Leadership in Open Science: Skills, values and culture



Dr Sara Lil Middleton (she/her)
Dr Flavio Azevedo (he/him)

OSC LMU Open Science Center FORRT

Prerequisites

- A foundational understanding of Open Science practices such as open access, preregistration, where training materials can be found here: https://www.osc.lmu.de/training/
- Access to the Open Research Workshop Design Workbook: https://lmu-osc.github.io/train-the-trainer-open-research/workshop-design-workbook/
- Access to FORRT leadership case study: https://osf.io/ay8qk/files/cmeuy

Note:
These training materials form part of three sessions on leadership in Open Science:

1. Skills, values and culture (current session)
2. Challenges (access here)
3. Strategies (access here)

Survey

1. Have you ever had an advocacy role?

How confident are you in your ability to:

0 = not confident at all, 1 = mostly not confident, 2 = somewhat confident, 3 = very confident

2. identify my own leadership values?

3. recognize how different elements of the working environment influences how you lead?

Session goals

Identify and **describe** key effective leadership qualities to build on existing knowledge and experiences

Identify own leadership values which you can adopt in your leadership contexts

Recognize where values of effective leadership and Open Science overlap to strengthen your capacity as leaders in Open Science

Examine how social context influences leadership and open research culture



Leadership in Open Science journey:

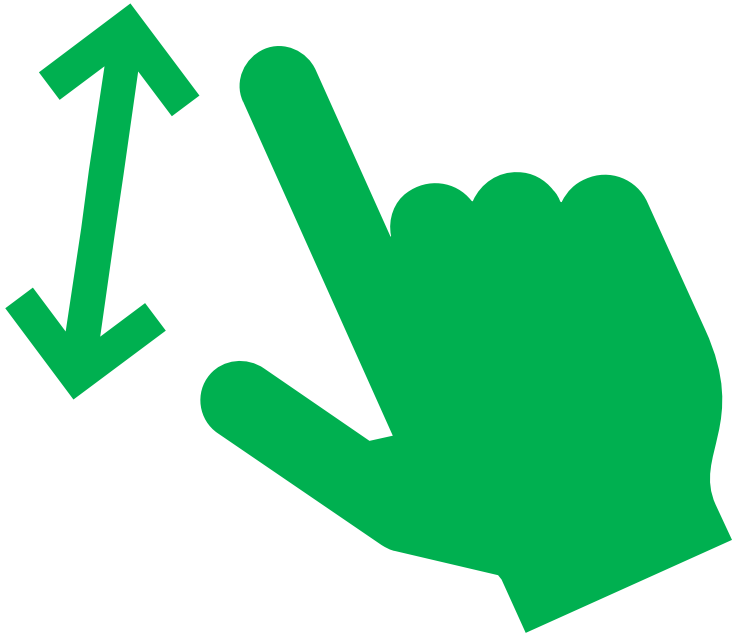
From:
“I am not sure what the key aspects of effective leadership are or how to incorporate them into my context”



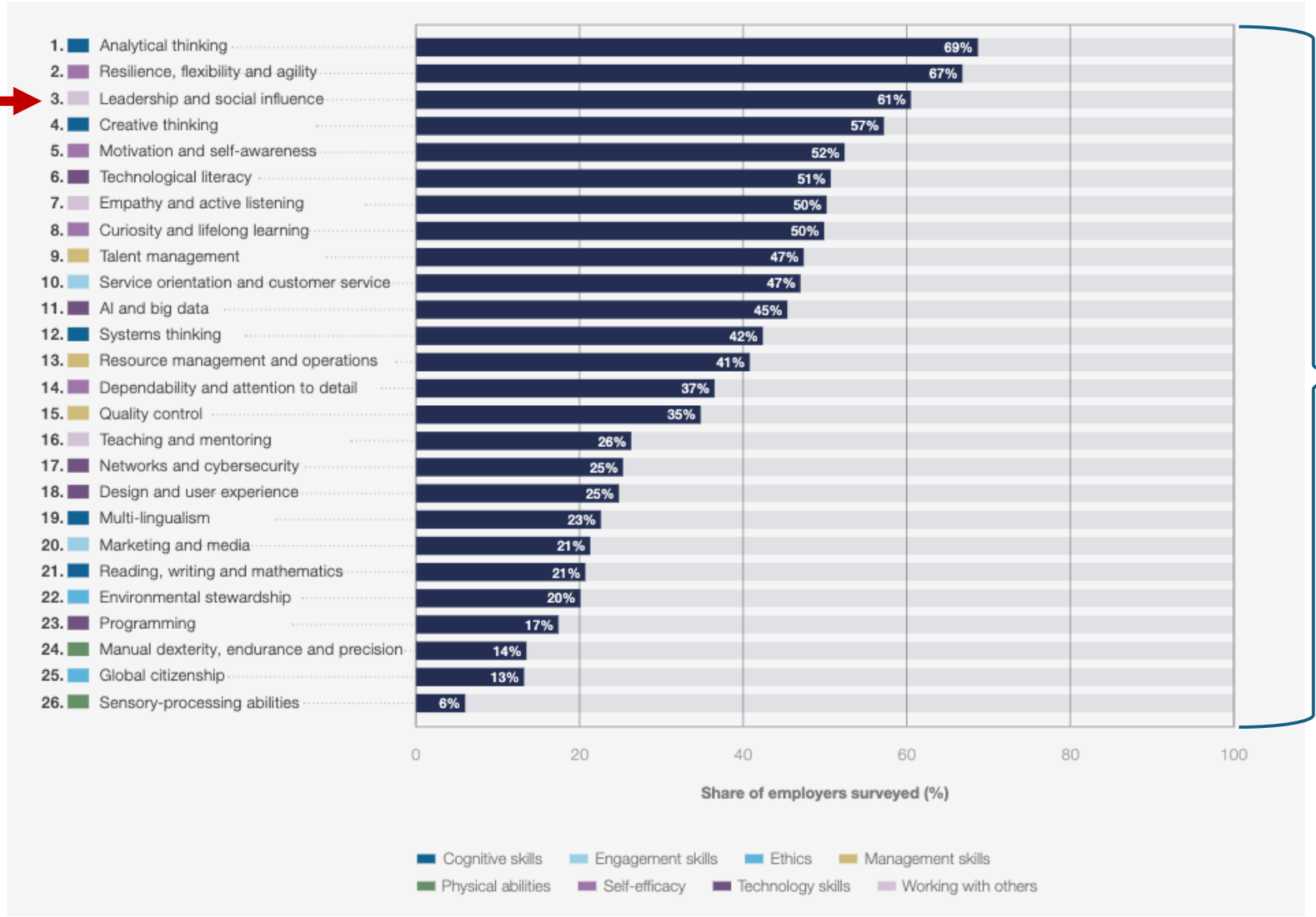
to…
“I feel I can critically evaluate my own leadership values and skills and feel empowered to adopt effective leadership practices in my context”

Zooming out

Thinking about the **wider context** of leadership in Open Science workshop in **industry** and **policy.**



Leadership is a core skill

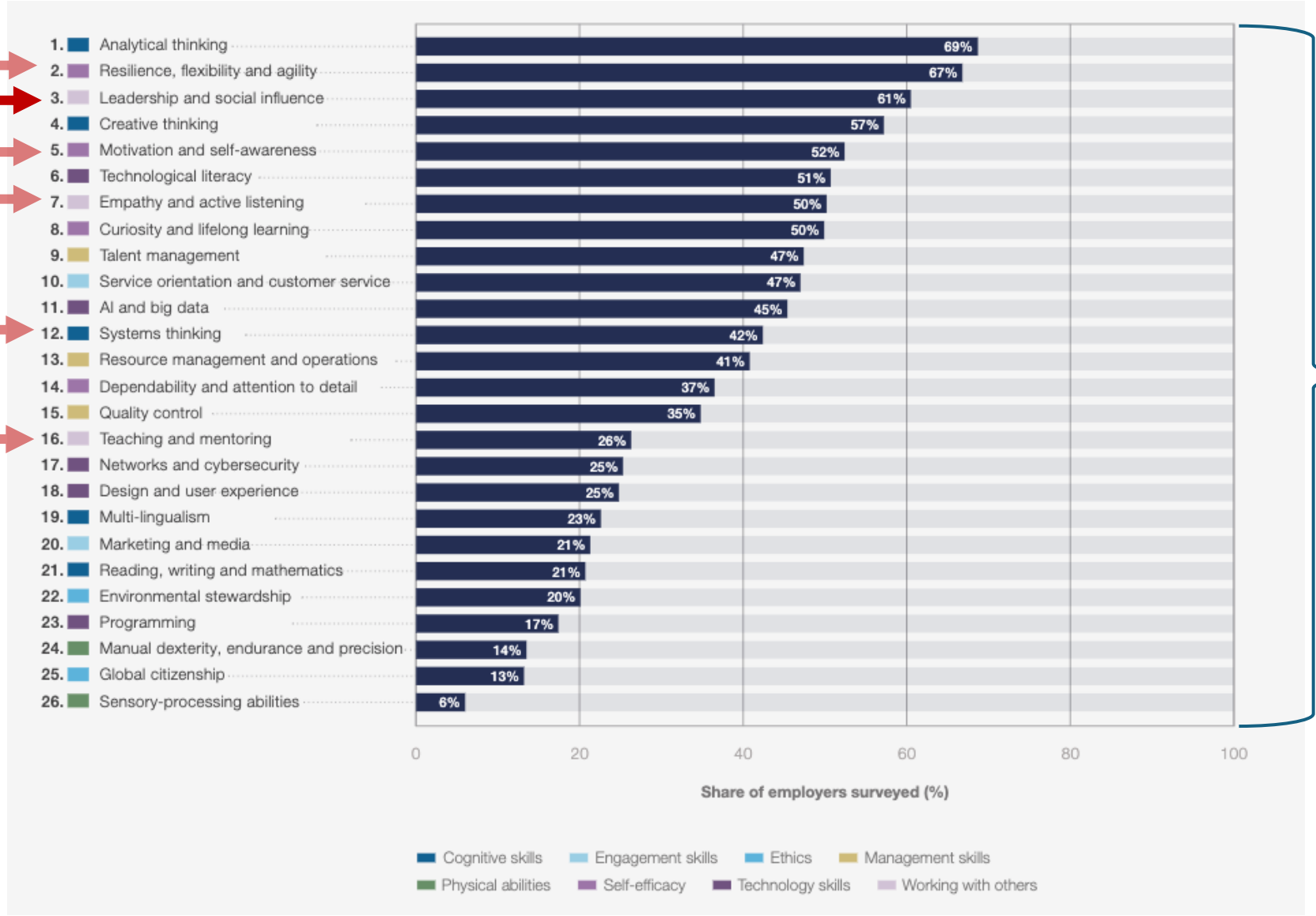


Share of employers who consider the stated skills to be **core skills** for their workforce

Adapted from Leopold et al. (2025)

OSC LMU Open Science Center FORRT

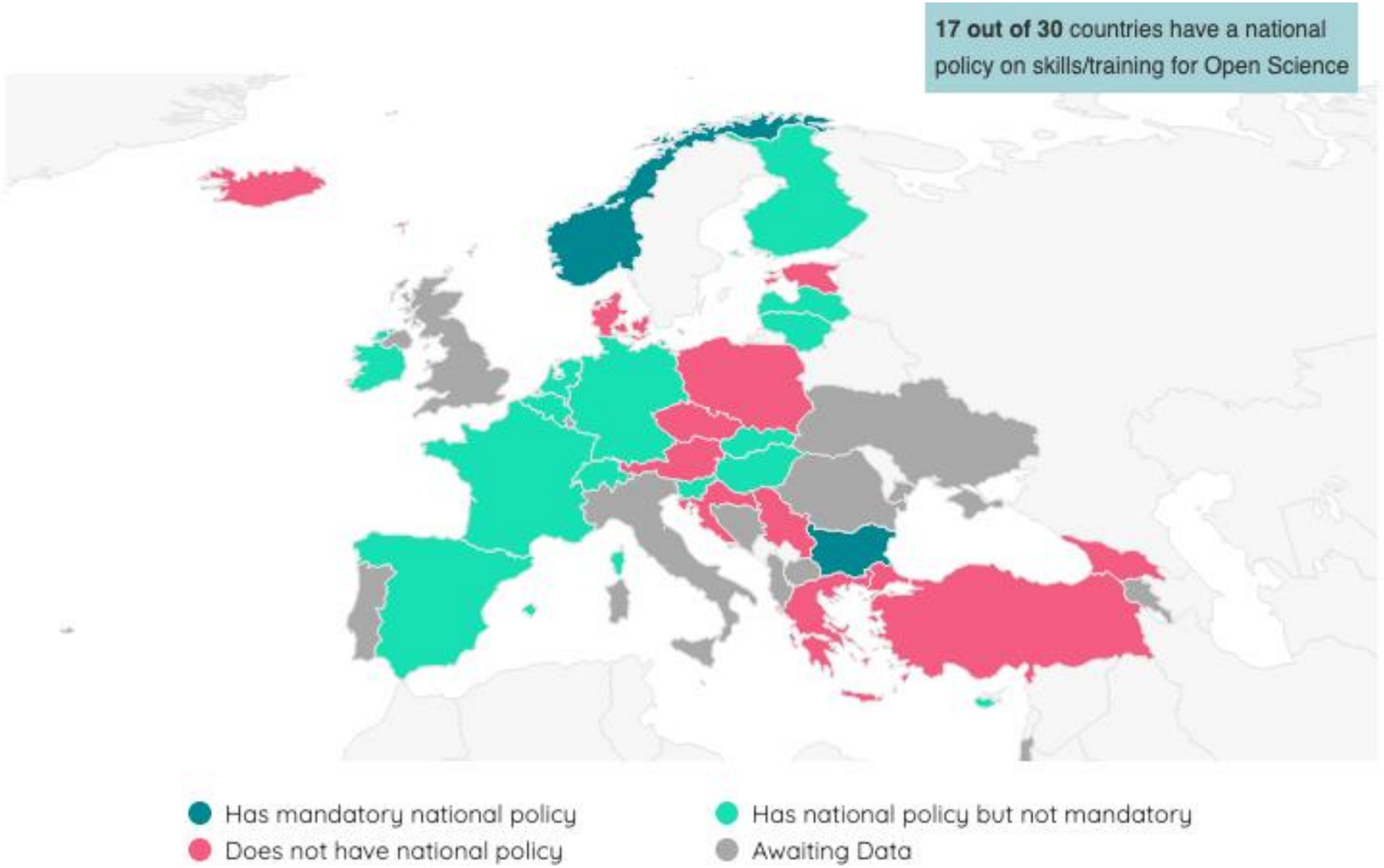
Skills in working with others and self-efficacy



Share of employers who consider the stated skills to be **core skills** for their workforce

Adapted from Leopold et al. (2025)

European Policy on skills/training in Open Science



~55% of countries have an Open Science skills/training policy

Adapted from EOSC Open Science Observatory (2024)

Regional differences in Open Science priorities

REGION	PRIORITIES
Latin American and Caribbean States	• Development of a comprehensive and globally coordinated approach to open science that addresses the structural needs of emerging and developing economies and ensures that the benefits of open science are fairly shared among all nations, building on their long history of open access publishing; • Sustainable access to infrastructure and compatibility with national priorities, regulating the commercialization of open data; • Strong multilingual engagement; and • Fair and equitable inclusion of historically marginalized knowledge-holders.
Asian and Pacific States	• Development of a common vision of open science; • A coherent regional policy framework and practical guidelines on different elements, practices and policies in relation to open science; and • Strengthened regional cooperation, including through the establishment of a regional platform for open science accompanied by regional capacity-building programmes.
African States	• Investments in connectivity and infrastructures, such as computer hardware and software; • Development of institutional capacity for science, technology and innovation and an enabling policy environment; • More efficient scientific collaboration and networking, including the sharing and scaling up of good practices in regional collaboration, in order to generate new knowledge and attract more substantial research funds at the regional level.
Arab States	• A cultural shift from a competitive to collaborative mode for the practice of science; • Development of policies and the technical capacity to manage intellectual property rights in relation to open science; • Establishment of infrastructure and regional repositories; • Greater awareness of open science as a key enabler of innovation and prosperity; • Strengthening of research systems to ensure research output is accessible, of quality and subject to a fair evaluation; and • Greater transparency and stronger links between research and societal impact.

Working towards these priorities requires effective leadership!

Adapted from UNESCO (2023)

What does good leadership look and feel like?

1. Self **reflect**

2. **Write** down words, short phrases or sentences

3. Group **discussion**

~10 minutes

Tip
Think back to a time you had a role model within or outside academia that left a positive impression on you.

OSC LMU Open Science Center FORRT

Some key leadership skills and qualities

Non-exhaustive list!



Active listening



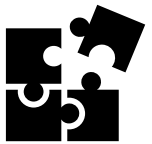
Clear communicators



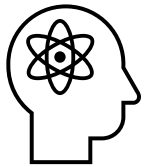
Knowledgeable



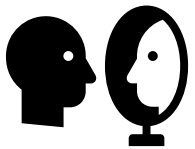
Empathy



Problem solvers



Active learning



Self-awareness



Collaborative



Flexibility

Some key leadership skills and qualities

Focus on five leadership qualities over the three sessions:



Active listening



Clear communicators



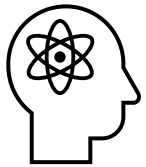
Knowledgeable



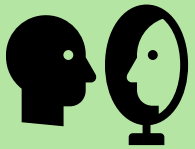
Empathy



Problem solvers



Active learning



Self-awareness



Collaborative



Flexibility

OSC LMU Open Science Center FORRT

Diversity of leadership roles



Diversity of leadership roles: formal

- Have **responsibility** and **authority** over others to achieve goals
- **Officially recognized** with position/title often appointed or elected
- Usually some training
- Feature of more hierarchal organizations

Formal



Diversity of leadership roles: informal

- Have responsibility and authority over others to achieve goals
- Officially recognized with position/title often appointed or elected
- Usually some training
- Feature of more hierarchal organizations

Formal



Informal

- Takes **initiative, influence** and **inspire** others towards achieving shared goals
- **Doesn't** have **formal** leadership **position/title**
- Not usually trained
- Emerges organically in times of change

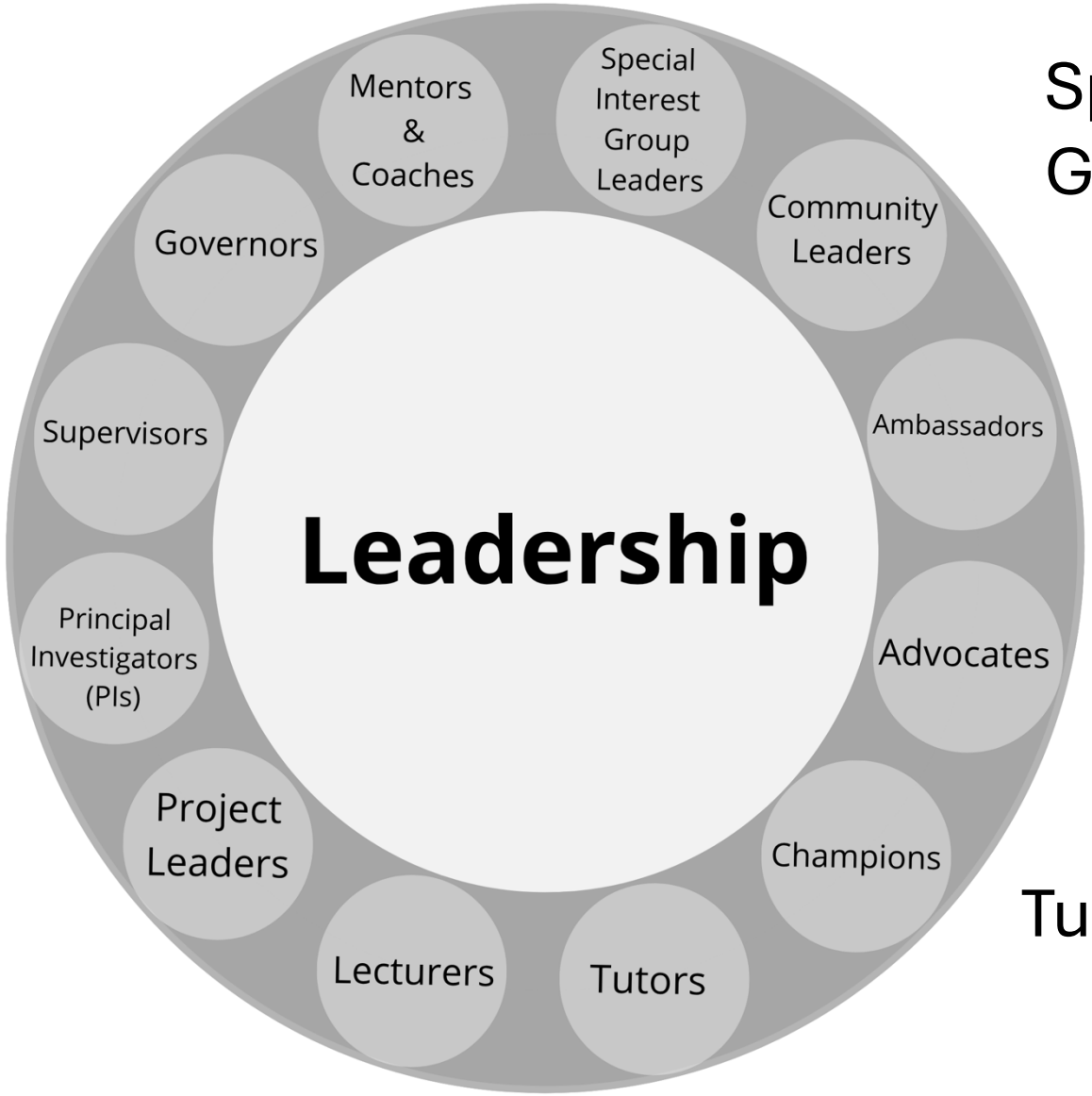
Diversity of leadership contexts

Committees

Lab groups

Authorship teams

Project teams



Special Interest Groups (SIGs)

Departments

Degree courses

Tutorials/workshops

What does leadership in Open Science/Scholarship mean to you?



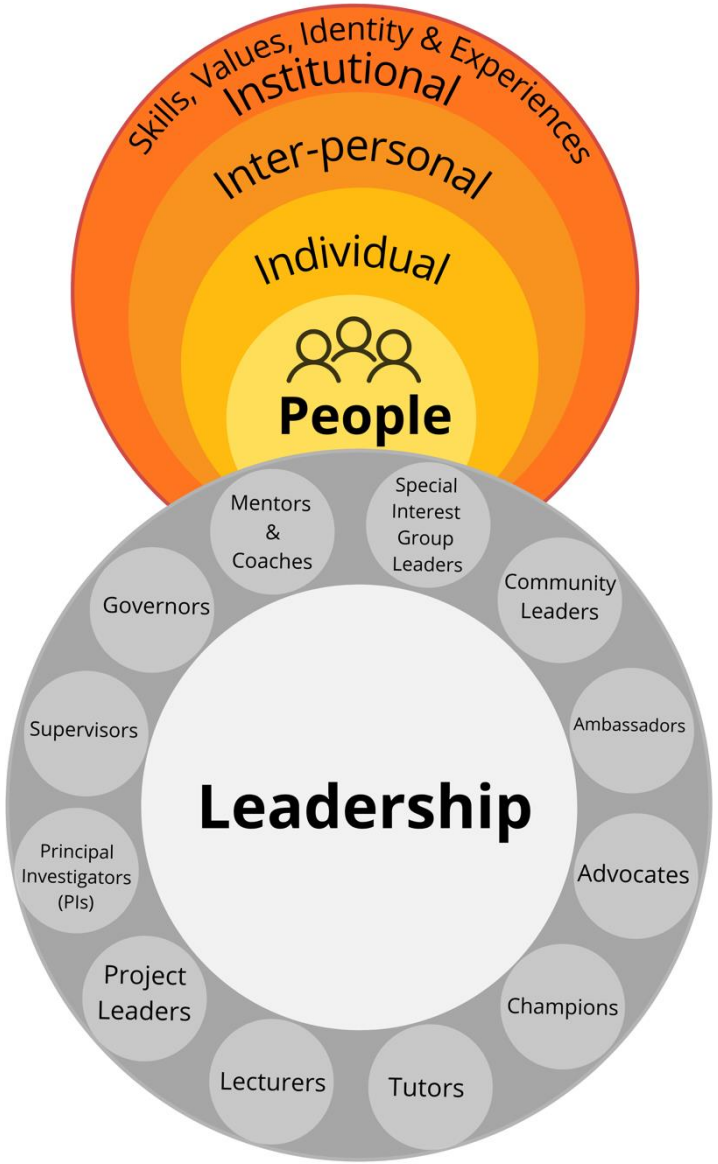
Dr. Elisabeth M. Bik

Independent researcher / science integrity consultant

"Leadership in Open Science means **helping others** do better science through **transparency**, **accountability**, and **openness** to correct the scientific record.

You do not need a leadership position to lead; every researcher can make a difference by setting a positive example."

Leadership is about people!



- Leadership doesn't exist in a vacuum as the **social context** of **leaders** and **followers** matters.
- Followers (e.g. learners, graduate students, employees, etc.) play an **active role** in **co-constructing** leadership.

(DeRue and Ashford, 2010)

Leadership styles



Coaching

“Try this”

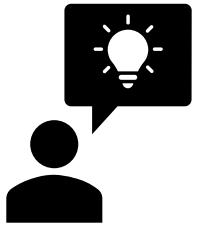
Develops others via mentorship and support



Democratic

“What do you think?”

Involves others in shared decision-making



Visionary

“Come with me”

Mobilizes others toward a clear vision



Transformational

“Let’s work towards…”

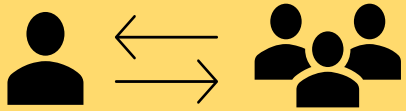
Inspires and empowers others to reach their potential

Adapted from Goleman (2000)

A relational view of leadership

Leadership is:

Relational



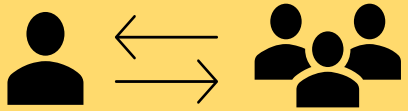
Social process between leaders and followers

Uhl-Bien (2006)

A relational view of leadership

Leadership is:

Relational



Social process between leaders and followers

Dynamic



Evolving process, adapting

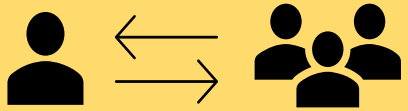
Uhl-Bien (2006)

OSC LMU Open Science Center FORRT

A relational view of leadership

Leadership is:

Relational



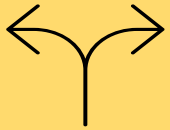
Social process between leaders and followers

Dynamic



Evolving process, adapting

Multi-directional



Beyond formal roles and organizational hierarchy

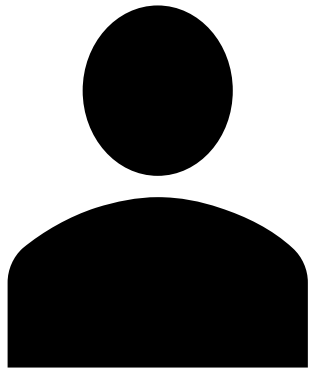
Uhl-Bien (2006)

OSC LMU Open Science Center FORRT

Multi-directional leadership: downwards



Leading downwards

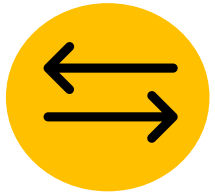


- Beyond downward dominance in organizational hierarchy
- Attuning and adapting to the needs of people in your team

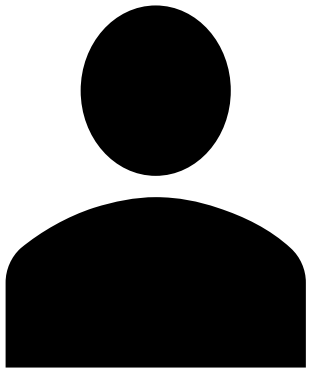
Multi-directional leadership: sideways



Leading downwards

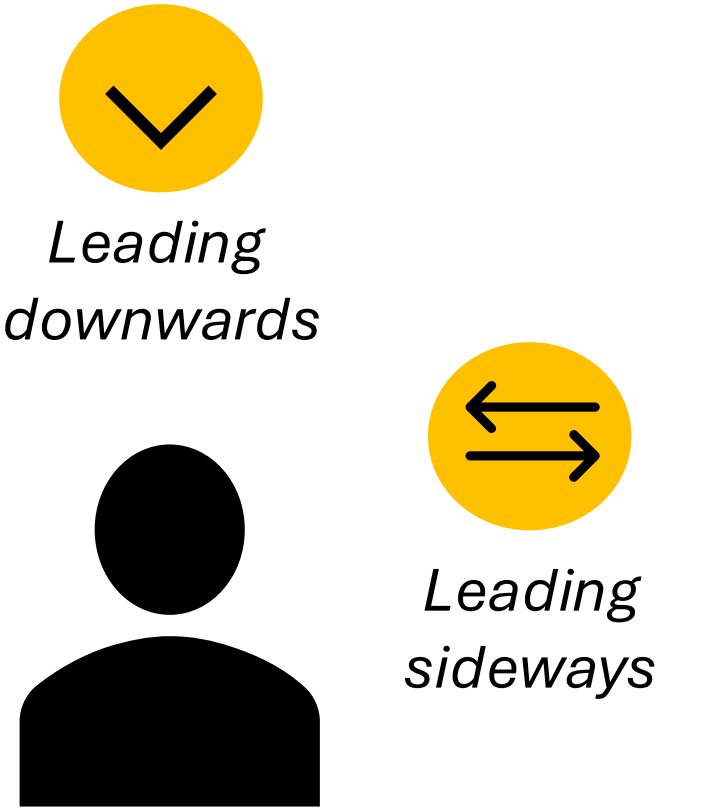


Leading sideways



- Influencing your peers during discussions in meetings

Multi-directional leadership: outwards



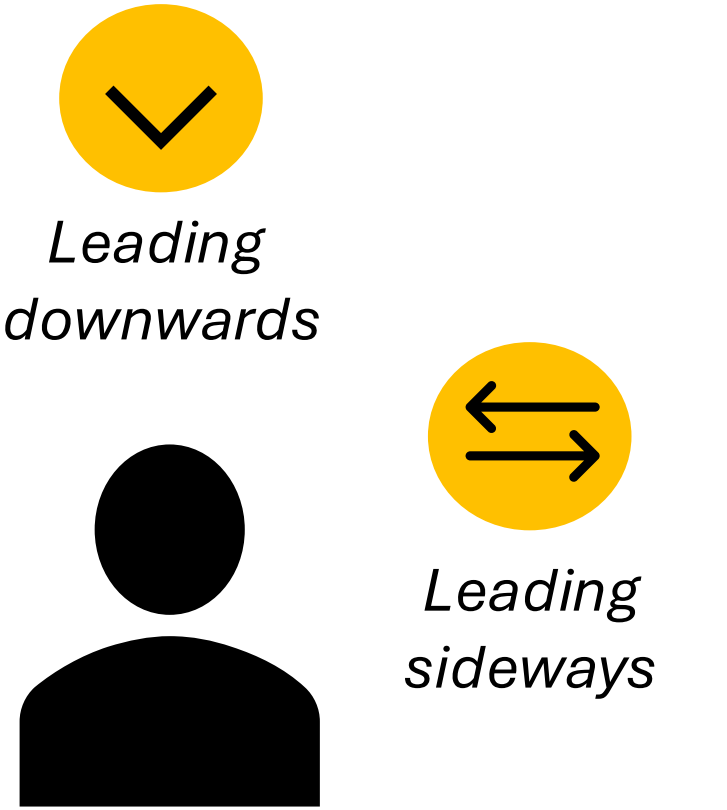
Leading downwards

Leading sideways

Leading outwards

- Representing the team/organization
- Building connections with others (e.g. policymakers, funders, community groups)

Multi-directional leadership: upwards



Leading downwards

Leading sideways

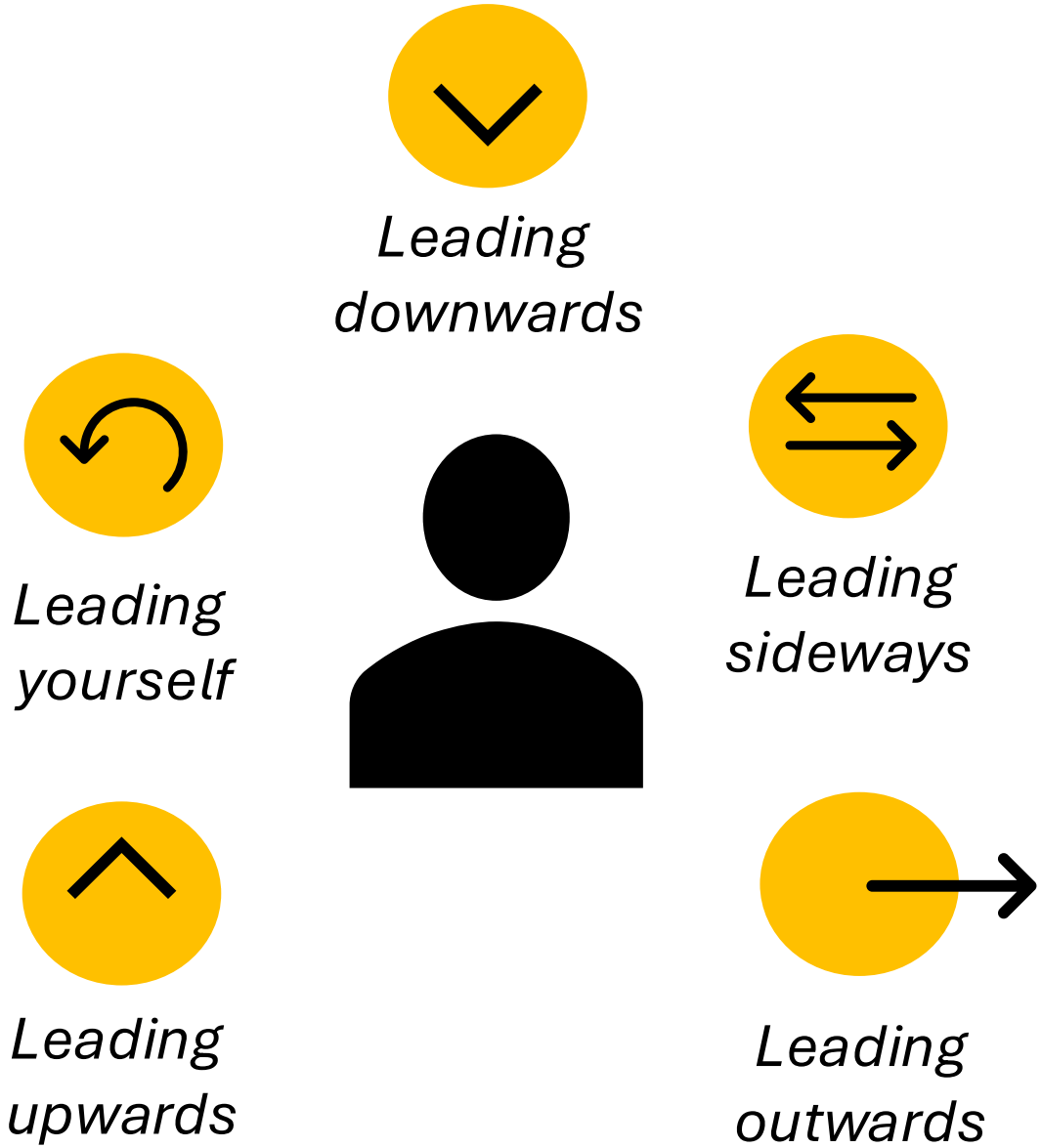
Leading upwards

Leading outwards

- Sharing own knowledge and expertise with your own leaders and managers

Multi-directional leadership: inwards

- Self-aware of skills, values, identity and power
- Self-management (time, priorities, etc.)



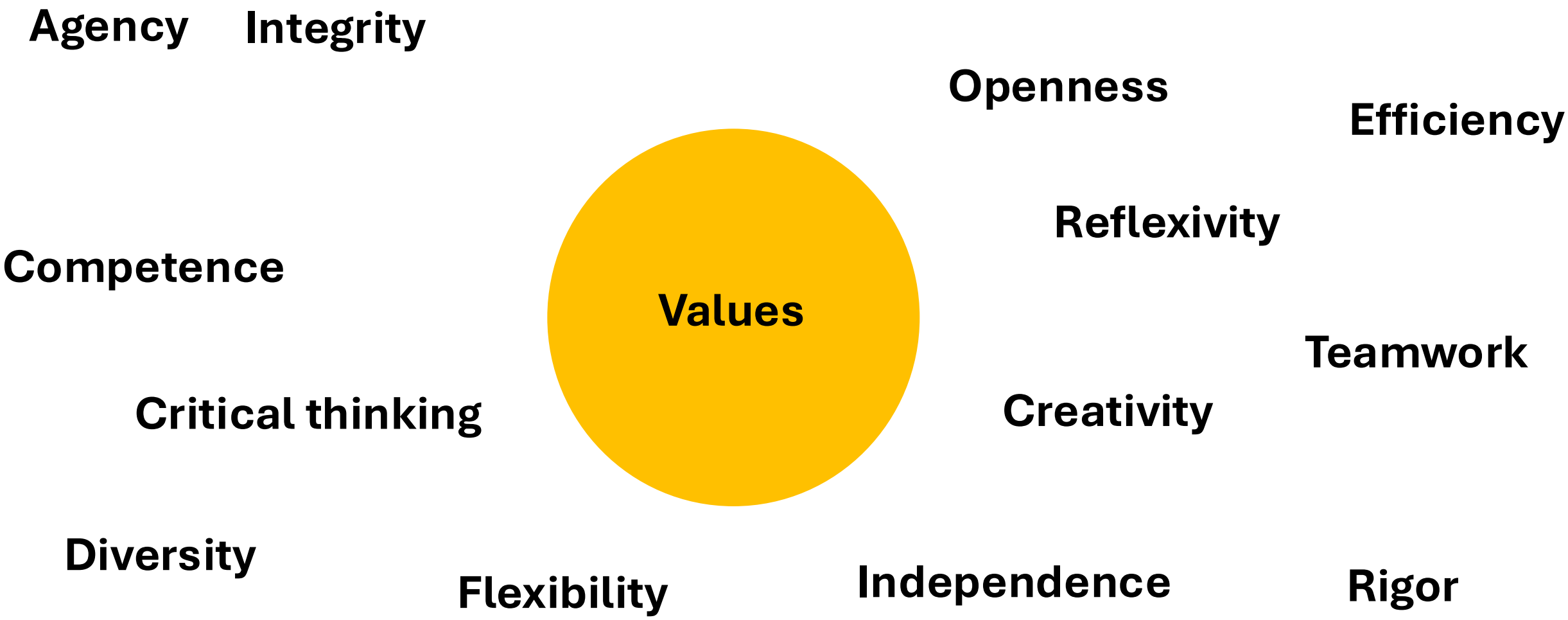
Self-leadership as a crucial part of leading others



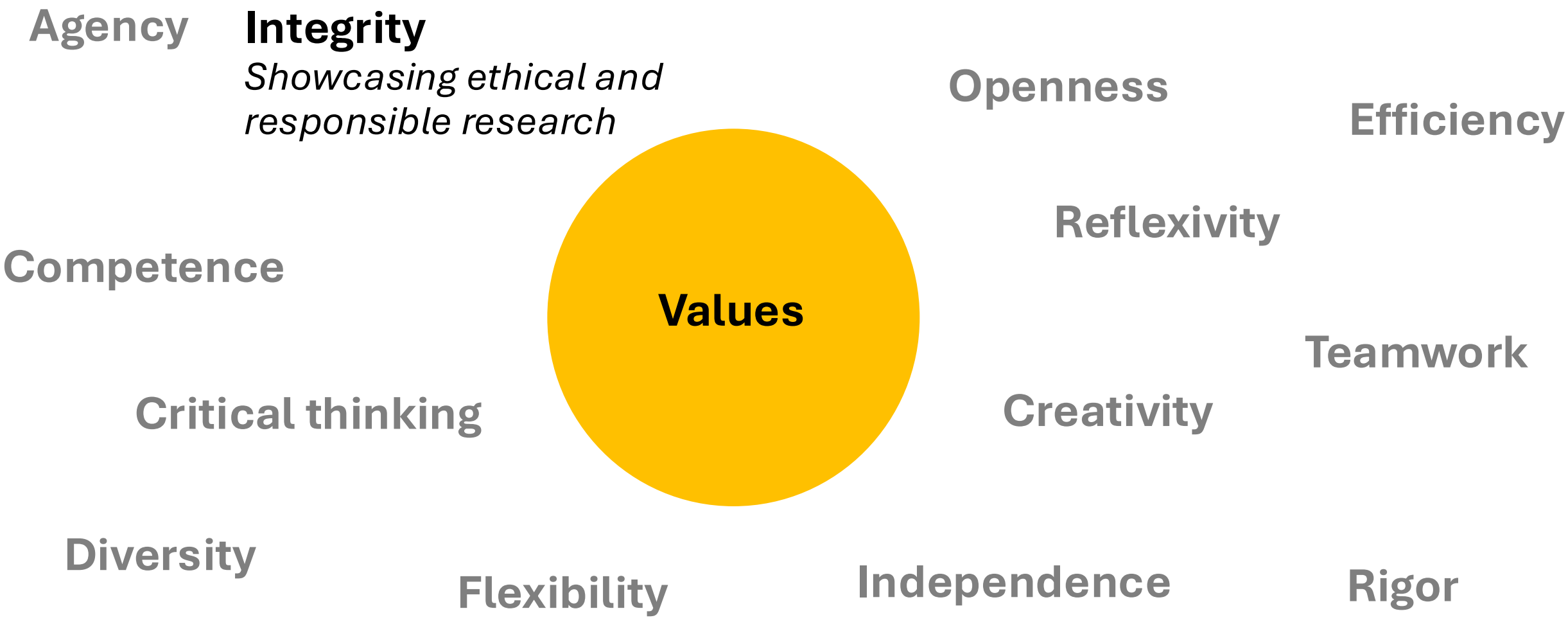
Leading yourself

- What values matter to me?
- Where are my knowledge gaps?
- How do my experiences shape how I lead?

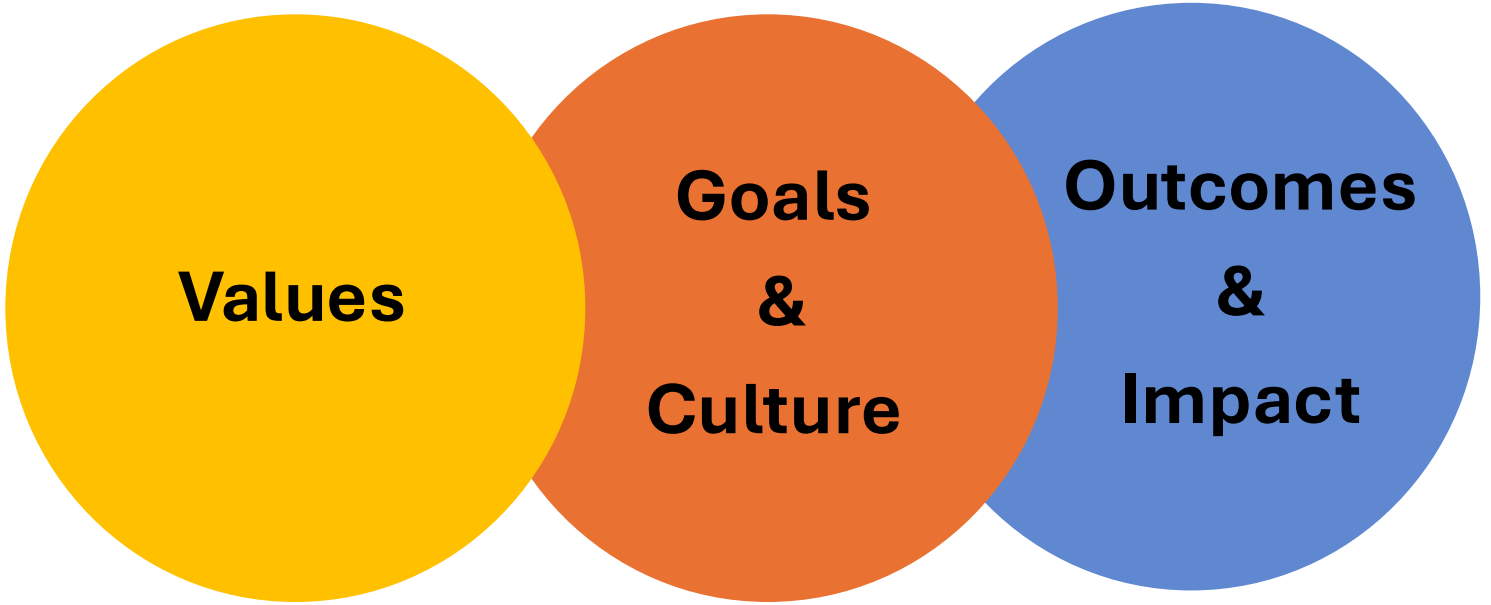
Start inwards: What matters to me?



Start inwards: What matters to me?

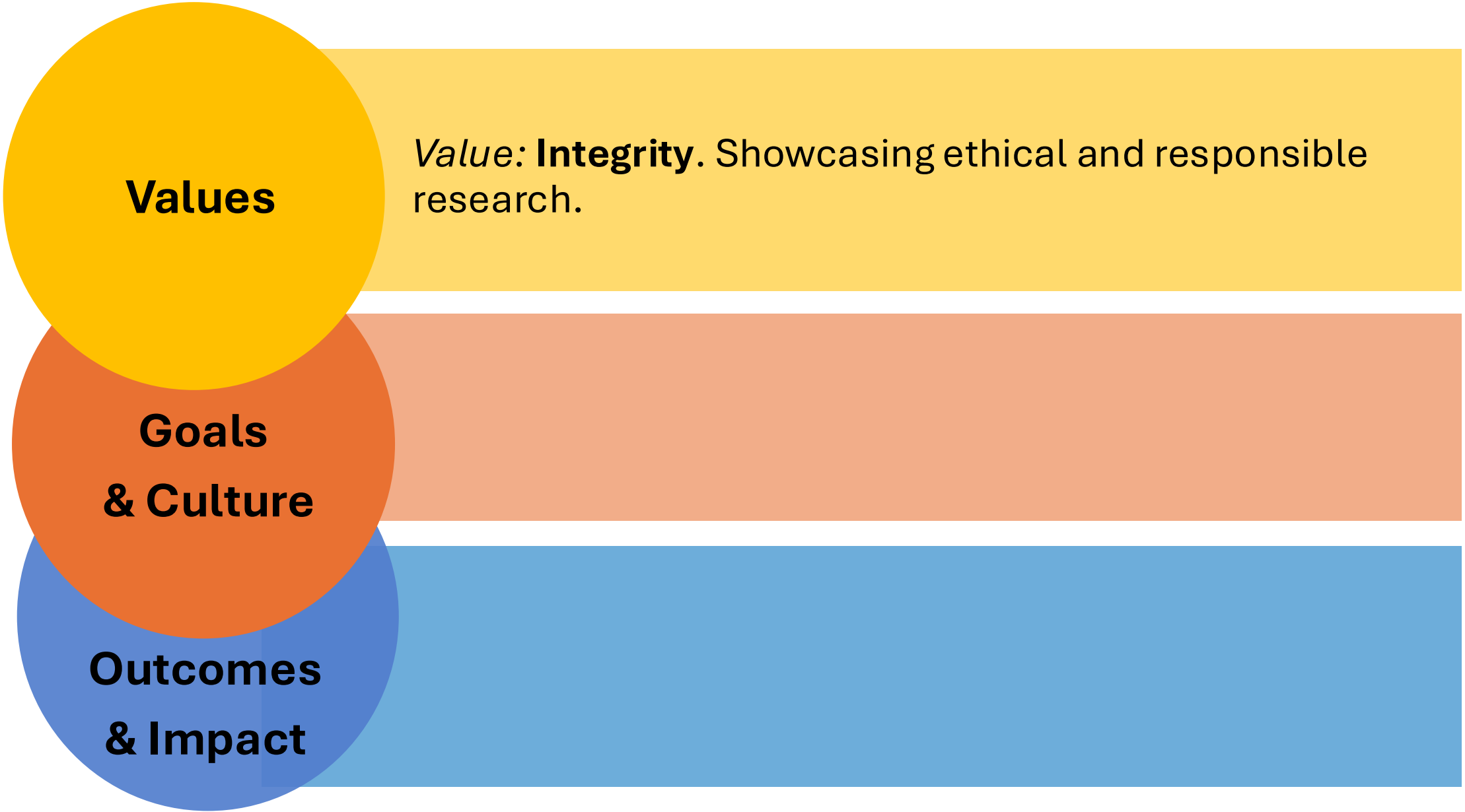


Values shape actions



Adapted from Centre for Teaching Support and Innovation (2026)

Values shape actions



Values shape goals and culture



Value: **Integrity**. Showcasing ethical and responsible research.

Goal: Learners **engage deeply** on the topic of AI usage in the research cycle.

Culture: Set expectations that **integrity matters** for high-quality credible research and for public trust in science.

Values shape outcomes and impact



Value: **Integrity**. Showcasing ethical and responsible research.

Goal: Learners **engage deeply** on the topic of AI usage in the research cycle.

Culture: Set expectations that **integrity matters** for high-quality credible research and for public trust in science.

Outcomes: Learners **critically examine** a case study on AI usage for data analysis from an ethical perspective.

Impact: Learners have **increased ethical awareness** of AI usage in their research and beyond.

Start inwards: What matters to me?

1. **Scan** through values table in workbook section 7.1

2. **Self reflect** which leadership values **resonate** with you

3. **Write** down **three values** in the workbook

~5 mins

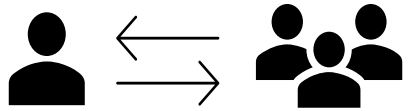
Tip
Take a look at the values table and guiding questions to help you.

Access workbook here: https://lmu-osc.github.io/train-the-trainer-open-research/workshop-design-workbook/

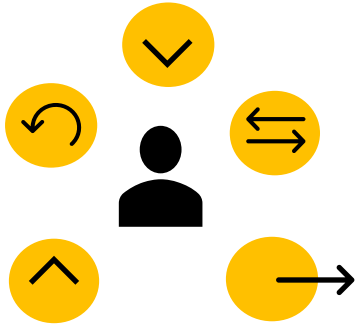
Interim summary



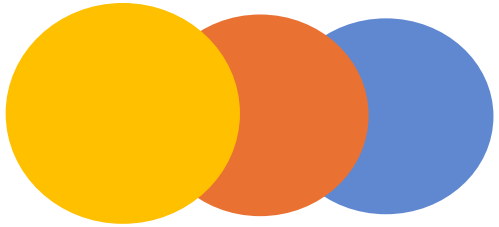
Leadership can be **formal** (e.g. supervisor) or **informal** (e.g. community champion)



Leadership is a **co-constructive process** between leaders and followers



Leadership is **multi-directional**



Values shape **actions**

What does leadership in Open Science/Scholarship mean to you?



Fotis Mystakopoulos

Open Scholarly Communication Officer at OPERAS Research Infrastructure

PhD Candidate in Archival, Library and Information Studies at the University of Western Attica (UniWA)

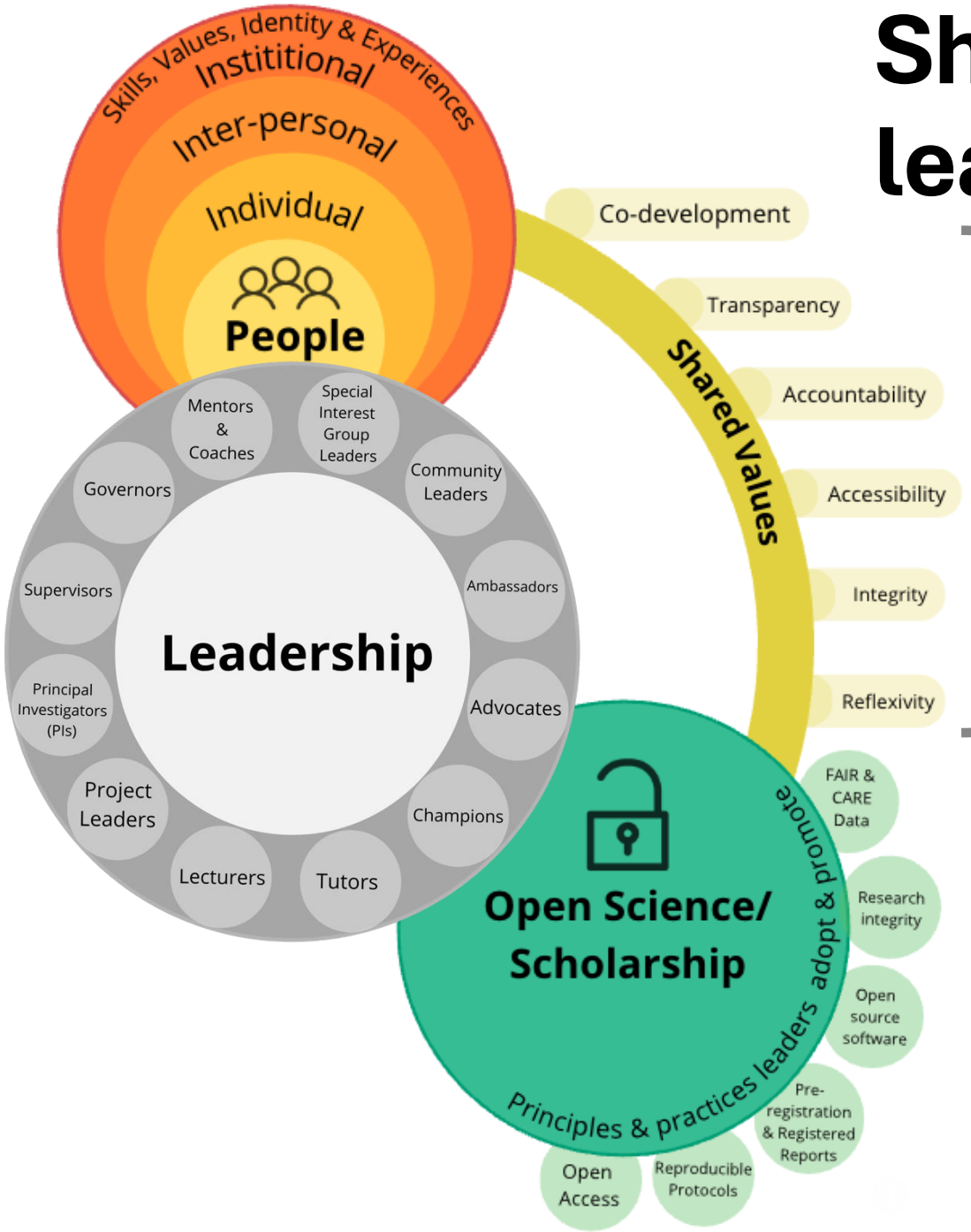
"A few years ago I'd have answered this differently, because of how open science is changing and **evolving**, but my current view has two components: the **scientific** and the **human**.

The scientific part means applying the principles of open science, doing research with **integrity**, **transparency**, and **quality**.

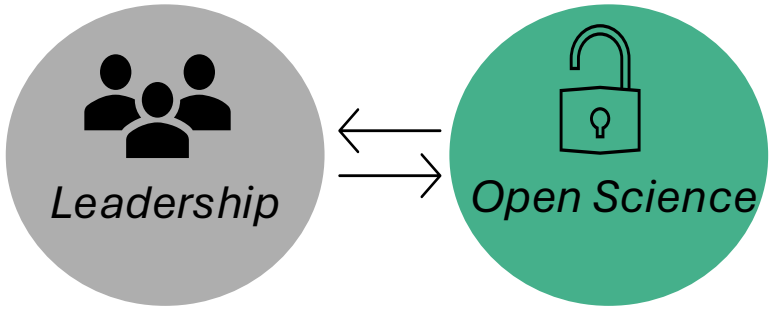
The human part means being **compassionate**, **supportive**, and **collaborative**. Research can be deeply isolating, often carried out in demanding environments, and for me **people come first**.

My hope is that through open science we also learn to be **kinder**, more **reflective**, and more understanding, because doing science the right way ultimately depends on **people** being able to **thrive** within a **research culture**."

Shared values of effective leadership and Open Science

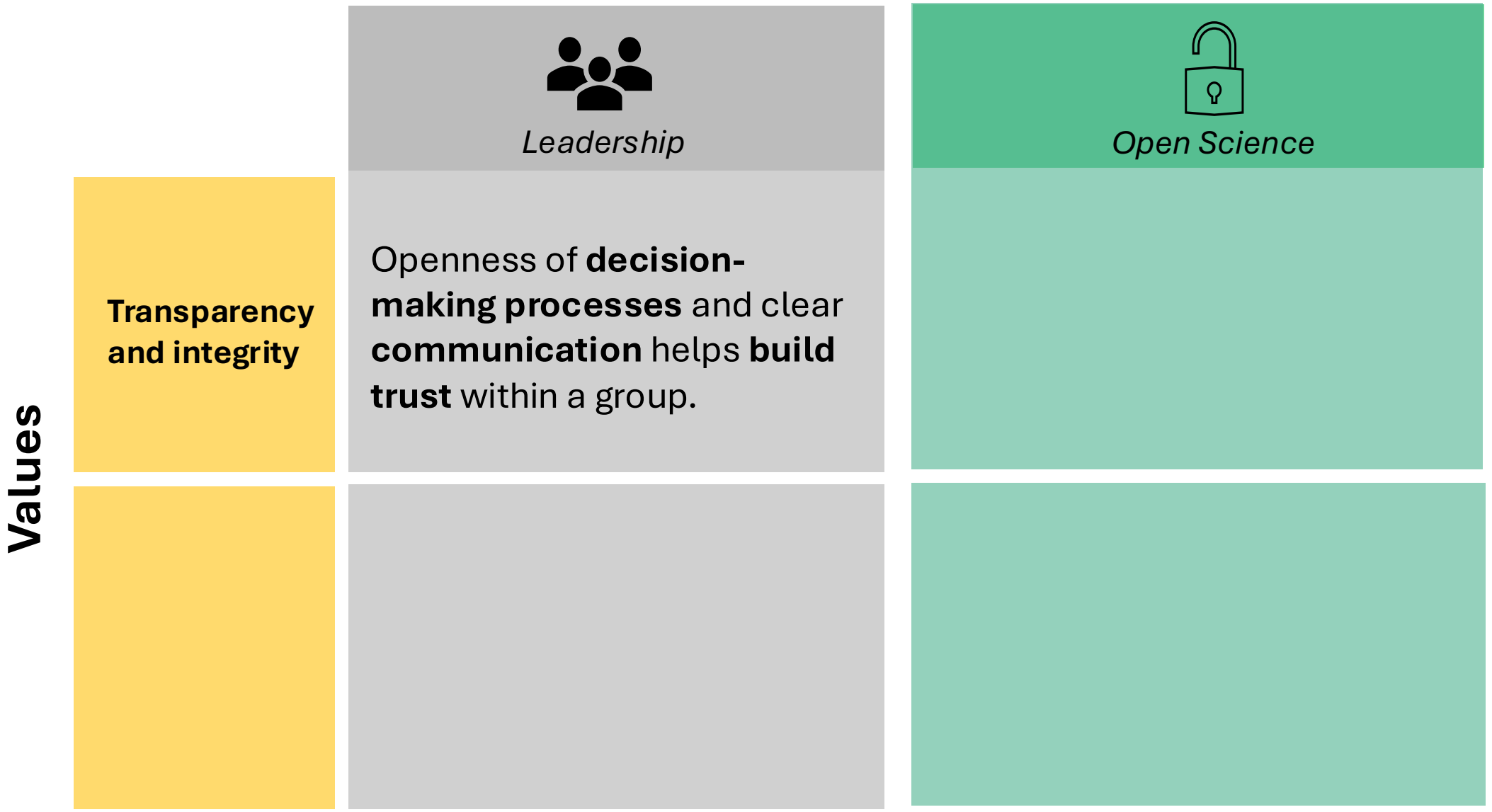


There are lots of values of effective leadership that overlap with values we strive for in Open Science!



OSC LMU Open Science Center FORRT

Example of shared values: transparency and integrity



Example of shared values: transparency and integrity

Values

	Leadership	*Open Science*
Transparency and integrity	Openness of **decision-making processes** and clear **communication** helps **build trust** within a group.	Thoughtful **planning** and transparently **documenting study** design, data collection and analysis in a **preregistration** improves **credibility** of research.

Context

Example of shared values: co-development

Values

	Leadership	*Open Science*
Transparency and integrity	Openness of **decision-making processes** and clear **communication** helps **build trust** within a group.	Thoughtful **planning** and transparently **documenting study** design, data collection and analysis in a **preregistration** improves **credibility** of research.
Co-development	**Relational** leadership, **collective role** in decision-making process, empowering everyone to **contribute**, ability to balance multiple (sometimes conflicting) ideas.	

Context

Example of shared values: co-development

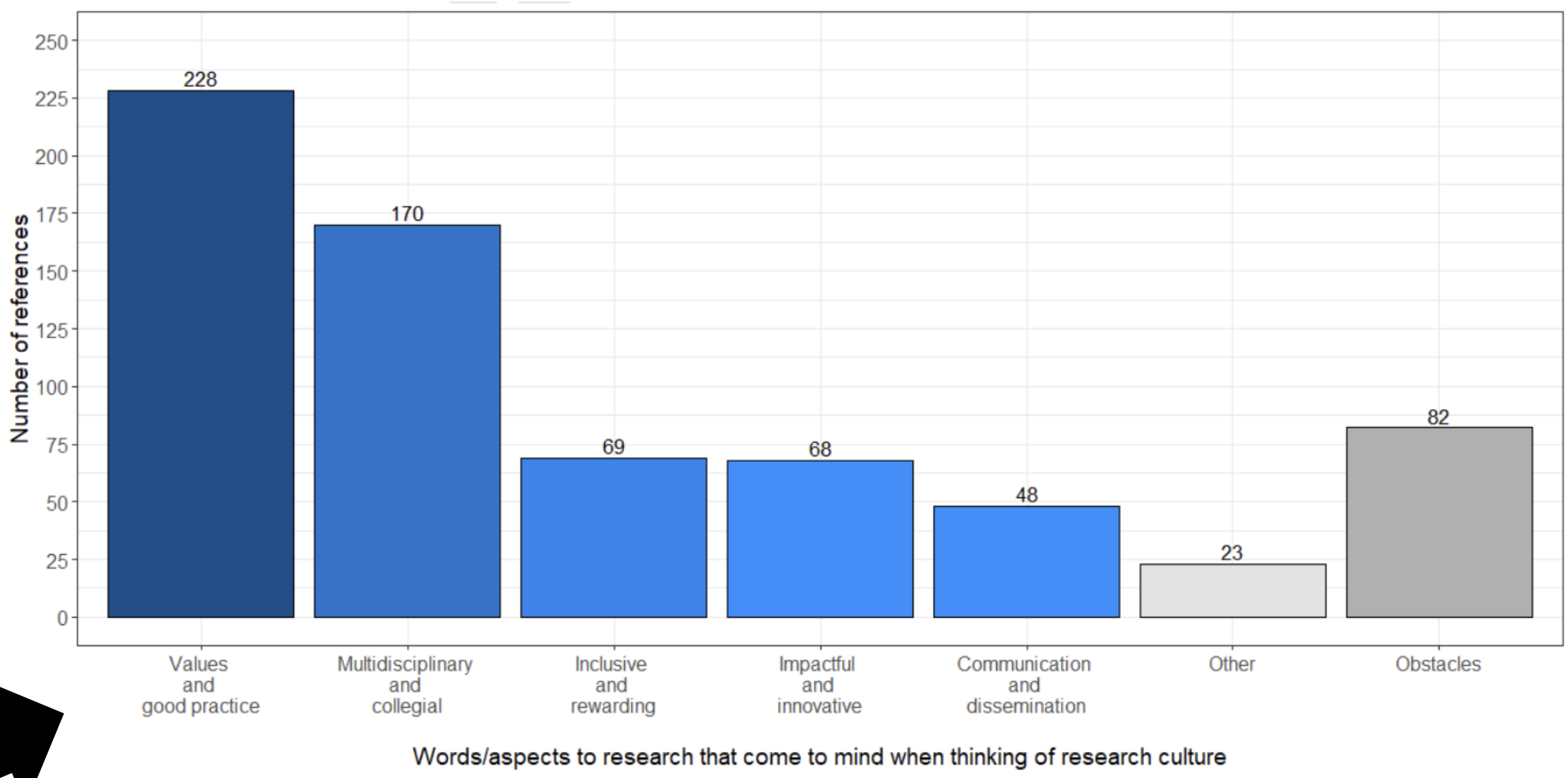
Values

	Leadership	*Open Science*
Transparency and integrity	Openness of **decision-making processes** and clear **communication** helps **build trust** within a group.	Thoughtful **planning** and transparently **documenting study** design, data collection and analysis in a **preregistration** improves **credibility** of research.
Co-development	**Relational** leadership, **collective role** in decision-making process, empowering everyone to **contribute**, ability to balance multiple (sometimes conflicting) ideas.	Embedding **CARE principles** into research, **co-producing** data governance policies with communities, minimizing harm and improving quality of research (Carroll et al. 2021).

Context

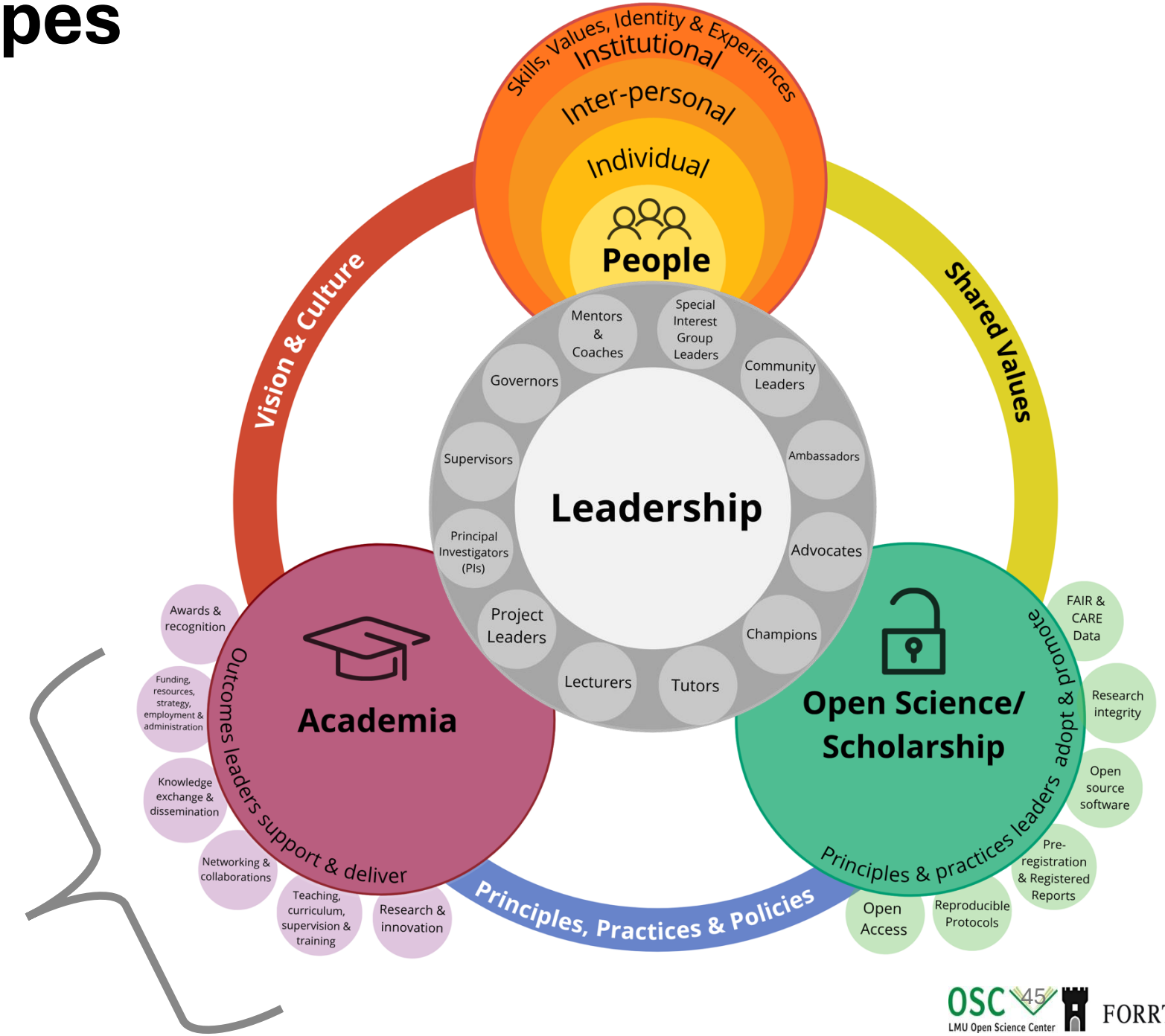
Shared values towards an open research culture

"What words or aspects to research come to mind when you think of research culture?"



Adapted from Lacey et al. (2026)

Current context shapes research culture

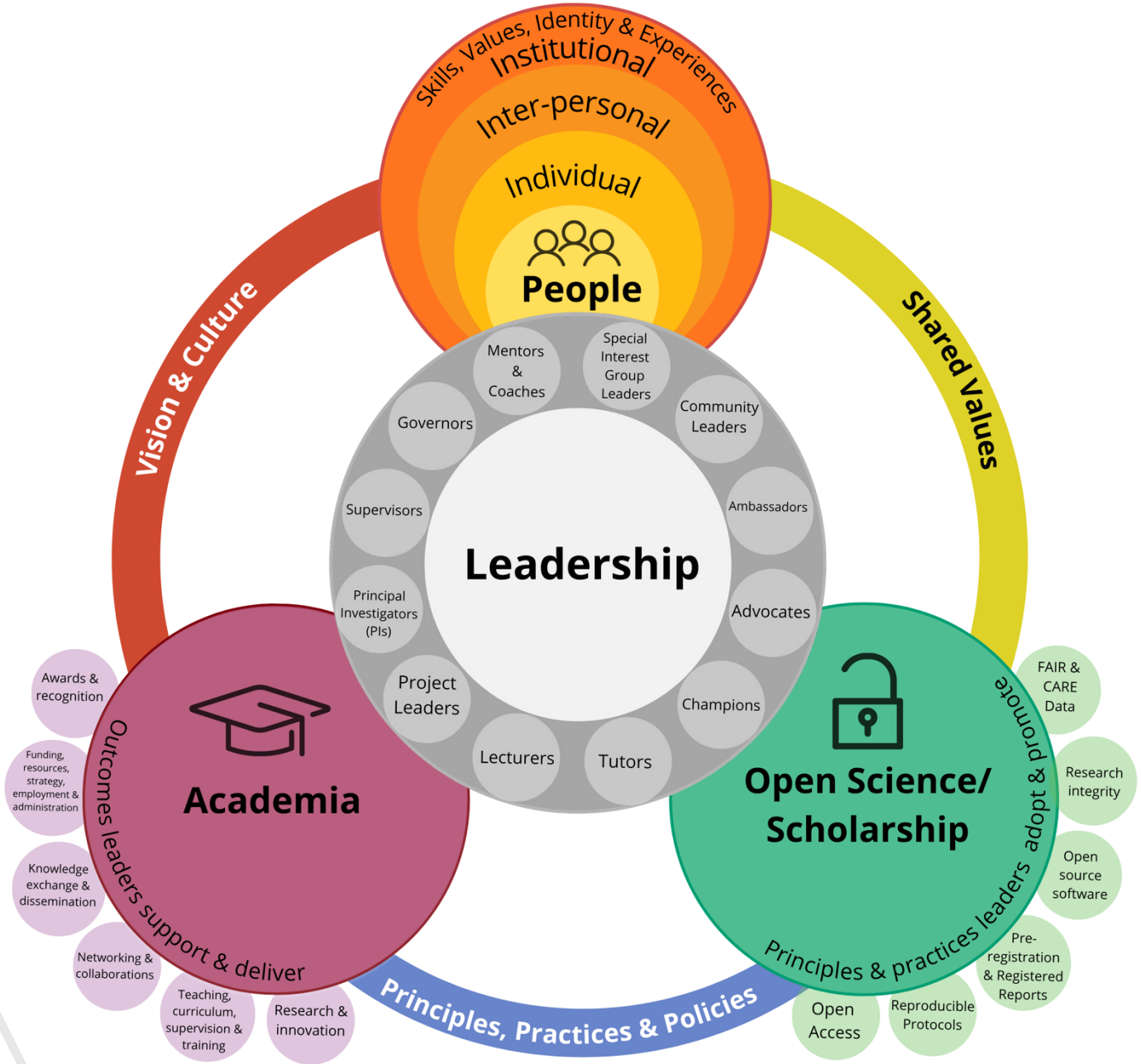


The environment in which research happens is **not** a **neutral** backdrop.

Current context shapes research culture

Social, cultural, educational background, **economic** factors influences how we lead and respond to challenges.

The environment in which research happens is **not** a **neutral** backdrop.

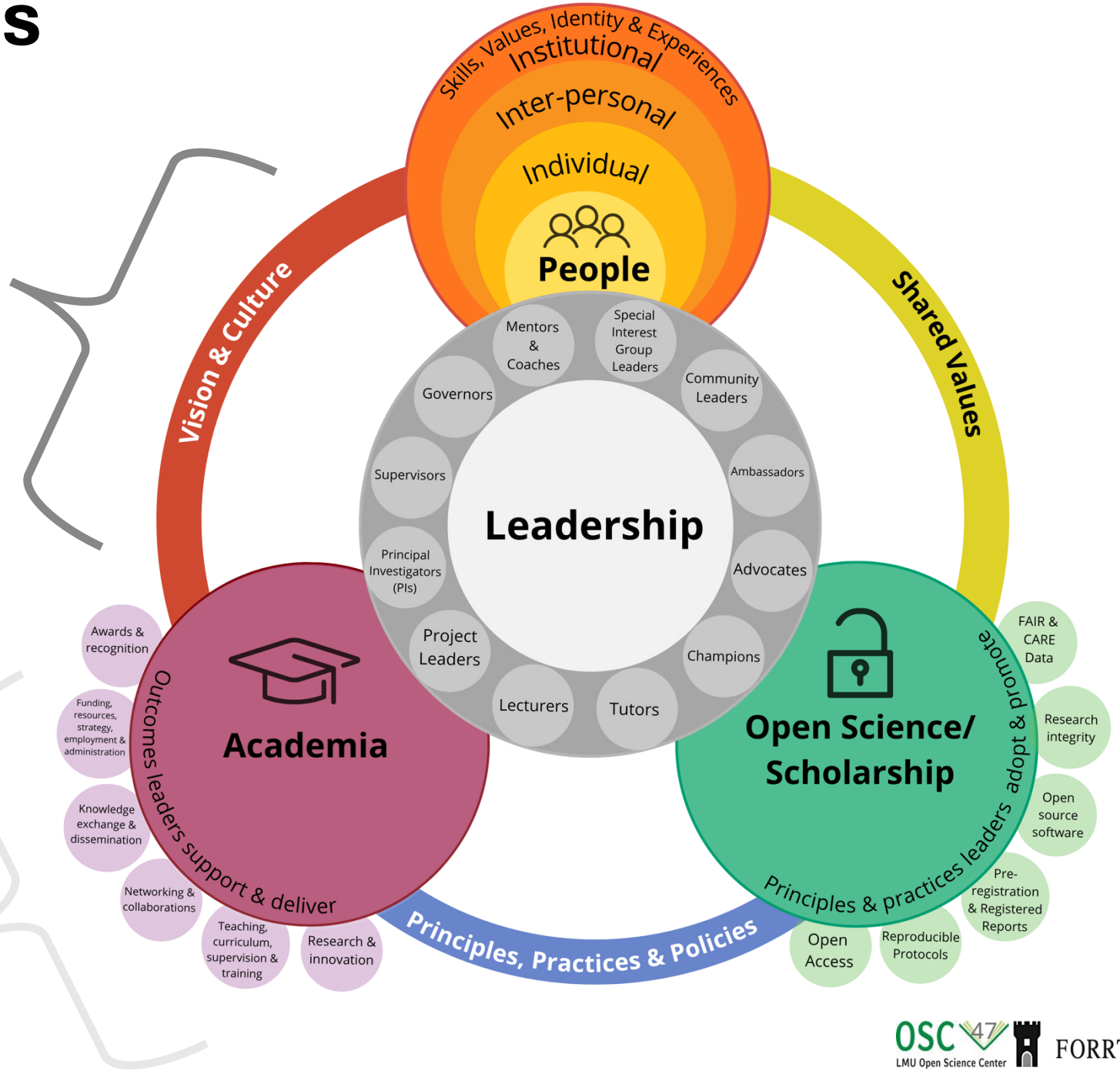


Current context shapes research culture

Leadership is a **critical** mediating factor in fostering a research culture that is **open**, **equitable** and **collaborative**.

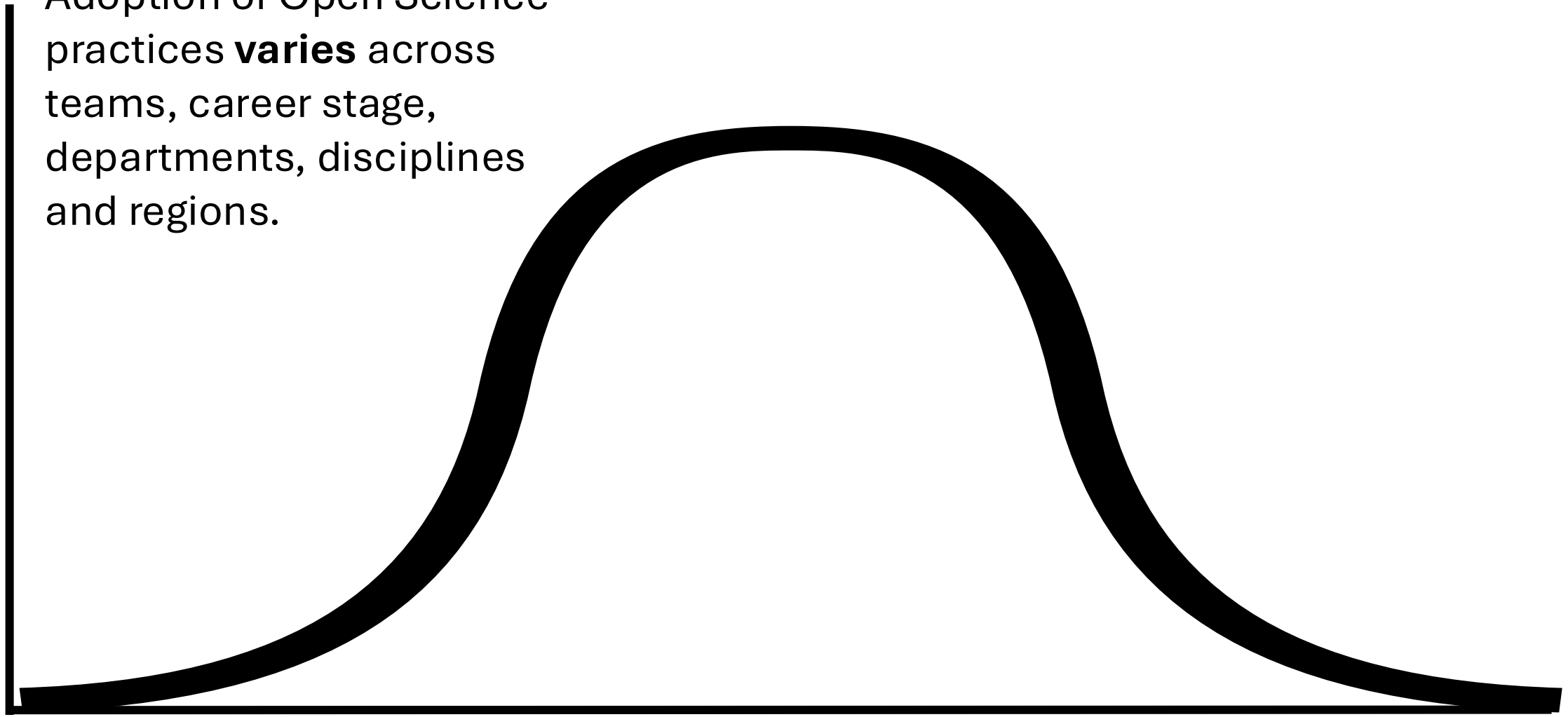
Social, cultural, educational background, **economic** factors influences how we lead and respond to challenges.

The environment in which research happens is **not** a **neutral** backdrop.



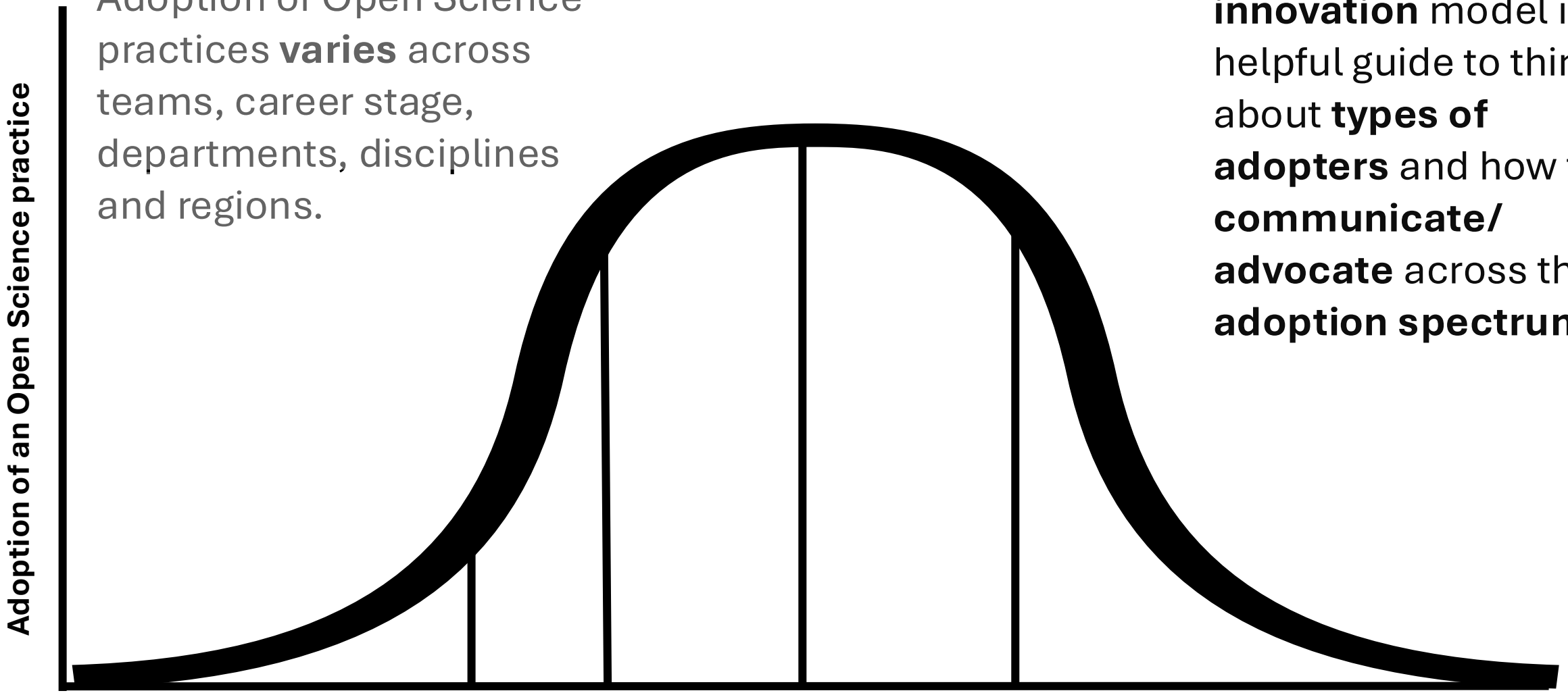
Adoption of Open Science practices varies

Adoption of Open Science practices **varies** across teams, career stage, departments, disciplines and regions.



Culture change curve

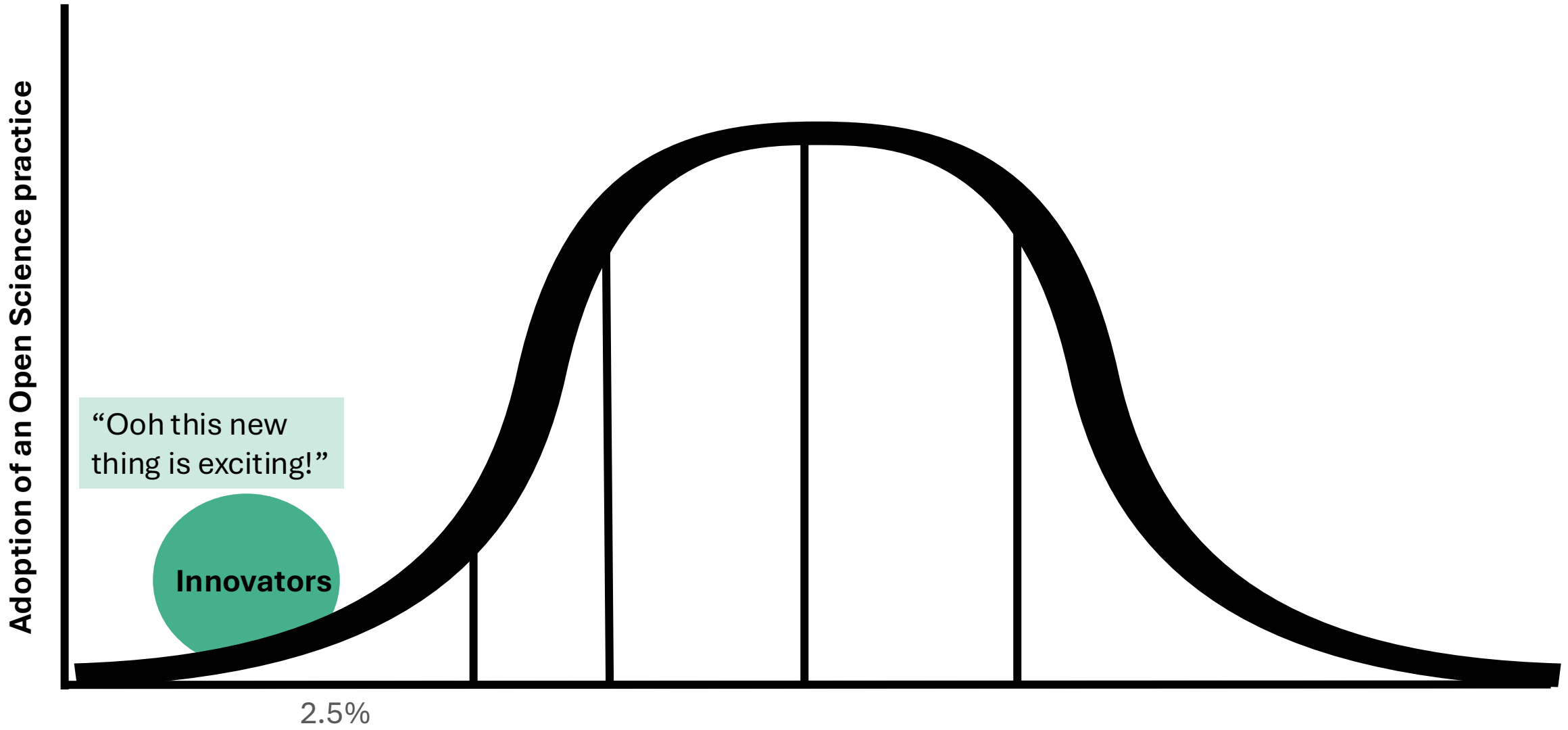
Adoption of Open Science practices **varies** across teams, career stage, departments, disciplines and regions.



The **diffusion of innovation** model is a helpful guide to think about **types of adopters** and how to **communicate/ advocate** across the **adoption spectrum.**

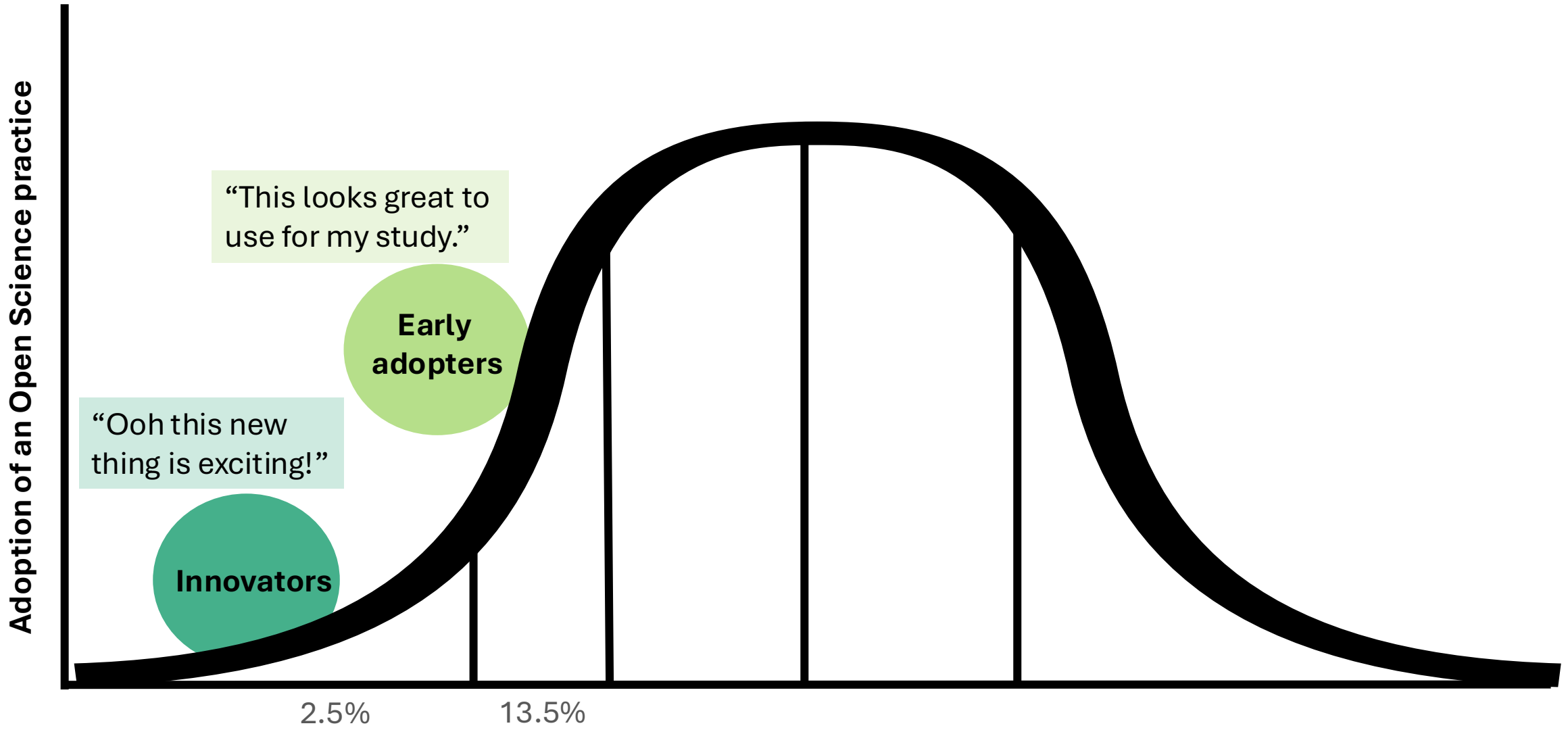
Adaptation of diffusion of innovation model by Rogers (1983)

Culture change curve: innovators



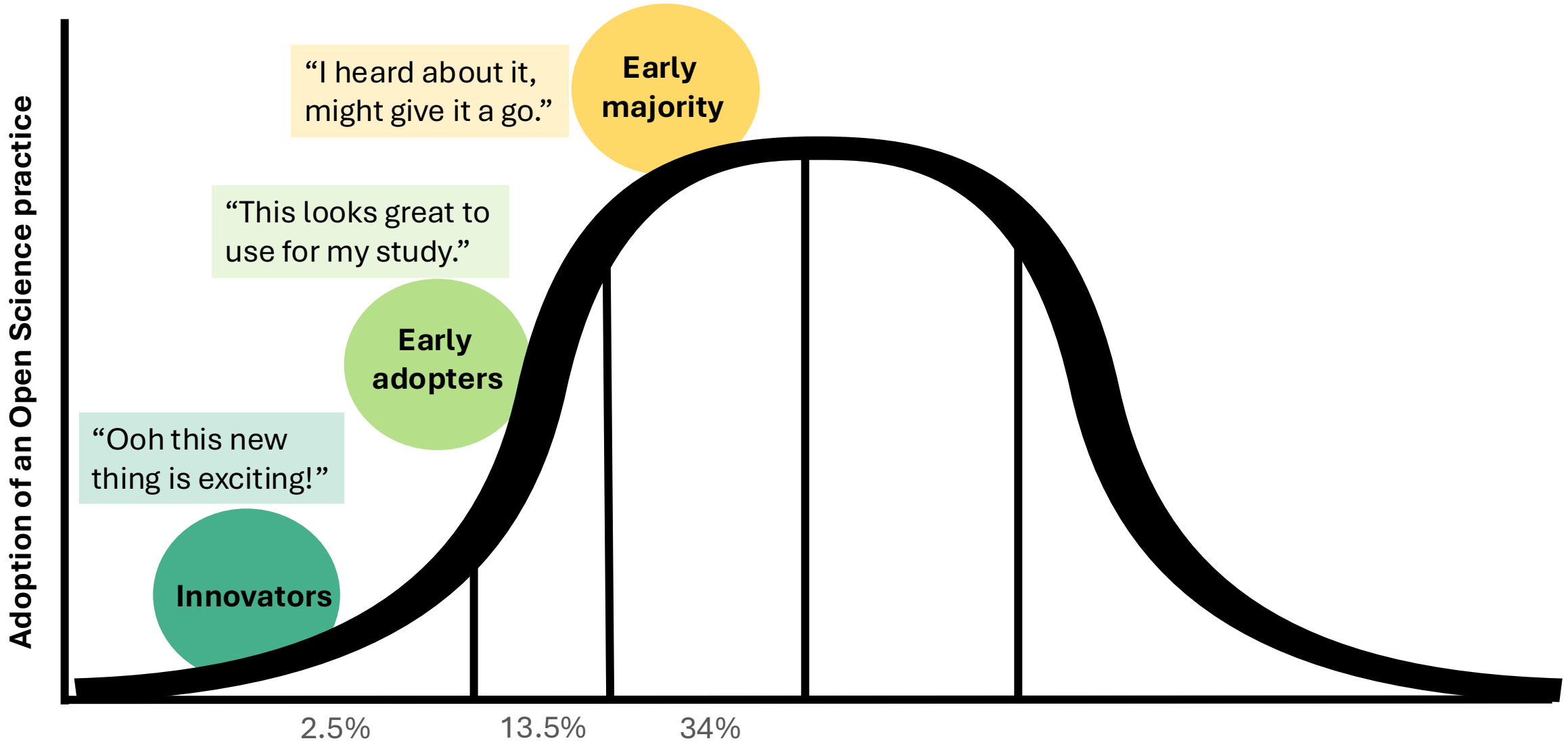
Adaptation of diffusion of innovation model by Rogers (1983)

Culture change curve: early adopters



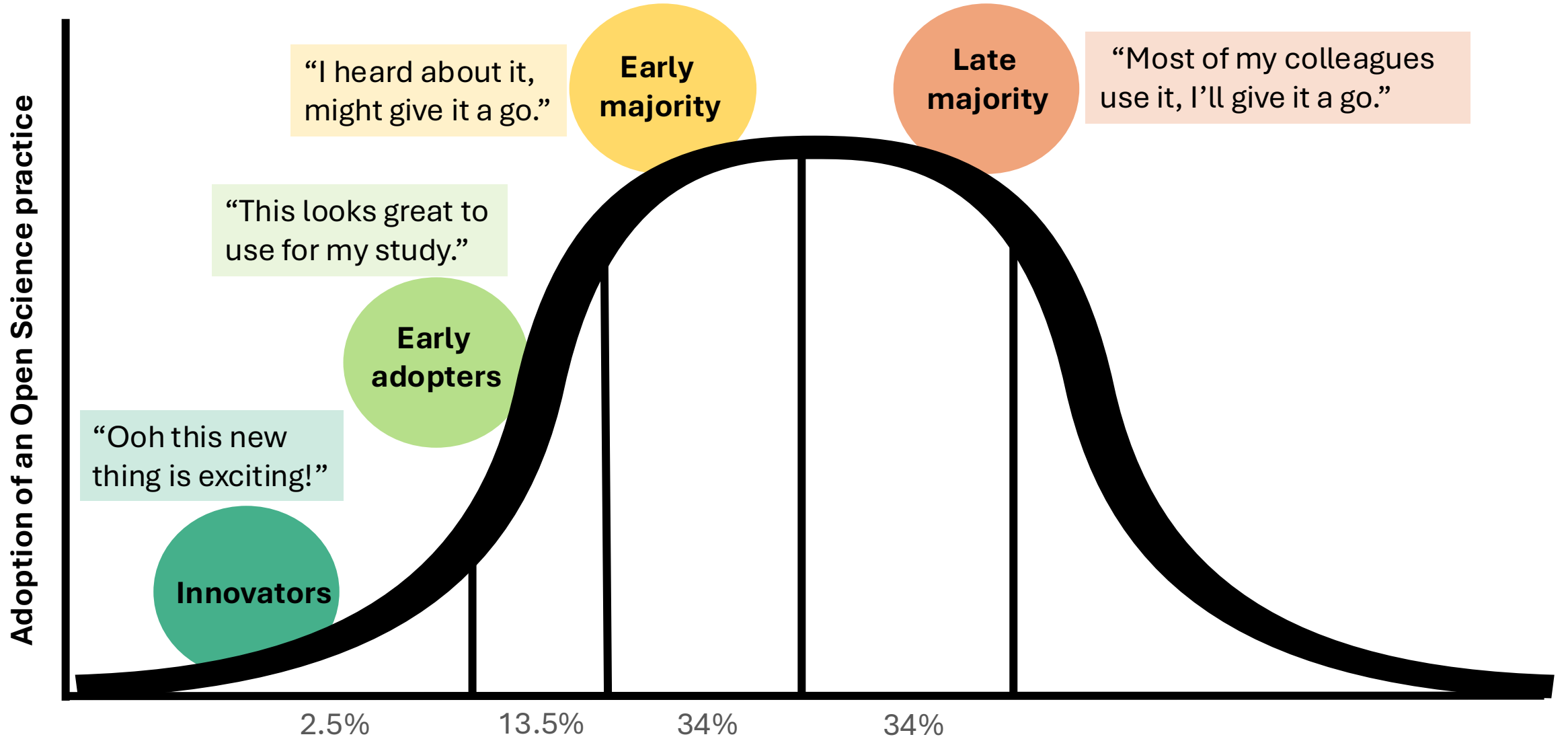
Adaptation of diffusion of innovation model by Rogers (1983)

Culture change curve: early majority



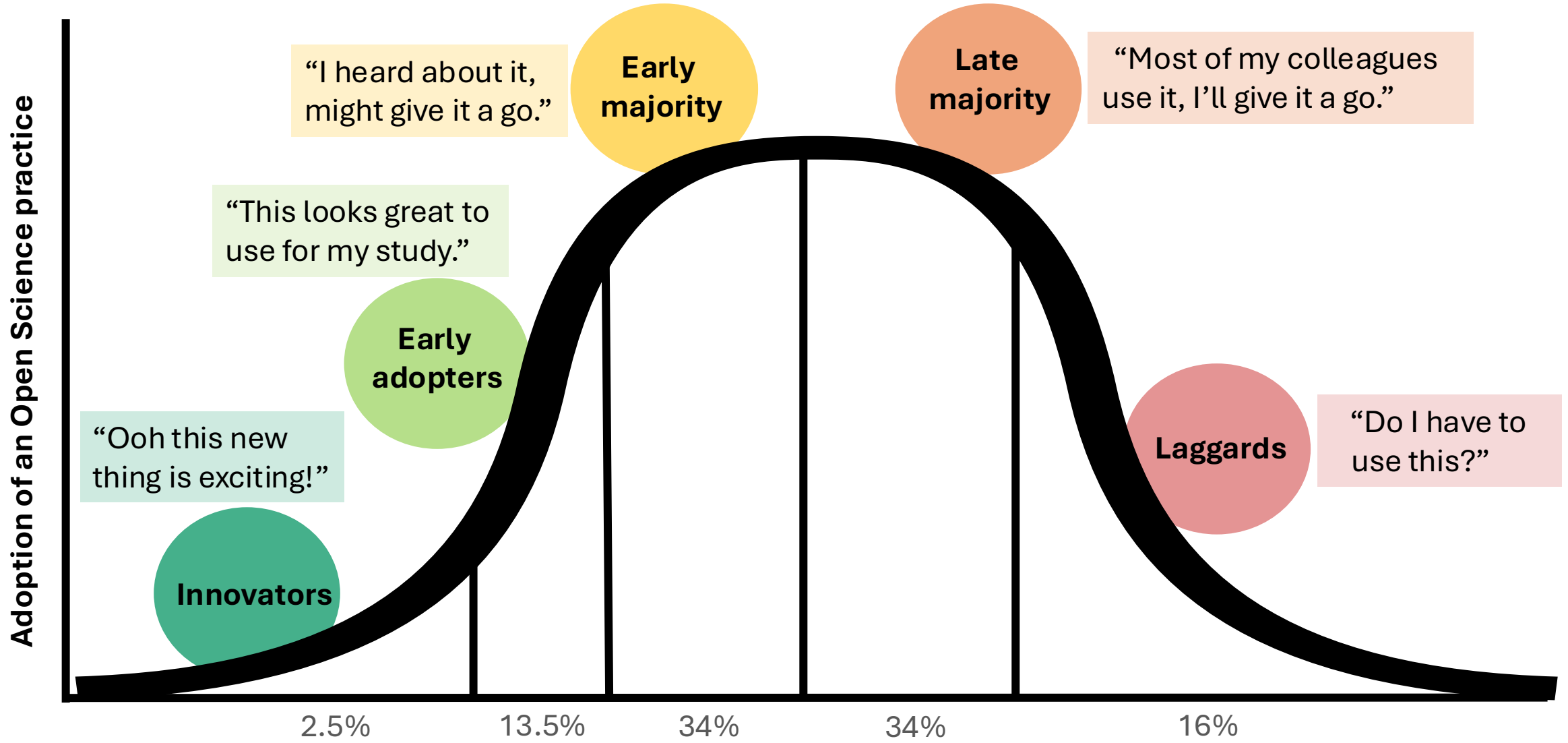
Adaptation of diffusion of innovation model by Rogers (1983)

Culture change curve: late majority



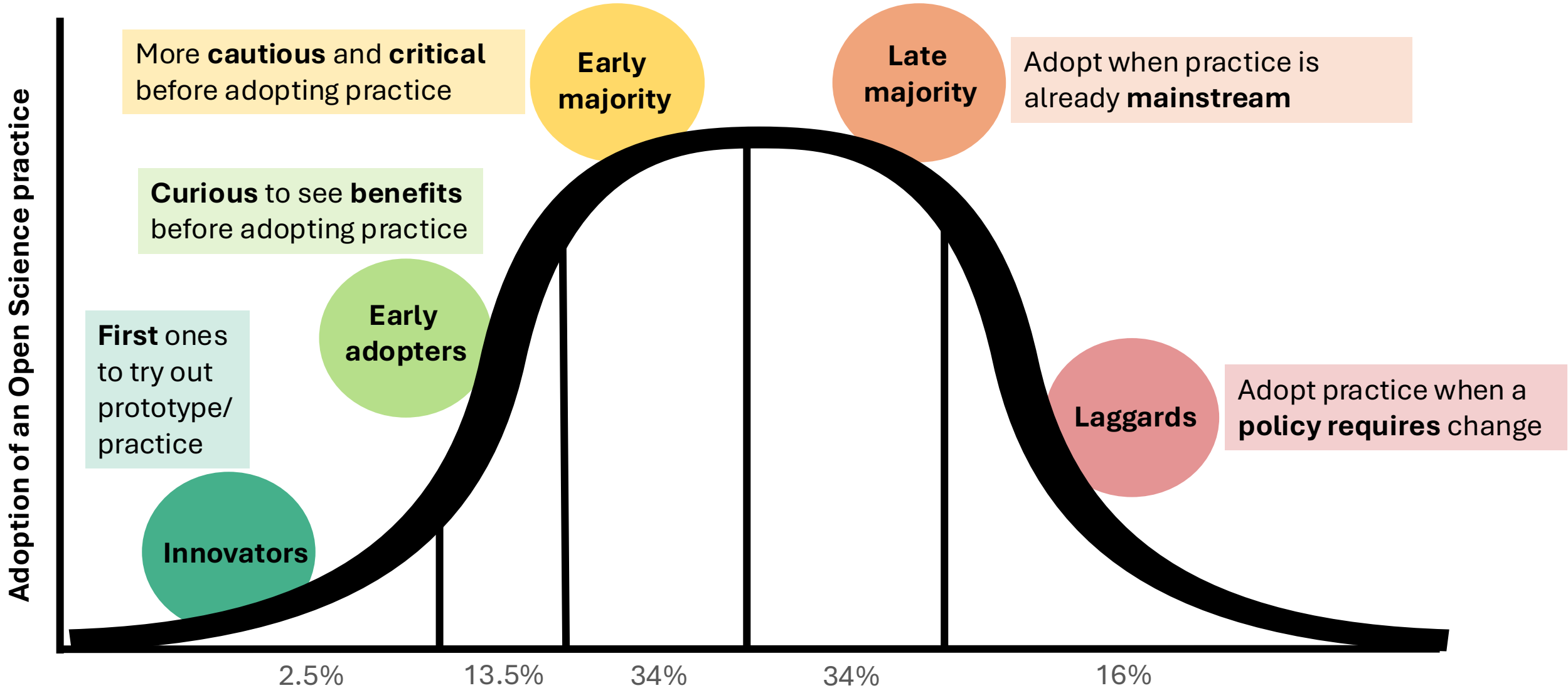
Adaptation of diffusion of innovation model by Rogers (1983)

Culture change curve: laggards



Adaptation of diffusion of innovation model by Rogers (1983)

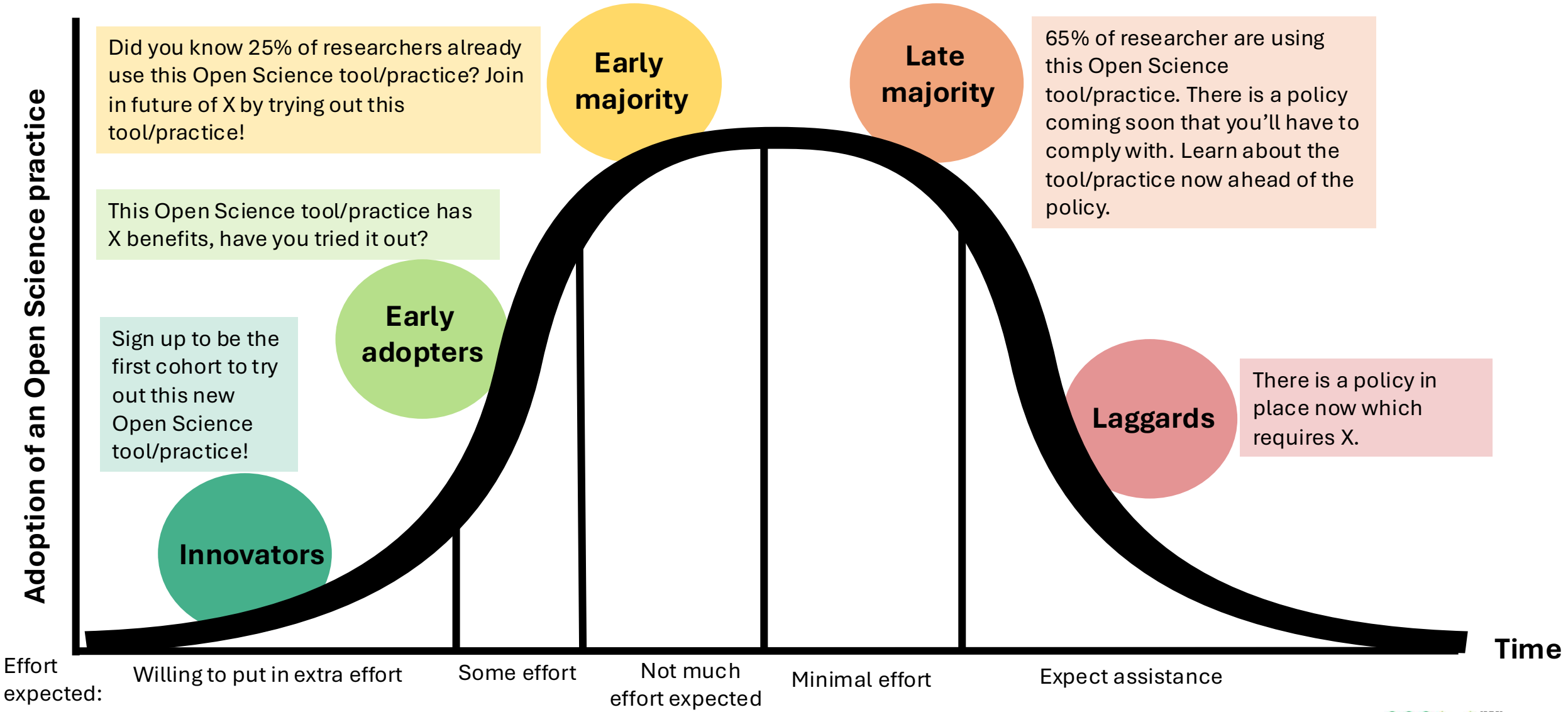
Culture change curve: time to adoption



Adaptation of diffusion of innovation model by Rogers (1983)

Communicating with different adopter types

How to **tailor messaging** depending on adopter type based on the effort adopters expect.



Adaptation of diffusion of innovation model by Rogers (1983); Skelly & Rusu (2023)

Varying norms and awareness of Open Science practices

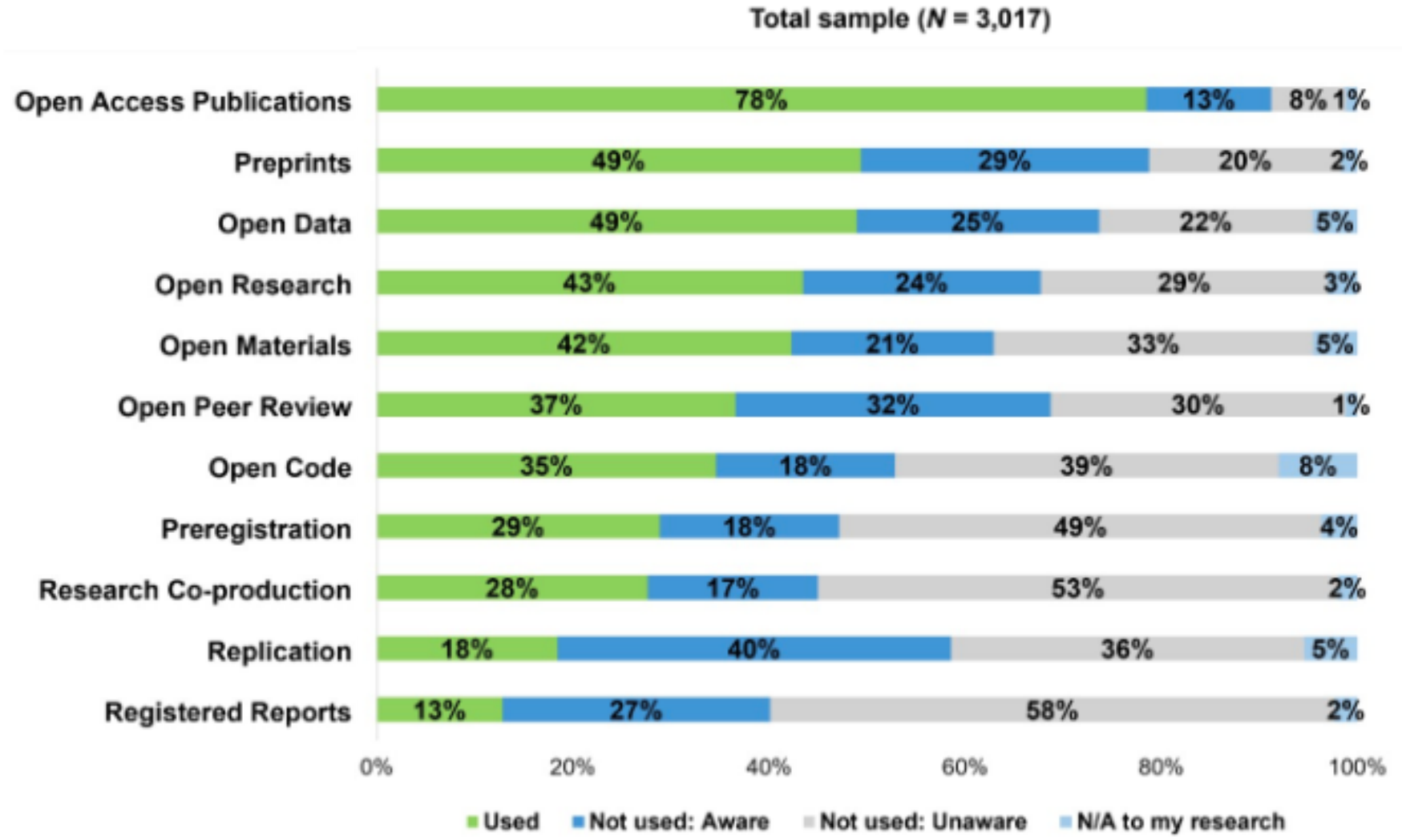
1. **Which** Open Science practice do you think is the **most used**? And the **least**?

Open Science practices

Open Data	Open Code	Open Materials	Open Research
Open Peer Review	Preprints	Preregistration	Registered Reports
Replication	Open Access Publications		Research Co-production

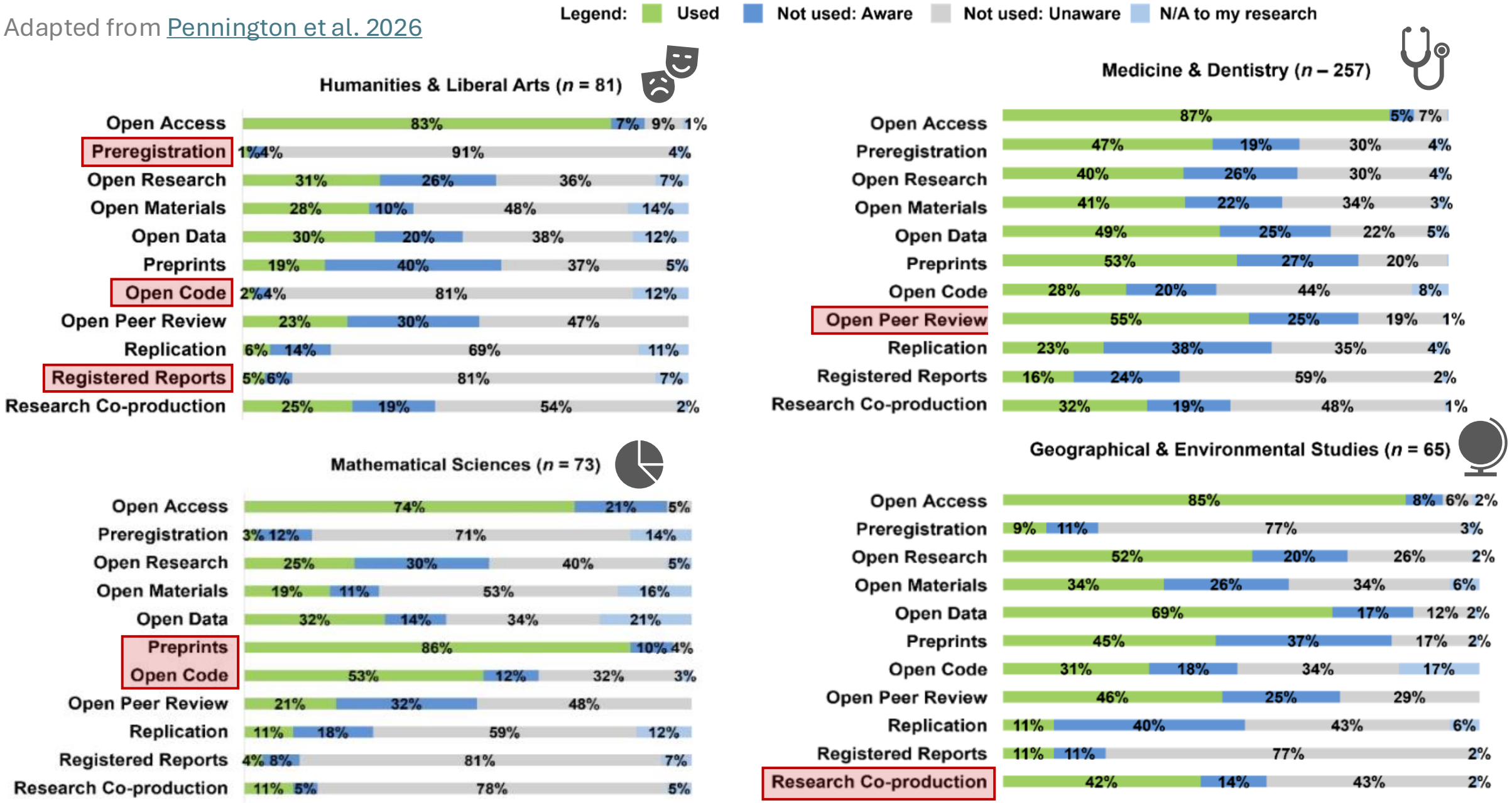
Open Access is now the norm

Adapted from [Pennington et al. 2026]



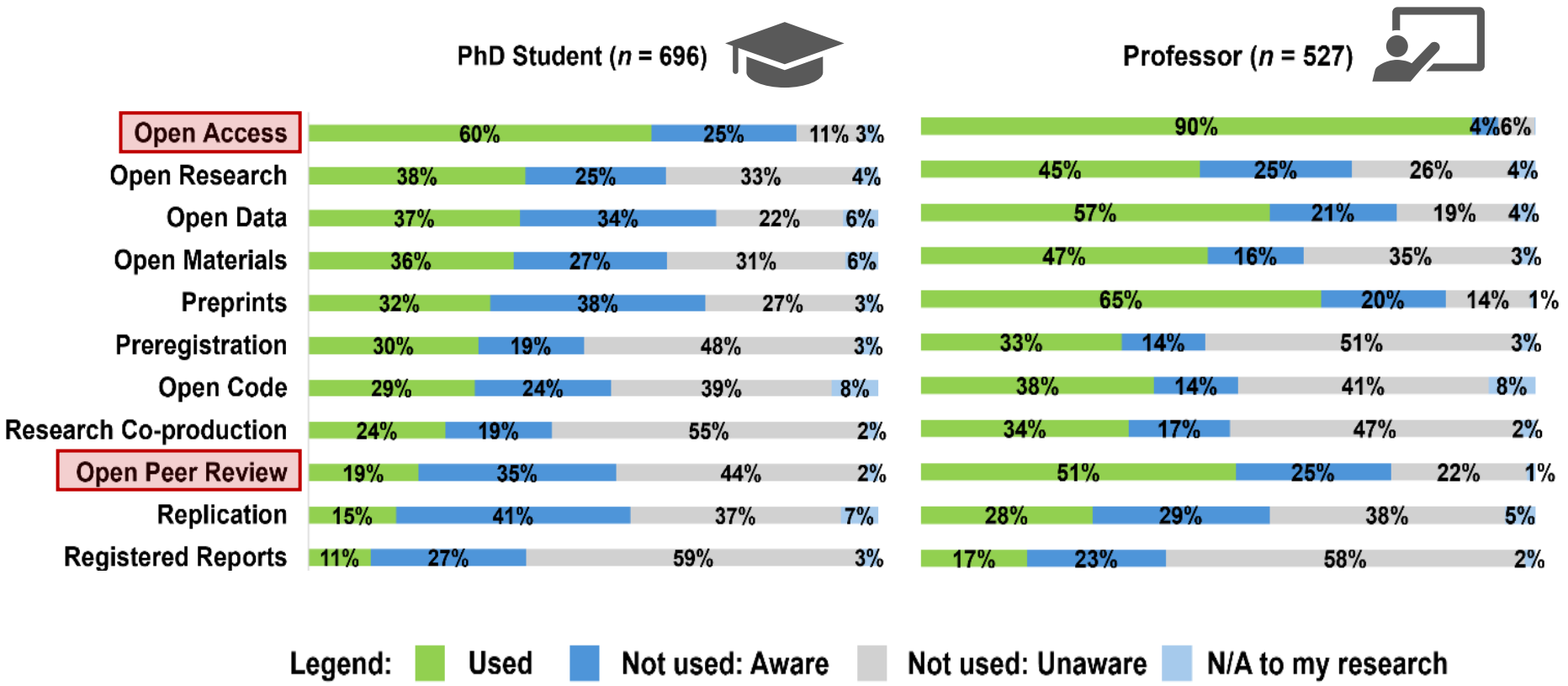
Varying norms and awareness across disciplines

Adapted from Pennington et al. 2026



Varying norms and awareness: career stage

Adapted from Pennington et al. 2026



Social location influences leadership and research culture

Social and cultural factors such as **gender**, **ethnicity**, **employment status**, **travel freedoms**, etc. influence how you do research.

Social location influences leadership and research culture

Social and cultural factors such as **gender**, **ethnicity**, **employment status**, **travel freedoms**, etc. influence how you do research.

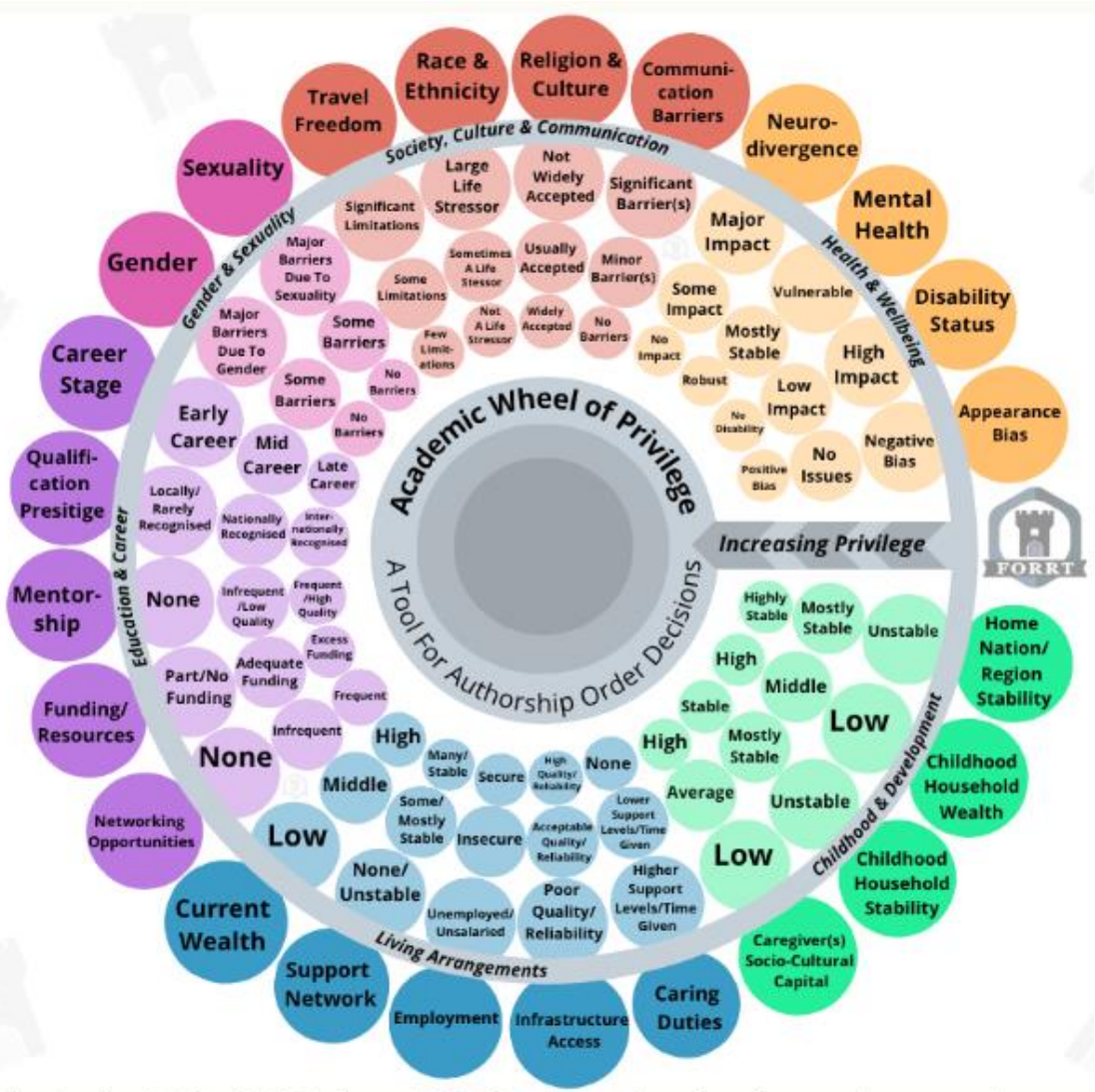


Figure 1. The Academic Wheel of Privilege with 24 baseline socio-cultural categories across six sectors. The effect of the concentric rings makes it appear like a funnel – the closer you get to the centre the more you are likely to spiral into more privilege. An extended description of the figure can be found in S2, with accompanying bibliography for each socio-cultural category in S8.

The **Academic Wheel of Privilege** is a framework to reflect on how social location influences academic activities (e.g. **authorship decisions**, **building collaborations**, **study design**, and **leadership**).

Adapted from Middleton et al. 2026 (CC BY NC SA)

Social location influences leadership style

Each of us map onto a different **social location**, which **can change** over time.

Our social location influences our **values**, **actions** and the **research culture** we foster as leaders.

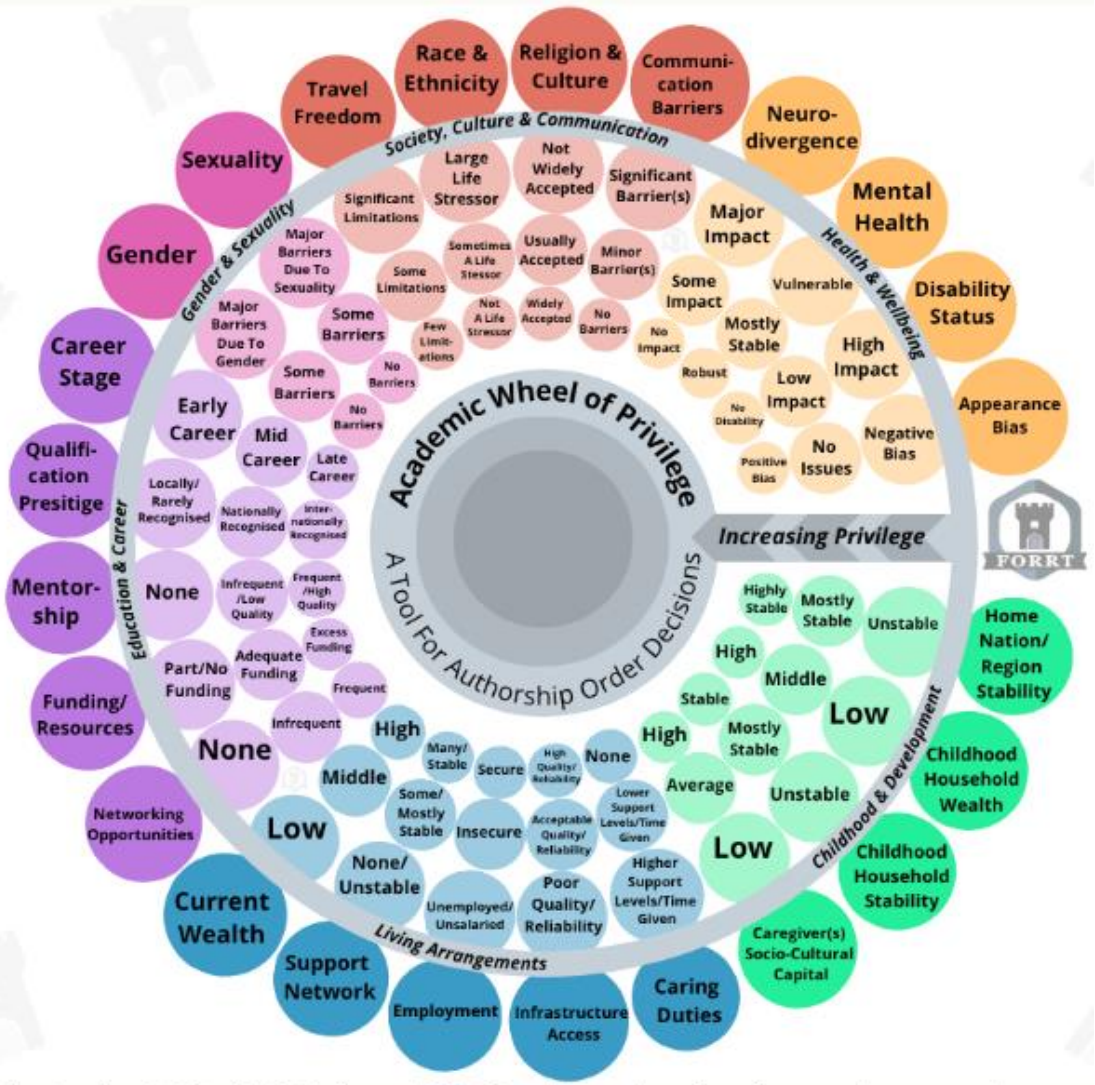


Figure 1. The Academic Wheel of Privilege with 24 baseline socio-cultural categories across six sectors. The effect of the concentric rings makes it appear like a funnel – the closer you get to the centre the more you are likely to spiral into more privilege. An extended description of the figure can be found in S2, with accompanying bibliography for each socio-cultural category in S8.

Adapted from Middleton et al. 2026 (CC BY NC SA)

Social location influences leadership style

Each of us map onto a different **social location**, which **can change** over time.

Our social location influences our **values**, **actions** and the **research culture** we foster as leaders.

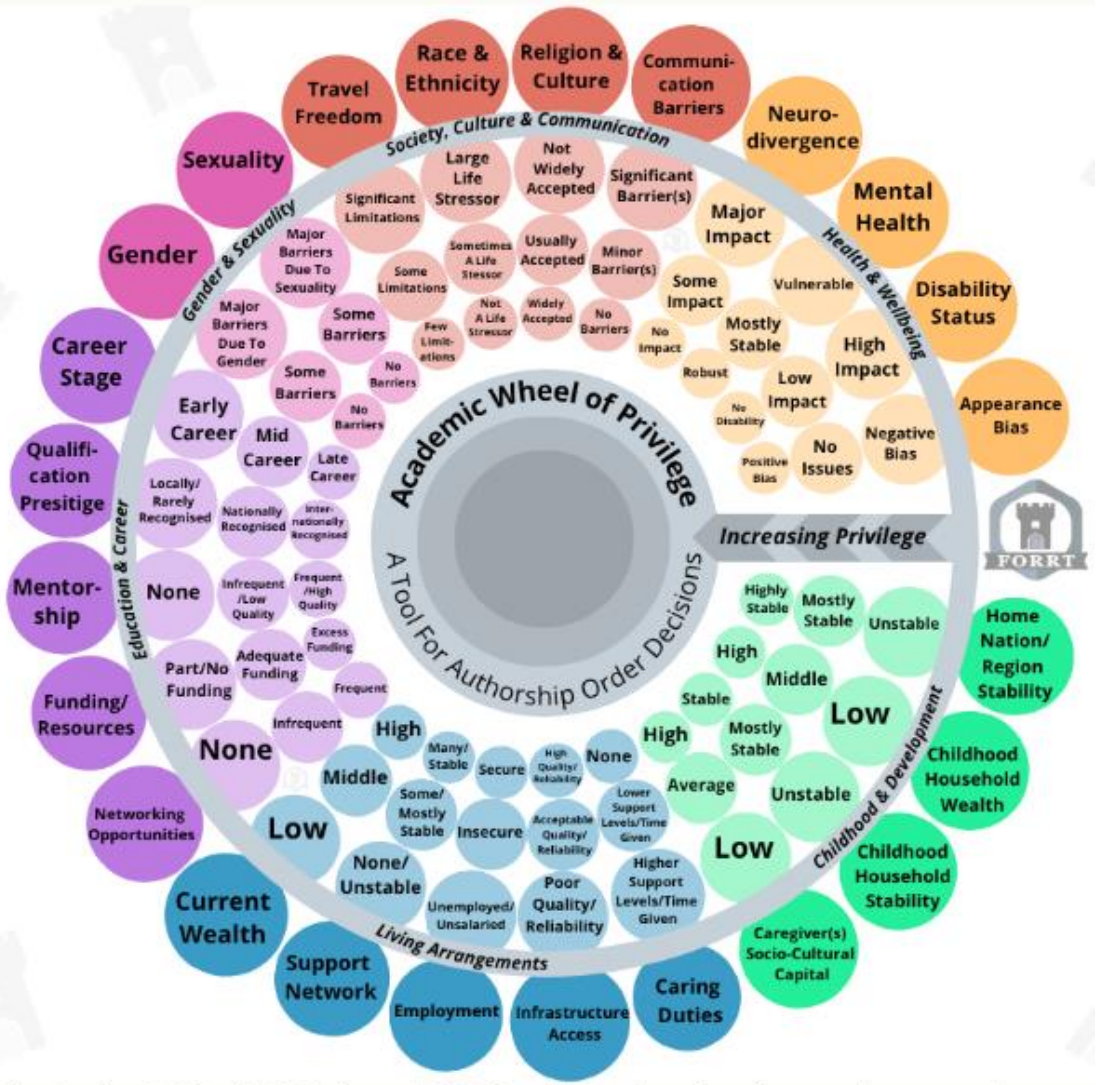


Figure 1. The Academic Wheel of Privilege with 24 baseline socio-cultural categories across six sectors. The effect of the concentric rings makes it appear like a funnel – the closer you get to the centre the more you are likely to spiral into more privilege. An extended description of the figure can be found in S2, with accompanying bibliography for each socio-cultural category in S8.

Example: teaching a reproducible coding workshop

The workshop is likely to be **led differently** if the instructor is a tenured male professor, disabled post-doctoral researcher or a female international PhD student.

See Gershenson et al. (2015) for more on this topic.

Adapted from Middleton et al. 2026 (CC BY NC SA)

Social location and adoption of Open Science practices

Funding/resources

Ability to pay for Article Processing Charges (APCs) for **Open Access** publications

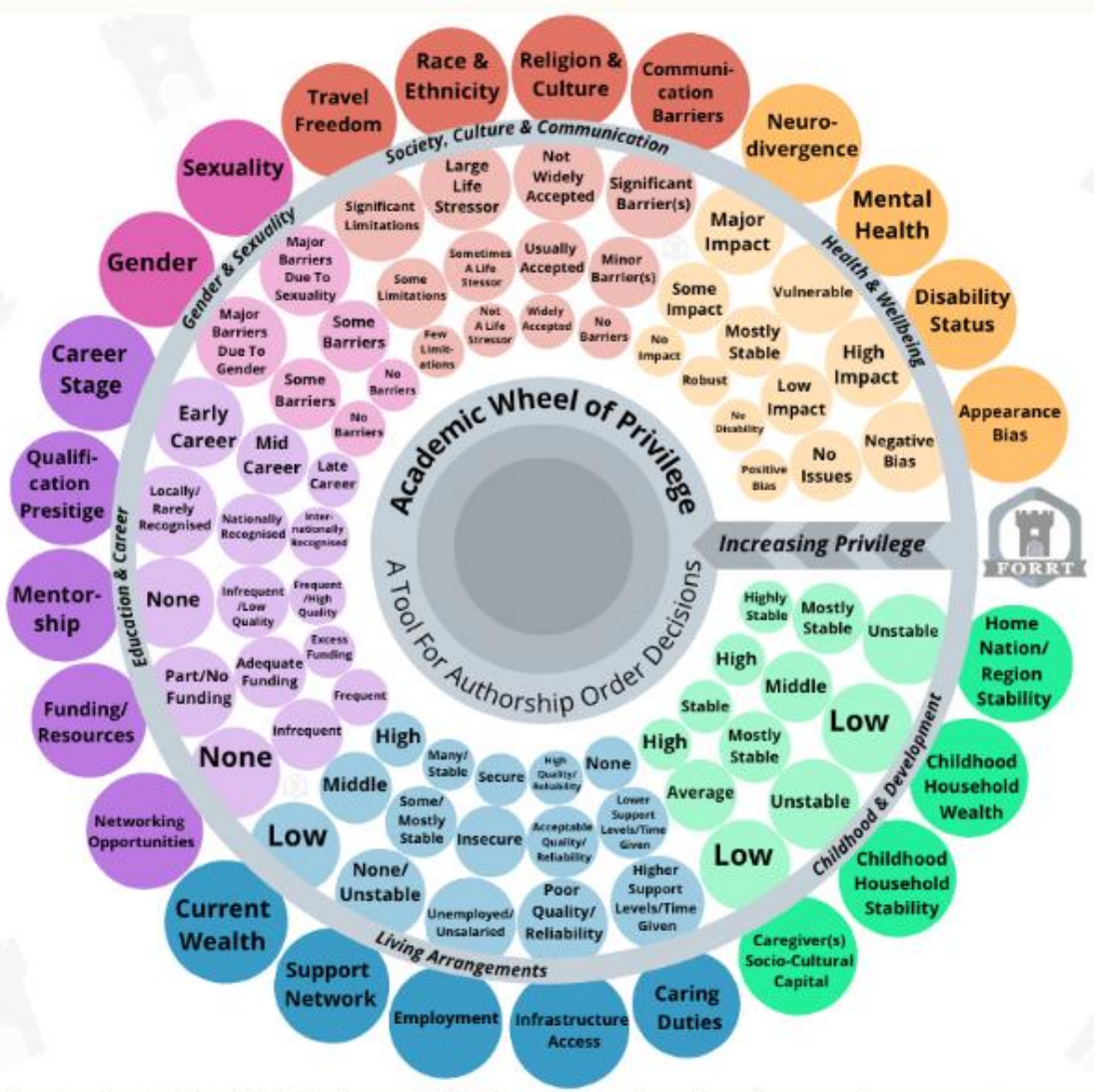


Figure 1. The Academic Wheel of Privilege with 24 baseline socio-cultural categories across six sectors. The effect of the concentric rings makes it appear like a funnel – the closer you get to the centre the more you are likely to spiral into more privilege. An extended description of the figure can be found in S2, with accompanying bibliography for each socio-cultural category in S8.

Adapted from Middleton et al. 2026 (CC BY NC SA)

Social location and adoption of Open Science practices

Culture and language

Study design, language accessibility of **Open Educational Resources.** Utility of **open peer review** perceived differently across cultures

Funding/resources

Ability to pay for Article Processing Charges (APCs) for **Open Access** publications

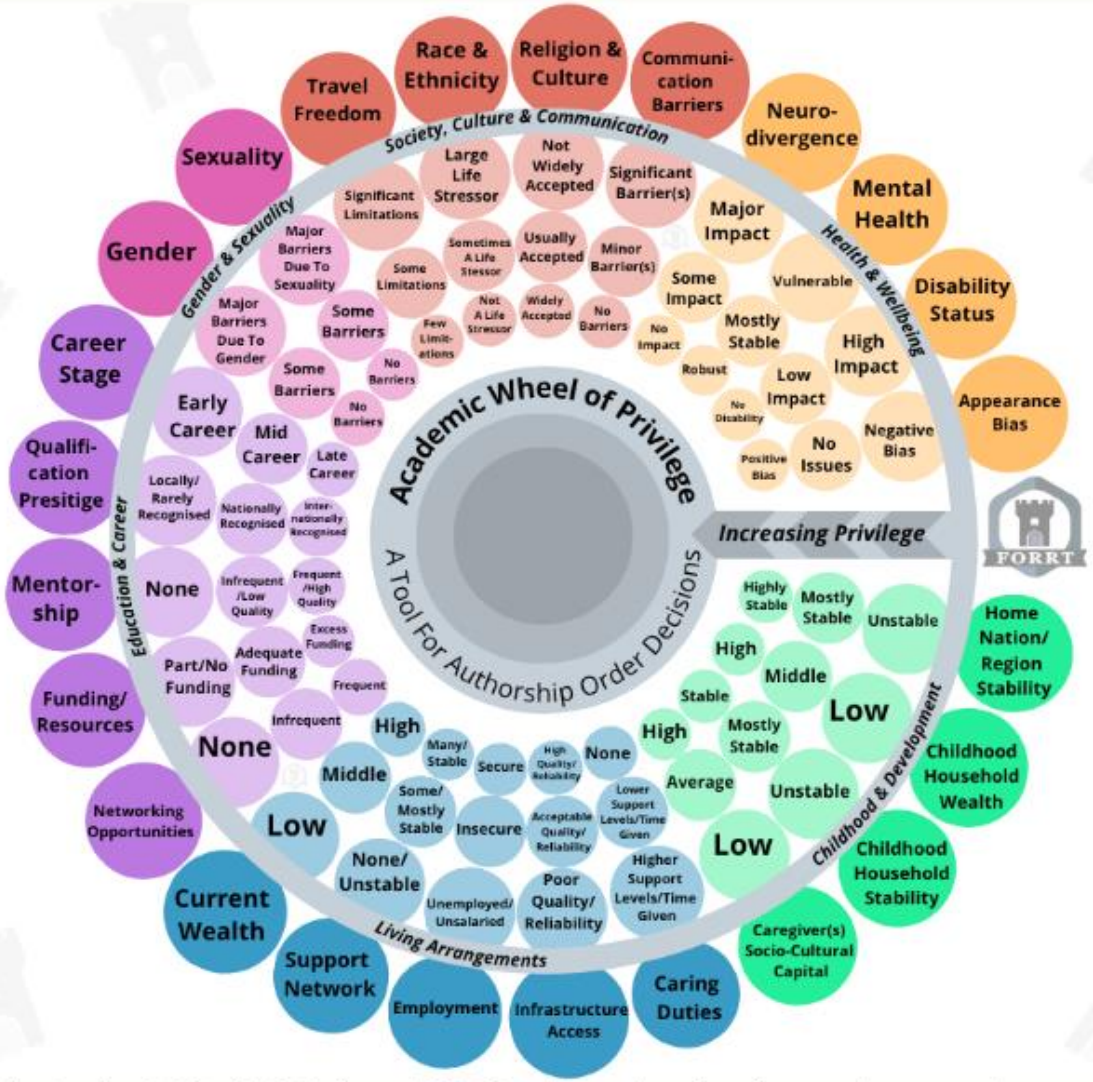


Figure 1. The Academic Wheel of Privilege with 24 baseline socio-cultural categories across six sectors. The effect of the concentric rings makes it appear like a funnel – the closer you get to the centre the more you are likely to spiral into more privilege. An extended description of the figure can be found in S2, with accompanying bibliography for each socio-cultural category in S8.

Adapted from Middleton et al. 2026 (CC BY NC SA)

Social location and adoption of Open Science practices

Culture and language

Study design, language accessibility of **Open Educational Resources.** Utility of **open peer review** perceived differently across cultures

Funding/resources

Ability to pay for Article Processing Charges (APCs) for **Open Access** publications

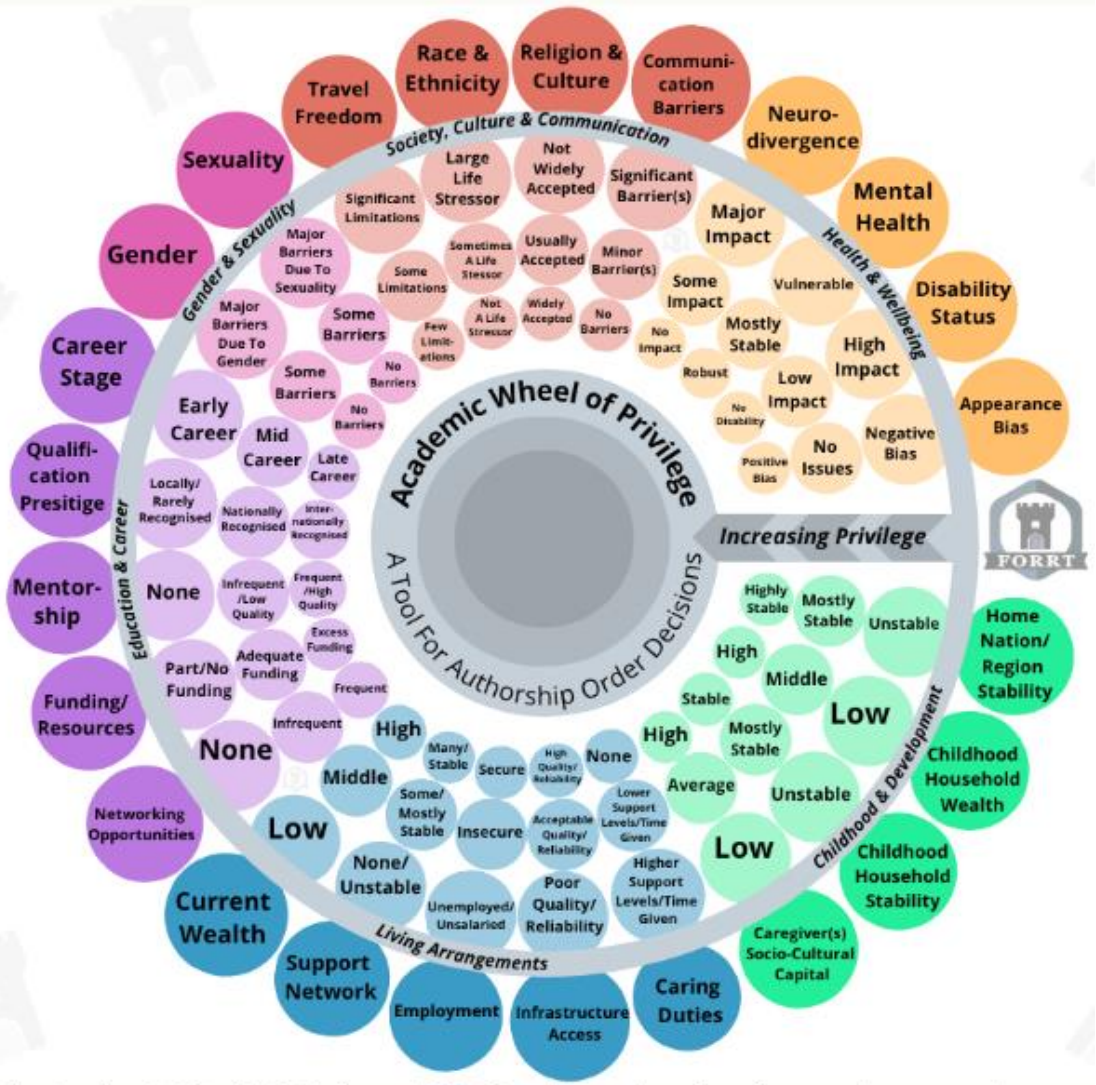


Figure 1. The Academic Wheel of Privilege with 24 baseline socio-cultural categories across six sectors. The effect of the concentric rings makes it appear like a funnel – the closer you get to the centre the more you are likely to spiral into more privilege. An extended description of the figure can be found in S2, with accompanying bibliography for each socio-cultural category in S8.

Disability status

Accessibility of **digital platforms** and time to implement Open Science practices

Adapted from Middleton et al. 2026 (CC BY NC SA)

Social location and adoption of Open Science practices

Culture and language

Study design, language accessibility of **Open Educational Resources.** Utility of **open peer review** perceived differently across cultures

Funding/resources

Ability to pay for Article Processing Charges (APCs) for **Open Access** publications

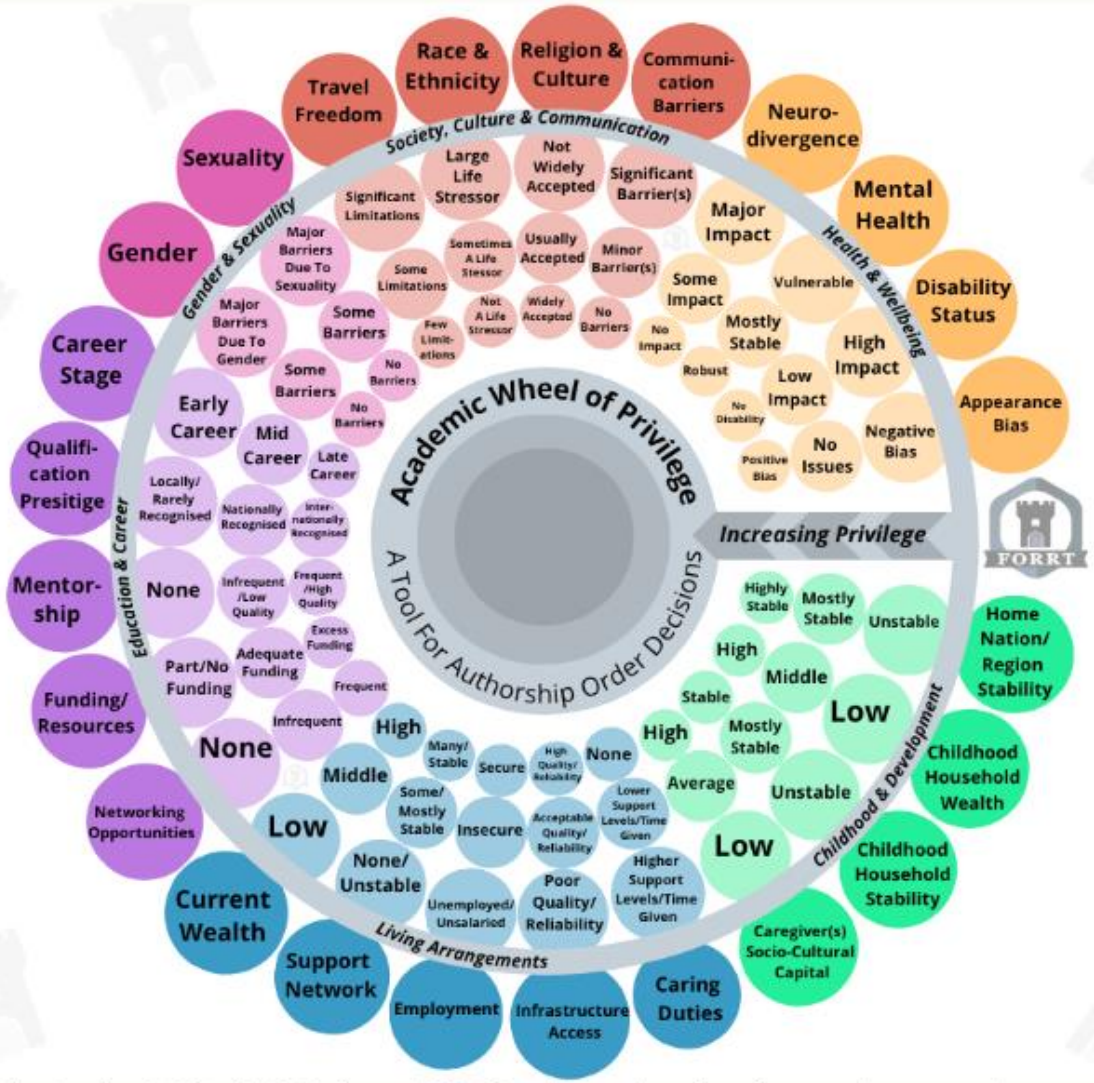


Figure 1. The Academic Wheel of Privilege with 24 baseline socio-cultural categories across six sectors. The effect of the concentric rings makes it appear like a funnel – the closer you get to the centre the more you are likely to spiral into more privilege. An extended description of the figure can be found in S2, with accompanying bibliography for each socio-cultural category in S8.

Adapted from [Middleton et al. 2026](#) (CC BY NC SA)

Disability status

Accessibility of **digital platforms** and time to implement Open Science practices

Home nation stability

Ability to make and sustain collaborations or engage in **Big Team Science** projects

Social location and adoption of Open Science practices

Culture and language

Study design, language accessibility of **Open Educational Resources.** Utility of **open peer review** perceived differently across cultures

Funding/resources

Ability to pay for Article Processing Charges (APCs) for **Open Access** publications

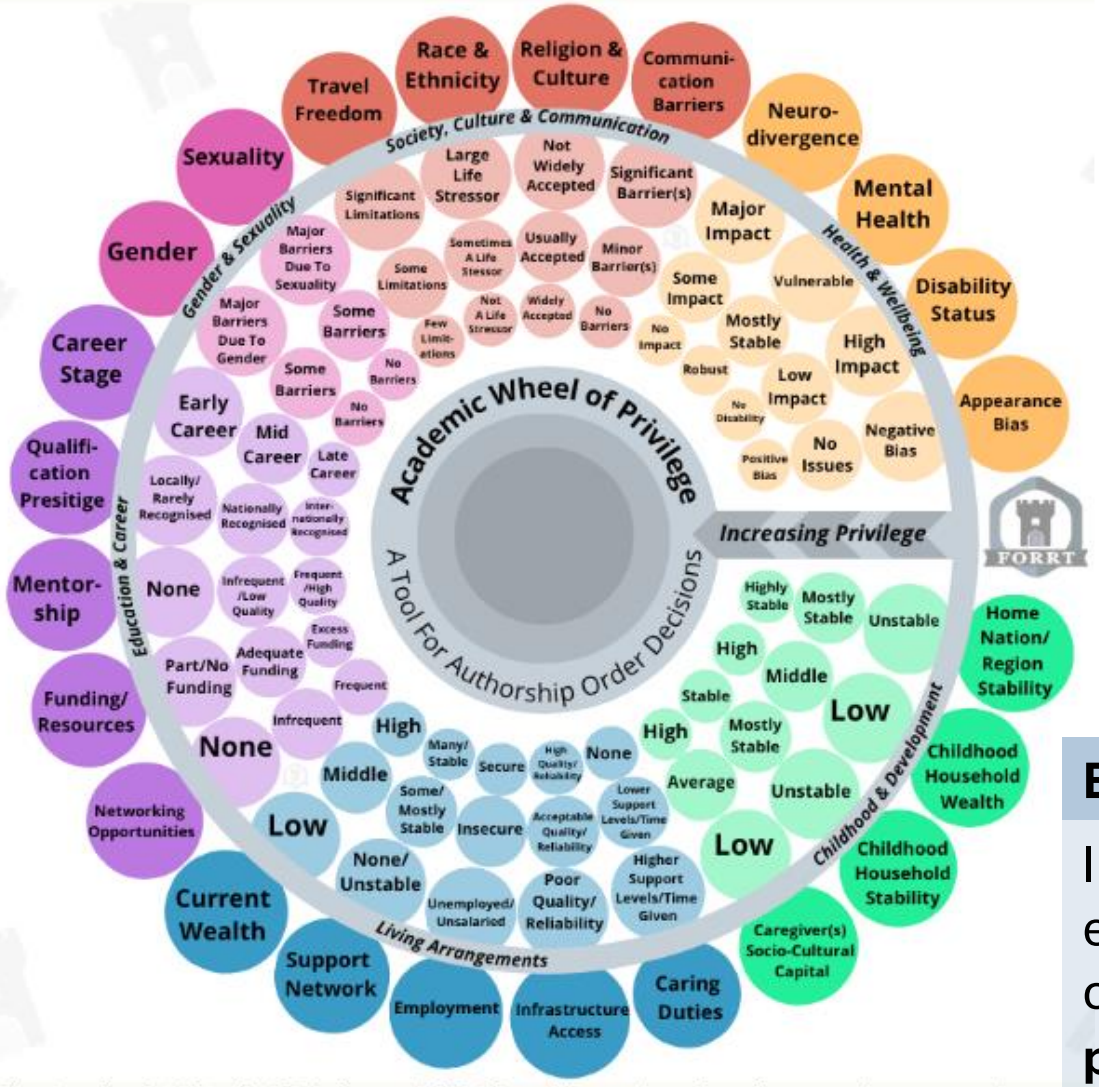


Figure 1. The Academic Wheel of Privilege with 24 baseline socio-cultural categories across six sectors. The effect of the concentric rings makes it appear like a funnel – the closer you get to the centre the more you are likely to spiral into more privilege. An extended description of the figure can be found in S2, with accompanying bibliography for each socio-cultural category in S8.

Adapted from Middleton et al. 2026 (CC BY NC SA)

Disability status

Accessibility of **digital platforms** and time to implement Open Science practices

Home nation stability

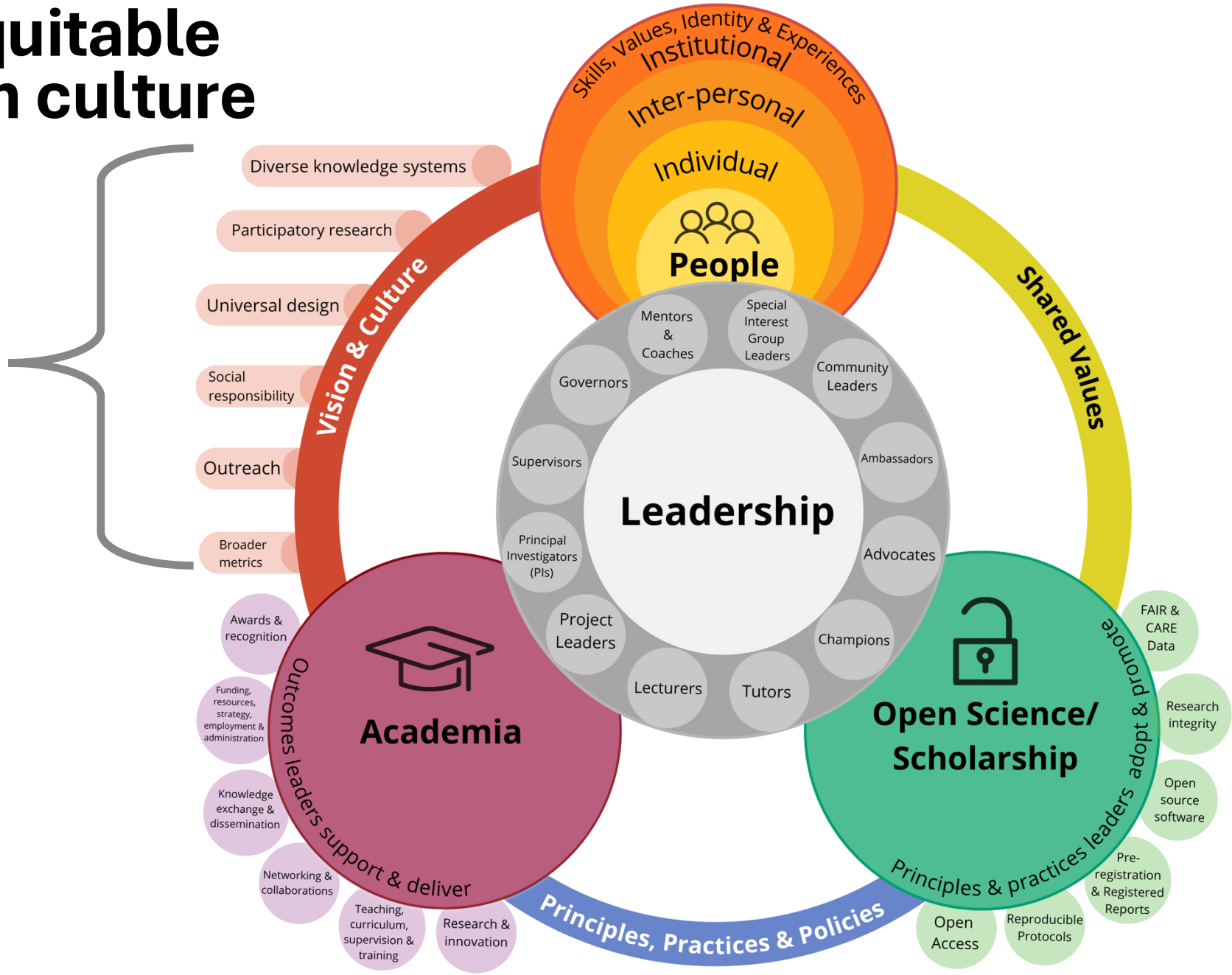
Ability to make and sustain collaborations or engage in **Big Team Science** projects

Employment status

Insecure or short-term employment influences capacity to do a **preregistration** or **registered report**

Towards an open, equitable and diverse research culture

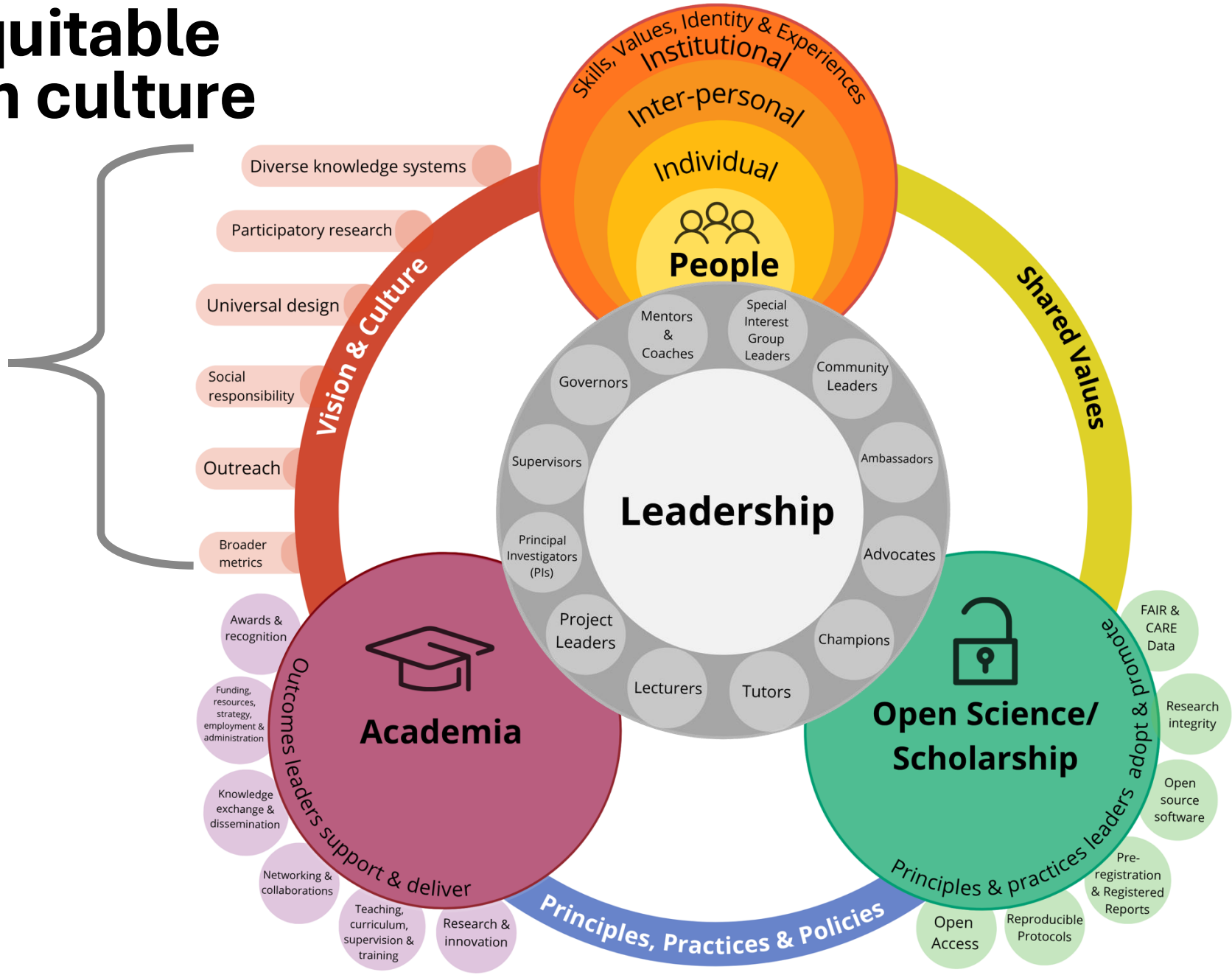
A **healthy** research culture **enables** high quality research (which also **safeguards** research integrity)



Towards an open, equitable and diverse research culture

A **healthy** research culture **enables** high quality research (which also **safeguards** research integrity)

Identify what is **working well** and what is not

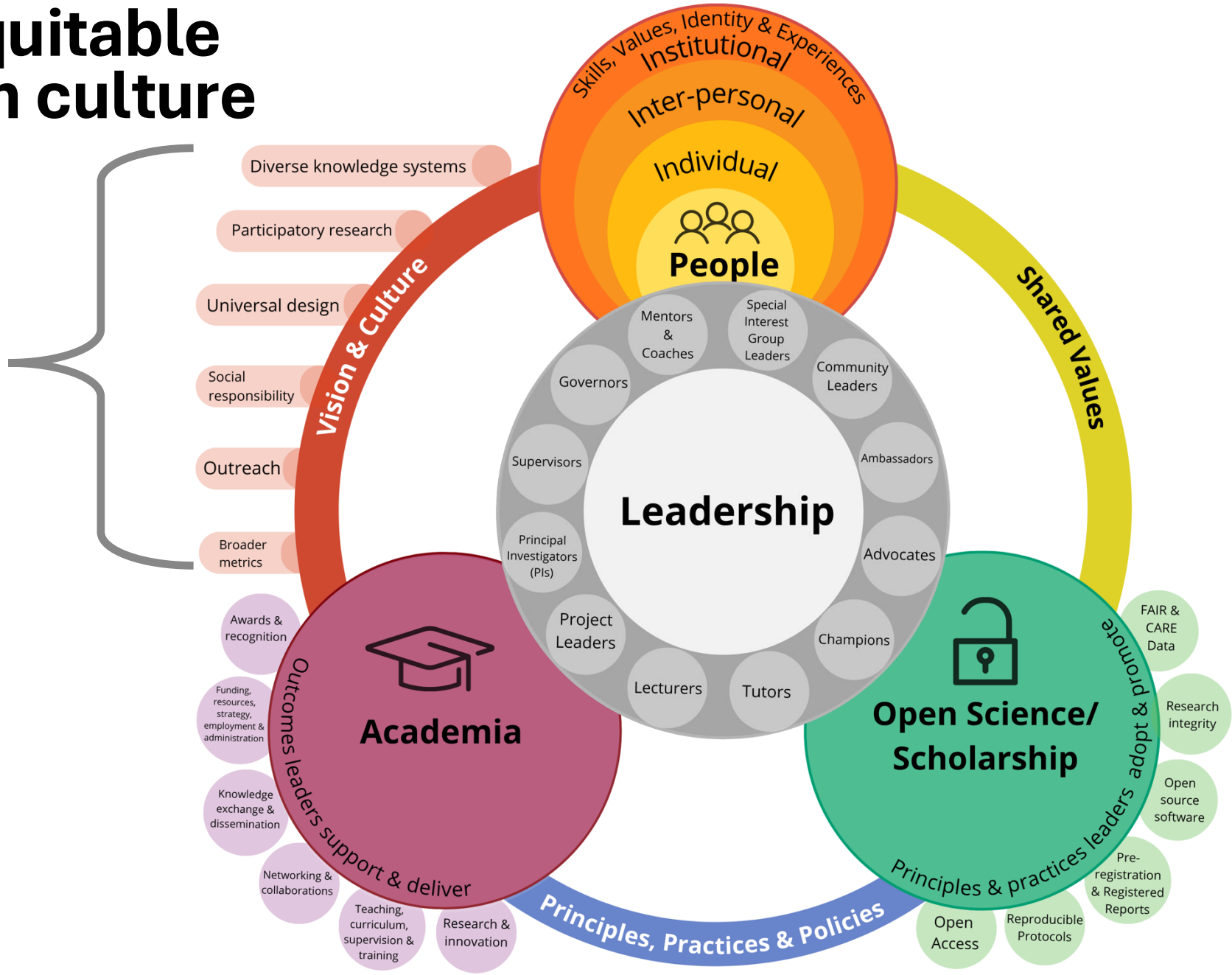


Towards an open, equitable and diverse research culture

A **healthy** research culture **enables** high quality research (which also **safeguards** research integrity)

Identify what is **working well** and what is not

Recognize how your **actions** shape the research culture



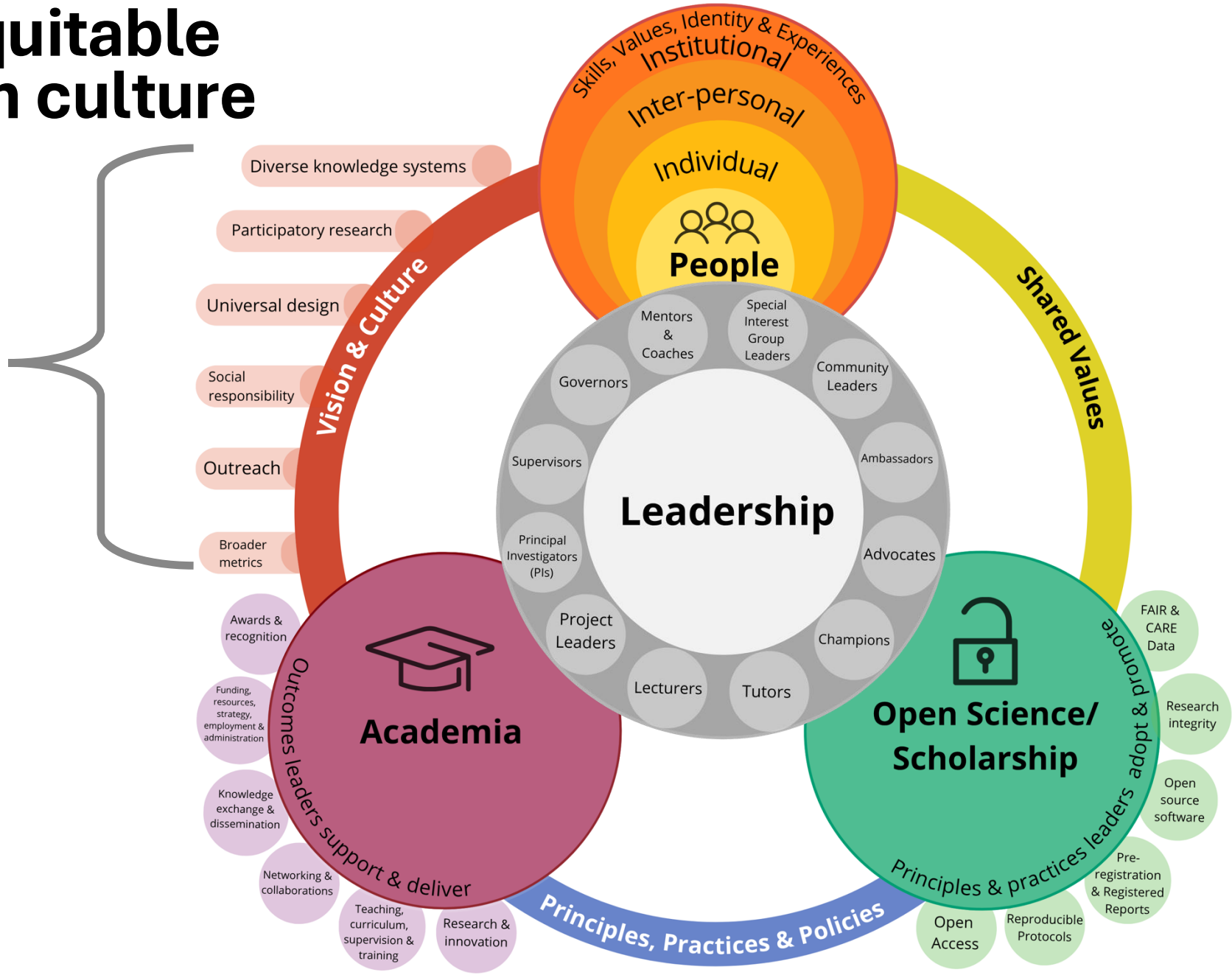
Towards an open, equitable and diverse research culture

A **healthy** research culture **enables** high quality research (which also **safeguards** research integrity)

Identify what is **working well** and what is not

Recognize how your **actions** shape the research culture

Try out **new** ways of **thinking** and **working**



Towards an open, equitable and diverse research culture

A **healthy** research culture **enables** high quality research (which also **safeguards** research integrity)

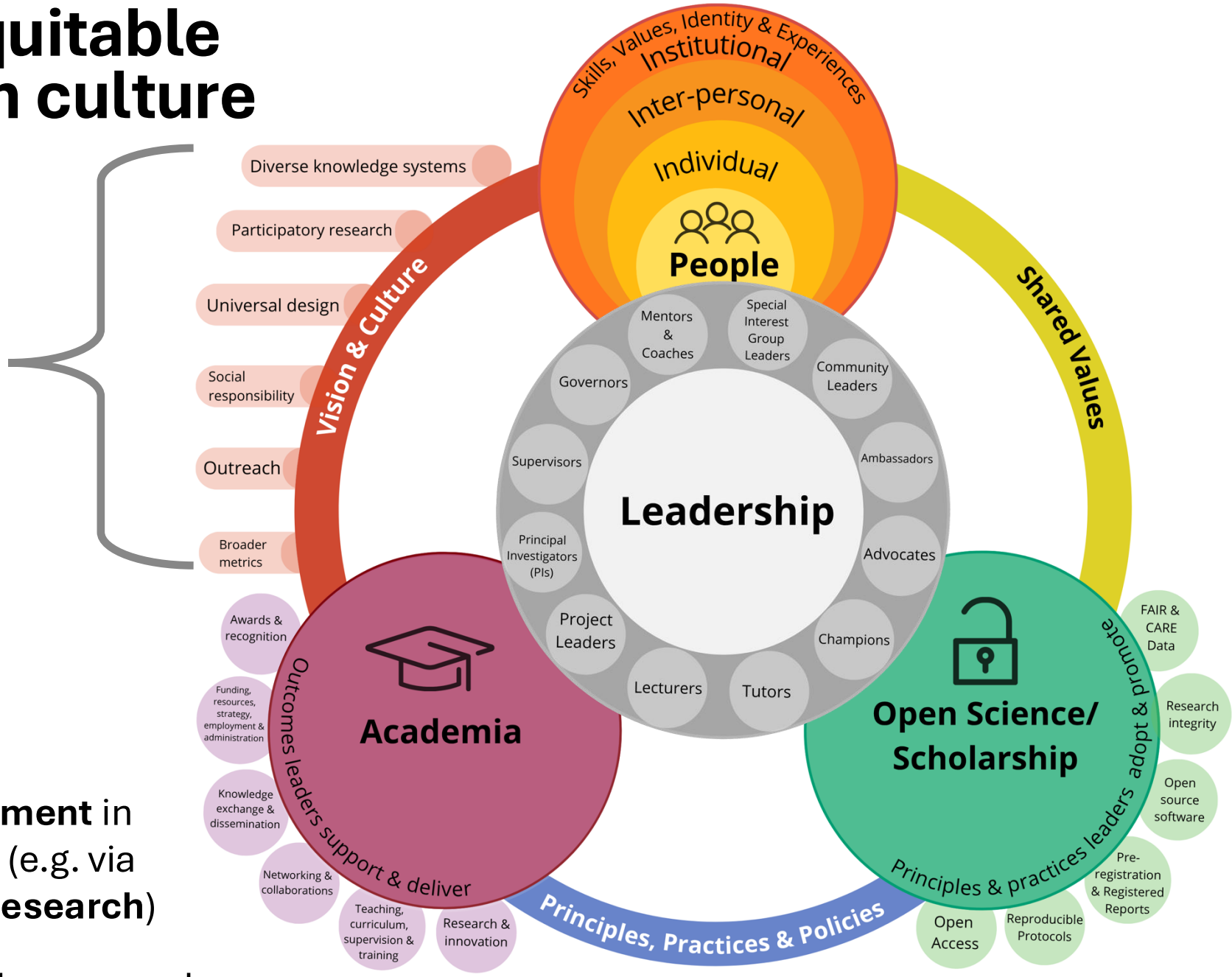
Identify what is **working well** and what is not

Recognize how your **actions** shape the research culture

Try out **new** ways of **thinking** and **working**

Increase opportunities for **engagement** in the learning and research process (e.g. via **Universal Design**, **participatory research**)

Check the workbook for additional resources!



Towards an open, equitable and diverse research culture: Universal Design (UD)

The **proactive** creation of spaces designed with human **variability** in mind.

Aims to **minimize barriers** and be **usable** by the widest range of people.

Increase opportunities for **engagement** in the learning and research process (e.g. via **Universal Design**, **participatory research**)

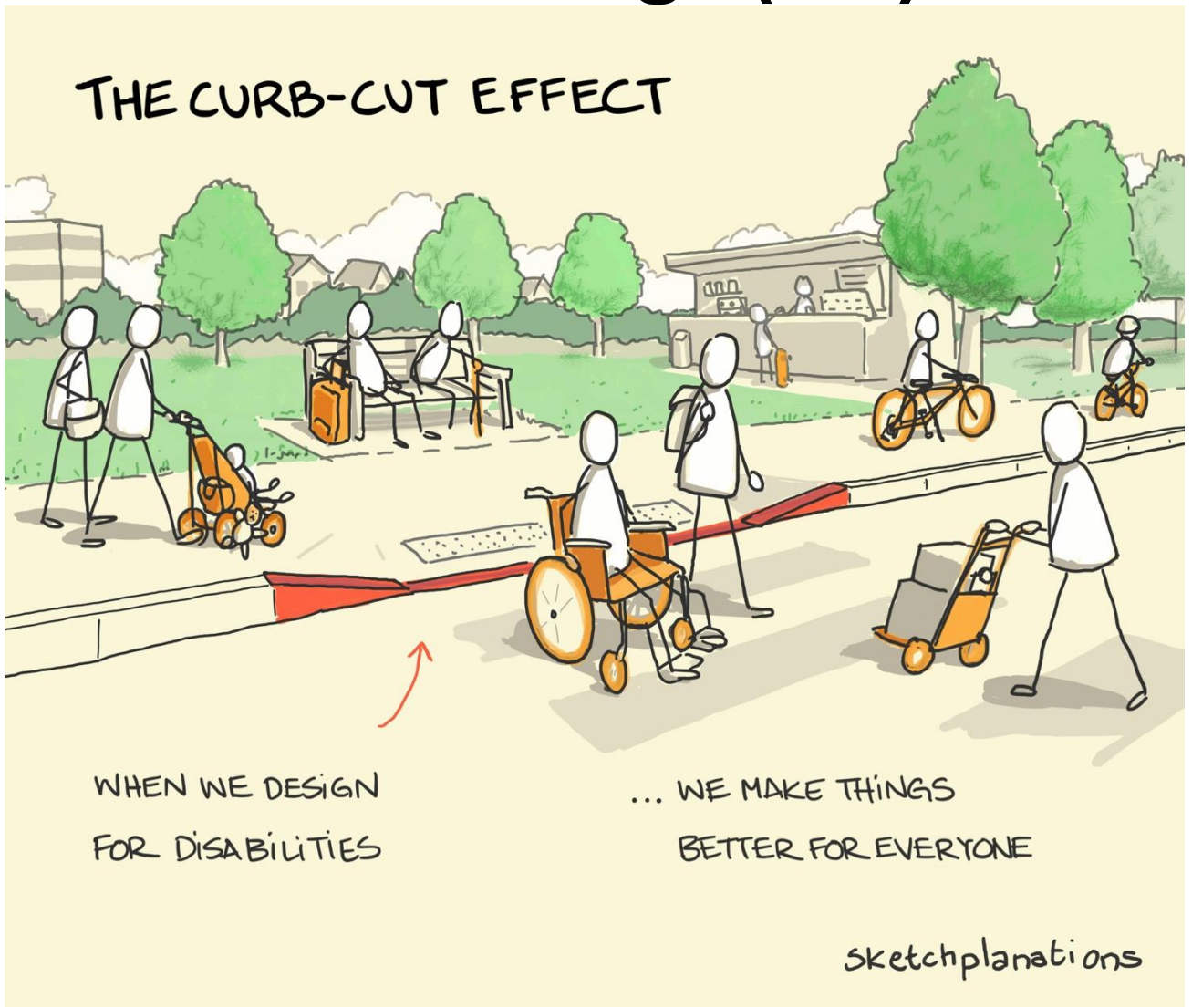


Image source: https://sketchplanations.com/the-curb-cut-effect

Towards an open, equitable and diverse research culture: Universal Design (UD)

Example: Extend FAIR principles to **include Universal Design** to information sharing.

Include **plain language** summaries, captioned **video** or **audio** format summaries to research outputs/educational materials (Phan et al. 2025).

Many people benefit (e.g. neurodivergent, disabled, non-native speakers, those with caring duties)!

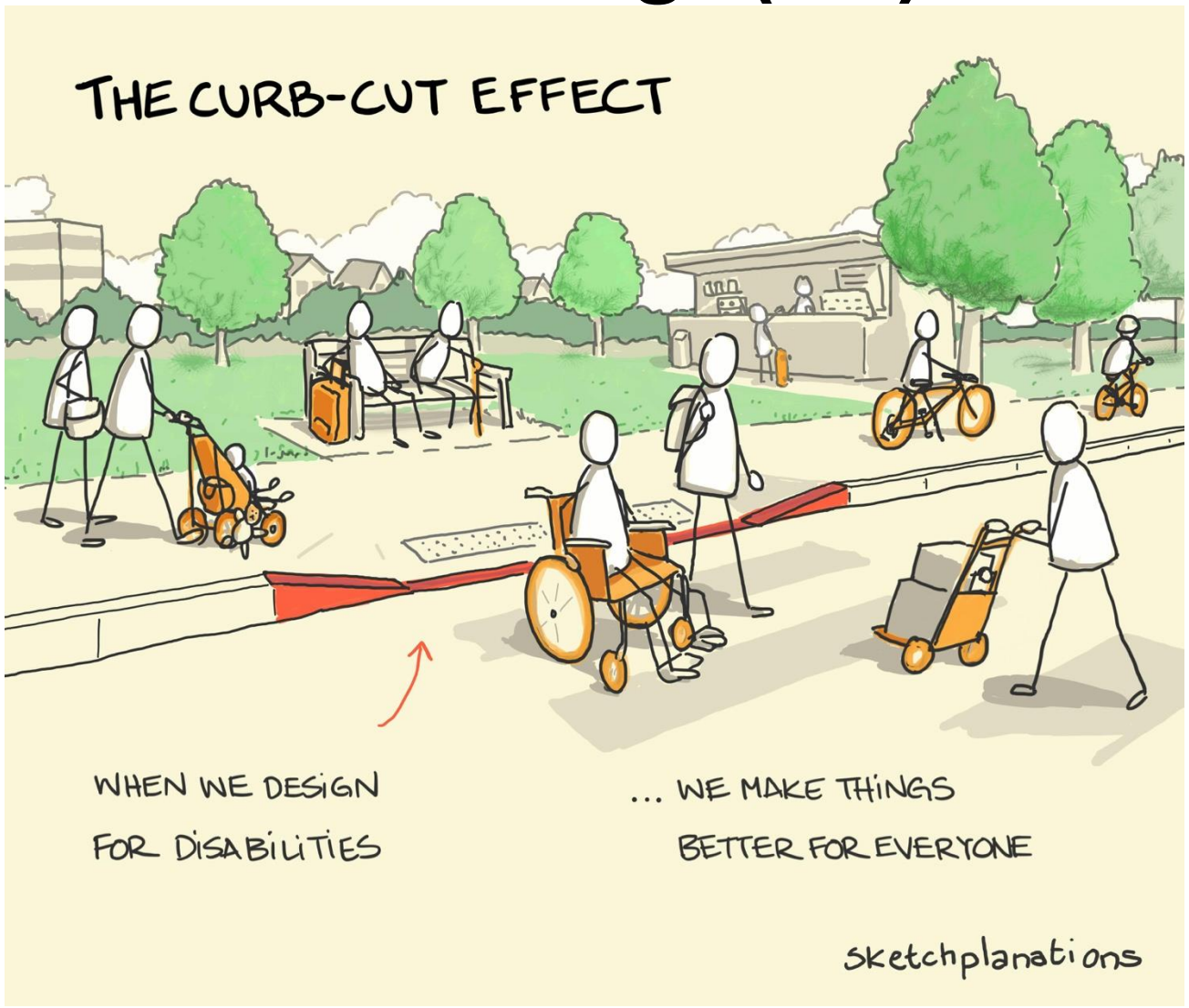
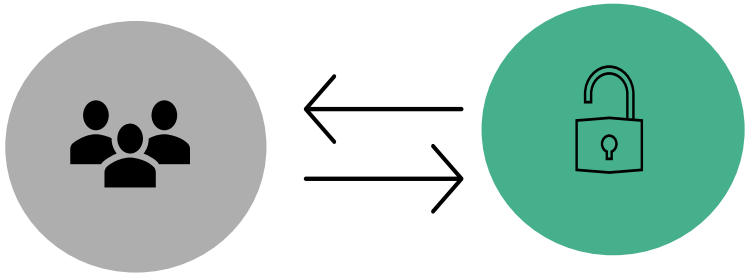


Image source: https://sketchplanations.com/the-curb-cut-effect

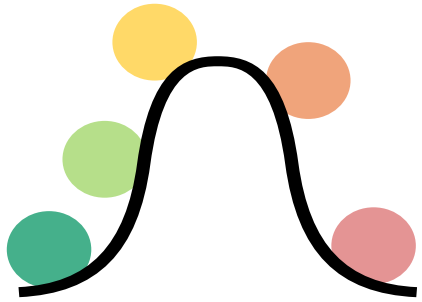
Interim summary



Effective leadership and Open Science have many **shared values**



Adoption of Open Science practices **varies** across teams, career stage, departments, disciplines and nations.



There are **5 adopter types** of Open Science practices: innovators, early adopters, early majority, late majority and laggards



Social and **cultural identities** influences how we navigate research spaces, **leadership** and **engagement** with Open Science practices

OSC LMU Open Science Center FORRT

What does leadership in Open Science/Scholarship mean to you?



Dr Beth Montague-Hellen

Head of Library & Information Services
at Francis Crick Institute

"Leadership involves knowing **where you're going**. There's no point in rigidly adhering to open research practices if you don't know **why** you're doing them.

We need to be open to trying new things and dropping practices that no longer work for us to help get to the goal of an **accessible** and **reproducible future** for research"

Case study on leadership in Open Science: FORRT



Dr Flavio Azevedo (he/him)

Asst. Prof Interdisciplinary Social Sciences (Utrecht) and FORRT Director

FORRT

Access to slides:
https://osf.io/ay8qk/files/cmeuy

What does leadership in Open Science/Scholarship mean to you?



Dr. Flávio Azevedo

Assistant professor in Interdisciplinary Social Sciences at Utrecht University

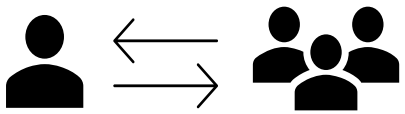
Director of FORRT (Framework for Open and Reproducible Research Training)

"Leadership in Open Science means **building the conditions** for others to participate, contribute, and lead.

It is not only about making research more transparent, but also about **transforming the structures** that determine whose knowledge is valued, whose labor is recognized, and who has the resources to shape scientific practice.

Leadership, to me, is **collective, reflexive,** and **accountable**: it is about creating infrastructures and communities that make a more open, equitable, and just science possible."

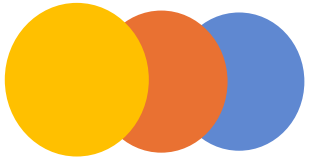
Final summary



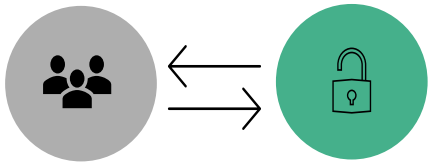
Leadership is about people!



Self-leadership is critical step towards leading others



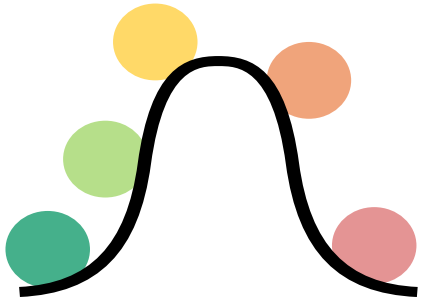
Values shape actions



Effective leadership and Open Science share many values



Research/learning culture shaped by our values, social location and work context



Culture curve can be used to identify types of Open Science adopters



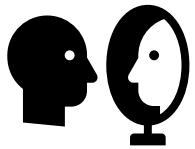
Awareness and adoption of Open Science practices varies

Leadership qualities we practiced

We've worked our **emotional intelligence** muscles in this session!



Empathy



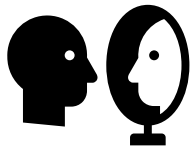
Self-awareness

Leadership qualities we practiced

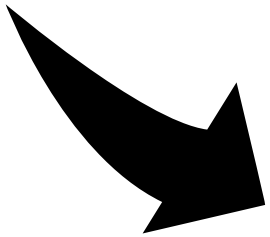
We've worked our **emotional intelligence** muscles in this session!



Empathy



Self-awareness



In the next two sessions we will work on:



Knowledge



Problem solving



Collaboration

Next two sessions:
Challenges in leadership: access here
Strategies in leadership: access here

Survey

1. Have you ever had an advocacy role?

How confident are you in your ability to:

0 = not confident at all, 1 = mostly not confident, 2 = somewhat confident, 3 = very confident

2. identify my own leadership values?

3. recognize how different elements of the working environment influences how you lead?

Questions


Skills, Values, Identity & Experiences
Institutional
Inter-personal
Individual
People
Diverse knowledge systems
Participatory research
Universal design
Social responsibility
Outreach
Broader metrics
Vision & Culture
Co-development
Transparency
Accountability
Accessibility
Integrity
Reflexivity
Shared Values
"Come with me"
Visionary
"What do you think?"
Democratic
Mentors & Coaches
Special Interest Group Leaders
Governors
Community Leaders
Supervisors
Ambassadors
Leadership
Principal Investigators (PIs)
Advocates
Project Leaders
Champions
Lecturers
Tutors
Coaching
"Try this"
Transformational
"Let's work towards..."
Academia
Outcomes leaders support & deliver
Awards & recognition
Funding, resources, strategy, employment & administration
Knowledge exchange & dissemination
Networking & collaborations
Teaching, curriculum, supervision & training
Research & innovation
Open Science/ Scholarship
Principles & practices leaders adopt & promote
FAIR & CARE Data
Research integrity
Open source software
Pre-registration & Registered Reports
Reproducible Protocols
Open Access
Principles, Practices & Policies

References

Carroll, S. R., Herczog, E., Hudson, M., Russell, K., & Stall, S. (2021). Operationalizing the CARE and FAIR Principles for Indigenous data futures. *Scientific Data*, *8*(1), 108. https://doi.org/10.1038/s41597-021-00892-0

Centre for Teaching, Support and Innovation. (2026). *1.3 Values, Goals, and Outcomes*. Universal Design for Learning Foundations. https://q.utoronto.ca/courses/386447/pages/1-dot-3-values-goals-and-outcomes?module_item_id=7180870

DeRue, D. S., & Ashford, S. J. (2010). Who will lead and who will follow? A social process of leadership identity construction and organizations. *The Academy of Management Review*, *35*(4), 627–647. JSTOR. http://www.jstor.org/stable/29765008

EOSC Open Science Observatory (2024). Open Science by Area / Training for Open Science. https://www.eoscobservatory.eu/explore/open-science-by-area/training

Gershenson, S., Holt, S. B., & Papageorge, N. W. (2015). *Who Believes in Me? The Effect of Student-Teacher Demographic Match on Teacher Expectations*. W.E. Upjohn Institute. https://doi.org/10.17848/wp15-231

Goleman, D. (2000). Emotional Intelligence: Leadership That Gets Results. Harvard Business Review. https://hbr.org/2000/03/leadership-that-gets-results

Lacey, S., Ricken, J., & Cassidy, S. (2026). *Leadership to Strengthen Research Culture and Foster Responsible Conduct of Research: A Case Study*. EdArXiv. https://doi.org/10.35542/osf.io/ws2cv_v1

Leopold, T., Di Battista, A., Jativa, X., Sharma, S., Li, R., & Grayling, S. (2025). Future of jobs report 2025. In *World Economic Forum*. https://www.weforum.org/publications/the-future-of-jobs-report-2025/

Middleton, S. L., Sulik, J., Iley, B. J., Elsherif, M. M., & Azevedo, F. (2026). *The Academic Wheel of Privilege: An equity-based tool for authorship order*. MetaArXiv. https://doi.org/10.31222/osf.io/af4nk_v2

Pennington, C. R., Norris, E., Skubera, M., Ba, Y., Moffat, R., Amaral, O. B., Adamkovic, M., Adıgüzel, A., Almeida, R. A., Baldwin, J., Ballou, N., Behrens, L. M. P., Bertram, M., Bjerke, I. E., Blackwell, S. E., Bochynska, A., De Boer, M., Buljan, I., Canales-Aguirre, C. B., … Clark, K. (2026). *Awareness and Use of Open Research Practices: An International Survey of Researchers Across Disciplines*. PsyArXiv. https://doi.org/10.31234/osf.io/edzxf_v1

Phan, J. M., Middleton, S. L., Azevedo, F., Iley, B. J., Grose-Hodge, M., Tyler, S. L., Kapp, S. K., Yeung, S. K., Shaw, J. J., Hartmann, H., & FORRT. (2025). Bridging Neurodiversity and Open Scholarship: How Shared Values Can Guide Best Practices for Research Integrity, Social Justice, and Principled Education. *Journal of Social Issues*, *81*(4), e70035. https://doi.org/10.1111/josi.70035

Rogers, E. M. (1983). Elements of Diffusion. In *Diffusion of innovations* (3rd edn). The Free Press. (Original work published 1962)

Skelly, L. & Rusu, C. (2023). Crafting Open Research advocacy message using the Diffusion of Innovation theory. Edinburgh Open Research Conference.

Uhl-Bien, M. (2006). Relational Leadership Theory: Exploring the social processes of leadership and organizing. *The Leadership Quarterly*, *17*(6), 654–676. https://doi.org/10.1016/j.leaqua.2006.10.007

UNESCO (2023) Open Science Outlook 1: status and trends around the world. https://unesdoc.unesco.org/ark:/48223/pf0000387324

OSC LMU Open Science Center FORRT

Contribution statement

Creator: Middleton, Sara Lil (0000-0001-5307-8029),
Azevedo, Flavio (0000-0001-9000-8513)
Reviewer: Verheyen, Steven (0000-0002-6778-6744),
von Grebmer zu Wolfsthurn, Sarah (0000-0002-6413-3895)

Acknowledgements:
Sharing leadership expertise:
Elisabeth Bik, Fotis Mystakopoulos, Beth Montague-Hellen

License and citation statement



This current work by Sara Lil Middleton, Flavio Azevedo, Steven Verheyen and Sarah von Grebmer zu Wolfsthurn is licensed under a CC-BY-SA 4.0 Creative Commons Attribution 4.0 International SA License (unless otherwise stated). It permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited. If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original.

Please cite these materials as: Middleton, S., Azevedo, F., Verheyen, S., & Von Grebmer Zu Wolfsthurn, S. (2026). *Leadership in Open Research: Skills, values and culture* [Quarto slides]. LMU Open Science Center and FORRT. https://lmu-osc.github.io/train-the-trainer-open-research/leadership-open-research/leadership-skills-culture/