

# A political scientist's insights into site reliability engineering

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**Hello**  
my name is

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Site Reliability Manager | 2 years

- YouTube Ads SRE
- Political scientist

# A political scientist's insights...

- Introduction to political science
- Team building as applied social change
- (Social science) system theory for system design and debugging

# Political science 101

# Politics, policy, and polity

Politics

Interactions

Policy

Rules  
eg. foreign policy

Polity

Group  
eg. state

# Political science: Relation to other domains

- Part of social science (as opposed to physics, or literature)
- Analysis of power in social interactions
- Political philosophy: Normative (*How to live*)
- History

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# Team building

Team building is ...

... social change  
applied

# Social change 101



# International Relations Theories; simplified

## Realism

States are the only actors. There is no superior force/rules, no central authority. They are rational actors and try to optimize their gains, and guarantee their survival.

## Liberalism

## Constructivism

# International Relations Theories; simplified

## Realism

States are the only actors. There is no superior force/rules, no central authority. They are rational actors and try to optimize their gains, and guarantee their survival.

## Liberalism

States can agree on international rules, entering cooperation - as rational actors. They have multiple interests, and are not "unitary".

## Constructivism

# Game theory

Players act rationally, but are bound by certain rules.

# Game theory: Prisoner's dilemma

Scenario	Player 1	Player 2	Result
<b>Scenario 1</b>	Confesses	Silent	Player 2 in prison
<b>Scenario 2</b>	Silent	Confesses	Player 1 in prison
<b>Scenario 3</b>	Confesses	Confesses	Both in prison, but short
<b>Scenario 4</b>	Silent	Silent	Both free

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**Key Takeaway:** If both players trust each other, they can walk free. If they do not: prison.

“ Power can be defined as every  
Chance, within a social relationship,  
of enforcing one's own will even  
against resistance [...].”

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**Weber, 2019, 134**  
*(K. Tribe's Translation)*

# Team building: Network organization

	<b>Hierarchical organization</b>	<b>Network organization</b>
<b>Knowledge</b>	Centralized	Individual / distributed in organization
<b>Leader (key characteristics)</b>	Manager	behind the scenes - unblocks, enables
<b>Individual (link to others)</b>	To reports of manager (team) and to manager	To team members and to individuals in other teams
<b>Cost of power</b> (Weber: "against resistance")	Low	High

Source: Own table. Weber refers to the earlier quote, defining power (Weber, 2019, 134).

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## Liberalism

States can agree on international rules, entering cooperation - as rational actors. They have multiple interests, and are not "unitary".

## Constructivism

Social reality exists and is constructed by the actions performed by states and other actors.

"Constructivist turn":  
Social constructs  
matter.

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# Team building as social change

## External rule setting

Hierarchical mode: Unspecified external entity rewrites or updates rules.

Expensive, needs direct power, will likely cause frustration.

## "Parliament"

## Experiment

# Team building as social change

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Hierarchical mode: Unspecified external entity rewrites or updates rules.

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## "Parliament"

Every member of the group ("polity") gets together and agrees on new rules.

Expensive, needs a lot of time, "too many meetings".

## Experiment

# Team building as social change

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## Experiment

Use social change: Start changing your behavior, and convincing others to follow.

Encourages growth mindset. Update rules later, if they work.



# Design and debugging

# Autopoiesis

# Next Steps: all about complexity

- 1 Social science / system theory, authors like Talcott Parsons, Niklas Luhmann
- 2 Complexity and risks
- 3 Understanding complexity
- 4 Reducing complexity

“ Accordingly, **complexity** means necessity of selection, which means contingency, which means **risk.** ”

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Luhmann, 1987, 47

*Translation and emphasis Michael Krax*

“ An interconnected set of elements is complex, if it is no longer possible for each element to be linked to each other because of inherent limits of the elements' linking capacity. ”

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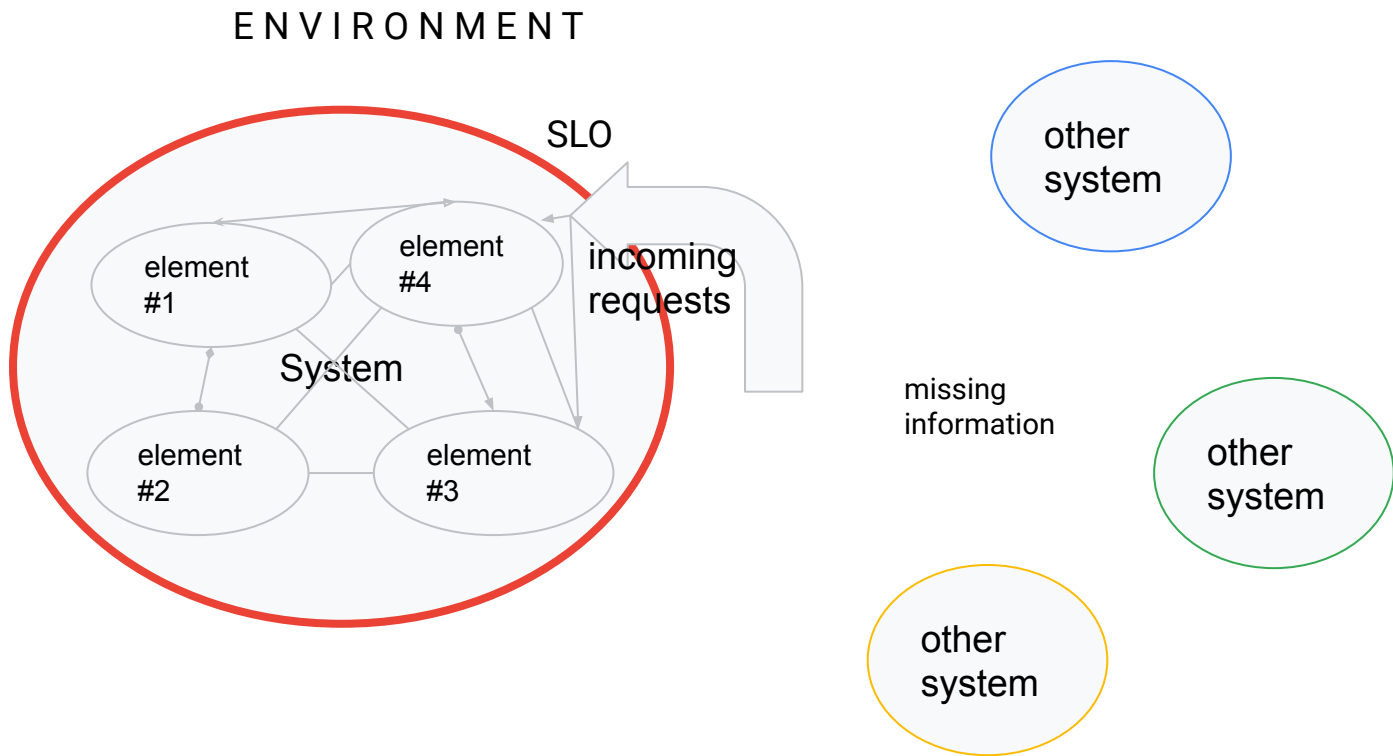
**Luhmann, 1987, 46**  
*Translation Michael Krax*

“ Only complexity  
can reduce  
complexity. ”

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**Luhmann, 1987, 49**  
*Translation Michael Krax*

# System theory and debugging



# Even more complexity

## Information

Complexity as missing information (to describe a system's environment completely). Model that as "unknown", as a risk.

## Boundaries

Self-organizing systems need a "beyond". A system cannot process full complexity of the other system.

## Difference

A system is not described by an identity, but by the difference between the system and its environment (self-referring, \*this).

## Environment

New kind of relationship - not about design and control, but about autonomy and environmental awareness.



# Conclusion

# A political scientist's insights ...

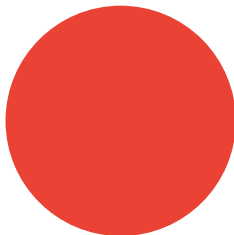
## Team building

In a network organization, one specific way drives organizational change



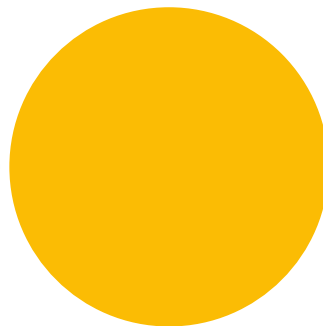
## Design and debugging

Luhmann provides a refreshing view on complexity and risk management in systems



## Political science

can provide interesting insights into site reliability engineering.



Thank You

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# Team building: Introducing organization

	Authoritative	Diffused
Intensive	Army command structure <i>mkx: incident management</i>	A general strike
Extensive	Militaristic empire <i>mkx: traditional management (?)</i>	Market exchange <i>mkx: scheduling mechanism that makes a decision to evict a job</i>

Source: Forms of organizational reach (Mann, 1986, Fig. 1.1, p. 9, additions in *italics*)