

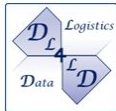


Data Logistics for Logistics Data

The meaning of this all, beyond DL4LD

DL4LD meeting, 15 June 2022

Giovanni Sileno, University of Amsterdam. g.sileno@uva.nl



Physical Logistics

physical transportation

Policies <~> **Agents** <~> **Infrastructure**

Policies <~> **Agents** <~> **Infrastructure**

informational transportation

Data Logistics



Physical Logistics

physical transportation

Policies <~> Agents <~> Infrastructure

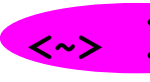


Xin

Lu

Reggie

Policies <~> Agents <~> Infrastructure



informational transportation

Data Logistics



Environment (physical, social, etc.)

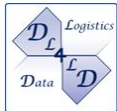
(distributed) activities

Policies <~> Agents <~> Infrastructure

Policies <~> Agents <~> Infrastructure

informational transportation

Data Logistics



In DL4LD we increased the depth of computational design abstraction

Imperative programming

Declarative programming

Policy-based programming

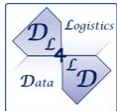
desires/preferences as **individual policies**

norms as **collective policies**

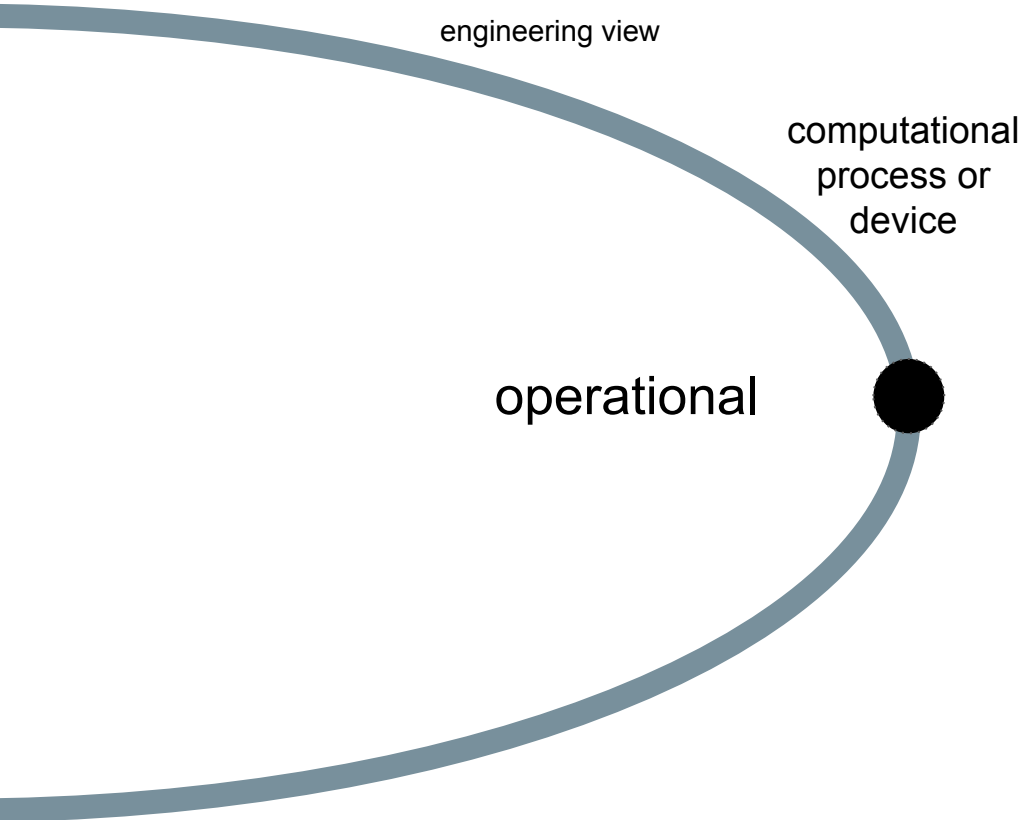
***Normative
specifications***

***Agent-based
Programming***

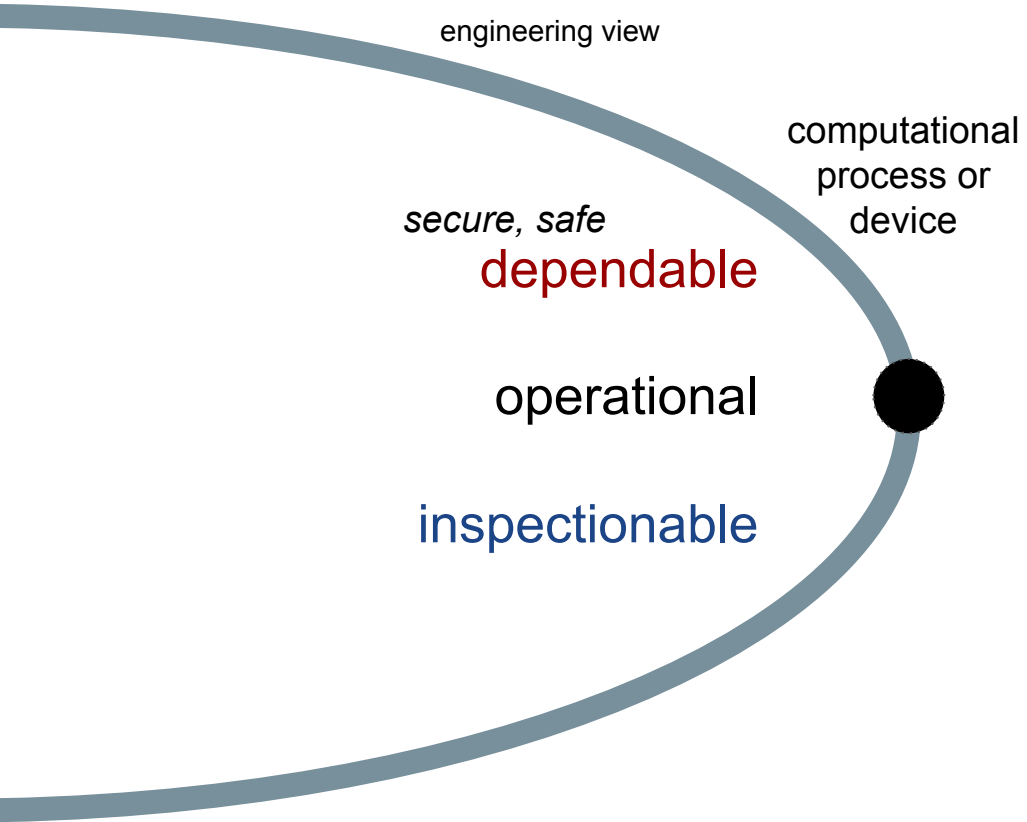
HOW
WHAT
WHY



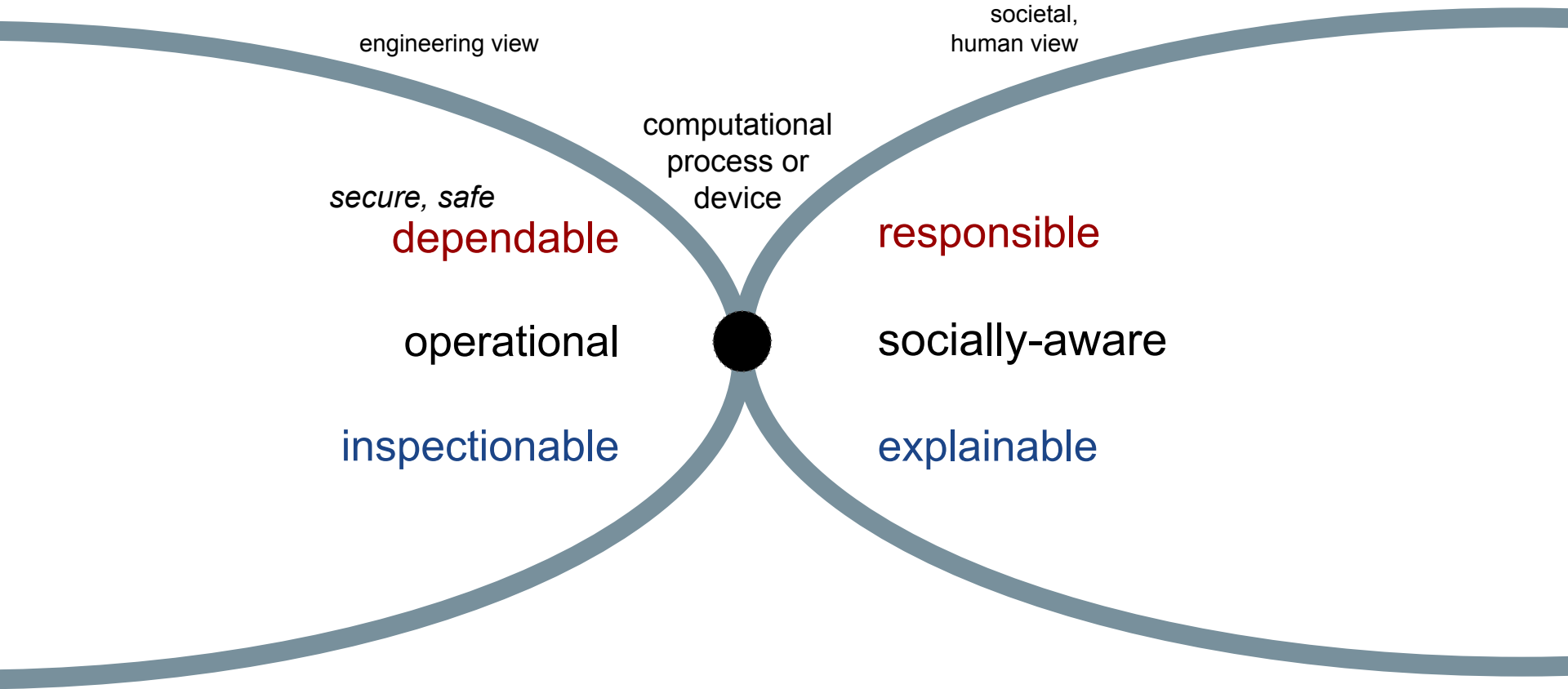
We passed from functional perspectives...



to extra-functional...



and beyond extra-functional!



engineering view

societal,
human view

computational
process or
device

secure, safe
dependable

responsible

operational

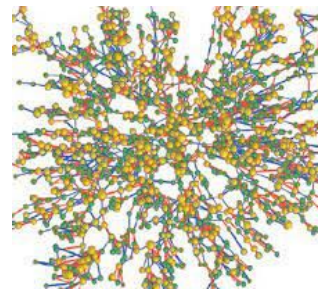
socially-aware

inspectionable

explainable

Relevance of DL4LD research

- Practically almost all real-world systems have a complex and distributed nature



A contemporary example?

Facebook Doesn't Know What It Does With Your Data, Or Where It Goes: Leaked Document

“We do not have an adequate level of control and explainability over how our systems use data,” Facebook engineers say in leaked document.



By [Lorenzo Franceschi-Bicchieri](#)

April 26, 2022, 3:02pm  Share  Tweet  Snap

Facebook is facing what it describes internally as a “tsunami” of privacy regulations all over the world, which will force the company to dramatically change how it deals with users’ personal data. And the “fundamental” problem, the company admits, is that Facebook has no idea where all of its user data goes, or what it’s doing with it, [according to a leaked internal document](#) obtained by Motherboard.

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“We can’t confidently make controlled policy changes or external commitments such as ‘we will not use X data for Y purpose.’ And yet, this is exactly what regulators expect us to do”

The document was written last year by Facebook privacy engineers on the Ad and Business Product team, whose mission is “to make meaningful connections between people and businesses,” and which “sits at the center of our monetization strategy and is the engine that powers Facebook’s growth,” according to a recent job listing that describes the team.

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...can we expect better from other (private/public) organizations?

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DL4LD has laid down **technological grounds** to face these challenges.



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