

# Data Protection and Privacy: Basis, Principles and Relevance for Neuro- and Computer-Scientists

Neuroscience Berlin  
Ethical Issues and Implications for Society

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Berlin University of Technology – Computers and Society

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# In this session, you will...

- ... get the basics of privacy and data protection
- ... learn how to distinguish between them
- ... get an idea about what this means to your discipline

# Defining „Privacy“

**Any Ideas?**

# Defining „Privacy“

Aristotle (384 BC – 322 BC):

***public sphere of [...] political activity***

***VS.***

***private or domestic sphere of the family***

See: Stanford Encyclopedia of Philosophy  
<http://plato.stanford.edu/entries/privacy/> [08.02.2008]

# Defining „Privacy“

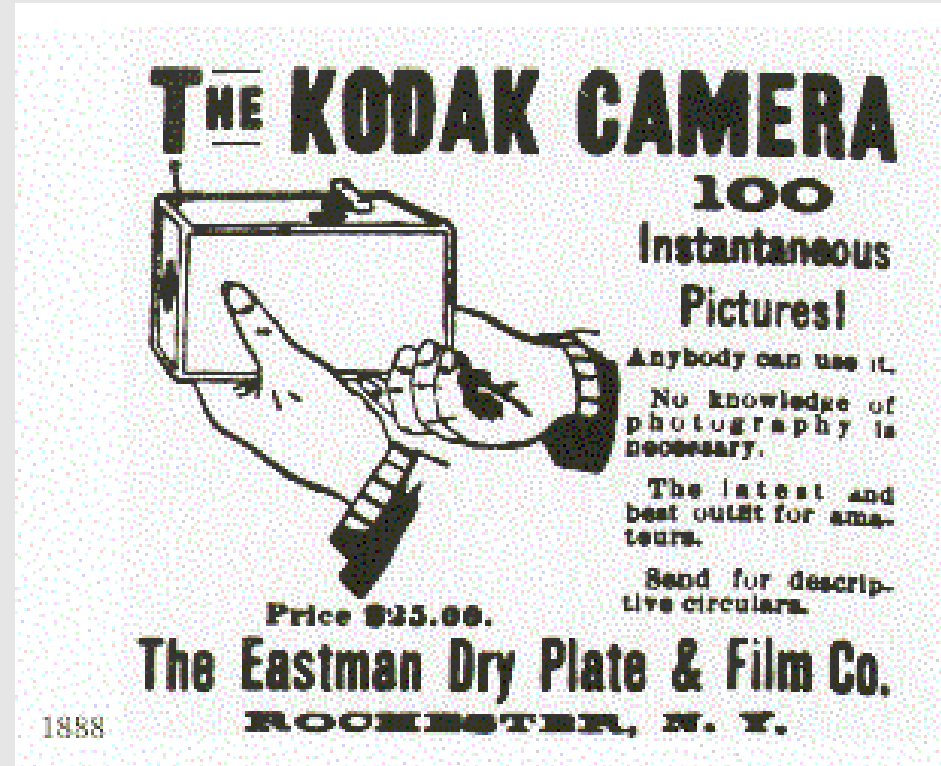
Warren and Brandeis (1890):

***„the right to be let alone“***

Warren, S. and Brandeis, L. (1890): „The Right to Privacy“  
Harvard Law Review 4(5)

# Right to be let alone (1890)

- „Recent inventions“
- Photography
- Newspapers
- Gossip columns
- Early „Paparazzi“



# Right to be let alone (nowadays)

**No, I won't show any pictures of:**

Britney Spears

Sarkozy & Bruni

Amy Winehouse

Madonna

Lady Di

...

# Defining „Privacy“

Warren and Brandeis (1890):

***„the right to be let alone“***

***„rights as against the world“***

Warren, S. and Brandeis, L. (1890): „The Right to Privacy“  
Harvard Law Review 4(5)



# Defining „Privacy“

United Nations, Universal Declaration of Human Rights (1948), Article 12:

***„No one shall be subjected to arbitrary interference with his privacy [...], nor to attacks upon his honour and reputation.“***

# Defining „Privacy“ - The Last One

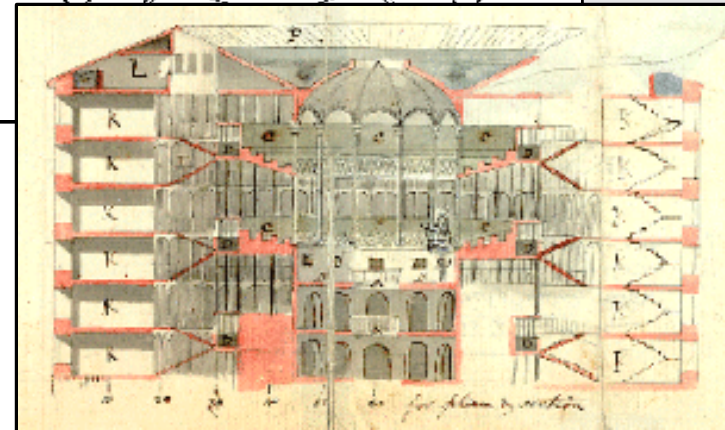
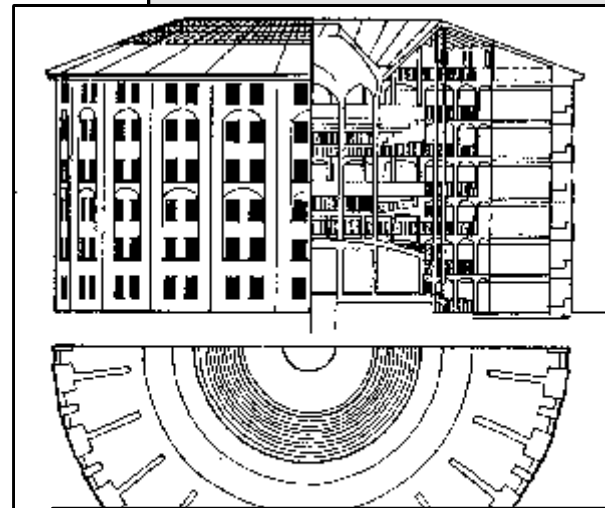
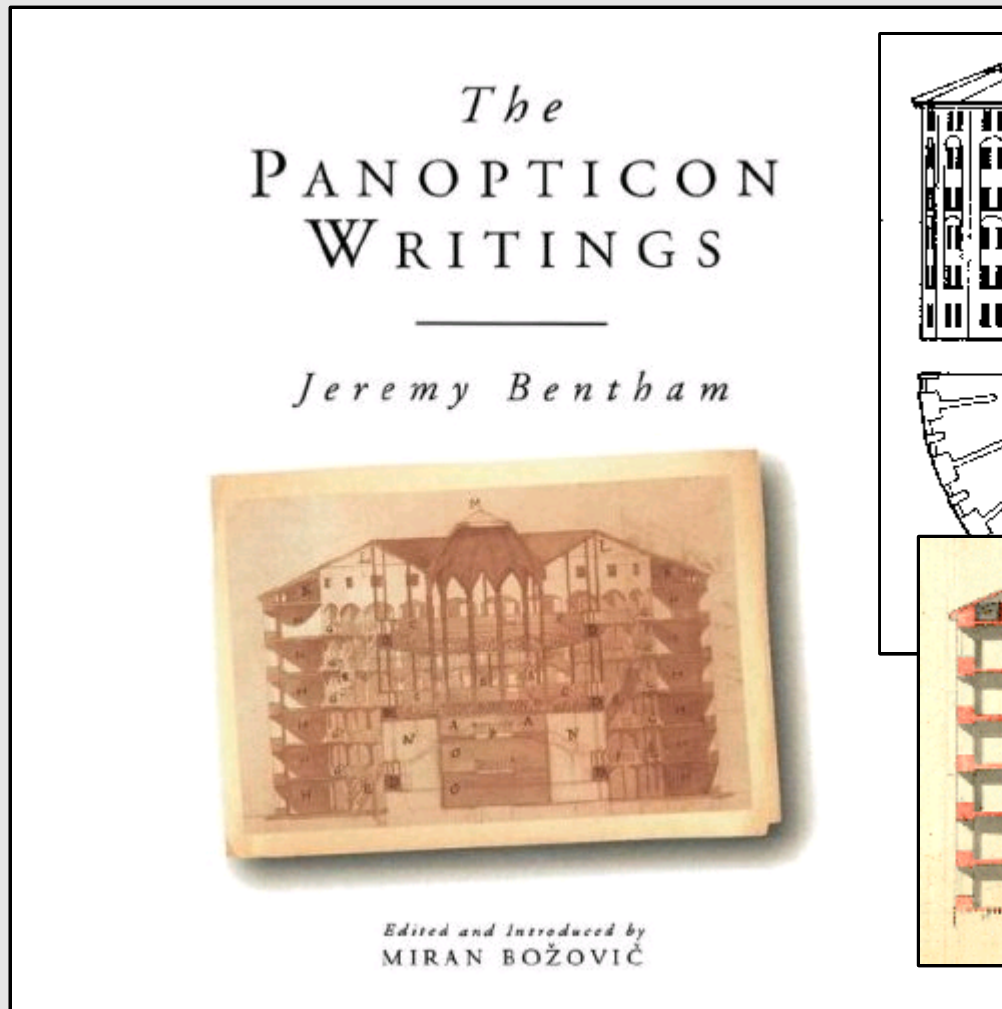
Oxford Dictionary of Philosophy (2005, 2<sup>nd</sup> ed.):

***„The right to privacy is deeply connected with a person's self-respect, with invasions [...] being connected with shame and indignity.“***

# Defining „Privacy“ - Synopsis

- Privacy as individual right against invasion
  - Originally developed against private „invaders“
  - Concept to protect individuals from
    - disclosure of embarrassing private facts
    - being shown in a false light  
(cf. <http://plato.stanford.edu/entries/privacy/>)
- ⇒ Individuals should be protected from invasions
- ⇒ „Right to be let alone“ seems appropriate

# „Privacy“ - Societal Aspects



„Morals reformed - health preserved - industry invigorated  
instruction diffused - [...] - all by a simple idea in Architecture!“

# Bentham's Panopticon (1787)

- Prison Architecture
- Only one (or few) observer(s) in the center
- Observer can see any inmate
- No inmate can see the observer(s)
- Inmates know that they **could** be observed
- Effect:  
Inmates behave according to this knowledge



# Bentham's „wisdom“

„[S]eeing without being seen“

„[T]he persons to be inspected should always feel themselves as if under inspection“

„A new mode of obtaining power of mind over mind, in a quantity hitherto without example“

⇒ The mere possibility of being observed makes people **change behavior.**



# Bentham nowadays



„It's one thing to know that there are CCTV cameras about, but it's quite another when they loudly point out what you have just done wrong.“

# Privacy: Two General Aspects

Aims of protecting privacy

```
graph TD; A[Aims of protecting privacy] --> B[Protect individuals from:]; A --> C[Protect society from:];
```

Protect individuals from:

- disclosure of private facts
- being shown in false light
- other kinds of invasion

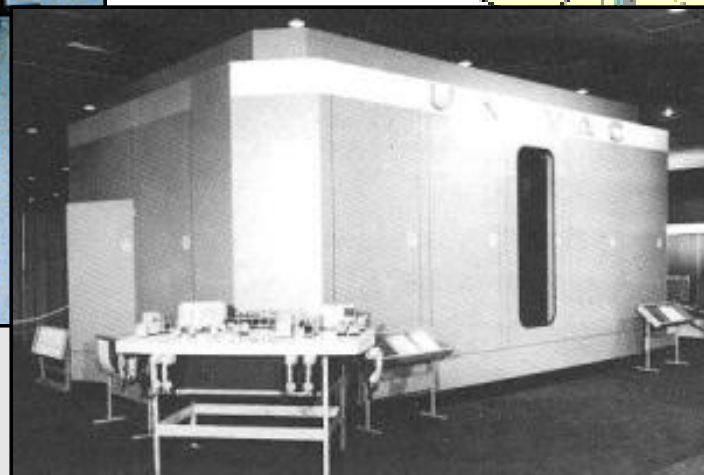
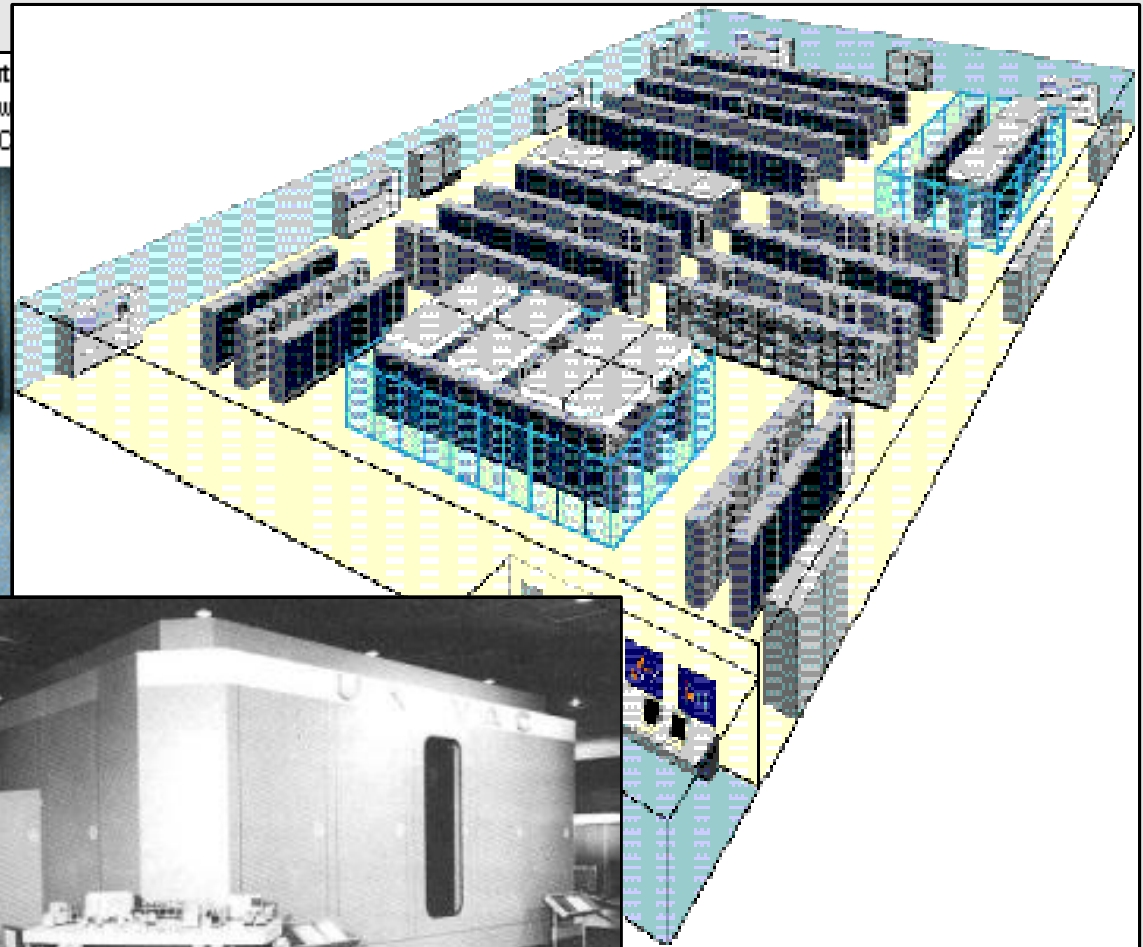
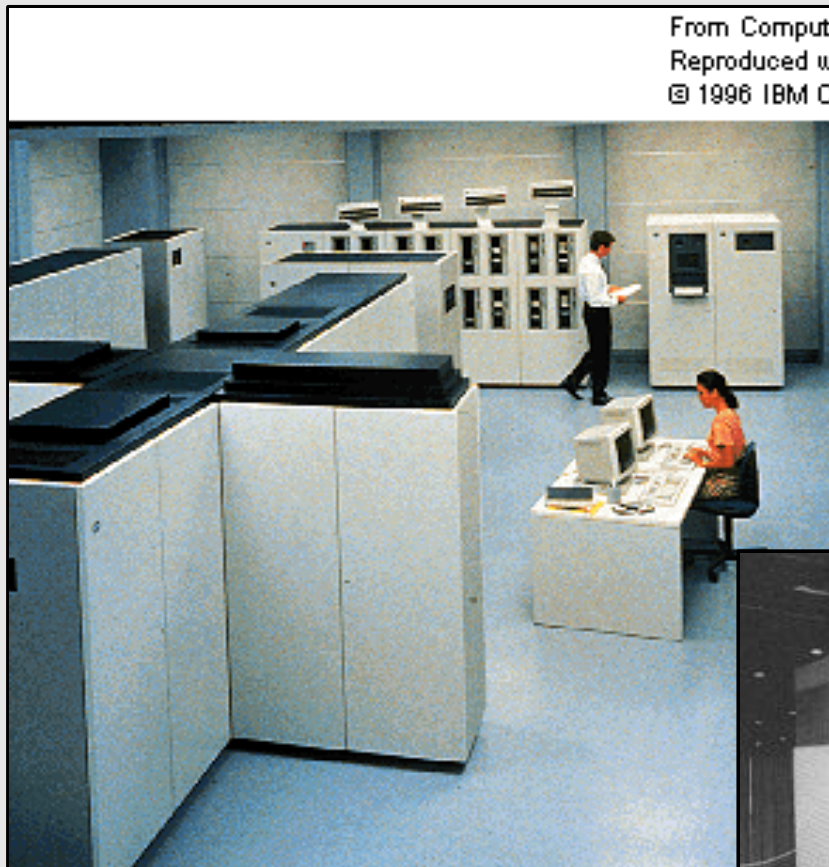
Protect society from:

- people not behaving in certain ways (ie. demonstrate)
- people losing individuality



# Issue 2: Data Protection

Remember: Early Computers



„I think there is a world market for  
about five computers.“

Thomas J. Watson, IBM chairman, 1958

# Counting Computers

1957	21	Western Germany overall
1958	139	Western Germany governmental
1968	3863	Western Germany overall
	143	Western Germany governmental
	1607	Western Germany ordered
1970	7250	Western Germany overall
1971	70000	USA
	7900	Japan
	7500	Western Germany overall
	6000	Great Britain
	5000	USSR
	350	GDR

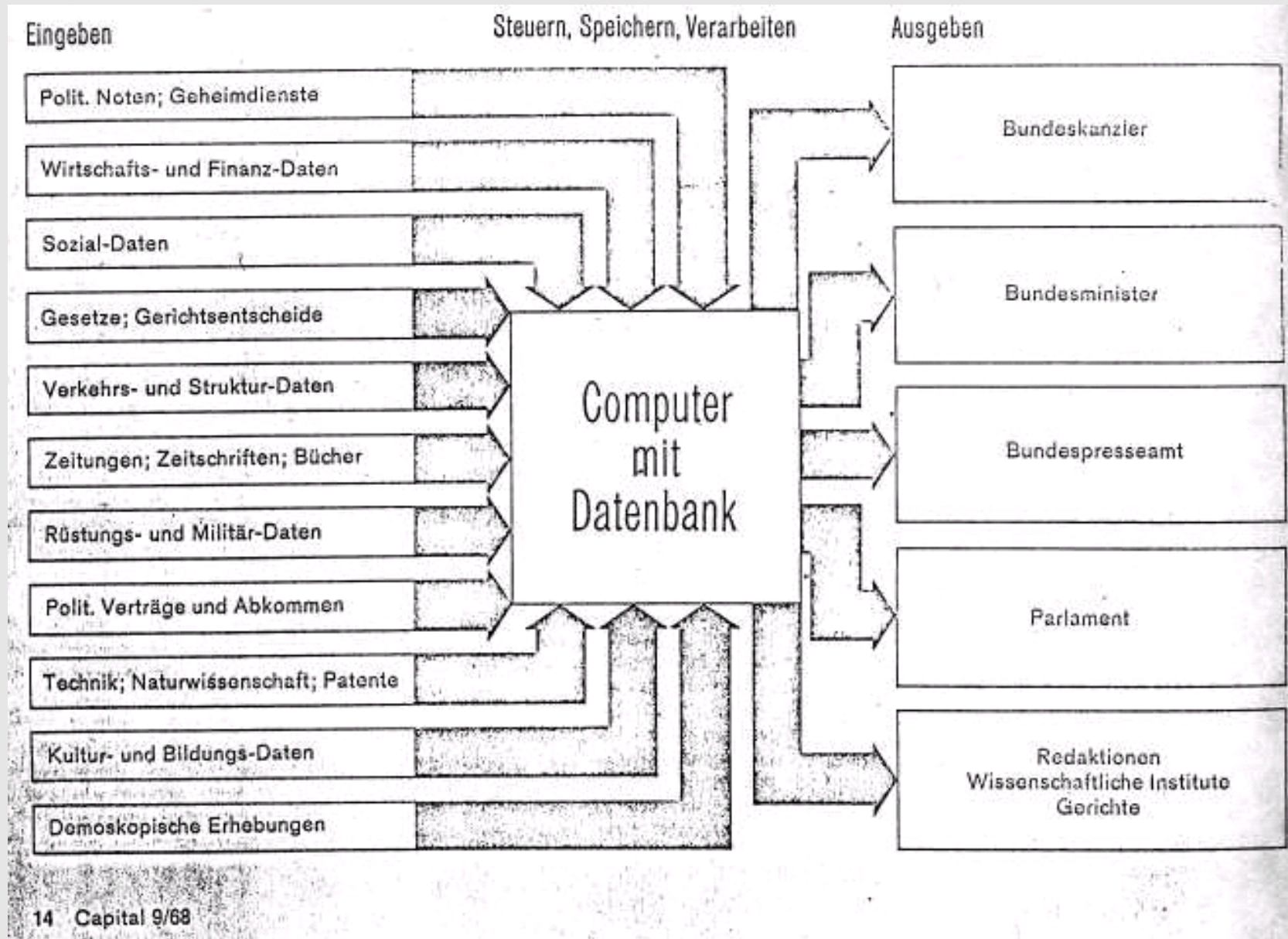
# Early Computer Uses

- Few, isolated and centralized Databases
- Governmental use predominated
- Mainly administrative purposes
  - Social Security
  - Census
  - Taxes
  - Military service
- Interlinking technically impossible





# Germany (1968): Federal Database Network



# The State as Leviathan (Hobbes)



# The State as Leviathan (Hobbes)

„Non est potestas Super Terram quae Comparetur ei“ (Job 41:24)  
„There is no power on earth which can be compared to him“



# Restrictions of State Power

- 1970: First data protection law worldwide – Hesse (Germany)
- General idea: Individuals shall not merely be **object** of administrative (and business) activities
- 1977: German federal data protection law

*„protect person-related data against **misuse**“*

- 1990: New federal data protection law

*„protect individual from being impaired in his **personal right**“*



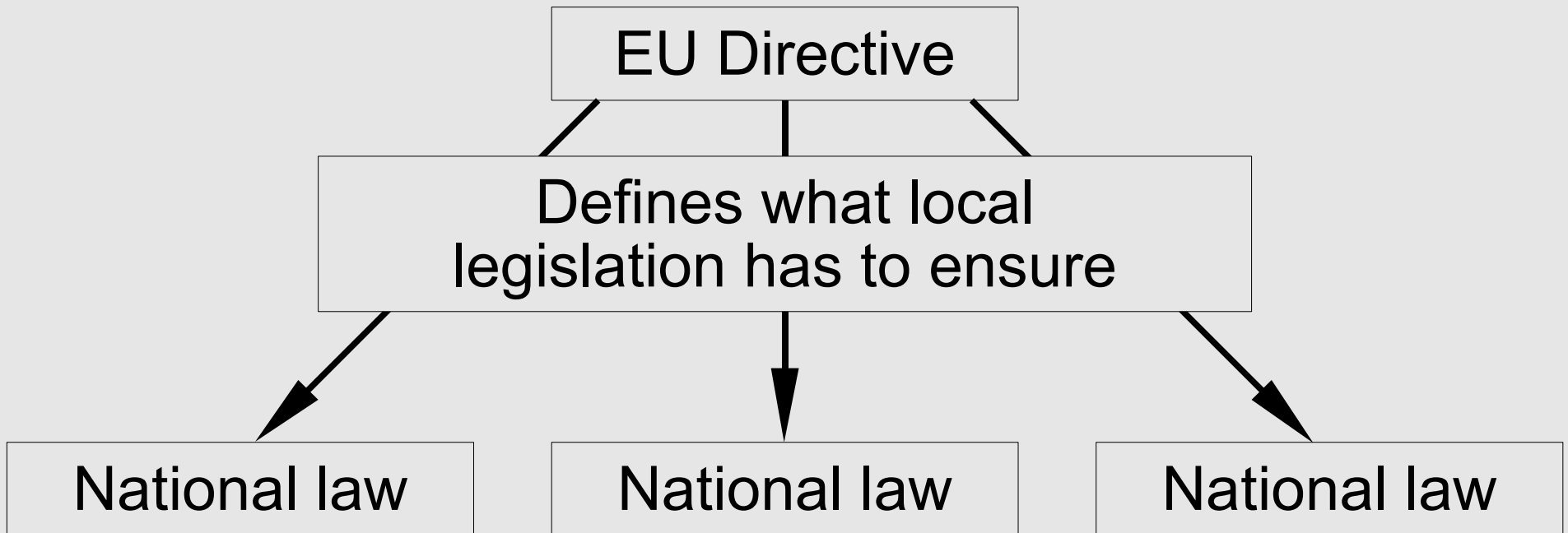
# EU Legislation (1995)

European directive 95/46/EC

„Member States shall protect the fundamental rights and freedoms of natural persons, and in particular their **right to privacy with respect to the processing of personal data.**“

Compare the misuse-model of early German law

# EU Legislation in General



# German Federal Data Protection Law: Reader's Digest

**Admissibility**  
**§4**

**Necessity**  
**§§13-16, 28-30**

**Confidentiality**  
**§5**

**External Control**  
**§§22-26, 38**

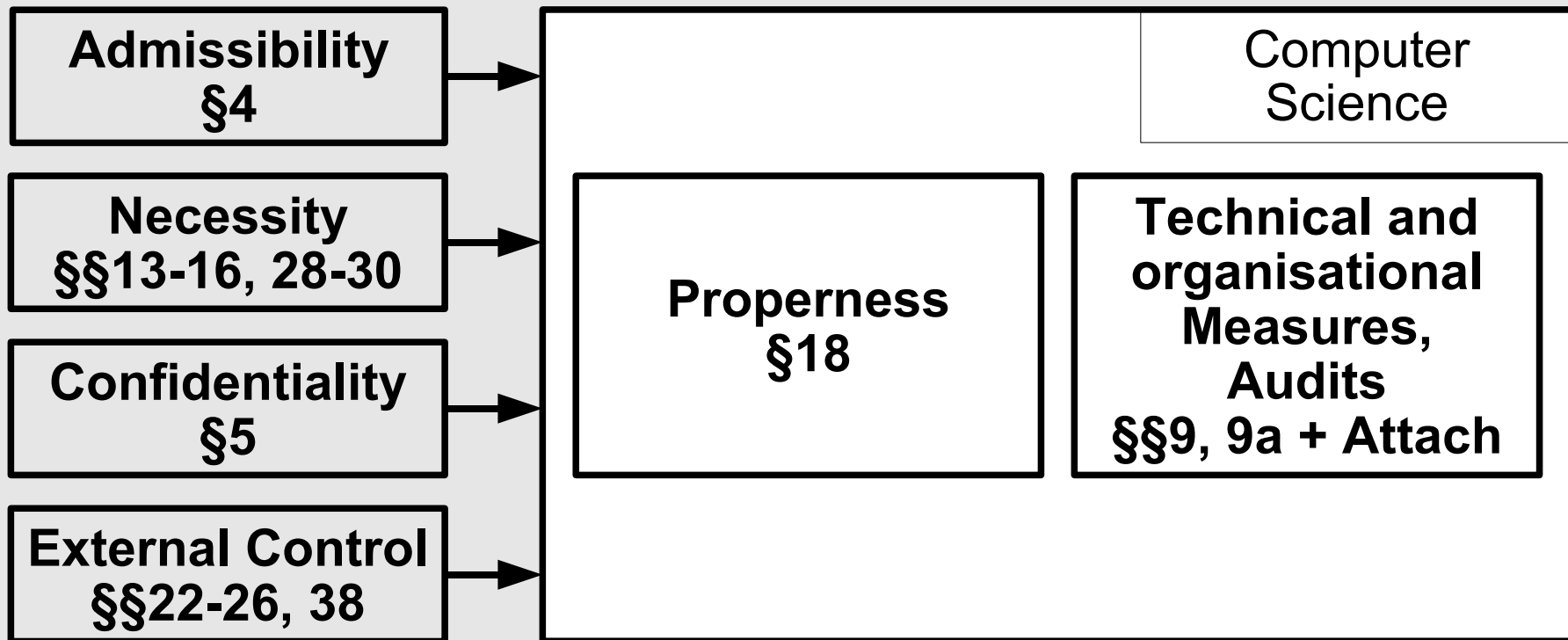
**Properness**  
**§18**

**Technical and  
organisational  
Measures,  
Audits**  
**§§9, 9a + Attach**

Computer Scientists?

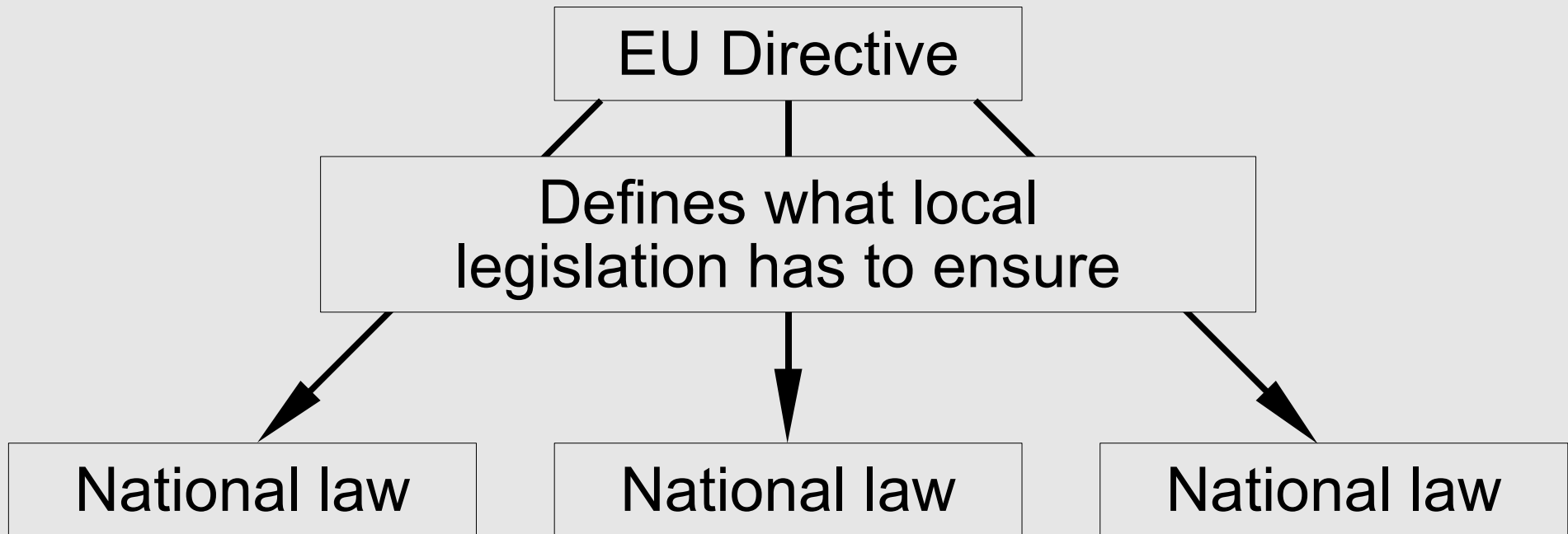
Neuroscientists?

# German Federal Data Protection Law: Reader's Digest



Neuroscientists?

# EU Privacy Legislation



**Forbids transfer to nations without appropriate data protection (from Oct 1998 onwards)**

# Transfer to other nations



# Data Protection Law (nowadays)

**Data Protection Laws Around the World**

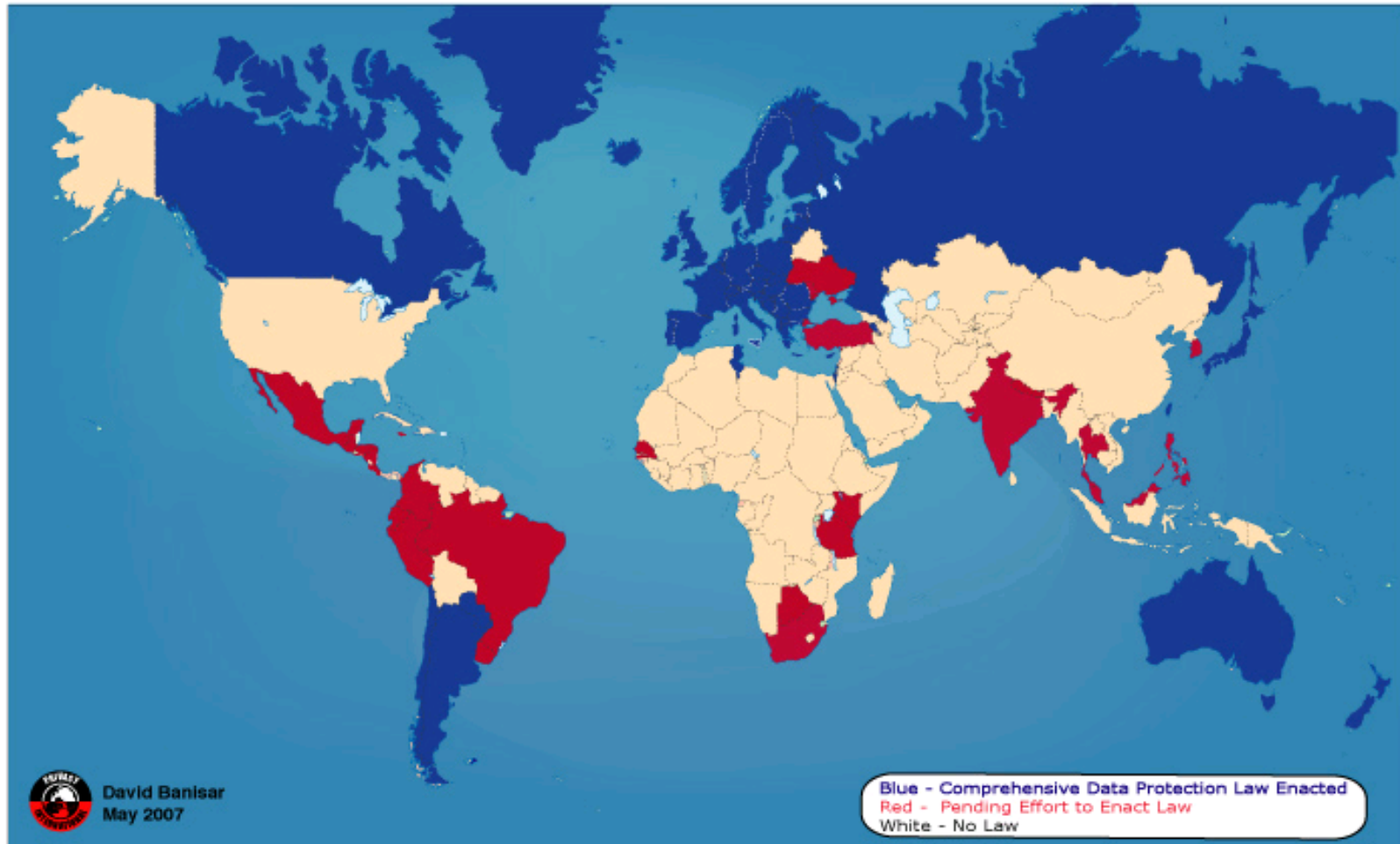


Image:  
<http://www.privacyinternational.org/survey/dpmap.jpg>

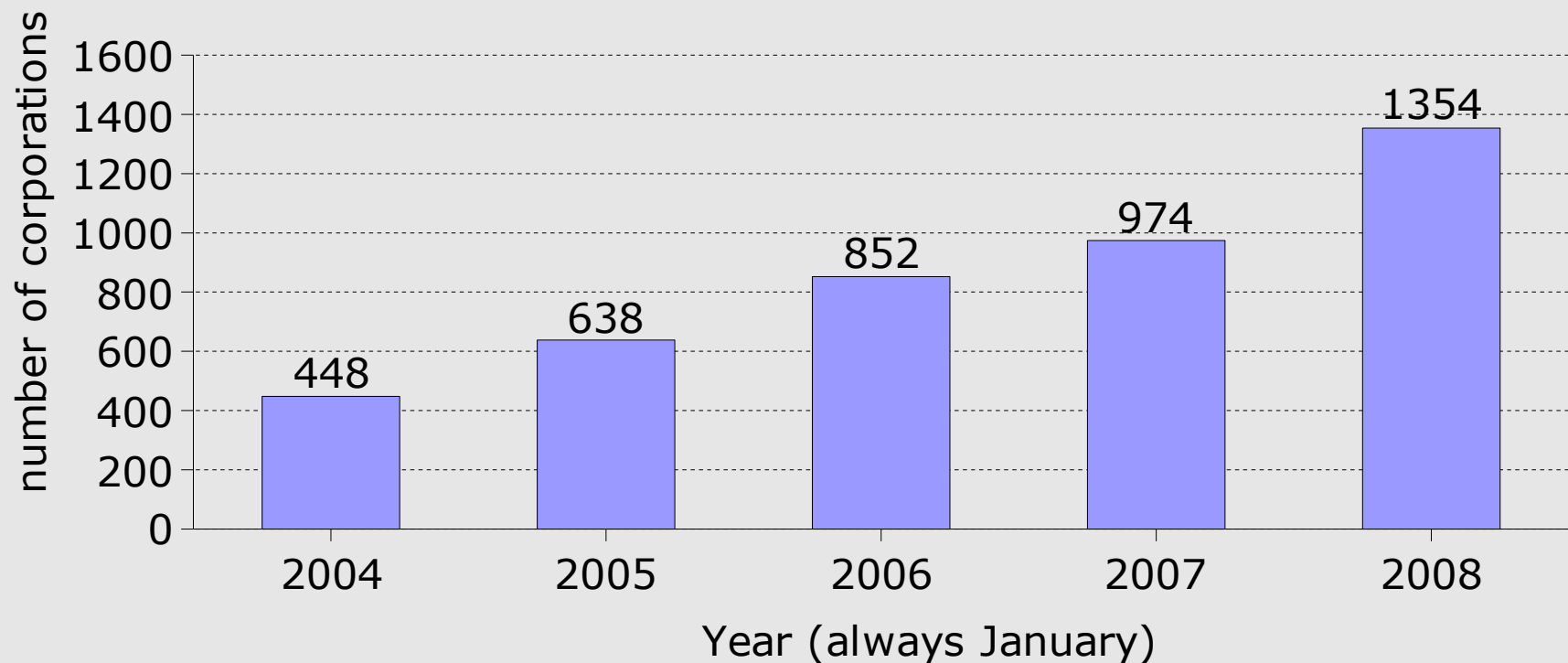
# US Answer: Safe Harbor Principles

- Notice
- Choice
- Onward Transfer
- **Security**
- **Integrity**
- Access
- Enforcement

**Accepted as „appropriate data protection“ in 2000**



# The success of Safe Harbor



- „Safe harbor principles“ are established and practical way
- Easier to remember than, ie, german law

# Data Protection and self-determination

Possible situations where person-related data  
(or: information)  
is desired to be „unprotected“ or „known“?

# Data Protection and self-determination



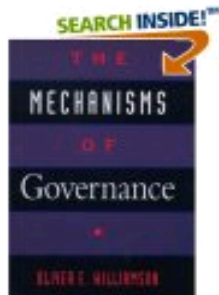
# Data Protection and self-determination

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1.



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I own it  Not interested  ★★★★★ Rate it

Recommended because you purchased **The Economic Institutions of Capitalism** ([Fix this](#))

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I own it  Not interested  ★★★★★ Rate it

Recommended because you purchased **The Economic Institutions of Capitalism** ([Fix this](#))

# Data Protection and self-determination

German concept:

**„Informational self-determination“**

# Data Protection - Synopsis

- Data protection only refers to the use of person-related **data**
  - Originally motivated by governmental use of **computers/databases**
    - Remember Warren/Brandeis: „Recent inventions“
  - Data processing for business purposes also considered
  - People might also want their data to be „unprotected“
- ⇒ Concept of „Informational self-determination“ might be good to remember

# Privacy vs. Data Protection

- Privacy is about **being let alone**
- Data protection is about **determining use of person-related data**
- Privacy  $\subset$  Data protection (?)

But be aware:  
**Distinction is not always that clear!**

# Privacy / Data Protection: Alternative Approach

**„Data is an asset“**

Lessig, Lawrence (1998):  
The Architecture of privacy



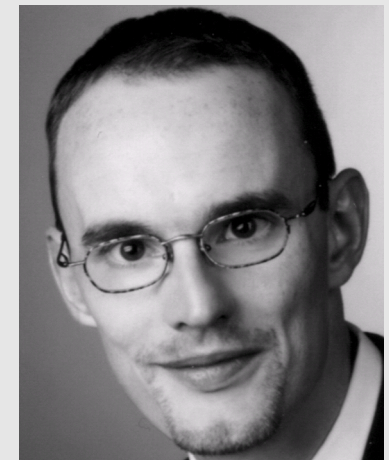
# Market approach to data protection



~0,75 €



Pallas, Frank  
sex: male  
birth: xyz  
avg. Income: abc  
**preferred drink: ...**  
...



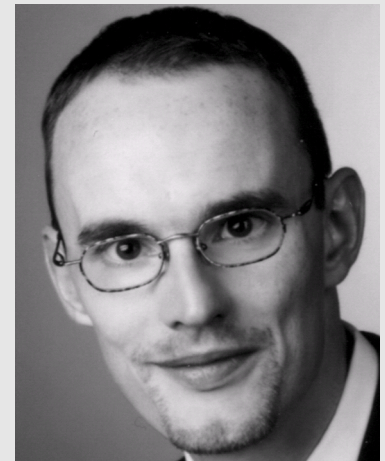
# Data protection and the market?

???

nope!



Pallas, Frank  
sex: male  
birth: xyz  
avg. Income: abc  
preferred drink: ...  
**sexual activity: ...**



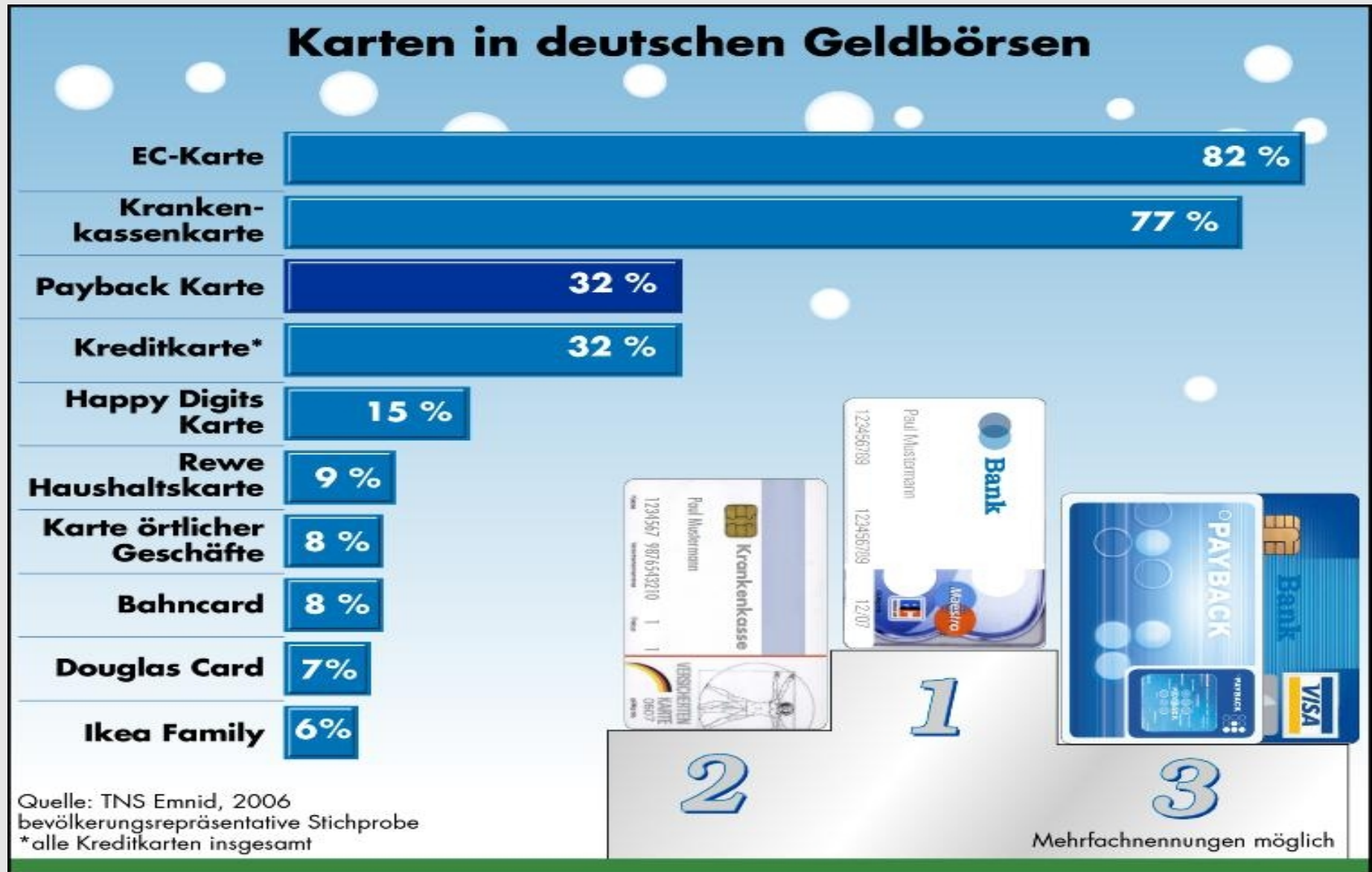
Does that work?

# Loyalty cards and the privacy market





# Loyalty cards and the privacy market



# Data protection and the market?



# Person-related data as an „asset“

- Approach mainly pursued in US
- Person-related data  $\hat{=}$  Intellectual property
- Lessig, Posner, ...
- „Law & Economics“: Efficiency
- Most European (and especially German) protagonists oppose intensely

Crucial question:  
Limitations of tradability?

# Limitations of „freewill“



# Conclusion

- Privacy and data protection are different concepts
- Privacy is about being let alone
- Data protection is rather about informational self-determination
  - Safe harbor principles allow for compact overview
- Economic approach also possible, contrasts to „human-rights-approach“
  - Needs, nonetheless, limitations of tradability



# Relevance for Neuroscientists

First of all, of course:

**Comply with legal regulations!**

Data-gathering allowed?

Anonymize experimental data

If not possible, have extensive security precautions in place

# Relevance for Neuroscientists (II)

**Be aware of an interest in  
„not knowing things“**

# Relevance for Neuroscientists (III)

**What about governmental use of  
„new technologies“?**

**Even if done in good faith?**

# Relevance for Neuroscientists (IV)

**What about „neuroeconomics“ in the market-based approach?**

# Relevance for Neuroscientists (V)

Warren and Brandeis (1890):

***„The common law secures to each individual the right of determining [...] to what extent his thoughts, sentiments, and emotions shall be communicated to others.“***

Warren, S. and Brandeis, L. (1890): „The Right to Privacy“  
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# Last Words: Listening to Luminaries



# Weizenbaum on the „Neutrality of Science“

Science is not neutral.

There is an infinite number of questions to ask.

Scientists only have a limited amount of time.

They thus can only ask a limited number of questions.

They are thus forced to select the questions to ask.

This necessary choice leads to non-neutrality.

# You

will have to decide  
which questions to work on.



# Contact me!

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