Cross-disciplinary projects: Reflections on why and how

Claes-Fredrik Helgesson, Director

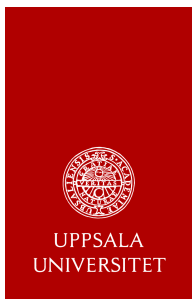Centre for Integrated Research on Culture and Society (CIRCUS)

CIRCUS aim to stimulate new research by facilitating **new patterns of collaboration**.

Listening in on ongoing conversations about interdisciplinarity…

…**and** providing a space for having such conversations at Uppsala University.

Outline

- **Initial mapping of the terrain**

- Possible answers to the question "Why?"

- Possible answers to the question "How?"

"Interdisciplinarity has come to be
at once a **governmental demand**,
a reflexive orientation within the academy
and an **object of knowledge**."

Barry, Andrew, and Georgina Born. 2013. "Interdisciplinarity: reconfigurations of the social and natural sciences."
In *Interdisciplinarity: reconfigurations of the social and natural sciences*, edited by Andrew Barry and
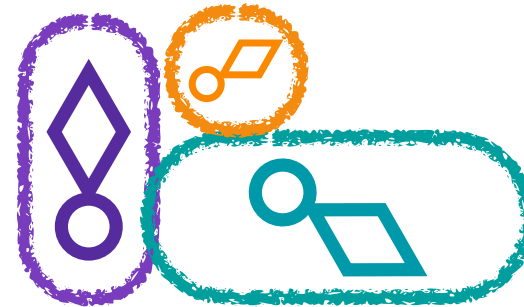Georgina Born, 1-56. Routledge.

Interdisciplinary research

Transdisciplinary research

Disciplinary research

Multi-disciplinary research

Another taxonomy: Different modes of interdisciplinarity

- **Integrative-synthesis mode**: "The integration of two or more 'antecedent disciplines' in relatively symmetrical form."

- **Subordination-service mode**: "Interdisciplinarity takes a form in which one or more disciplines occupy a subordinate or service role in relation to other component disciplines."

- **Agonistic-antagonistic mode**: "[Interdisciplinarity] is driven by an agonistic or antagonistic relation to existing or prior forms of disciplinary knowledge and practice."
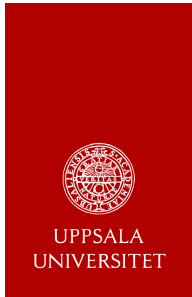
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Cross-cutting research
is a
heterogeneous practice

There is even a categorization of some categorizations…

Focus of interest	Author(s)	What produces categories?	Categories
Degrees of disciplinary integration	OECD (1972)	Development of scientific knowledge	Multidisciplinarity, pluridisciplinarity, interdisciplinarity, transdisciplinarity
	Heckhausen (1972)	Maturation of interdisciplines	Indiscriminate ID, pseudo-ID, auxiliary ID, composite ID, supplementary ID, unified ID
	Miller (1982)	Degree of conceptual order	Topical focus, professional preparation, life experience perspective, shared components, cross-cutting organizing principles, hybrids, grand synthesis
	Stember (1991)	Responses to dissatisfaction with disciplines	Intradisciplinarity, cross-disciplinarity, multidisciplinarity, interdisciplinarity, transdisciplinarity
	Boden (1999)	Strength of ID	Encyclopedic ID, contextualizing ID, shared ID, co-operative ID, generalizing ID, integrative ID
	Karlqvist (1999)	Distance between fields	Unification of knowledge, accumulation of knowledge, doing different things, doing things differently, thinking differently
Interdisciplinary practices	Rossini and Porter (1979)	Socio-cognitive frameworks for integration	Common group learning, modeling, negotiation among experts, integration by leader
	Lenoir et al. (2000)	Social representations of ID	Eclectism, pseudo-ID, hegemony, holism
	Lattuca (2001)	Research questions	Informed disciplinarity, synthetic ID, transdisciplinarity, conceptual ID
	Palmer (2001)	Cognitive strategies for ID	Team leader, collaborator, generalist
	Bruun et al. (2005b)	Knowledge networking	Coordination, translation, pioneering
	Bruun et al. (2005a)	Interactions between fields	Encyclopedic MD, contextualizing MD, composite MD, empirical ID, methodological ID, theoretical ID
	Lengwiler (2006)	Organizational practices	Methodological ID, charismatic ID, heuristic ID, pragmatic ID
	Pohl et al. (2008)	Forms of collaboration + means of integration	(Two-dimensional matrix of the possible combinations of the latter)
Rationales of interdisciplinarity	OECD (1982)	Demands for ID	Endogenous ID, exogenous ID
	Klein (1985), Salter and Hearn (1996)	Motives for ID	Instrumental ID, conceptual ID
	Bruun et al. (2005a)	Type of research goals	Epistemological ID, instrumental ID, mixed goals
	Boix Mansilla (2006)	Epistemological approaches to ID	Conceptual-bridging, comprehensive, pragmatic
	Barry et al. (2008)	Logics that guide ID	Accountability, innovation, ontological change

Three focus of interest identified to sort them:

1) Degrees of disciplinary integration
(Eg. Multi-, inter-, trans-disciplinarity)

2) Interdisciplinary practices
(E.g. Coordination, translation, pioneering)

3) Rationales of interdisciplinarity
(E.g. Endogenous ID, exogenous ID)

Huutoniemi, Katri, Julie Thompson Klein, Henrik Bruun, and Janne Hukkinen. 2010. Analyzing interdisciplinarity: Typology and indicators. *Research Policy* 39 (1):79-88.

A categorization
of categorizations !

Degrees of disciplinary integration

Development of scientific knowledge
(OECD 1972)

Multidisciplinarity
vs
Pluridisciplinarity
vs
Interdisciplinarity
Vs
Transdisciplinarity

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A categorization of categorizations !

Rationales of interdisciplinarity

Demands for interdisciplinarity (OECD 1982)
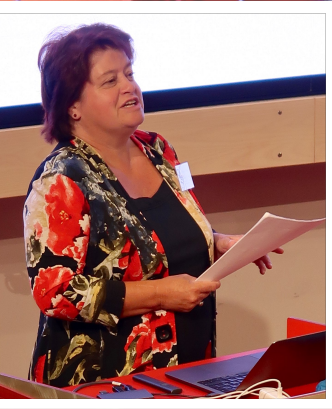
Endogenous interdisciplinarity

vs

Exogenous interdisciplinarity

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Why Interdisciplinarity? - Promises, Problems, Practices
Circus symposium 24 september 2019

The Contours
of Interdisciplinarity

▲▲▲

ERIN LEAHEY
Professor and Director
School of Sociology
University of Arizona

THE UNIVERSITY
OF ARIZONA

I. IDR papers

How do they fare?

- More novel (Lee et al. 2015; Taylor & Greve 2006)
- More likely to be highly cited (Leahey et al. 2017)
- Greater impact (Schilling & Green 2011; Uzzi et al. 2013; Larivière et al. 2015)
  - → Sven Widmalm's talk on IDR & impact (next)

But also….

- More likely to be rarely cited
- Greater variation in citation (Leahey et al 2017)
- Greater uncertainty of reward (Foster et al. 2015; Singh & Fleming 2010)
- More hits and more flops

Close vs. Distant IDR

- IDR is beneficial up to a point
- But when spanning disciplines that are too cognitively distant, the payoff dwindles
- There's a curvilinear relationship between IDR and impact...

(Carnabuci & Bruggerman   2009;
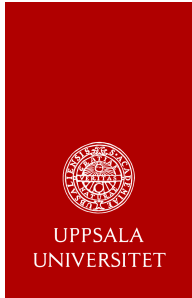Yegros-Yegros et al. 2015)
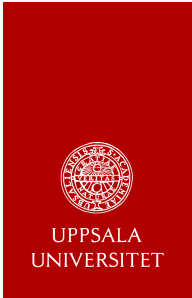
Close vs. Distant IDR
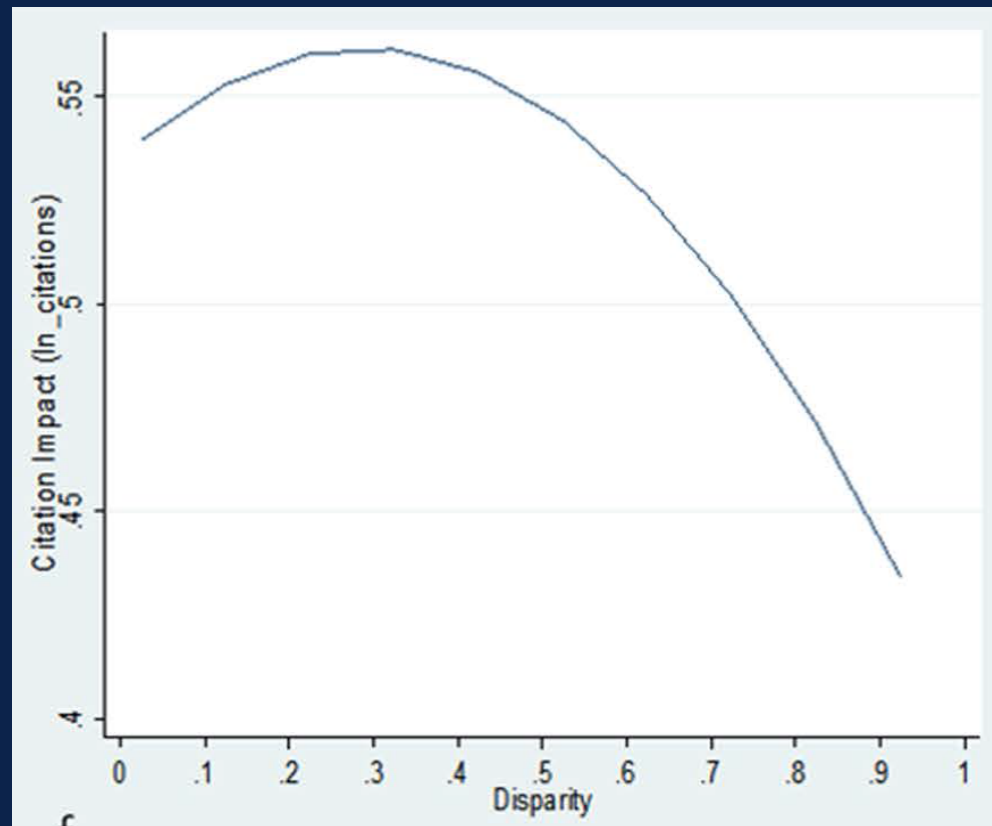
"We do need time to misunderstand each other, especially when fostering lost dialogue between humanities and natural sciences."

(slow-science.org) & Berg, Maggie, and Barbara K Seeber. 2016. The slow professor: Challenging the culture of speed in the academy: University of Toronto Press.

A particular skill set?

"[A]t the crux of good interdisciplinary research lies not a shallow knowledge of myriad topics but a **detailed understanding of how to make different forms of knowledge work together synergistically.**" p. 66 (my emphasis)

Lyall, Catherine. 2019. Being an interdisciplinary academic: How institutions shape university careers. Cham: Palgrave Macmillan.

Outline

- Initial mapping of the terrain

- **Possible answers to the question "Why?"**

- Possible answers to the question "How?"

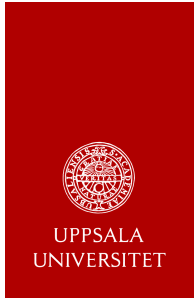# Possible answers to the question "Why?" I

- It can be taxing to find an appropriate mode

- It can be more time-consuming

- It may require partially different skills

- It is more of a high-risk and high-rewards endeavour

- …

Possible answers to the question "Why?" II

- Appropriate for addressing certain questions

- Appropriate for certain calls

- Opens up for new possibilities for collaboration

- Opportunities for new kinds of output

- Opportunities for learning

- Opportunities for reflection and exploring new skills

- May open new career possibilities

Outline

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- Possible answers to the question "Why?"

- **Possible answers to the question "How?"**

There is no single way to do it:

- Figuring out what is an appropriate mode of collaboration will need to take into account:
  - the chosen research task
  - the available (and recruitable) competences (on subject matter, collaborative skills, etc)
  - available funding opportunities
  - desired collective outputs
  - desired individual outputs (acquiring skills, publications, other merits)
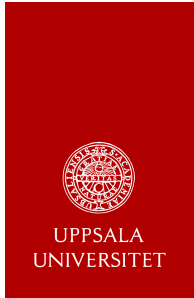
How CIRCUS can help

- Opportunities to get support to create exploratory research networks (Sept.) and to develop cross-cutting grant applications (April) - Open calls!

- Help to create exploratory workshop

- Help find possible collaborators

- Seminar series and symposium to get more insight into the possibilities and challenges to work across disciplinary boundaries.

Debating Research Together - Explorations in the excellence and shoddiness in how we in academia engage in cross-cutting scholarly debates
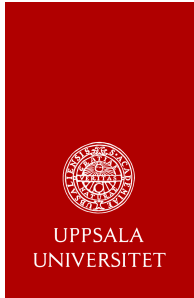
Add to your calendar

- Date: 6 December, 09:30 – 7 December, 12:15
- Location: Humanistiska teatern
- [Website](#)
- Organiser: Centre for Integrated Research on Culture and Society (CIRCUS)
- Contact person: [Ingrid Berg](#)
- [Konferens](#)

The aim of Circus' third annual symposium, 6-7 December, is to explore the qualities of debate, discussion and exchange in research and in public debates.

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