oueees-201706 Part 3: Negligence of people

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Lecture notes on GitHub

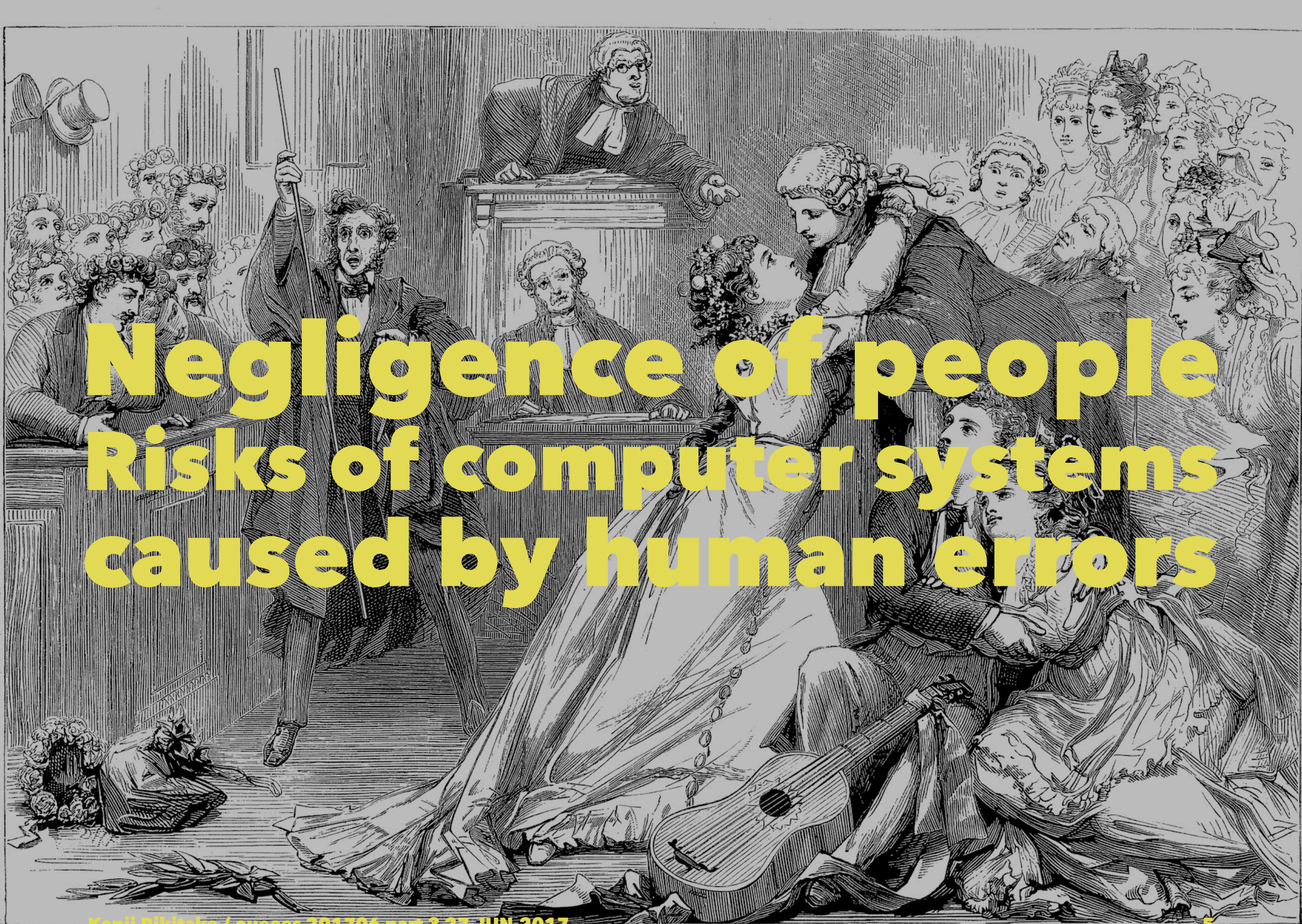- https://github.com/jj1bdx/oueees-201706-public/

- Don't forget to *check out the issues*!

Some thoughts on Part 2 report answers

- Internet and DNS: eventually consistent

- Concurrency = asynchronicity

- Eventual = allowing timeframe variance

- Redundancy: more availability

Negligence of people
Risks of computer systems
caused by human errors

SCENE FROM "TRIAL BY JURY," AT THE ROYALTY THEATRE.

Illusion of *distributed* systems: how large systems fail

Case study: Mizuho Bank on April 2002 (1/4) [1]

- **Failed transactions** on merging 3 banks

- Duplicated transactions also observed

- **Planned since December 1999**, implementation details changed many times

- Single point of failure at the *Relay Computer*

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[1] 失敗知識データベース: みずほファイナンシャルグループ大規模システム障害

Case study: Mizuho Bank on March 2011 (2/4) [2]

- **~1.2M unprocessed transactions** on 17-MAR-2011; ATM closed for 3 days to complete the batch during 19~21 MAR-2011[3]

- **Cascaded failures** by interrupted and duplicated batch operations

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[2] みずほ銀障害の全貌判明、懸案はCIO人事 - 第1回 重なった30の不手際 (ITpro), 第2回 読み誤りや誤削除など人為ミス続発

[3] みずほ銀行: 2011年3月のシステムトラブル (Wikipedia)

Case study: Mizuho Bank as of 2016 (3/4) [4]

- Integration project initiated in 2012

- Scandal of relationship with organized crimininals revealed on September 2013[5]

- Integration project deadline delayed from March 2016 to December 2016

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[4] Akio's Log - みずほ銀行次期システム関連のまとめ

[5] みずほ銀行暴力団融資事件

Case study: Mizuho Bank as of 2017 (4/4)

- Still recruiting software engineers (May 2017) [6]

- Project completion by Summer 2017 announced; testing and implementation will take 1 to 1.5 years [7]

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[6] ジョブダイレクト: みずほ情報総研株式会社の求人(2017年5月掲載)

[7] みずほ銀行の次期システムが今夏にも完成との報道、稼働は18年度以降(ITpro 2017/05/08)

Why failed?

No corporate governance
No software engineering skills
No project management skills
Pervasive complacency
Indifference and ignorance

Question

Can Mizuho Bank successfully complete the project this time?

Fallacies of teamwork
... and other social issues

Groupthink
=
「空気読め」

Groupthink (n.)

The practice of thinking or making decisions as a **group** in a way that **discourages creativity or individual responsibility** [8]

[...]occurs when a group makes **faulty decisions because group pressures lead to a deterioration of "mental efficiency, reality testing, and moral judgment"** (Irving Janis,

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[8] New Oxford American Dictionary, macOS 10.12.5, emphasis by Kenji Rikitake

[9] The Psychologists for Social Responsibility, "What is Groupthink?"

When all think alike, no one thinks very much.

— Walter Lippman [10]

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[10] Walter Lippman, "The Stakes of Diplomacy" (1915)

Groupthink symptoms (1/2) [9]

- Illusion of invulnerability

- Collective rationalization

- Belief in inherent morality

- Stereotyped views of out-groups

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[9] The Psychologists for Social Responsibility, "What is Groupthink?"

Groupthink symptoms (2/2) [9]

- Direct pressure on dissenters

- Self-censorship

- Illusion of unanimity

- Self-appointed *mindguards*

[9] The Psychologists for Social Responsibility, "What is Groupthink?"

Groupthink in news media (1/2) [9]

- Incomplete survey of alternatives

- Incomplete survey of objectives

- Failure to examine risks of preferred choice

- Failure to reappraise initially rejected alternatives

[9] The Psychologists for Social Responsibility, "What is Groupthink?"

Groupthink in news media (2/2) [9]

- Poor information search

- Selective bias in processing information at hand

- Failure to work out contingency plans

- Low probability of successful outcome

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[9] The Psychologists for Social Responsibility, "What is Groupthink?"

Remedies of groupthink [9]

- Assign critical evaluator role

- Stop stating preferences/expectations

- Check deliberation by external associates

- Invite outside experts to challenge

- Assign devil's advocate

- Survey rivals' scenarios regularly

[9] The Psychologists for Social Responsibility, "What is Groupthink?"

Filter Bubble: groupthink in internet [11] [12]

- **Filtering out the people and opinions against one's belief**

- **Less exposure to conflicting viewpoints**

- **Isolated in personal ecosystem enforcing ideological frames by the social network**

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[11] Pariser, Eli. The Filter Bubble: What the Internet Is Hiding from You, Penguin Press (New York, May 2011) ISBN 978-1-59420-300-8

[12] Filter Bubble (Wikipedia)
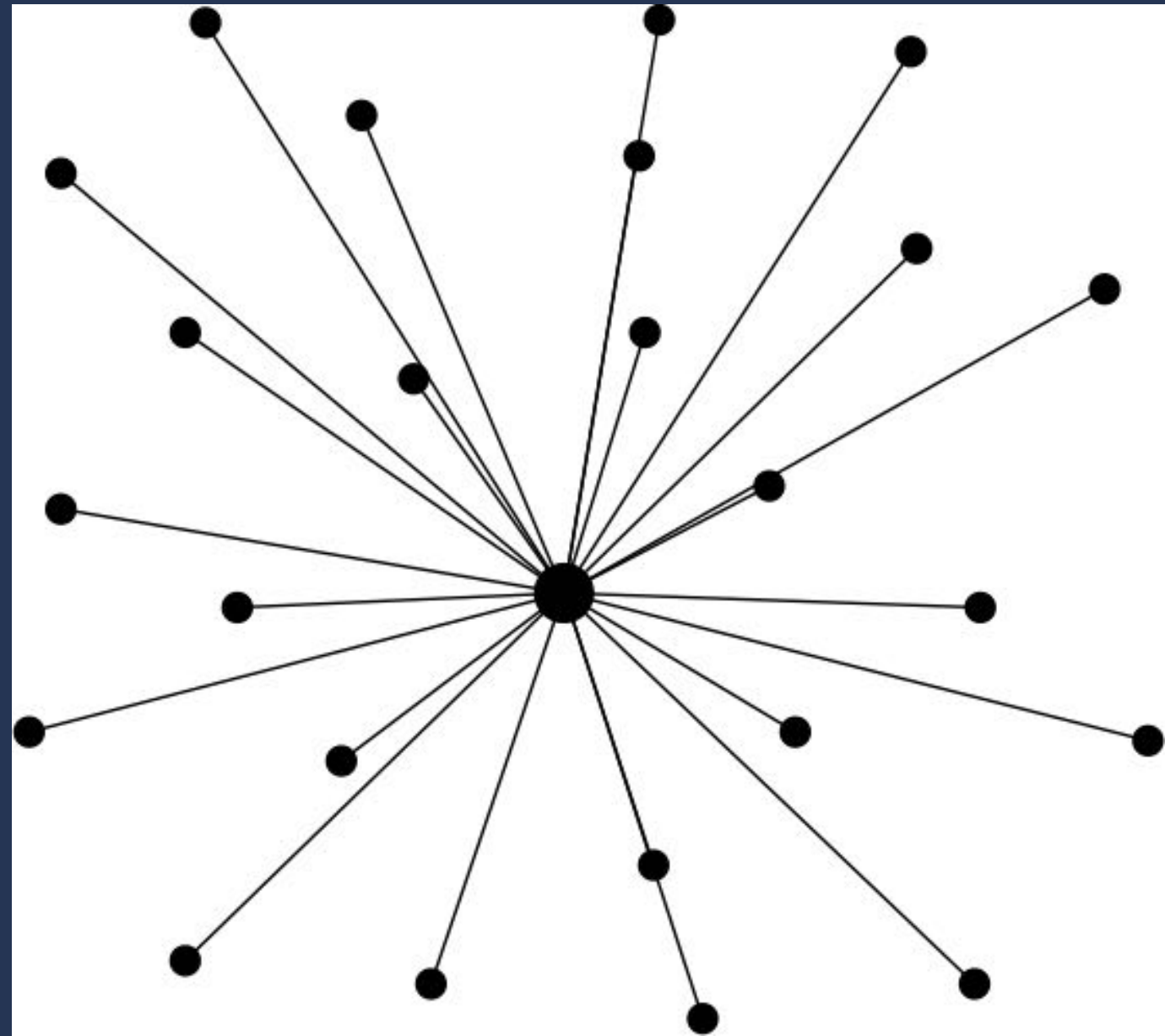
No groupthink
空気は読むな
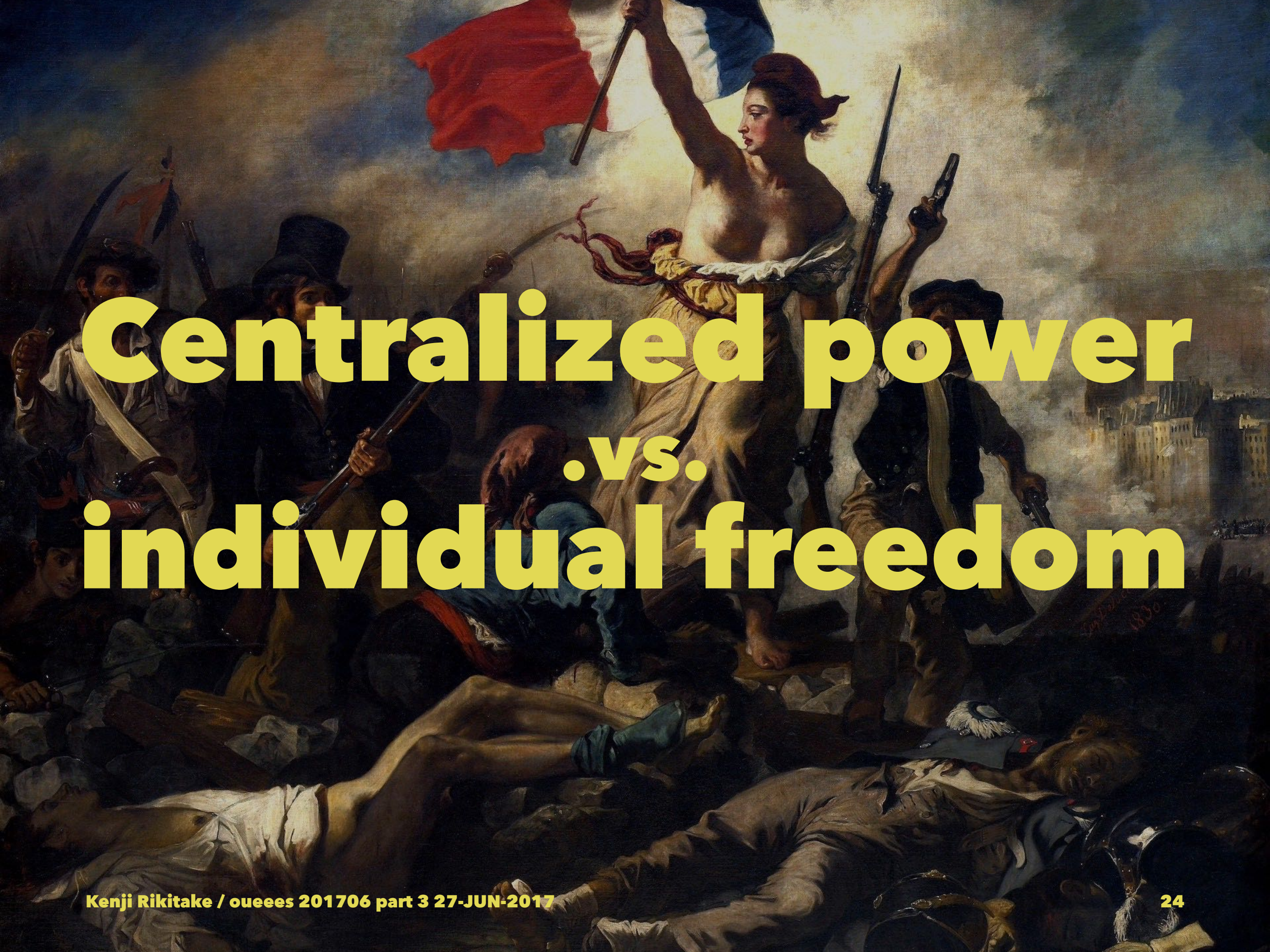
# Centralized power .vs. individual freedom

Centralized society

- **Efficient**

- **Power concentrated at the core**

- **Each node depends on the core**

- **System fails if the core fails**

- **Vulnerable to the attacks of the core**

Distributed society

- **Inefficient = many hops are required to distribute information**

- **Power given to each node**

- **Each node should survive on its own**

- **Resilient to the attacks of each node**

- **Diversity**
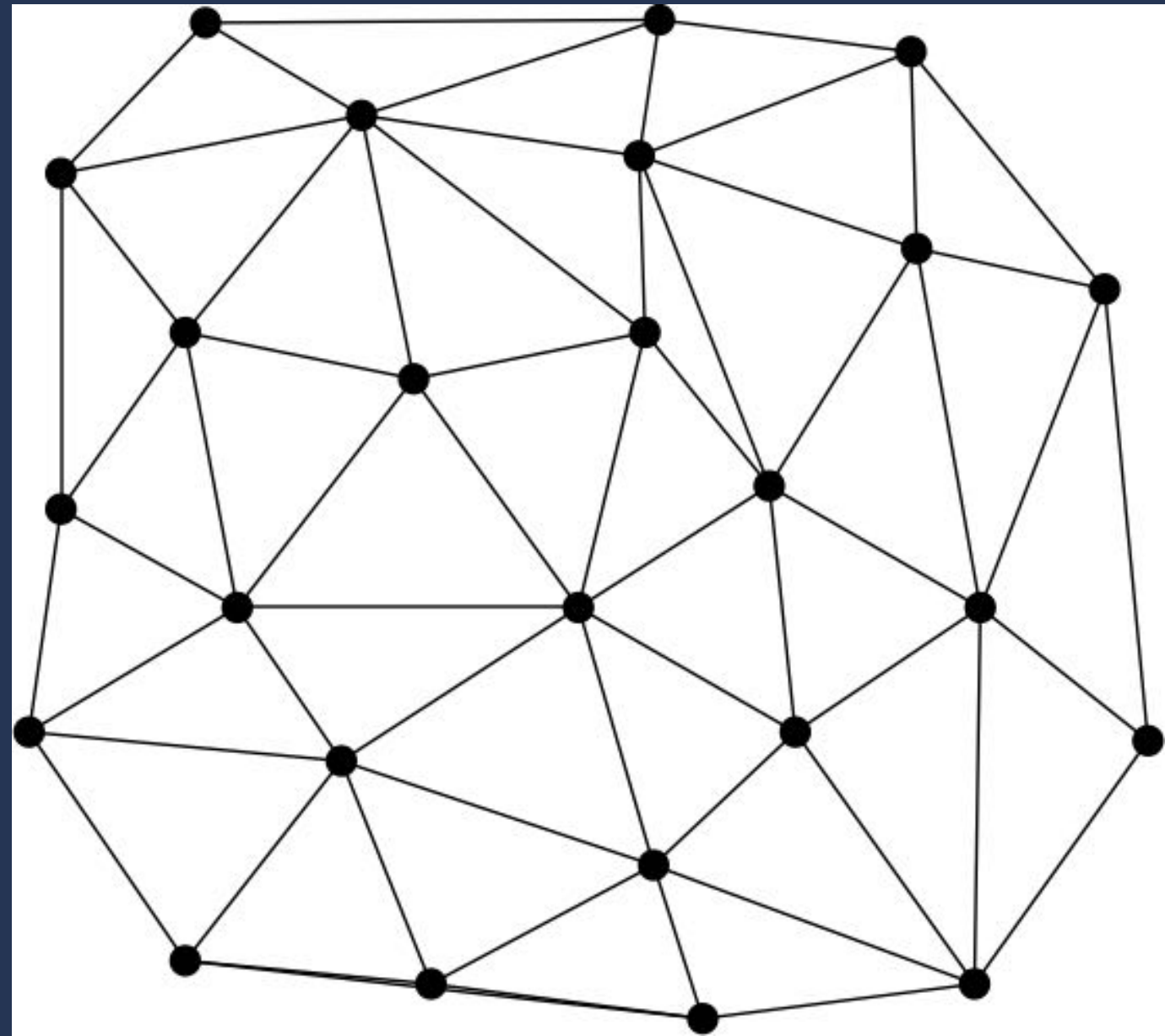
Distributed systems:
Resilience
Diversity
Autonomy

But the reality is:
Efficiency
Uniformity
Autocracy

Question

Are we trading our liberty and freedom for more efficient and convenient society?

Appendix: on choosing your career and professionality

When I chose my career and professionality?

- Age 9: discovered computers and English

- Age 10 discovered ham radio and electronics

- Age 14: earned money by writing software

- **Age 23: finally decided to make my living on my computer software professionality, with my English proficiency**

If I were at age 22, what I will do after getting a Bachelor's degree?

...

Do what you want to do

and

Get out of Japan ASAP

Explore the computer skills

Do something unpopular

What are the most important things to pursue engineering/scientist career?

...

Physical strength
Mental strength
Curiosity

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