>
</tr>
<tr>
<td>May 8</td>
<td>(no lecture)</td>
</tr>
<tr>
<td>May 15</td>
<td>(no lecture)</td>
</tr>
<tr>
<td>May 22</td>
<td>Vincent de Jager, Wouter van der Houven: Profiling</td>
</tr>
<tr>
<td>May 29</td>
<td>(no lecture)</td>
</tr>
<tr>
<td>June 5</td>
<td>Judith van Stegeren, Robert Kleinpenning: Social Networks</td>
</tr>
<tr>
<td>June 12</td>
<td>Dibi Tamunomiebaka, Sandip Pandey: Cloud computing</td>
</tr>
<tr>
<td>June 19</td>
<td>Le van Huyrh, Patrick Verleg: search engine privacy</td>
</tr>
</tbody>
</table>

**Deadline**

- Deadline paper skeleton
- Deadline student paper
Spotted on an ATM in Germany...

jaap-henk.hoeppman@tno.nl, jhh@cs.ru.nl, www.cs.ru.nl/~jhh