Contestable AI for urban intelligence

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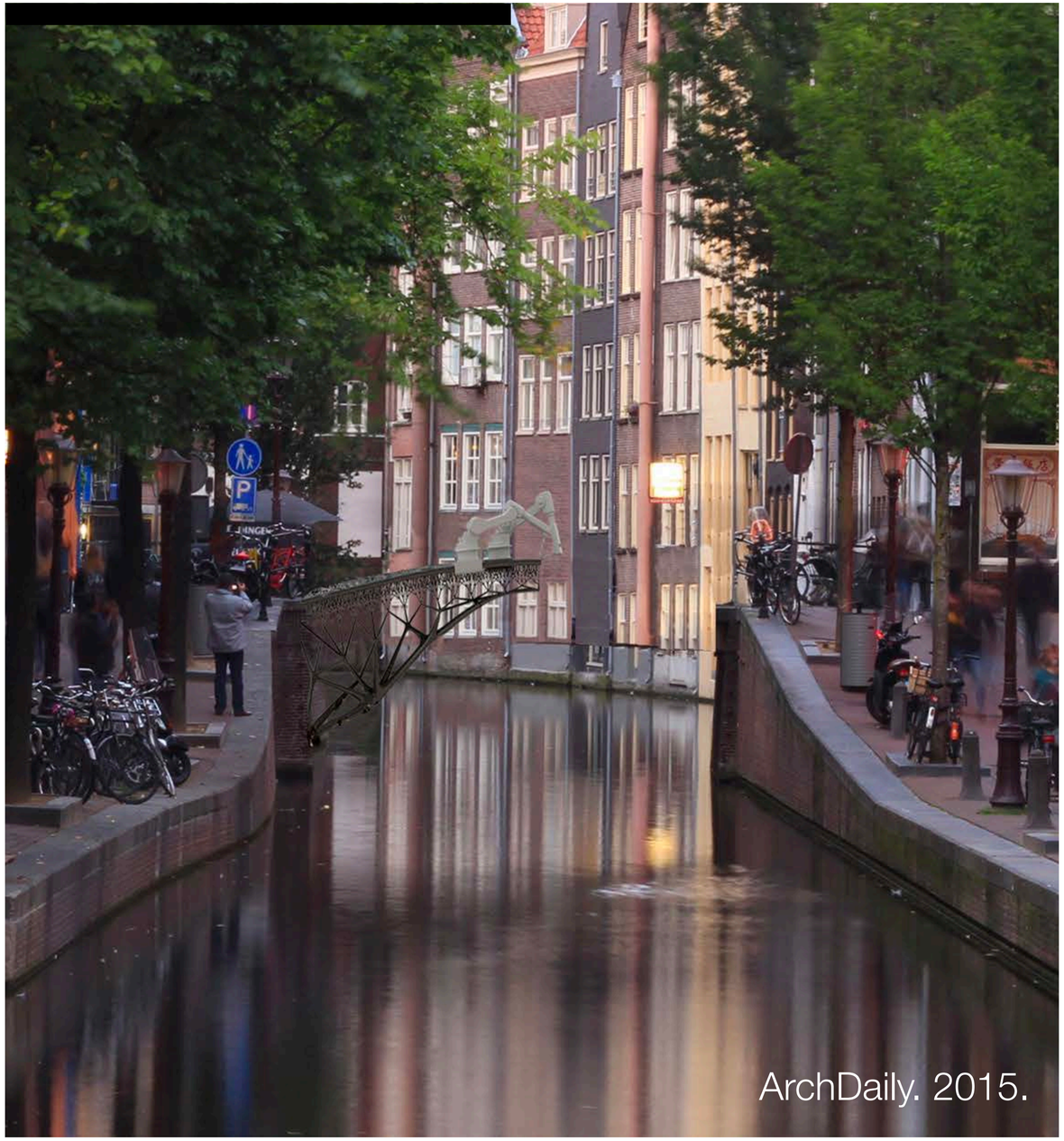
BRIDE Project closing event
23 August 2023

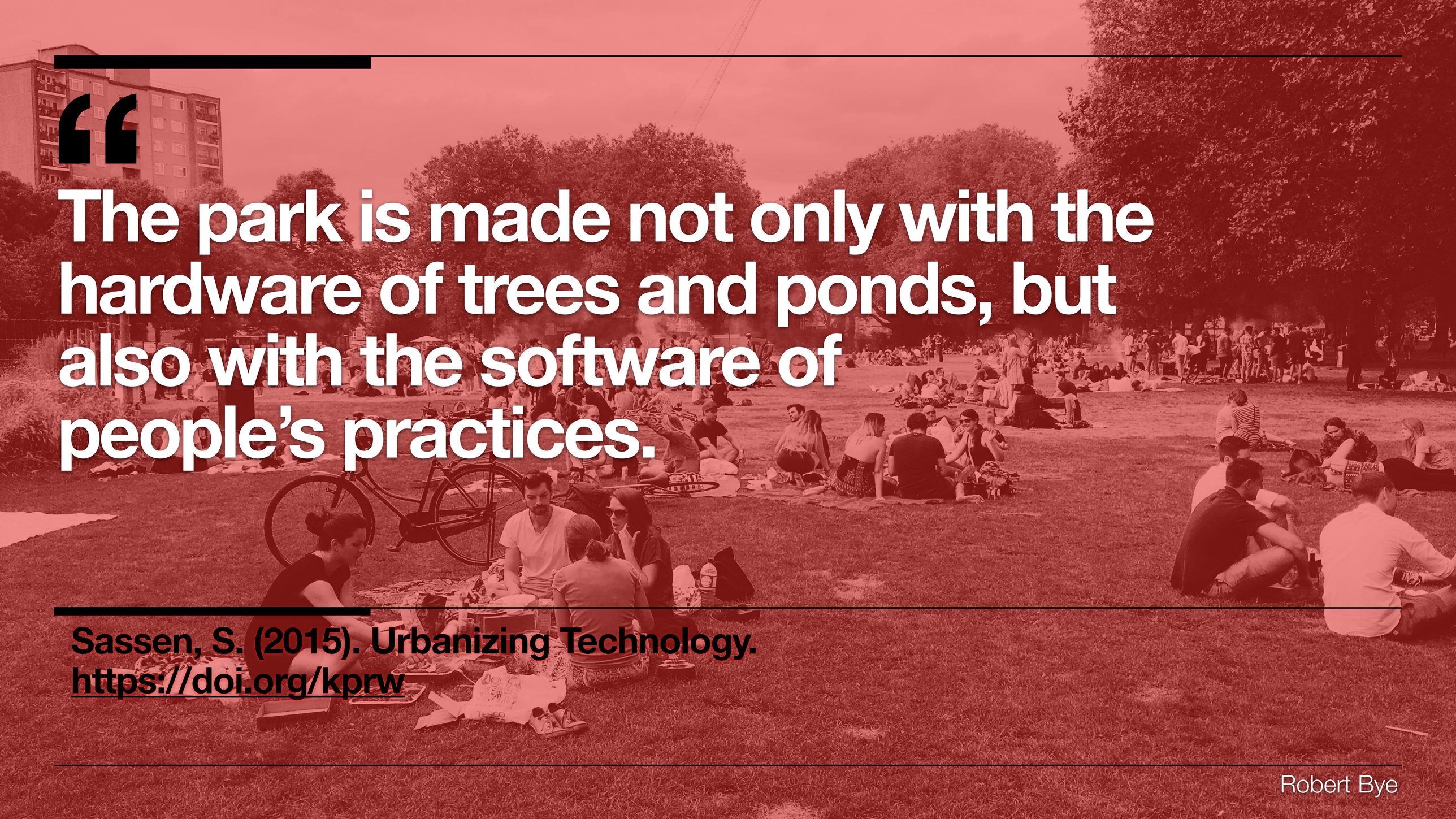
www.contestable.ai

Frank Rudolph Paul



ArchDaily. 2015.

DesignBoom. 2021.



“

The park is made not only with the hardware of trees and ponds, but also with the software of people’s practices.

Sassen, S. (2015). Urbanizing Technology.
https://doi.org/kprw

Urbanizing technology

- Inclusion
- Adaptability

Sassen, S. (2005). Cityness in the Urban Age.

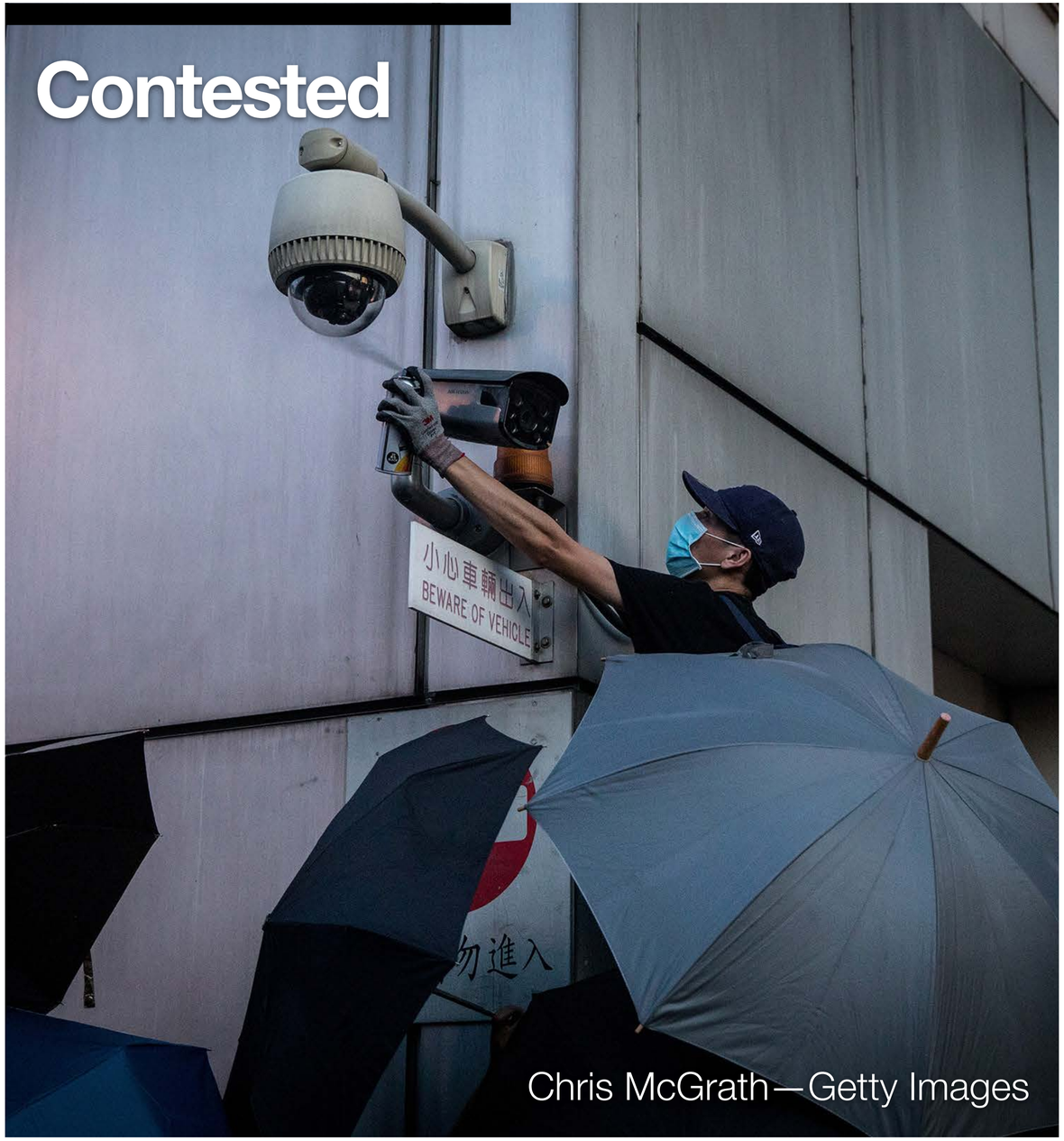
Sassen, S. (2010). Cityness. Roaming Thoughts About Making and Experiencing Cityness.

Sassen, S. (2013). Does the City Have Speech?

Sassen, S. (2015). Urbanizing Technology.

WMB studio

Smart urban infrastructure that respects cityness needs to be contestable.


Contested
小心車輛出入
BEWARE OF VEHICLE
勿進入
Chris McGrath—Getty Images


Contestable
Shutter
CAM
Responsible Sensing Lab

Contestable AI

AI that is open and responsive to dispute, throughout the system lifecycle, establishing a procedural relationship between decision subjects and system operators.

O. Kuille/Internet Archive

Minds and Machines
https://doi.org/10.1007/s11023-022-09611-z

Check for updates

Contestable AI by Design: Towards a Framework

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Abstract
As the use of AI systems continues to increase, so do concerns over their lack of fairness, legitimacy and accountability. Such harmful automated decision-making can be guarded against by ensuring AI systems are contestable by design: responsive to human intervention throughout the system lifecycle. Contestable AI by design is a small but growing field of research. However, most available knowledge requires a significant amount of translation to be applicable in practice. A proven way of conveying intermediate-level, generative design knowledge is in the form of frameworks. In this article we use qualitative-interpretative methods and visual mapping techniques to extract from the literature sociotechnical features and practices that contribute to contestable AI, and synthesize these into a design framework.

Keywords Artificial intelligence · Automated decision-making · Contestability · Design · Human–computer interaction · Machine learning · Sociotechnical systems

1 Introduction

Artificial Intelligence (AI) systems are increasingly used to make automated decisions that impact people to a significant extent. As the use of AI for automated decision-making increases, so do concerns over its harmful social consequences,

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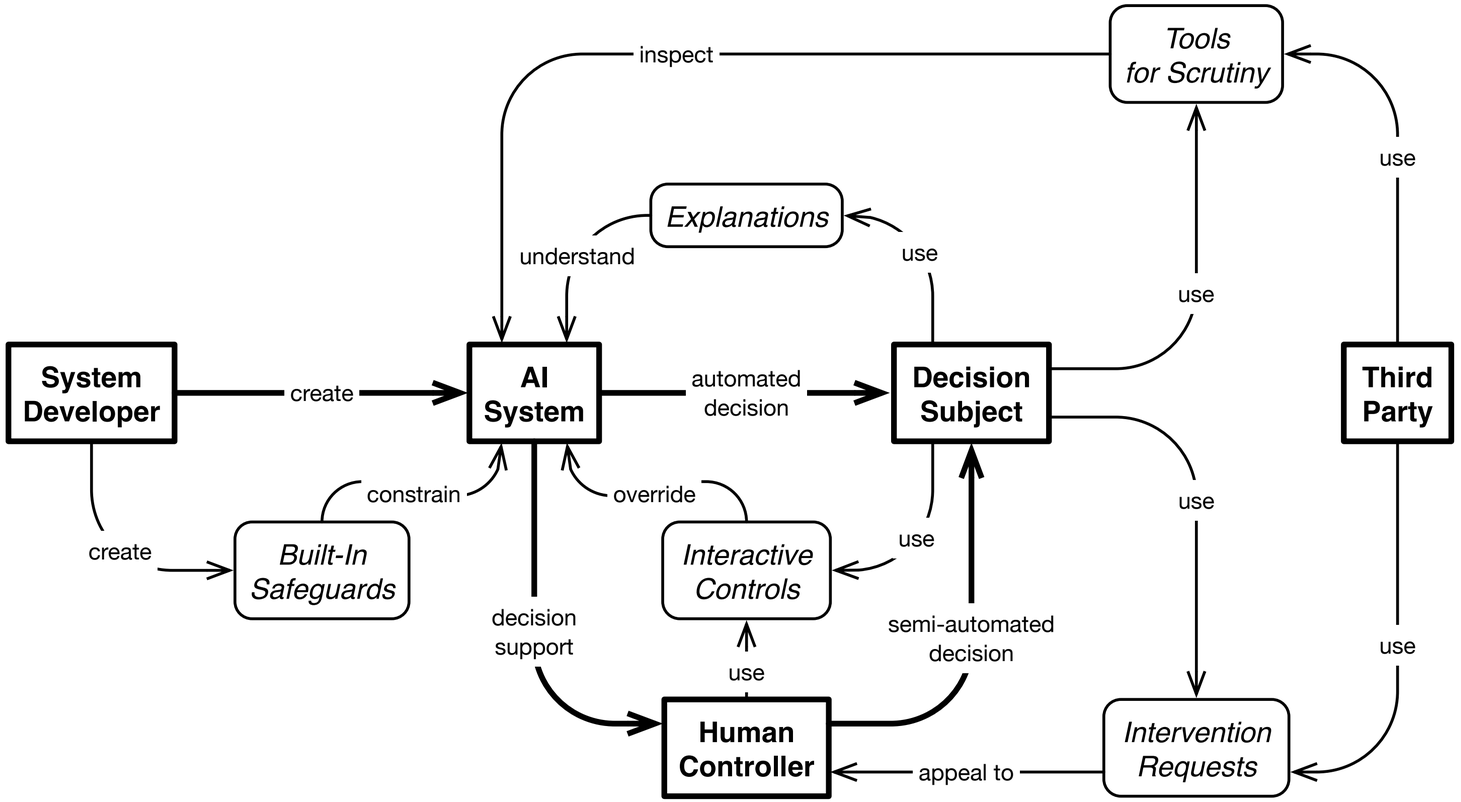
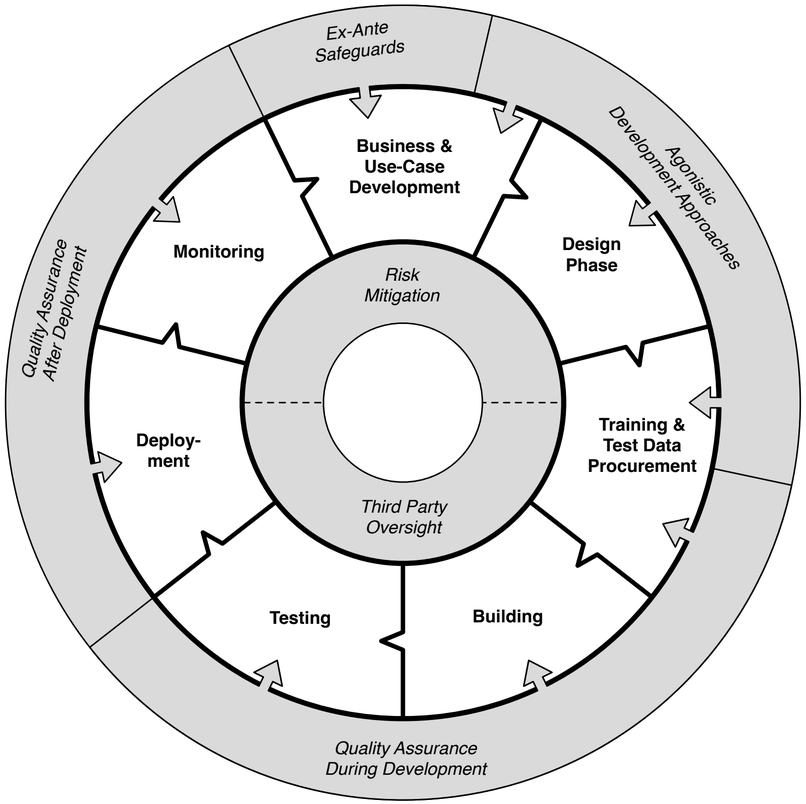
edu.nl/963n7

Features



Practices



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Practices

Ex-ante safeguards

Anticipating impacts • Acceptance criteria • Certification

Agonistic dev approaches

Co-construct decision-making process • Ongoing adversarial dialogue

QA measures during dev

Stakeholder needs guiding development • Bias prevention • Living labs • Stakeholder feedback

QA measures after deploy

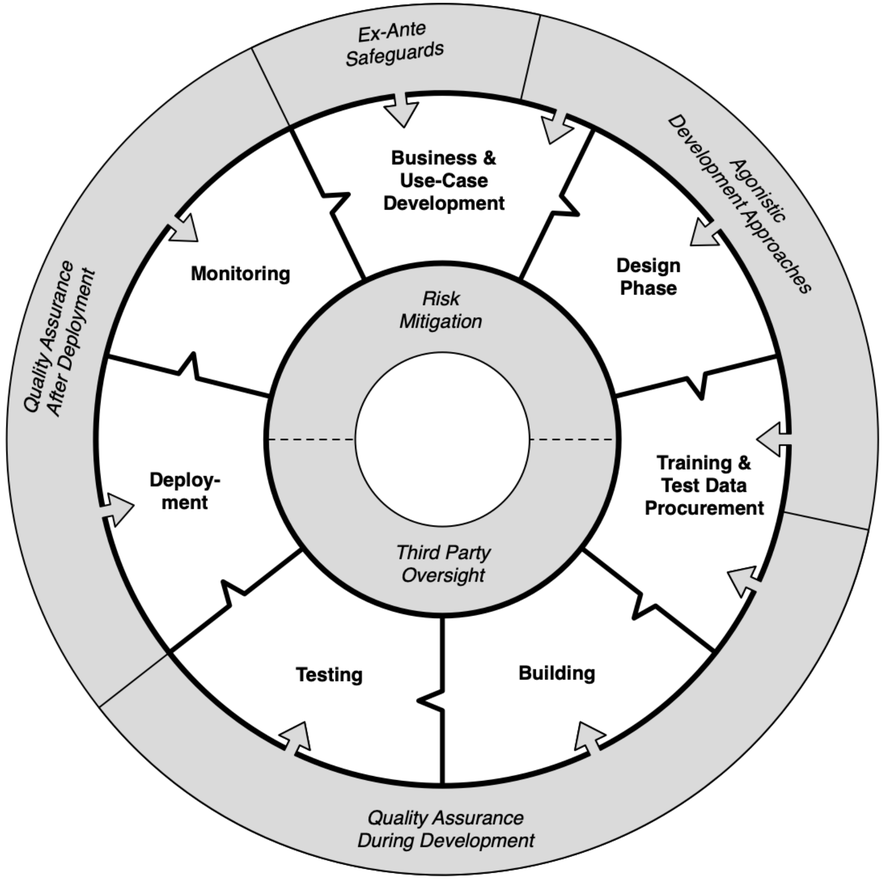
Procedural integrity • Monitoring for bias, misuse • Feedback from corrections, appeals and additional contextual info

Risk mitigation

User education • Environmental limits

Third party oversight

Model-centric tools for auditing • Trusted intermediaries • Secure environments



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How contestability compares the cityness qualities of inclusion and adaptability.

Inclusion × Contestability

"Seeing like a city. Tap into local knowledge for tech implementation."

🏟️ **Agonistic development approaches.**

🙋 **Representation?**

Adaptation × Contestability

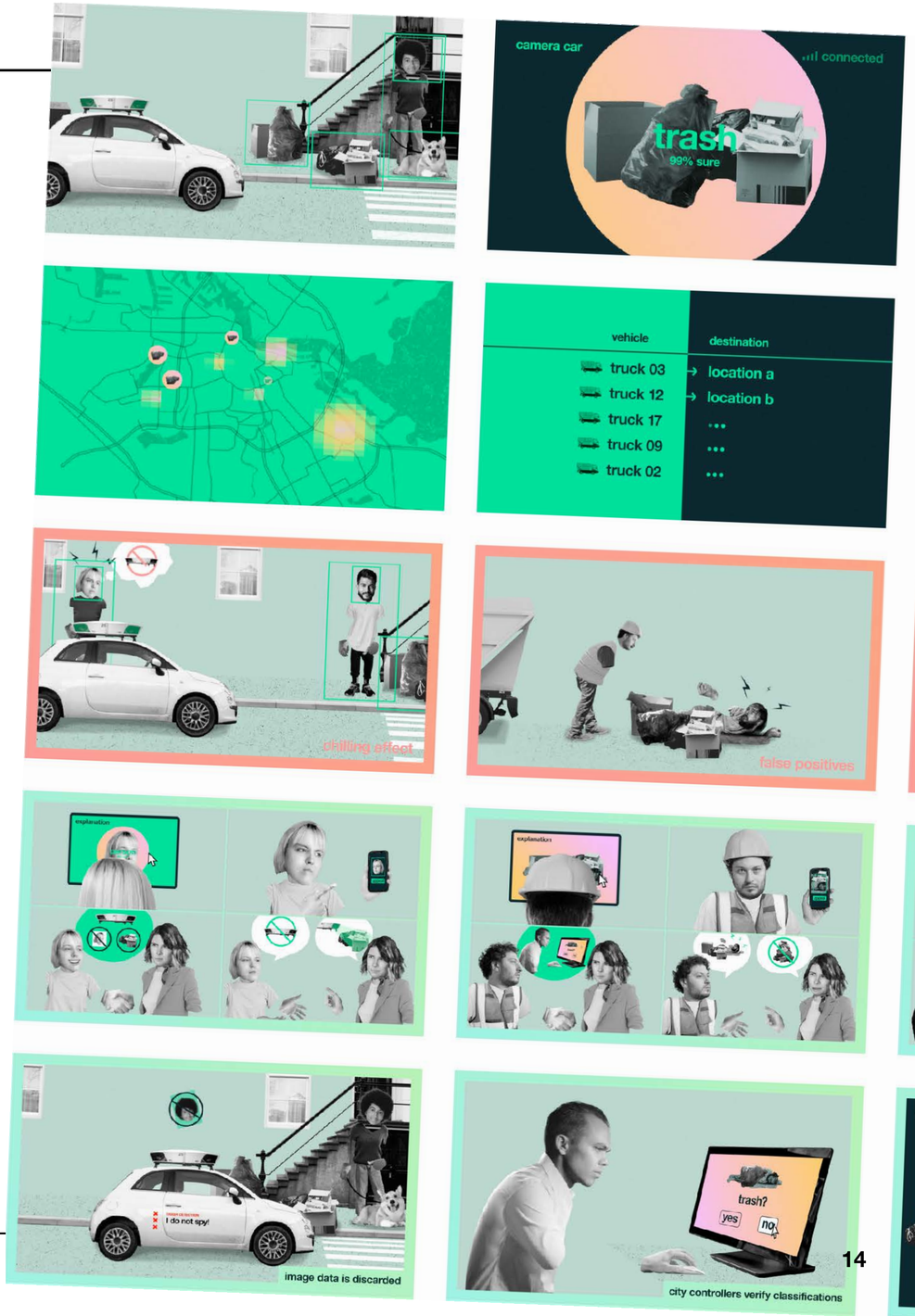
"Since cities are unstable, technology needs to not be pre-programmed—brittle spaces that become obsolete when social practices change."

🏟️ **QA after deployment.**

🙋 **Reversibility?**

Alfrink, K., Keller, I., Doorn, N., & Kortuem, G. (2023). **Contestable Camera Cars: A Speculative Design Exploration of Public AI That Is Open and Responsive to Dispute.** Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems, 1–16. https://doi.org/10/gr5wcx

edu.nl/wp7ke



Takeaways

1. **Cityness is a more expansive notion of urban intelligence.**
2. **Tech must be urbanized so as not to harm cityness.**
3. **Contestability demands more robust forms of inclusion and adaptability.**

Thank you!
Questions?

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