Rethinking 'Interdisciplinarity' for Cycling Scholarship

Presented by **Dr. Martin Zeilinger (Abertay University)**

Integrating materials from a forthcoming essay co-authored with
Dr. Andrew Bricker (Ghent University)

Introduction & Aims

- **Making a case for the importance of interdisciplinarity in cycling scholarship**
- **Exploring key challenges and opportunities** that arise with interdisciplinary approaches
- Advocating for benefits of **humanities-informed approach**, towards development of a self-reflexive and dynamic framework for Critical Cycling Studies

The Complex Nature of Cycling Scholarship



Cycling-related scholarship intersects with many established research domains.

Such as mobility studies, urban planning, public health, infrastructure studies, policy studies, and more



Cycling is a complex and multi-valent phenomenon

Touches on individual, collective, and overlapping lifeworlds

Virtually every research domain could play a central role



Unpacking the complex requirements and challenges of interdisciplinary approaches is crucial

Cross-Disciplinary vs. Interdisciplinary Research: a Crucial Distinction

- **Cross-Disciplinary Research Defined**
  - Investigations that come **"in the form of the exchange of expertise between closely related disciplines"** (Kluger and Bartzke 2020)
  - Integrates fields with **common methodologies and ontologies**
  - Undertaken within **"epistemic communities that are already aligned with each other's vocabularies"** (Pedersen, 2016)
  - Often targets immediate, applied outcomes
  - **Pragmatic benefits**: streamlined collaboration, funding access, rationalization of aims
  - Easier to design, fund, and undertake (Cf Rylance, 2015)
- **Key limit**: Occurs within domain-specific and methodological silos

Examples of Cross-Disciplinary Insights



Urban Studies (Saelens et al., 2003):

Highlighted the need for insights from other disciplines to positively impact urban mobility practices

Challenges in policy and urban design due to context-specific variables affecting mobility participants in built environments



• Public Health & Transportation (Pucher, Dill, & Handy, 2010):

Integrated insights from public health, transportation policy, and behavioral science in diverse geographical areas

Examined how infrastructural elements, educational programs, and supportive policies can combine to affect cycle-use safety and population health



Note: These are valuable, but tend to be "cross-disciplinary" rather than "interdisciplinary"

What is Truly Interdisciplinary Research?

- **Challenging and potentially risky**
- Requires context-specific critical reflection on integrating **disparate** (not already-aligned) critical frameworks
- **Generates new conceptual approaches and transformative insights** not possible from a single field or by following combinations of existing, adjacent methodologies
- As Karl Popper noted: **"We are not students of some subject matter, but students of problems. And problems may cut right across boundaries of any subject matter or discipline."**
- Involves **rethinking methodologies, integrating disparate theoretical frameworks, and generating new modes of inquiry** that challenge conventional disciplinary boundaries (Keestra et al., 2022)
- Benefits from a process of **"undisciplining" knowledge** (Graff, 2015), i.e. **"the non-prescriptive rethinking and breaking open of established categories to create space for dynamic and fluid intellectual exchanges that carry both risk and reward."**

Challenges of Interdisciplinarity

- **Requires effort and commitment**
- **Potential lack of methodological and thematic coherence**
- **Struggle with focus**
- May lead to fragmentation, diffraction of data, and a dilution of analytical depth if too many perspectives are integrated without a clear, pre-existing guiding framework (e.g., Uprichard and Dawney, 2019)
- **Institutional barriers** (traditional, disciplinary-bound research models may be privileged in institutional research strategies and funding opportunities)
- Difficulty of gaining critical distance from their own domain that is needed for developing genuinely interdisciplinary perspectives

Opportunities and Benefits of Interdisciplinarity

- **Risk brings opportunity** (Repko, 2008; Lyne, 2015)
- **Threats become strengths**: challenges of implementation, broadness of focus, methodological diversity
- Feeds into **research culture that values flexibility alongside coherence**
- Cultivates the ability to adapt, expand, and redefine perspectives
- **Evidence of increased research impact and cross-domain dynamism** (Okamura 2019)
- **Great transformative potential**
- Cycling is a highly complex, multi-dimensional phenomenon – interdisciplinary perspectives are fundamentally useful for studying and understanding such phenomena

The Power of Foundational (Non-Applied) Research

- **Moves beyond what Berbary (2020) called "always-already applied" approaches**
- **Embraces exploratory and generative foundations** that can lead towards further transformative research
- ***Grundlagenforschung***: "Non-applied foundational research"
  - **Increased potential for long-term scientific advancement and innovation**
  - **Not bound by prescriptive frameworks or predetermined expectations**
- **"Complexity-driven approaches"** (Pernecky, 2019) lead to new **"inter-epistemological ways of knowing"** (Freiband et al., 2022)
- In cycling-related contexts, can help address complex issues such as related to mobility justice, sustainability in relation to micro-mobility, or large-scale infrastructural inequities

Advocating for Humanities-Informed Interdisciplinarity

- **Humanities research is self-reflexive, pluralistic, dynamic, exploratory, and aims for transformational insight**
- Cycling cuts across **power, class, gender, geography, culture, identity** – and many other critical vectors
- Humanities has a long history of dealing with such concerns (rhetorical, social, political, historical, philosophical, aesthetic dimensions)
- Harpham (2013) : **the "distinctiveness" of the humanities "is resistance: the humanities resist—that is, they both adhere to and deviate from—all the basic premises of disciplinarity as such."**
- Connects utilitarian, pragmatic, goal-driven concerns with broader cultural narratives, power dynamics, and historical trajectories, and has methods for for combining and rethinking frameworks
- **Uniquely suited for exploring and integrating under-examined areas** in both 'foundational' and applied research

Cycling as an Anchoring Concept

- **Emphasize cycling itself as a boundary-crossing concept**.
  - Facilitates activities, exchanges, and insights
- **A shared interface for generative interplay** between diverse theoretical frameworks, conceptual approaches, and methodologies
  - Especially useful when agendas, plans, or funding mandates make common ground difficult
- **Cycling as a critical lens**:
  - Not just a subject of analysis, but actively informs our critical approaches and scholarly work
- **Embrace a framework that is self-reflexive, responsive, and dynamic** – just like cycling itself
- Open to contributions from **all who engage with cycling** (researchers, cyclists, pedestrians, activists, policymakers, and so forth)

Conclusion

- **Cycling is a profoundly complex phenomenon requiring truly interdisciplinary approaches**
- **Distinguish between pragmatic 'cross-disciplinary' and transformative 'interdisciplinary' work**
- **Embrace the risks and challenges of interdisciplinarity to unlock new insights and impact**
- **Advocate for cycling-related *Grundlagenforschung* informed by humanities perspectives** to address complex issues and foster critical self-reflexivity
- **Utilize cycling itself as a unifying, dynamic framework** for boundary-crossing scholarship

Thanks for listening

- Look out for our essay **“The Many Paths Ahead: Toward an Interdisciplinary Framework for Critical Cycling Studies”** – under review with *Humanities and Social Science Communications*
- Look out for a **CFP** for a Critical Cycling Studies symposium in Gent/Belgium next year!
- Get in touch:
  - Martin Zeilinger: m.zeilinger@abertay.ac.uk
  - Andrew Bricker: andrew.bricker@ugent.be

References

Berbary LA (2020) Theorypracticing differently: re-imagining the public, health, and social research. Leisure Sciences 44(7):906–914

Freiband A, Dickin KL, Glass M et al (2022) Undisciplining the university through shared purpose, practice, and place. Humanit Soc Sci Commun 9, 172 https://doi.org/10.1057/s41599-022-01195-4

Graff HJ (2015) Undisciplining knowledge. Johns Hopkins University Press, Baltimore

Harpham GG (2013) Finding ourselves: the humanities as a discipline. Am Lit Hist 25(3):509–534

Keestra M, Uilhoorn A, Zandveld J (eds) (2022) An introduction to interdisciplinary research: theory and practice, 2nd ed. Amsterdam University Press, Amsterdam

Kluger MO, Bartzke G (2020) A practical guideline: how to tackle interdisciplinarity–A synthesis from a post-graduate group project. Humanit Soc Sci Commun 7. https://doi.org/10.1057/s41599-020-00540-9

Okamura K (2019) Interdisciplinarity revisited: evidence for research impact and dynamism. Palgrave Commun 5. https://doi.org/10.1057/s41599-019-0352-4

Pedersen DB (2016) Integrating social sciences and humanities in interdisciplinary research. Palgrave Commun 2. https://doi.org/10.1057/palcomms.2016.36

Popper KR (1963) Conjectures and refutations: the growth of scientific knowledge. Routledge, London

Pucher J, Dill J, Handy S (2010) Infrastructure, programs, and policies to increase bicycling: An international review. Prevent Med 50, Supplement: S106-S125. https://doi.org/10.1016/j.ypmed.2009.07.028

Repko AF (2008) Interdisciplinary research: process and theory. Sage, Los Angeles

Rylance R (2015) Grant giving: global funders to focus on interdisciplinarity. Nature 525:313–315. https://doi.org/10.1038/525313a

Saelens BE, Sallis JF, Frank LD (2003) Environmental correlates of walking and cycling: findings from the transportation, urban design, and planning literatures. Annals Behav Med 25(2):80–91. https://doi.org/10.1207/S15324796ABM2502_03

Uprichard E, Dawney L (2019) Data diffraction: challenging data integration in mixed methods research. J Mixed Meth Res 13(1):19–32

Lyne R (2015) Interdisciplinarity and anxiety. Palgrave Commun 1. https://doi.org/10.1057/palcomms.2015.21

Pernecky T (2019) An unintroduction to postdisciplinarity. In: Pernecky T (ed) Postdisciplinary knowledge. Routledge, London