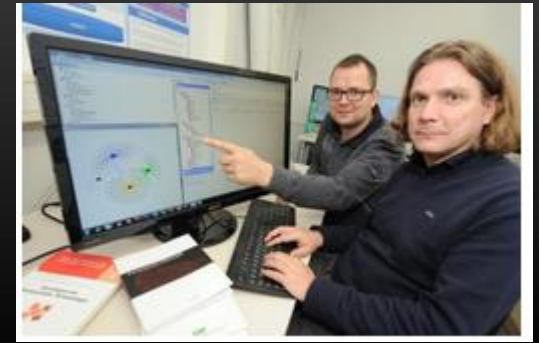# HOW DARK IS THE DARKNET?

Dangers and Possibilities for the Digital Society

THE PANELISTS

- **Michael Spranger**, Hochschule Mittweida, University of Applied Sciences, Germany
- **Lasse Berntzen**, University of South-Eastern Norway, Norway
- **Claus-Peter Rückemann**, Leibniz Universität Hannover / Westfälische Wilhelms-Universität Münster / North-German Supercomputing Alliance (HLRN), Germany
- **Dirk Labudde**, University of Applied Sciences Mittweida, Germany

1901 und 1910

Udo Steinberg ... "Steinberg was one of the most important players in the early years of our club"

1895 to 1900
Udo Steinberg studied
at the "Technikum"
Mittweida

Panel on Facets of Digital Society Drawbacks

Theme: How Dark is the Darknet? -- Dangers and Possibilities for the Digital Society

Moderator
Dirk Labudde, University of Applied Sciences Mittweida, Germany

Panelists
Michael Spranger, Hochschule Mittweida, University of Applied Sciences, Germany
Lasse Berntzen, University of South-Eastern Norway, Norway
Claus-Peter Rückemann, Leibniz Universität Hannover / Westfälische Wilhelms-Universität Münster / North-German
Supercomputing Alliance (HLRN), Germany
Dirk Labudde, University of Applied Sciences Mittweida, Germany
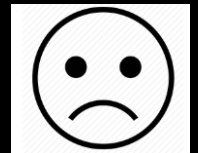
Digitization of society

Digitization is in full swing. It affects us all - and makes for a profound change in every area of life. The digital transformation offers great opportunities for a better quality of life, revolutionary business models and more efficient management.

Modern society is globally networked, we communicate in seconds with friends, acquaintances and business partners worldwide. However, the **positive possibilities** of using the Internet also have **negative side effects**: cybercriminals have a variety of opportunities.

Crime moves to the Internet, new crime phenomena arise.

Hello world, these are my secrets
Cars, airplanes and reactors communicate
with their servers - highly unsafe..

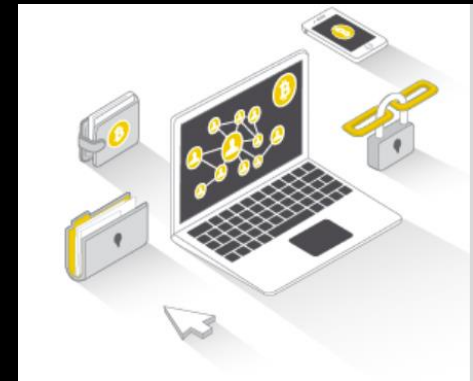The work on TOR was started in 2002 by Matej Pfajfar.

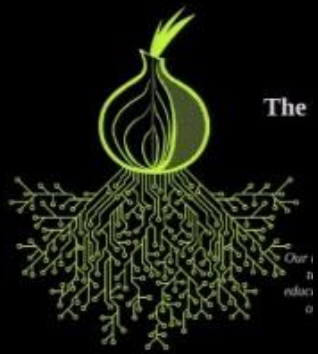Tor is a network that is used for the anonymization of Internet connections.

The Man Behind
Bitcoin
Satoshi Nakamoto

- First blockchain-based system introduced in 2008 by "Satoshi Nakamoto"
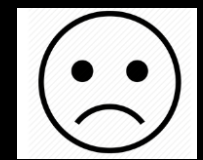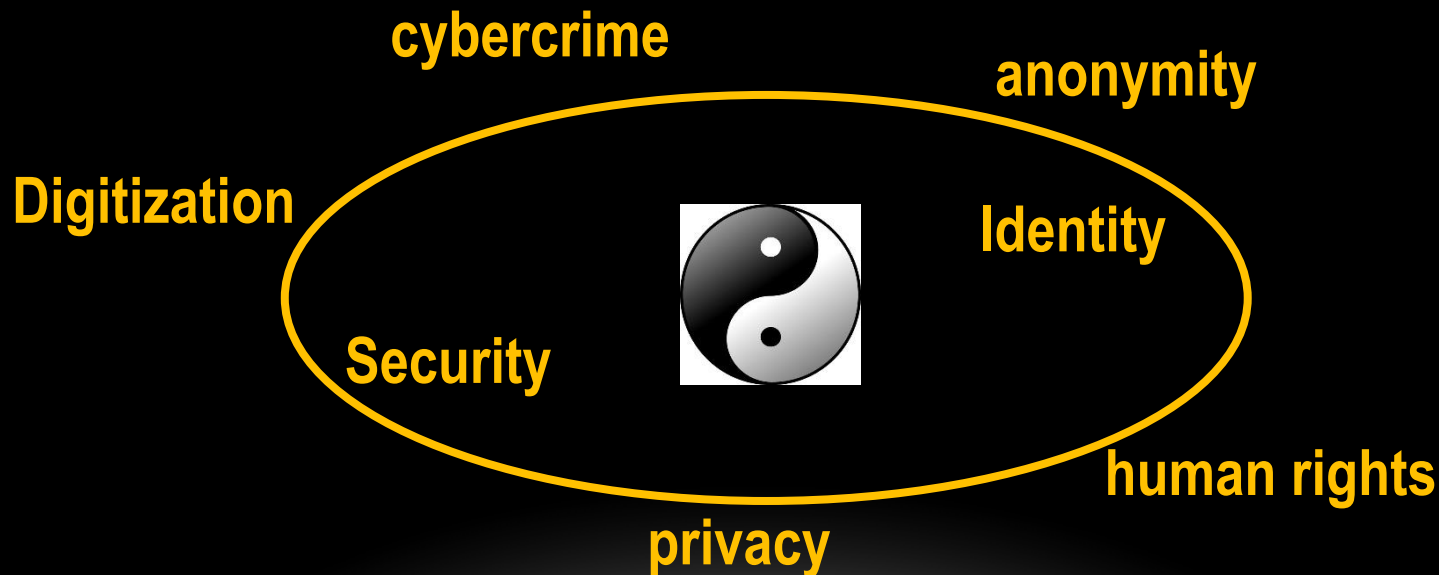- Implemented in **2009**

Dark Web …?!

- **Digitization requires cybercrime !**
- **Security vs privacy !**
- **Does anonymity inevitably lead to crime?**
- **We need a social, technical and legal discussion!**

cybercrime

anonymity

Digitization

Identity

Security

human rights

privacy

AN **CPIX** ORIGINAL DOCUMENTARY

Darknet

Lasse Berntzen

University of South-Eastern Norway

The Darknet

- Darknet: Information and communication channels hidden behind password protection and encryption.
- The darknet is a problem, not because its dark (non-transparent), but because it is used for criminal activities, e.g., drug trade, trafficking, terrorism.
- But it is nothing new. The darknet is like illegal drinking clubs or gambling clubs.
- People may have different reasons for staying under the radar, and many reasons are certainly not criminal, maybe just embarrassing (and certainly protected by the right to privacy).

International Dimension

- The Darknet is located everywhere.
- Some countries have mutual arrangements to exchange information.
- Other do not.
- The Internet is global.
- This makes the darknet difficult to handle.
- And calls for international collaboration

Law Enforcement and Darknet

- Law Enforcement have only limited chances of being in front of the technological developments.
- Therefore, traditional good police work including undercover operations and social engineering must be used.
- But the Law Enforcement should be more open to collaborate and learn from e.g., universities.

EU Data Retention Directive

- Regulatory mechanism
- Evidence in criminal cases
- Access must be decided by court, not by police
- Access should only be granted for serious crimes

- I am more concerned about the massive data retention done by private companies

DataSys 2018 International Expert Panel:
Panel on Facets of Digital Society Drawbacks:
How Dark is the Darknet? – Dangers and Possibilities for the Digital Society.

Darknet and Its Public Awareness:
Is Reputation of Sciences and Technologies Part of a Gambit?

DataSys 2018
July 25, 2018, Barcelona, Spain

Dr. rer. nat. Claus-Peter Rückemann[1,2,3]

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DataSys 2018 International Expert Panel: Panel on Facets of Digital Society Drawbacks: How Dark is the Darknet? – Dangers and Possibilities for the Digital S

└─ Status: Computer Networks Exist
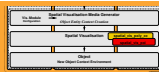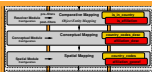
Computer Networks Exist

- **Computer Network:** An "implemented methodology", an implementation of a mathematical network, a tool.
- **Dark:** A state where capability to detect/see is reduced due to absence/ignorance of sensorable physical effects.
- **Public awareness is result of a tradition of misled perception:** Terms with different context but comparable side-effects, e.g., Dark Ages, Dark Art, Dark Triad, Dark Matter, Dark Energy, . . .
- Are there different views of "dark"?: Society, culture, regulations, . . . As always, without a view from outside the box, there are too many distracting things, which do not contribute to solve a problem.
- **Darknet is** not **a matter of** "Digital" but of **Society**!
- **The Darknet is "legally dark"**, non-harmonised national regulations and laws, territorial law, . . .
- Open questions:
  From society point of view: What is the purpose of the darknet?
  Is there the political will to define and to solve possible problems?
 What is done regarding the legal, executive, technical stati?

Conclusions: Address problems in the real world, . . .

- **Title answer: The Darknet is as dark as society allows.**
- **Darknet does not mean data, which are legally owned and not shared with others.**
- **Here, if there is a "problem", its solution is not in scope of sciences and technologies.**
- **There are connotations for different naming of grey/dark/. . .**
- **Essences are already addressed.**

  "Even shameful deeds, when done in darkness, never bring disgrace."
      (Sophocles, 497/6–406/5 BCE).

- **Apply regulations and effectively force consequences** in real world.
- **Do not summarise different problems.**
  Address individual problems individually.
- **Something is not dark just because human eyes can't see it.**
  Switch on the light.
- **Use the available and create the required legal and complementary tools.**
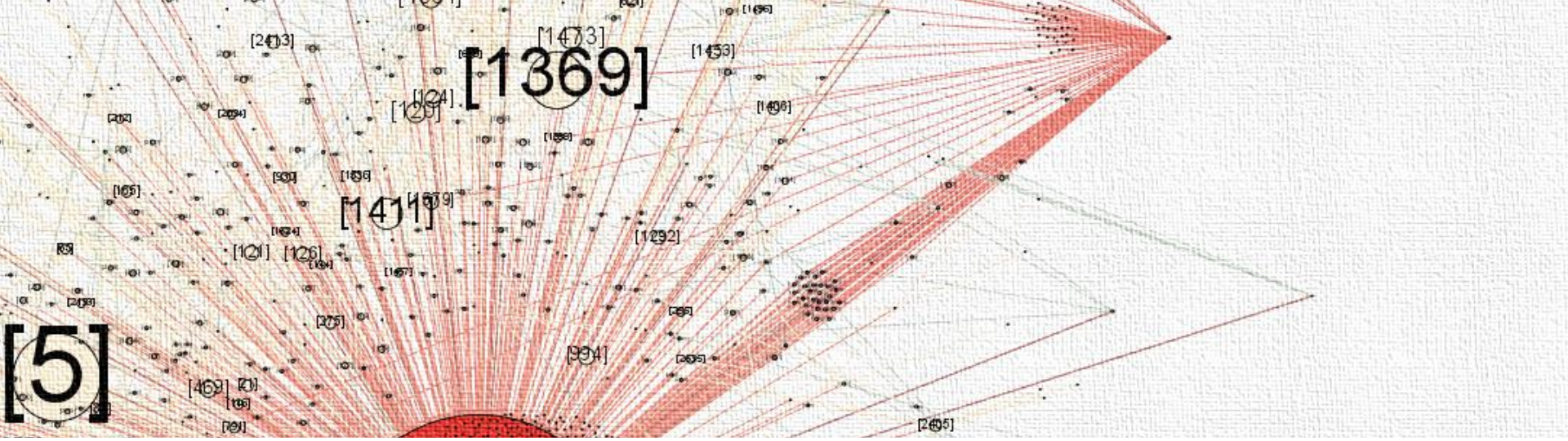
How Dark is the Darknet?
Dangers and Possibilities for the Digital Society

Michael Spranger, Panel on Facets of Digital Society Drawbacks, Datasys 2018, Barcelona
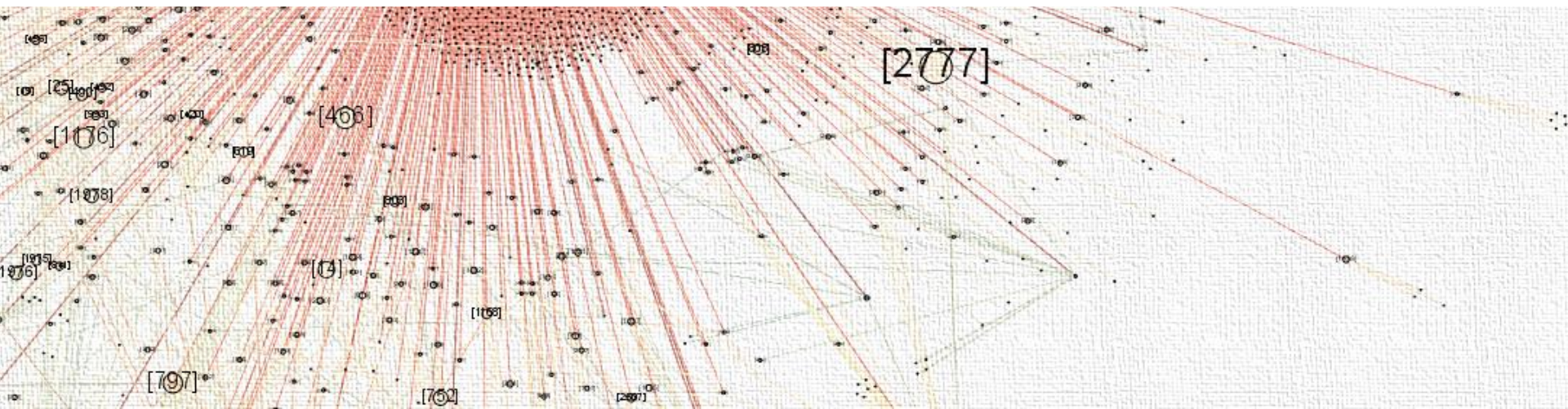
Thoughts

- How dark the Darknet is depends on how easily can we bring light into the darkness

- Is the effective investigation of crimes on the Internet / Darknet possible or are we inevitably moving towards a criminal anarchy?

Types of Crime

OFFLINE CRIMES

Offline Crimes

Serial crimes like

Arson

Burglary

Fraud

…

Pattern Recognition and Simulation

Modeling burglary patterns on street networks
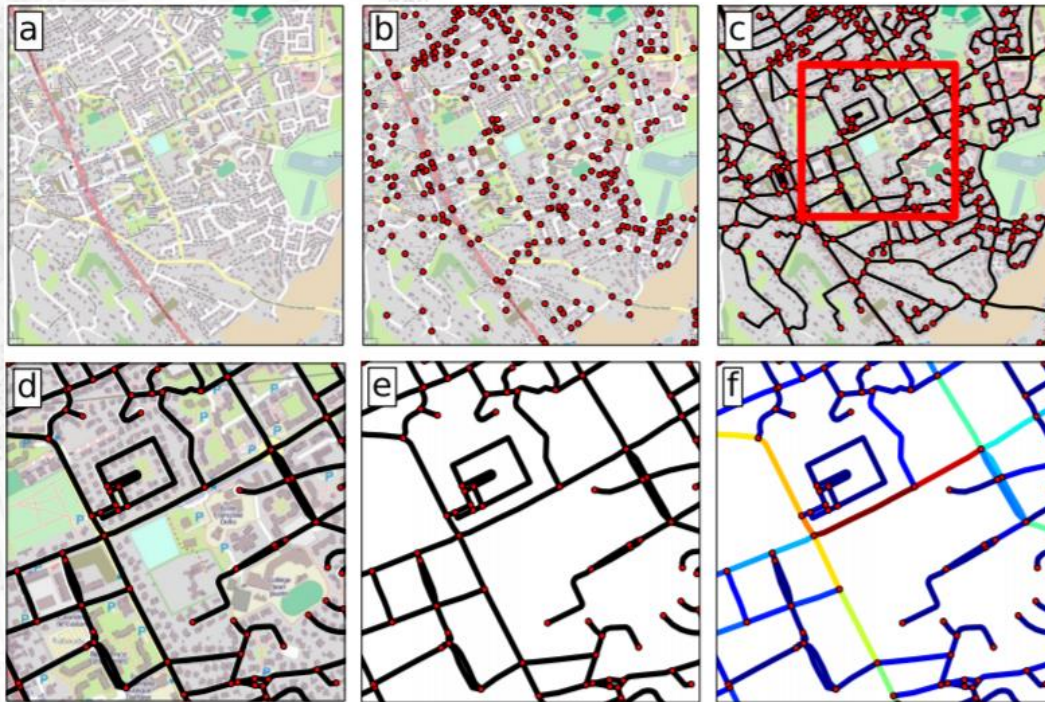
Types of Crime

CRIMES (PLANNED) ONLINE

Crimes (planned) online

Riots during demonstrations, sport events or as a sequel to political annoyance often emerge in social media.

Terrorists often recruiting their future assassins via social media.

...then we swear that we will strike America at its centre in Washington.

Defend crimes planned online
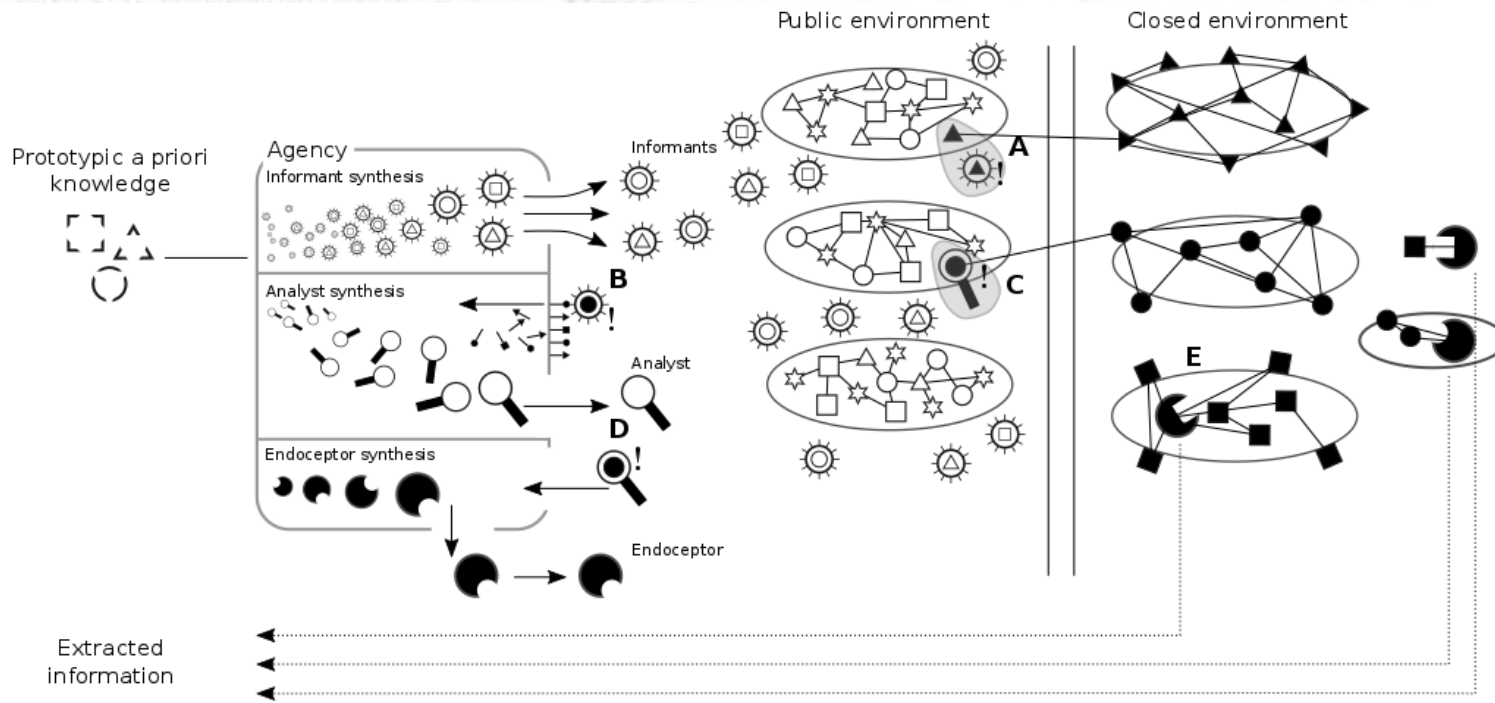
An artificial immune system for social networks

Types of Crime utilizing the Internet

ONLINE CRIMES

Online Crimes

Buy everything:

Illegal drugs

Weapons

Illegal porography

Identities

Murderer

Defend Online Crimes

Some Methods…

- Waiting for Whistleblowers and leaks…

- German research project: "Integration of networked data and early detection of organized crime phenomena"

- First "intelligent" police search engine for the Darknet

- But, "just" a search engine …

- What comes next ?

- … and when ?

15 years later …

2002: TOR invented ➡ 2017: FuhSen invented

Conclusions

- New Technologies are first used for commiting crimes
  - Crime is very fast in exploiting new technologies
    - The crime's lead is increasing

Digital Anarchy?