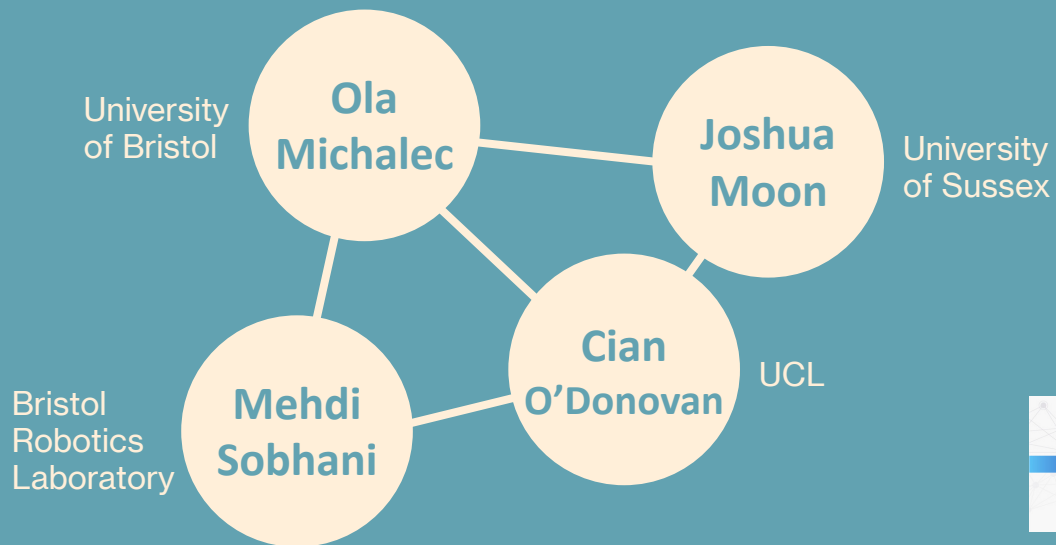


# Human capabilities for interdisciplinary research 🤠🦄

A workshop for the ESRC NCRM 2021 Research Methods Festival – October 28<sup>th</sup>

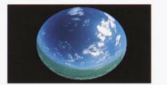




# Human capabilities



DEVELOPMENT  
AS  
FREEDOM



AMARTYA SEN

WINNER OF THE NOBEL PRIZE IN ECONOMICS

"Fascinating... The overall argument [is] eloquent and probing."  
—The New York Times



**Human capabilities:**  
**real freedoms** (agency and empowerment)  
**to be and to do things**  
**that make up a**  
**flourishing life**





**Ana**



(cc) <https://flic.kr/p/f6zubN>



**Benny**



(cc) <https://flic.kr/p/UCmHhv>



**Ciara**



(cc) <https://flic.kr/p/b4CMjF>



**Internal endowments**

**+ external conditions**

**→ capability**

# Human capabilities

- Internal endowments
- External conditions and resources
- Capability approach takes into consideration the inter-connections between the internal and the external structural realities of our lives and then helps us assess and address both

environment

money

job

political  
landscape

policies

markets

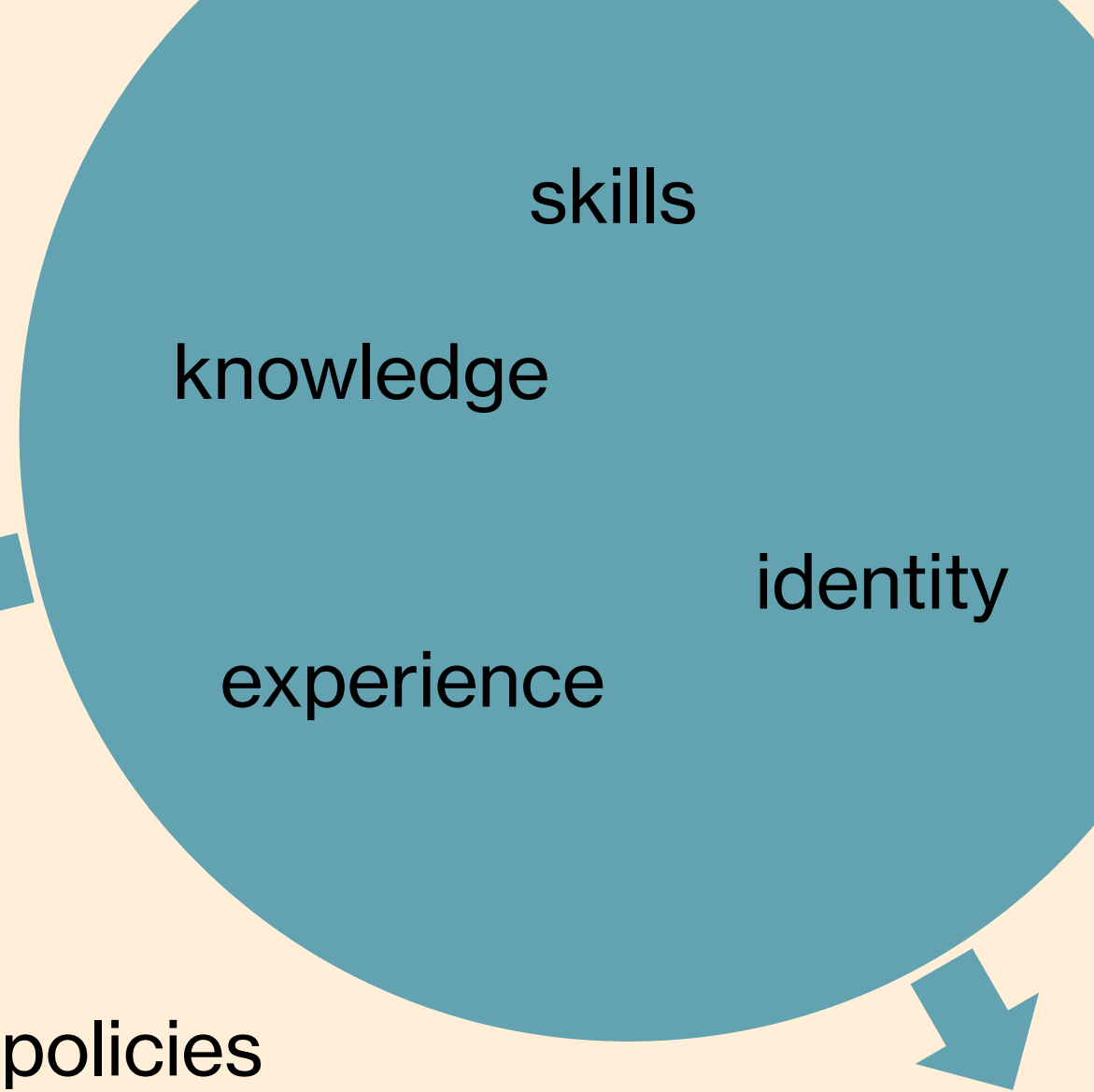
skills

knowledge

experience

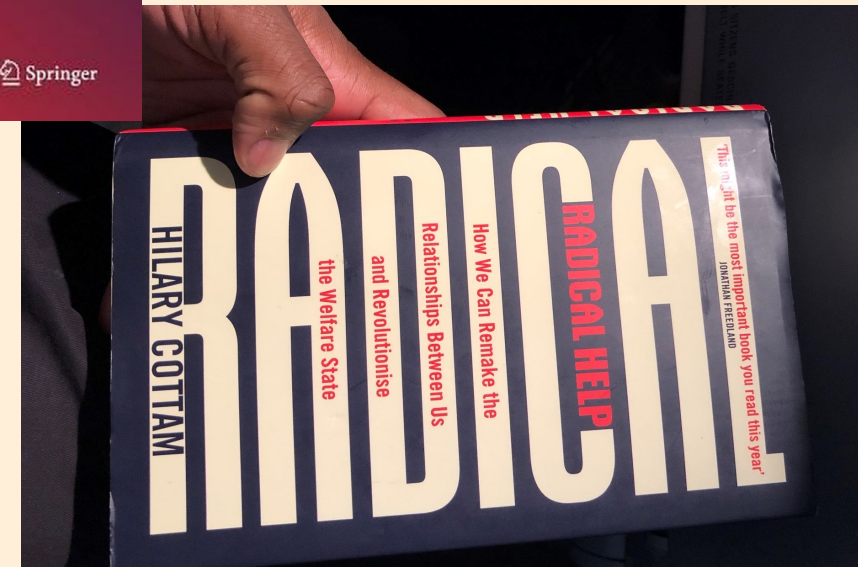
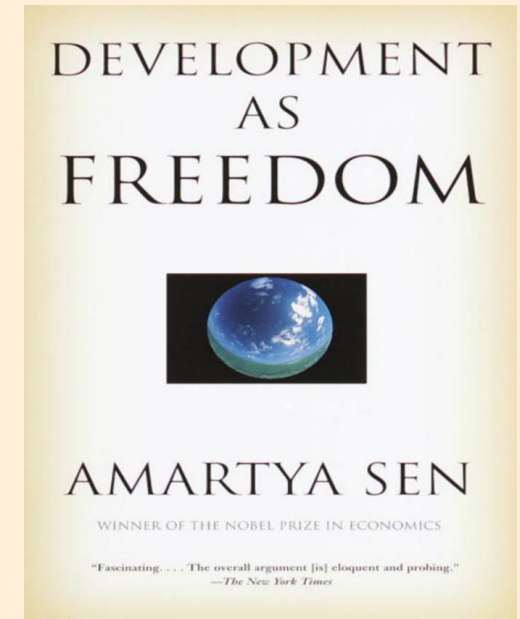
identity

inequalities



# Capabilities as a [space to evaluate]...

- Sen
  - evaluating development as freedom
  - vs. evaluating development as people's preferences or economic utility
- Others –
  - Social welfare
  - Education
  - The impact of technology on well-being



# Capabilities as a space to evaluate researchers



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## Capabilities for transdisciplinary research

Cian O'Donovan <sup>1,2,\*</sup> Aleksandra (Ola) Michalec <sup>2,3</sup> and Joshua R. Moon <sup>4</sup>  
<sup>1</sup>Department of Science and Technology Studies, University College London, Gower Street, London, WC1E 6BT, United Kingdom. <sup>2</sup>SPRU - Science Policy Research Unit, University of Sussex, Brighton, BN1 9SL, United Kingdom. <sup>3</sup>Department of Computer Science; Cabot Institute for the Environment, University of Bristol, BSS 1QU, United Kingdom.

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Problems framed as societal challenges have provided fresh impetus for transdisciplinary research. In response, funders have started programmes aimed at increasing transdisciplinary research capacity. However current programme evaluations do not adequately measure the skills and characteristics of individuals and collectives doing this research.

Addressing this gap, we propose a systematic framework for evaluating transdisciplinary research based on the Capability Approach, a set of concepts designed to assess practices, institutions and people based on public values. The framework is operationalised through a mixed-method procedure which evaluates capabilities as they are valued and experienced by researchers themselves. The procedure is tested on a portfolio of 'pump-priming' research projects in the United Kingdom.

We find these projects are sites of capability development in three ways: through convening cognitive capabilities required for academic practice; cultivating informal tacit capabilities; and maintaining often unacknowledged backstage capabilities over durations that extend beyond the lifetime of individual projects. Directing greater attention to these different modes of capability development in transdisciplinary research programmes may be useful in identifying areas for ongoing project support, and also in steering research



# Capabilities as a [space to evaluate] interdisciplinary researchers



# Capabilities as a [space to evaluate] interdisciplinary research!

## Disciplines discipline!

- Capabilities to transgress disciplinary boundaries
- **Relational capabilities**
- Aggregate capabilities
- Collective capabilities
- For funders and society: capabilities as capacity

inequalities

funding

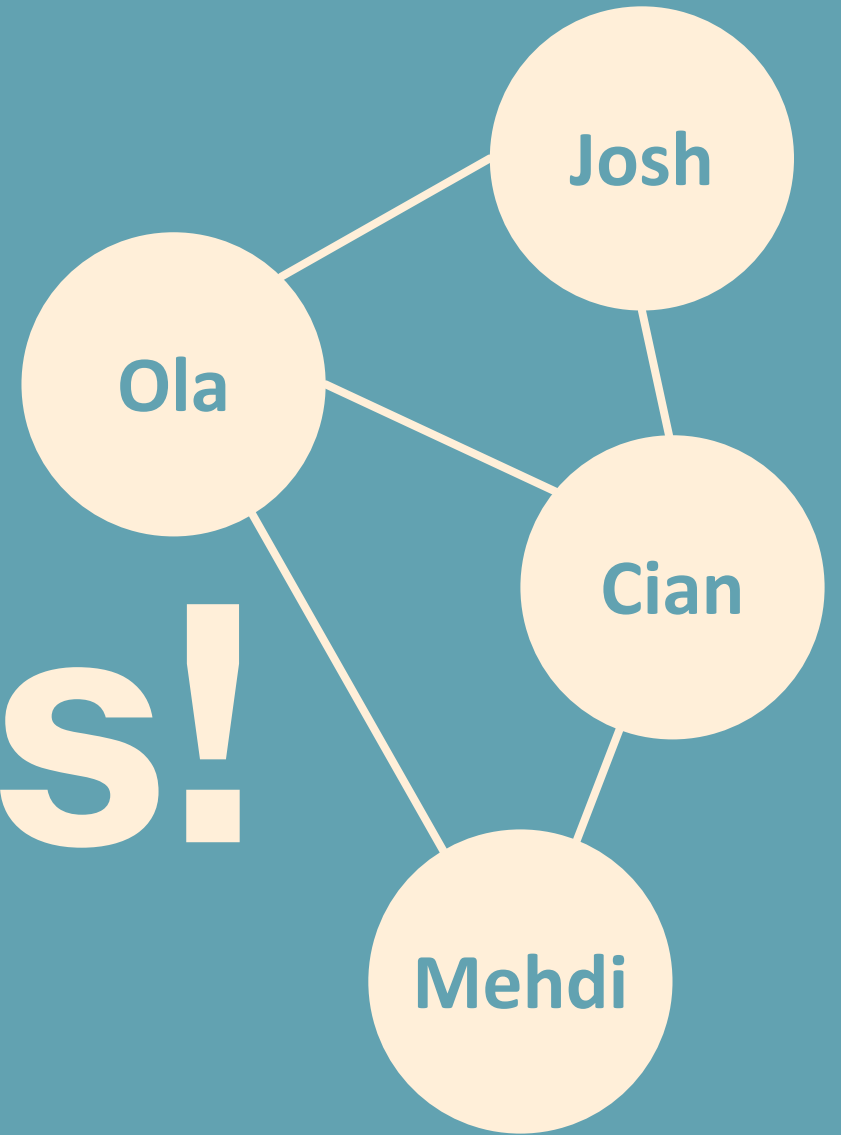
environment

policies





# Map Yourselves!



# Measuring Capabilities

- Relationships are everywhere and take many forms
  - Financial
  - Romantic
  - Friendship
  - Social
  - Professional
  - Pastoral
  - Twitter



Photo by [Alex Lujan](#) on [Unsplash](#)



Photo by [Melissa Askew](#) on [Unsplash](#)



Photo by [Kiki Falconer](#) on [Unsplash](#)



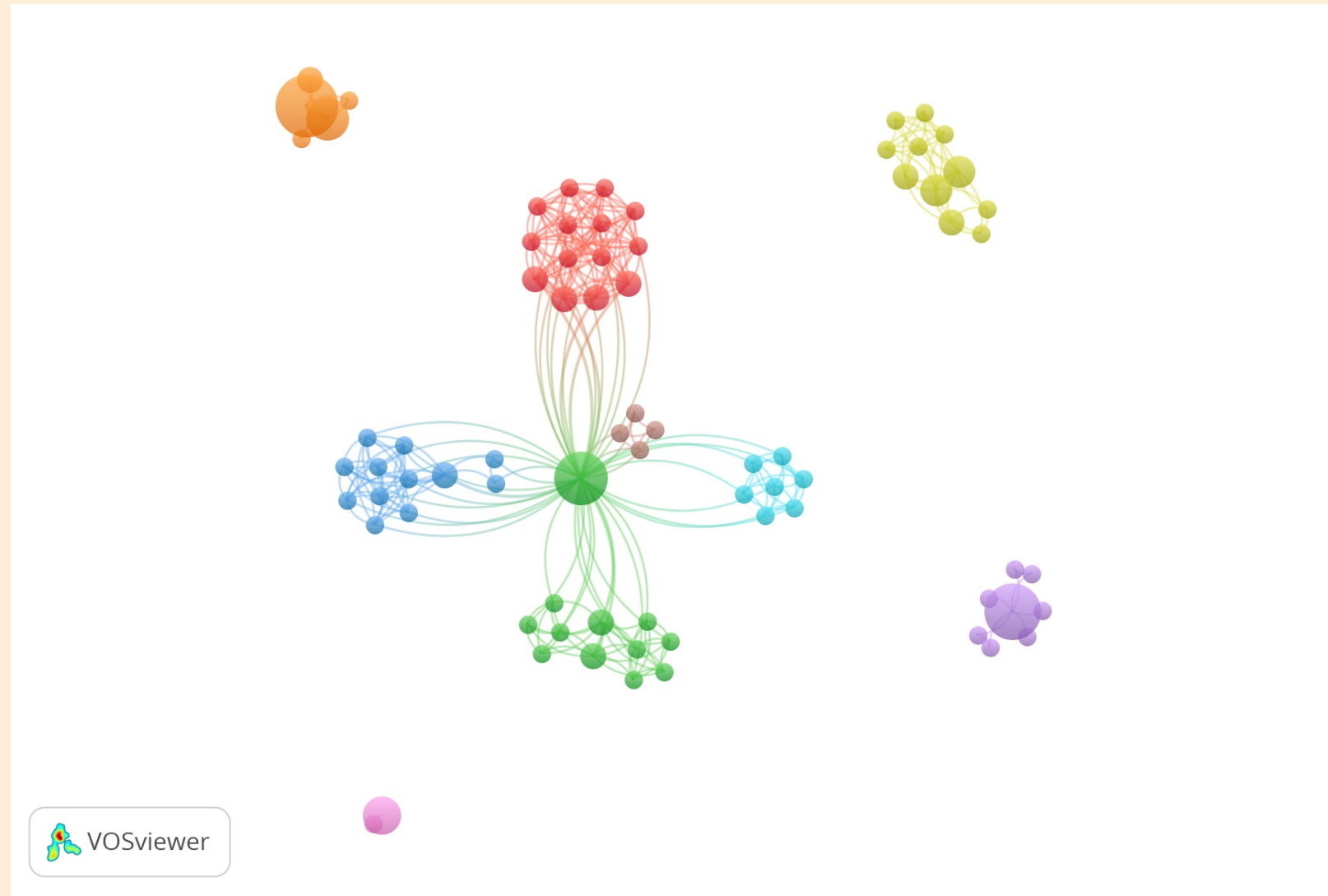
Photo by [Nathan Dumlao](#) on [Unsplash](#)



# Measuring Capabilities

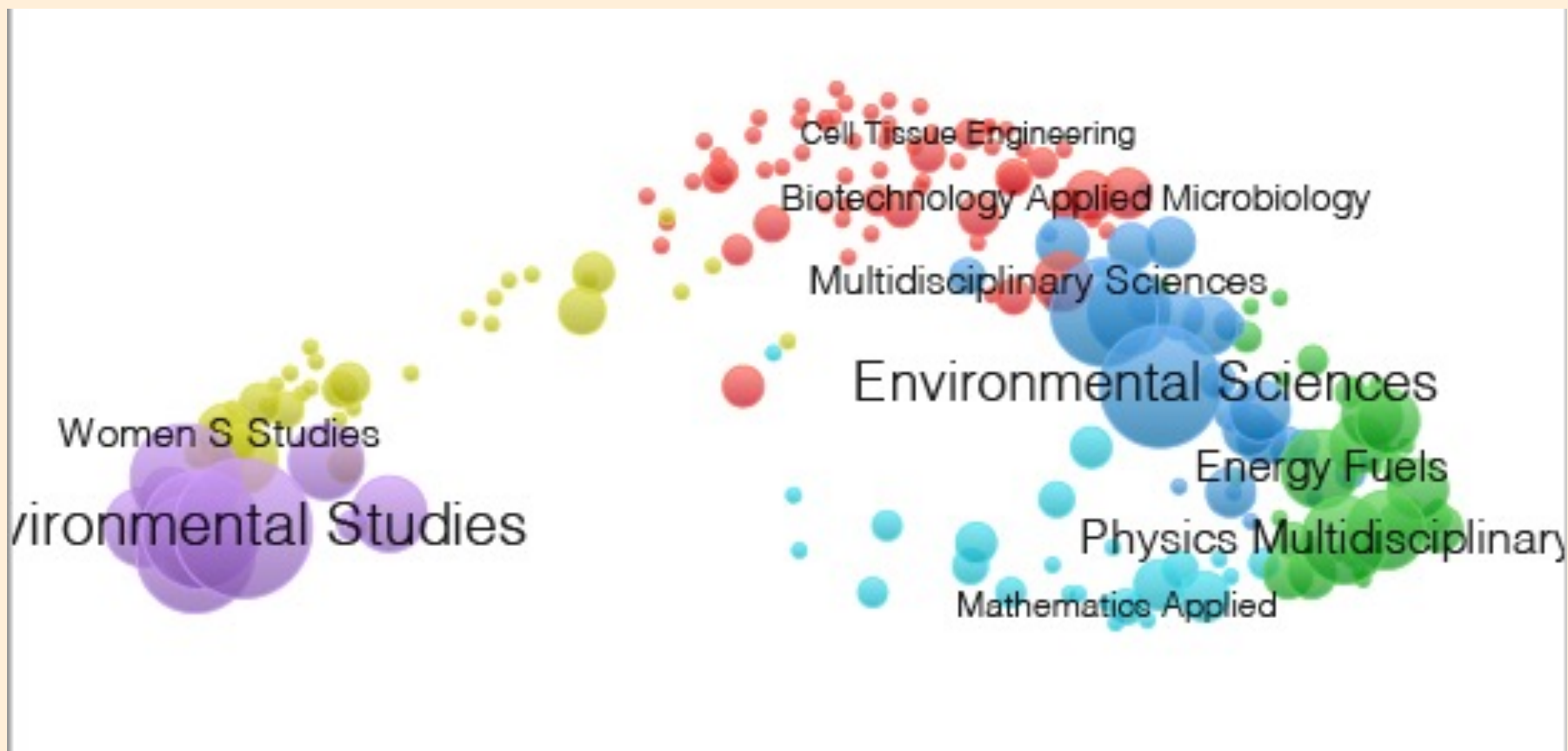
- Relationships can be measured in many ways:
  - Direct/Participant Observation
  - Social Networks
  - Statistical Models
  - Actor Networks
  - Interviews/Surveys
  - 'Big Data'

# Measuring Capabilities

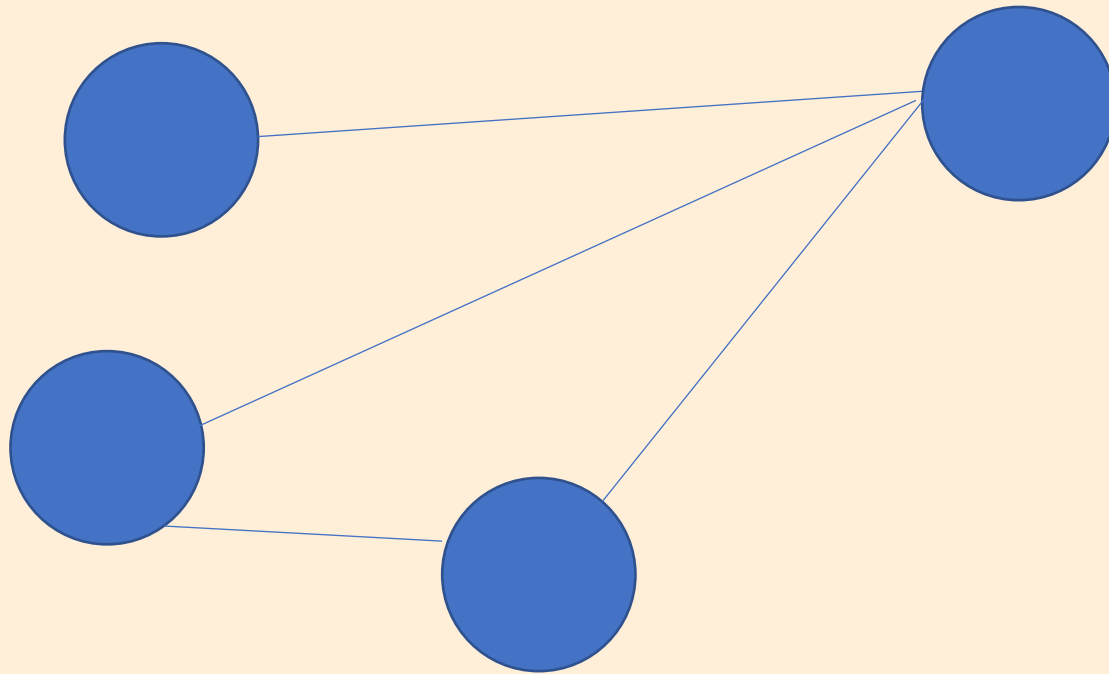




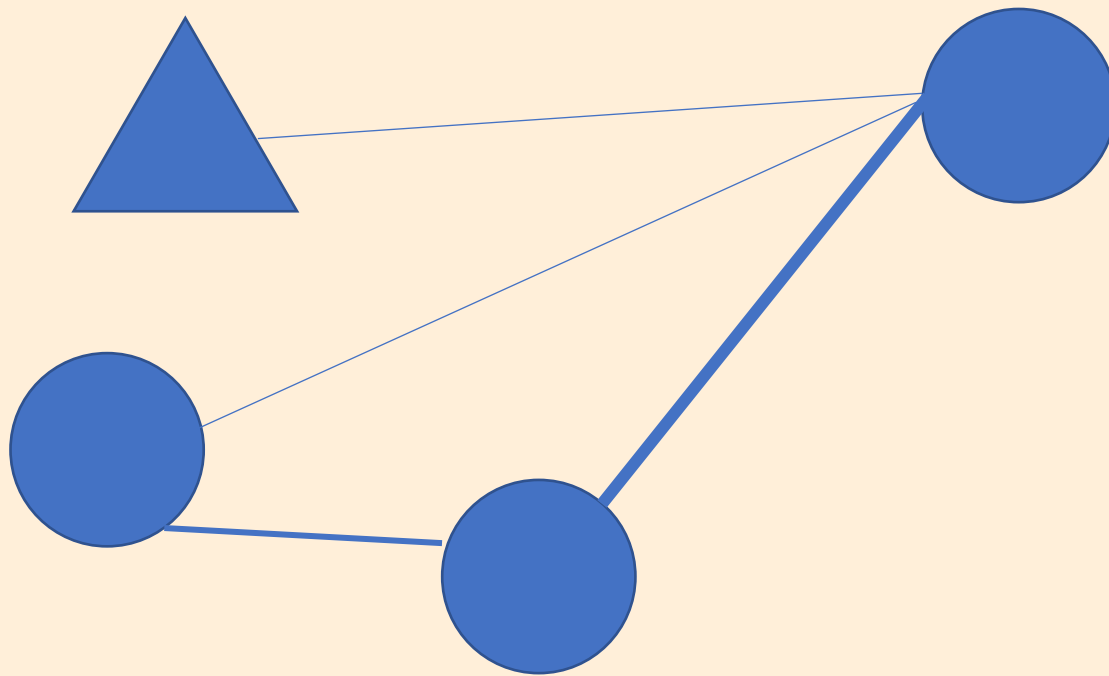
# Bibliometrics 'Flattens' relationships



# Network 'Layering'

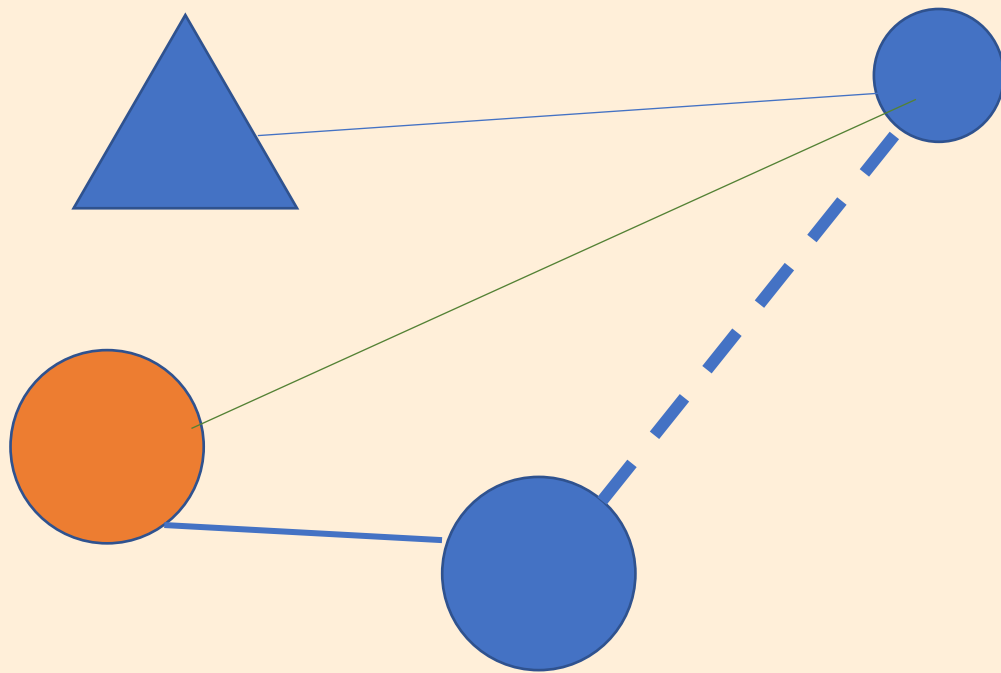


# Network 'Layering'





# Network 'Layering'



# Measuring Capabilities

- Bibliometrics works by flattening relationships in a two-dimensional plane
- Layering of different dimensions & representations can make these more and more complex
- However, representations are still limited in number (risk cognitive overload for audience)
- 'Classic' bibliometrics foregrounds co-authorship as a relational tie but this can be misleading
- What kinds of relationships are hidden by co-authorships and how can these be re-surfaced?

# Further reading

## **Capabilities for Transdisciplinary Research.**

O'Donovan, C., Michalec, O., & Moon, J. (forthcoming).

*Research Evaluation*. [https://keepfaking.it/articles/odonovan\\_et\\_al\\_2021\\_transdisciplinary\\_capabilities.pdf](https://keepfaking.it/articles/odonovan_et_al_2021_transdisciplinary_capabilities.pdf)

## **What is robotics made of? The interdisciplinary politics of robotics research.**

Michalec, O., O'Donovan, C., & Sobhani, M. (2021).

*Humanities and Social Sciences Communications*. <https://doi.org/10/gh7qwm>

## **Technology and Human Capabilities in UK Makerspaces.**

O'Donovan, C., & Smith, A. (2020).

*Journal of Human Development and Capabilities*, <https://doi.org/10/gh6s7x>