Trust in AI in research: Yet another variable

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Academia

- MD RNRMU, Moscow, Russia &
University of Pittsburgh, USA - 2012

- PhD Humboldt University, MDC, Charite, Berlin, Germany - 2017

- Postdoc MPI-CBG, Dresden, Germany - 2017-2021

Industry

- Manager in Spectroswiss, Switzerland - 2021-2022

- Communications Manger, Lipotype, Dresden, Germany - 2022 – now

Non-profit sector

- Co-founder, Dragonfly Mental Health, USA - 2019-2025

- Co-founder, community lead, outreach lead, Sci.STEPS, Berlin, Germany - 2022 - now

Definitions

Trust is commonly defined as a willingness to be vulnerable based on expectations of competence, integrity, and benevolence (Svare, 2020 Baghramian, 2020).

Since this definition emerged from research on **human-to-human** relationships, applying it to AI requires careful consideration (McGrath, 2024).

Human-AI trust depends less on social cues or shared relationships and more on system performance, transparency, ethical design, and the context in which the system is used.

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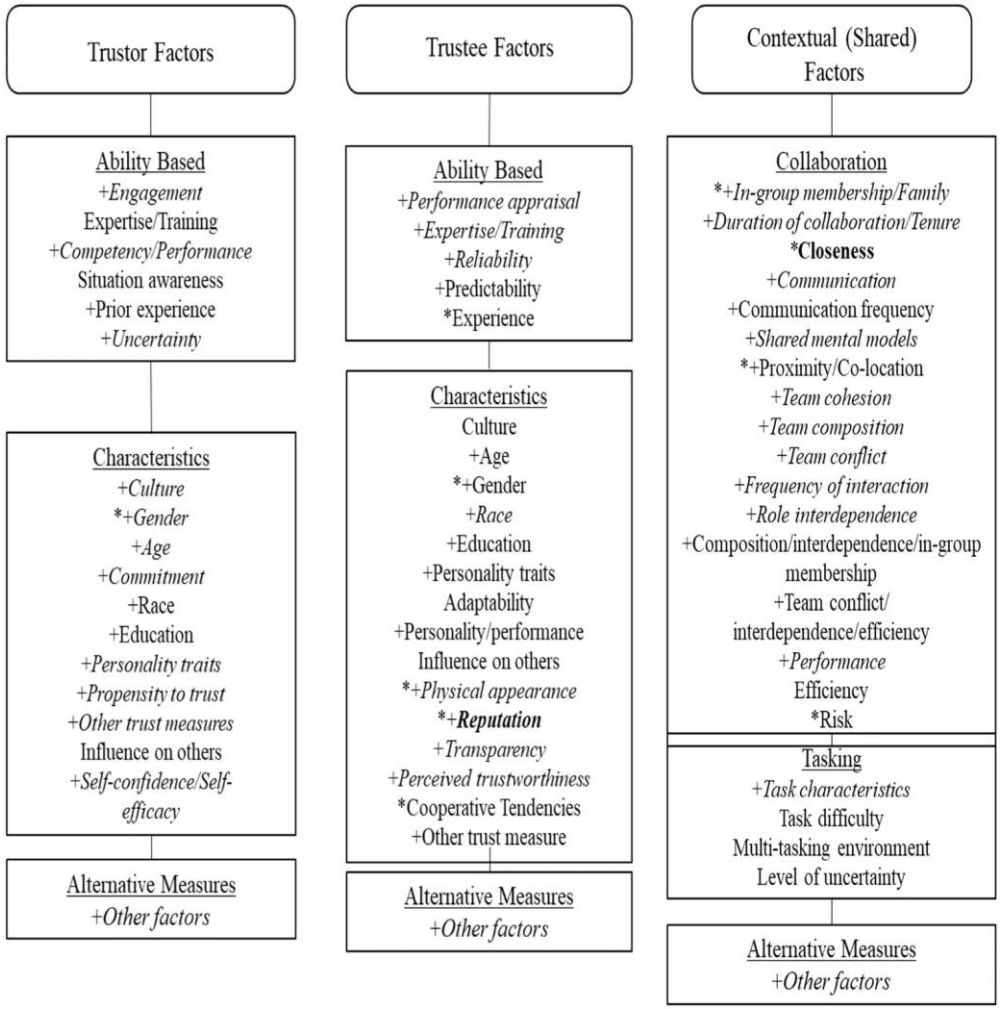
Understanding human-to-human trust

Trustor (the person that trusts) and the trustee (the one who is to be trusted)



Model is
revised by Hancock at al. (2023)
from Mayer et al. (1995).

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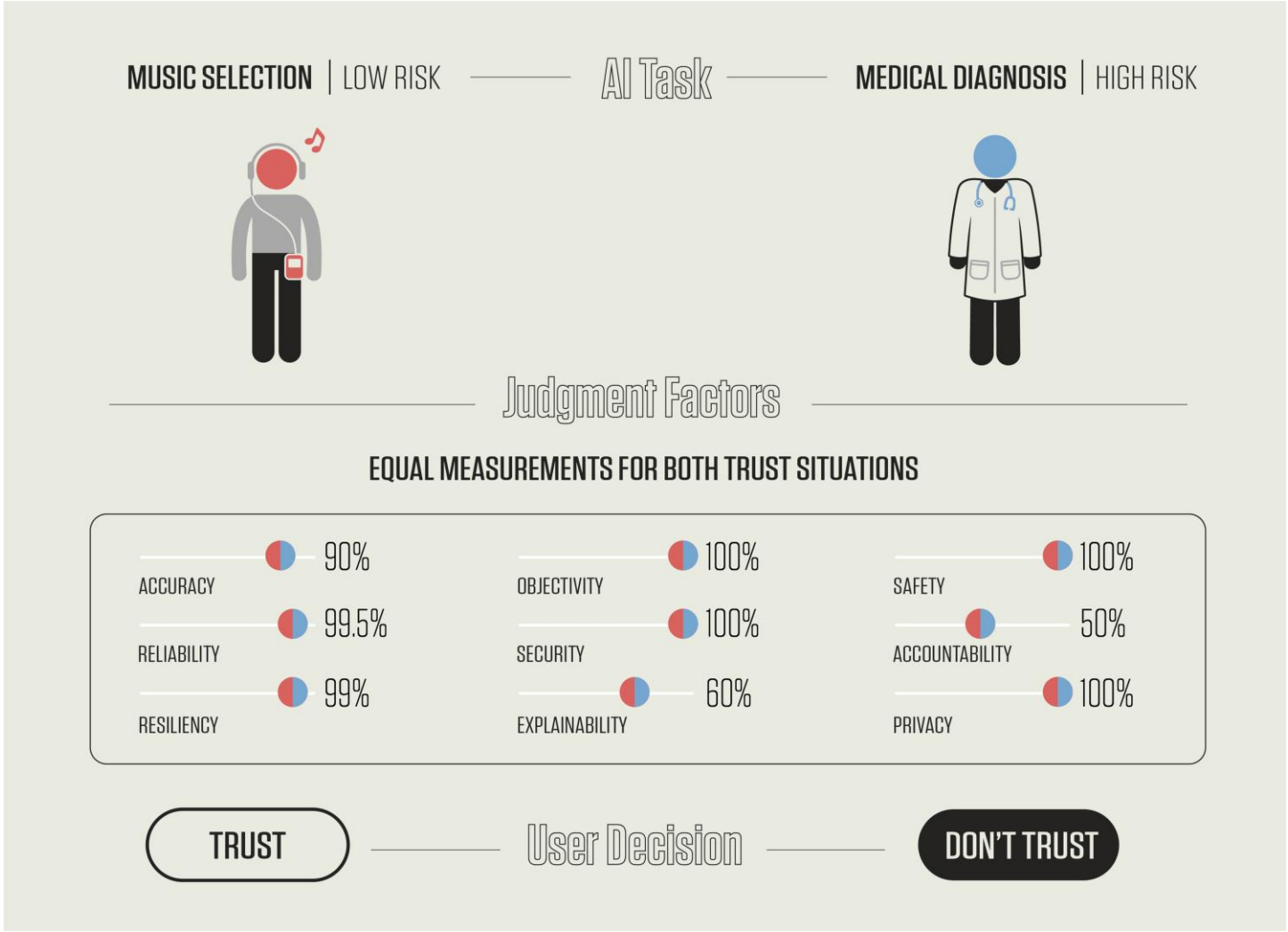
Understanding human-AI trust



Brian Stanton, NIST, 2021

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Measuring and/or understanding?

- What metric(s) can we use in human-AI trust? Are there any reasonable metrics at all?

- Are they field- and application-specific?

- How can we use this knowledge in helping researchers navigate the jungle of existing tools?

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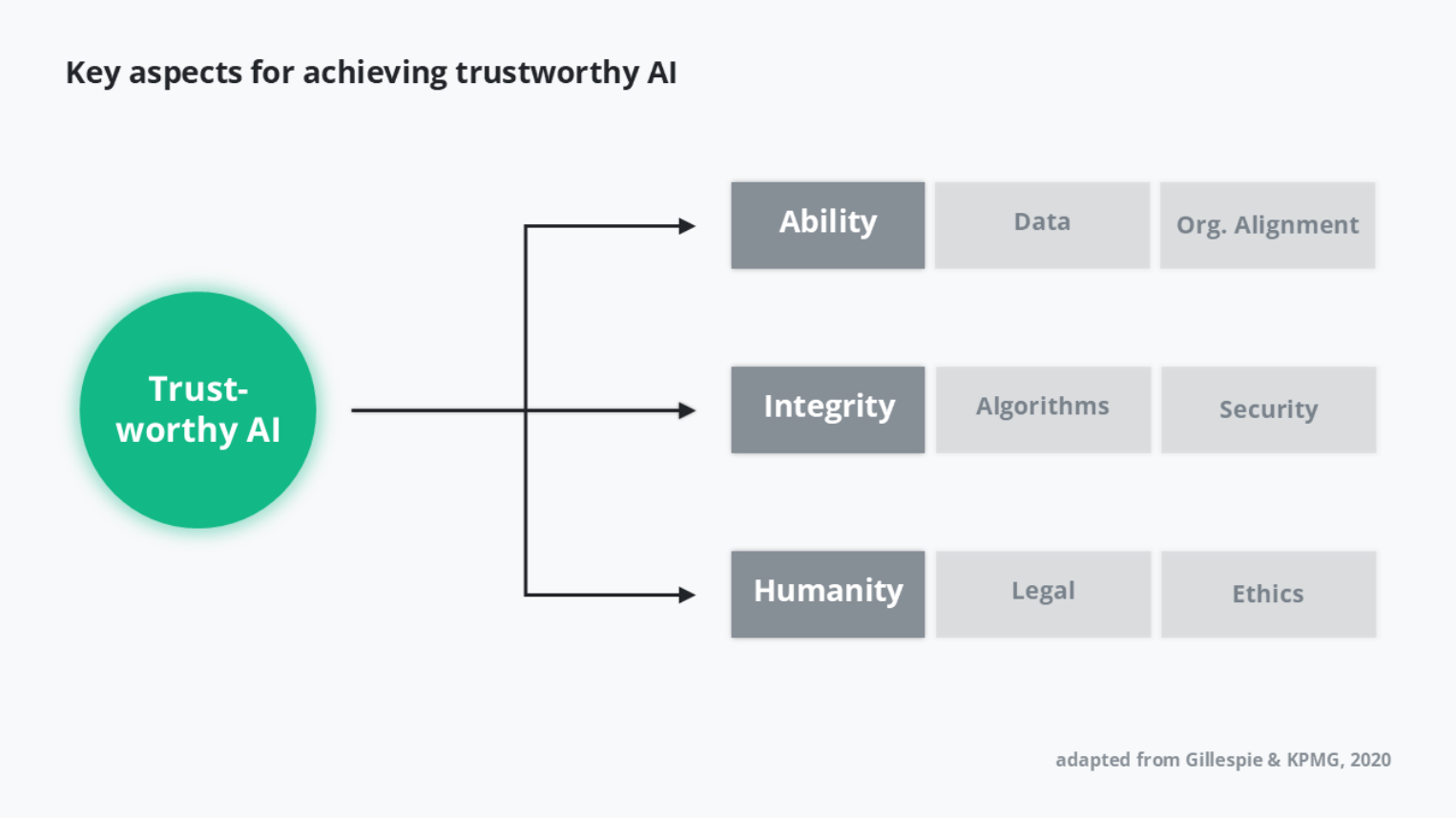
Core principles of trustworthy AI



Additional readings:
Blau et al. 2024
ALLEA Code of Conduct
Chen et al. 2024

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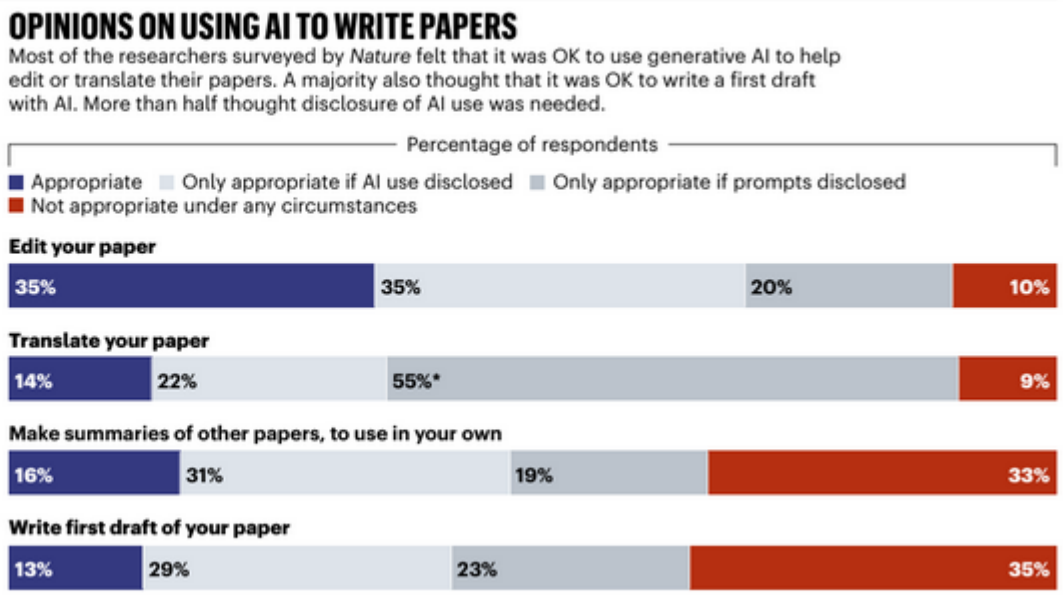
Feature

SCIENTISTS SPLIT ON ETHICS OF AI USE

A *Nature* survey of 5,000 researchers finds contrasting views on when it's acceptable to involve AI in research papers and what needs to be disclosed.

By Diana Kwon



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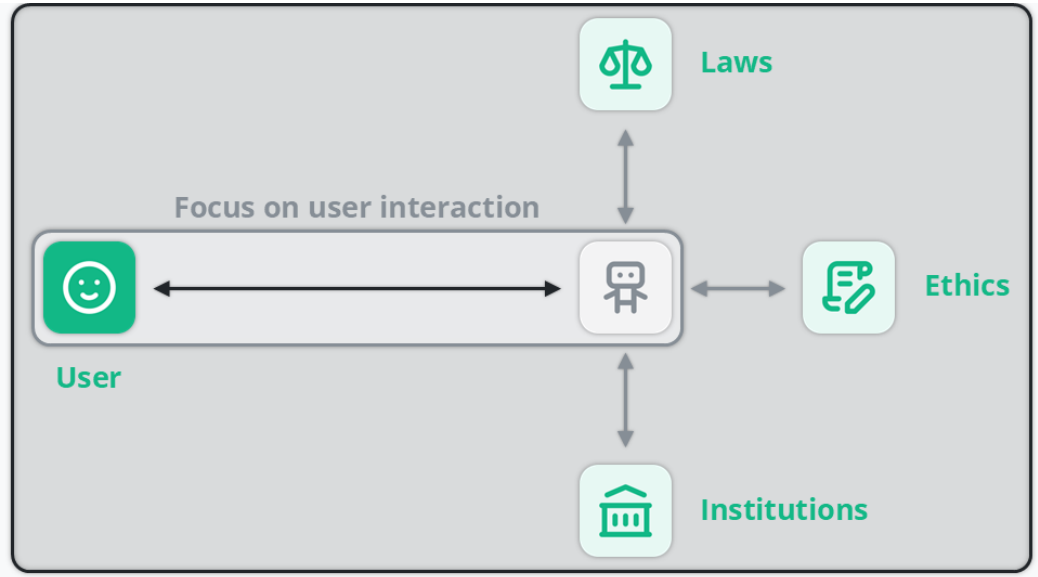
Further aspects

- Engaging multiple stakeholders and levels



- Dehumanizing AI
- Balancing trust appropriately and taking a pulse - surveying researchers' trust in AI

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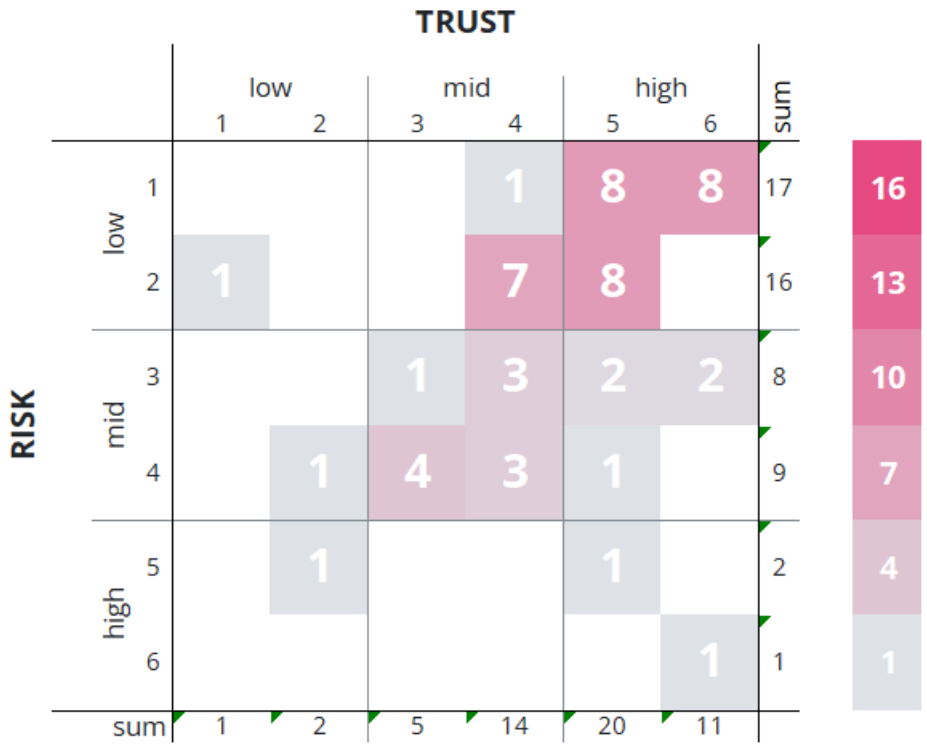
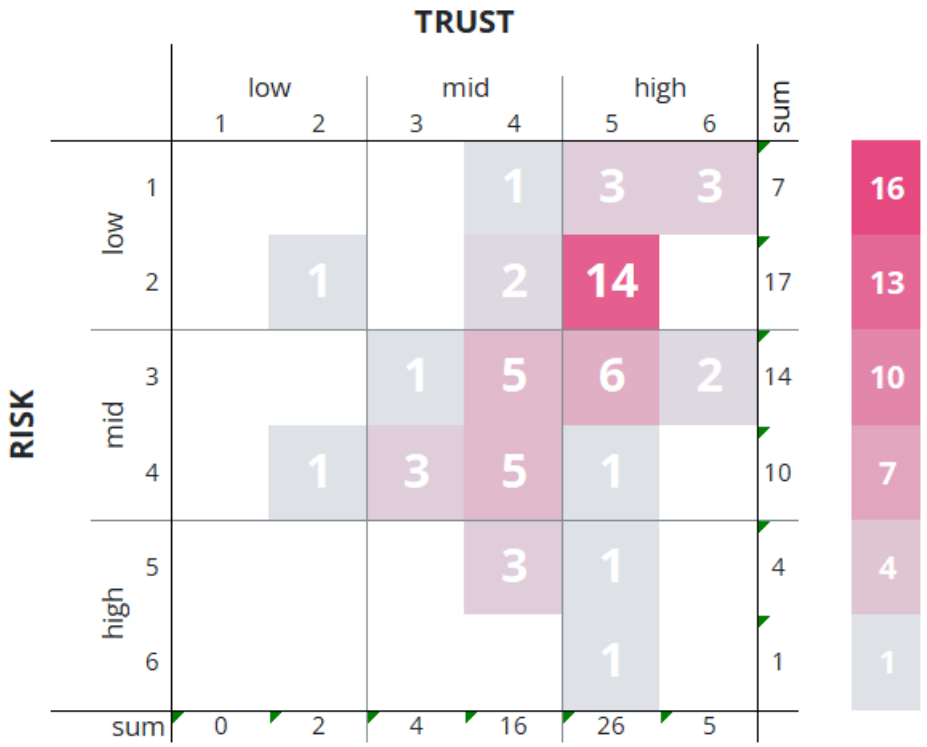
Low-risk and high-trust activities

Searching scientific literature



Summarizing papers



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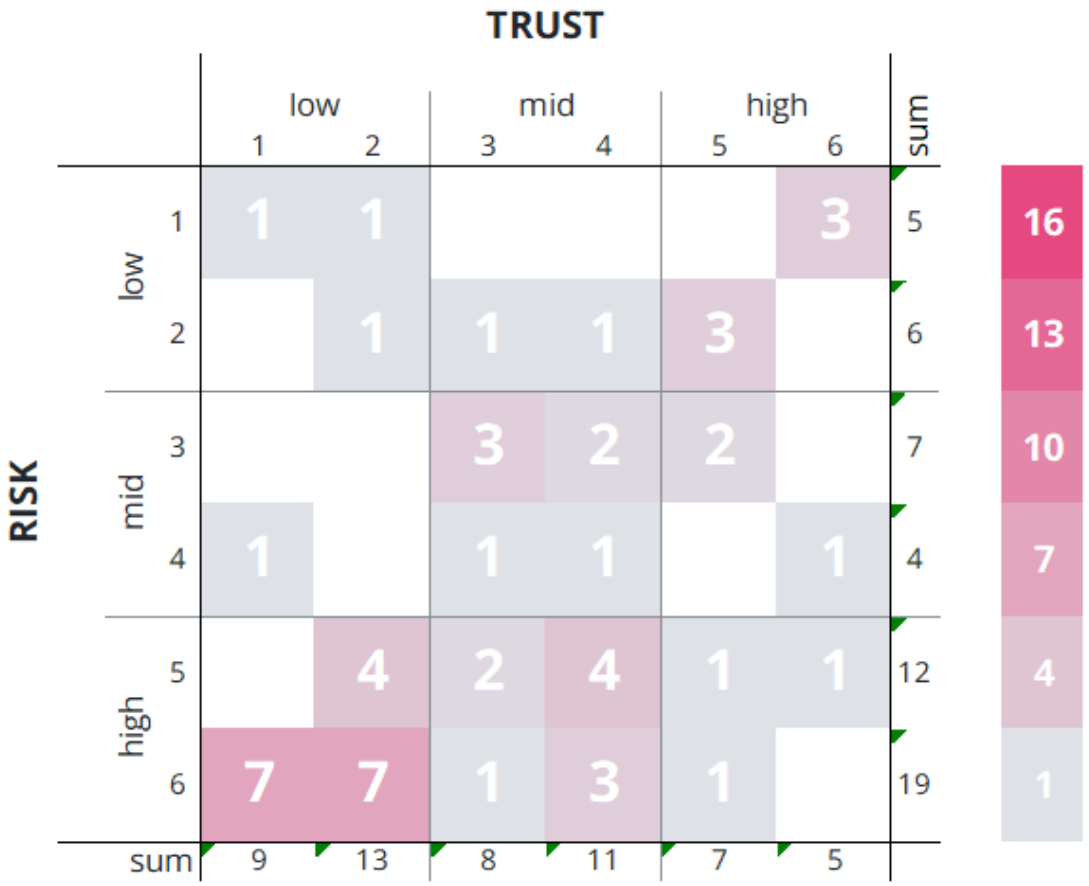
High-risk and low-trust activities



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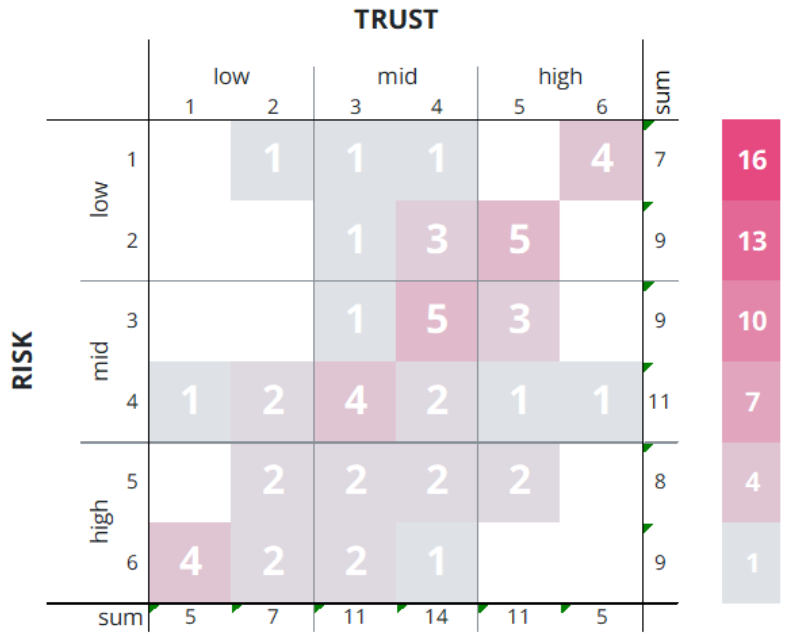
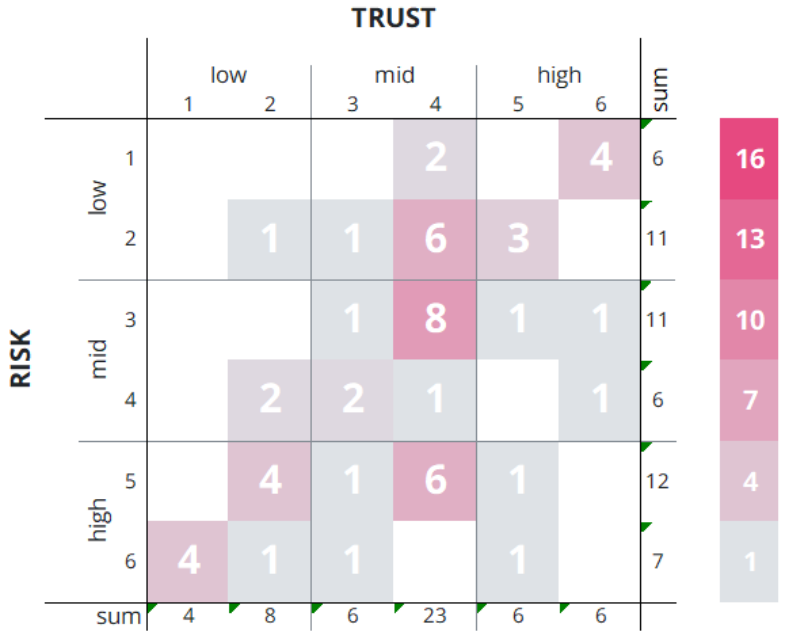
Highly subjective tasks

Suggesting hypotheses



Drafting or editing research reports



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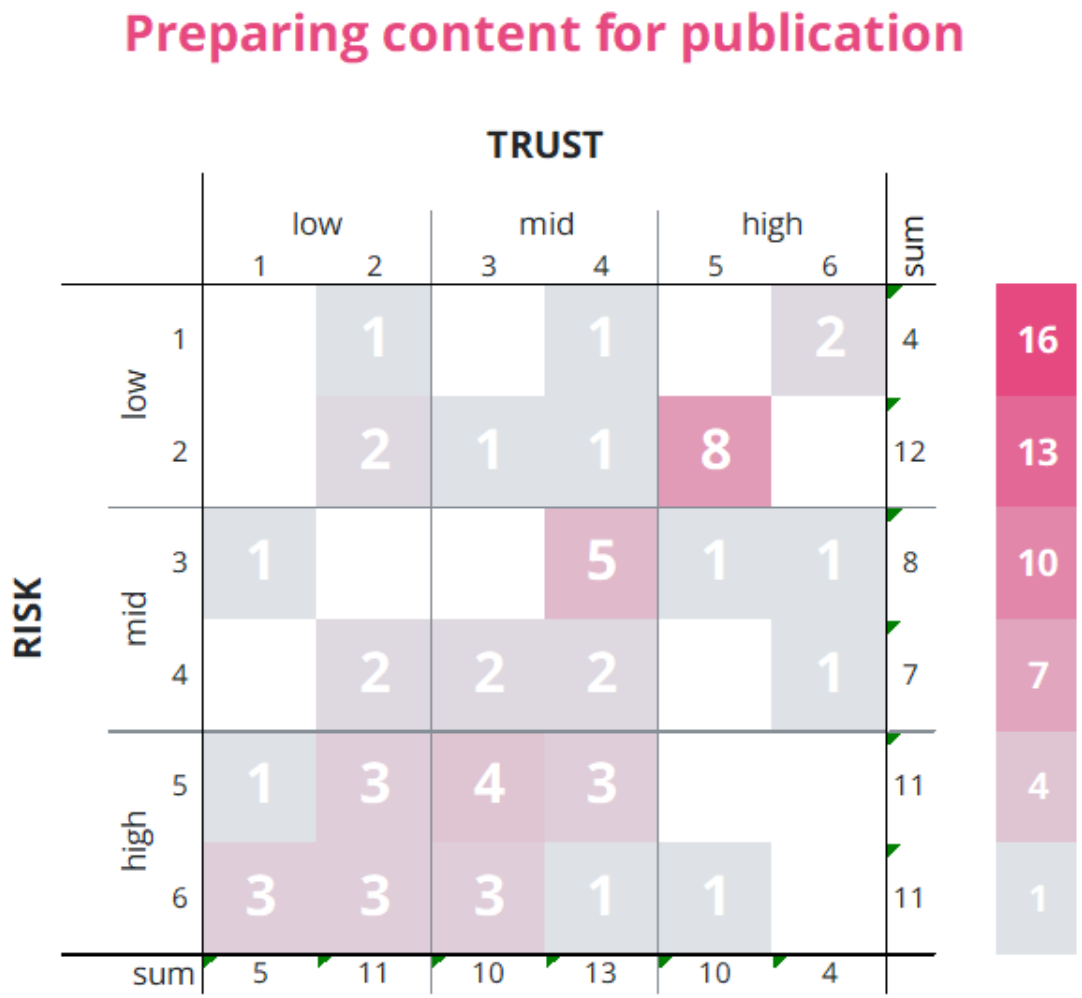
Highly subjective tasks



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Conclusions

- Trust in AI changes depending on the task and the level of perceived risk
- Scientists may confidently use scienceOS for some tasks while remaining cautious about others
- Transparency, clear system limits, and human oversight help create well-founded trust
- Appropriate trust, rather than blind trust, is essential for responsible AI use in scientific research
- When using any AI tool: do the background check, understand why and how you are doing it, evaluate the output, disclaim the AI usage

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Thank you!

… so many people to thank!

Questions?

Staying in touch:
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