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Some like it cool: Tracking changing temperatures of interdisciplinary team dynamics

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Role: Formative Accompanying Research (FAR)

Who am I?

Current role: member of an interdisciplinary collaboration in the field of sustainability

Job: Formative accompanying researcher (FAR) with dual task:

— **Research** the team

— Support the **learning** of the team

Learning in three ways:

Learning **about**, learning **with** and learning **for**

Navigating this role involves paying attention to my changing **positionality** in relation the team

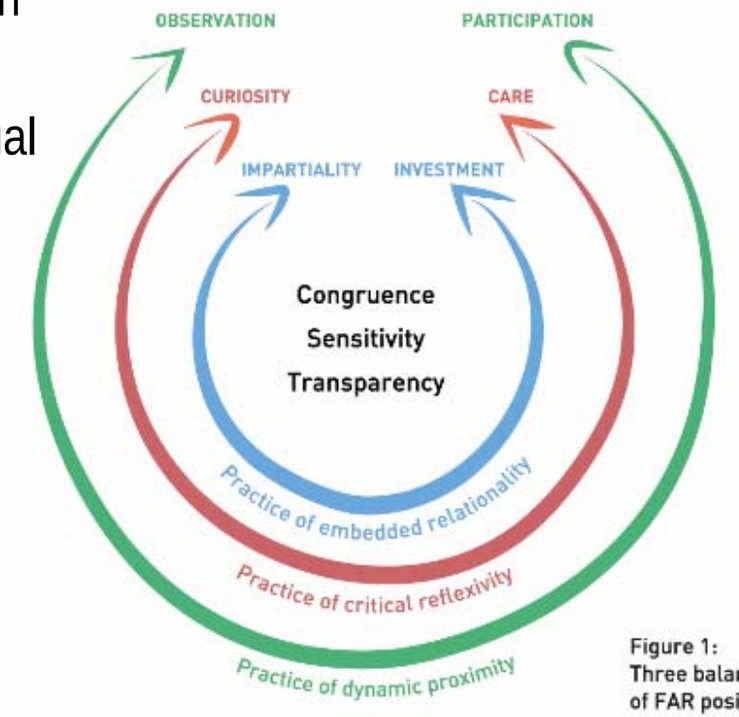


Figure 1:
Three balancing acts of FAR positionality.

Context: An interdisciplinary research team in sustainability science

Four year project

23 researchers, co-located:

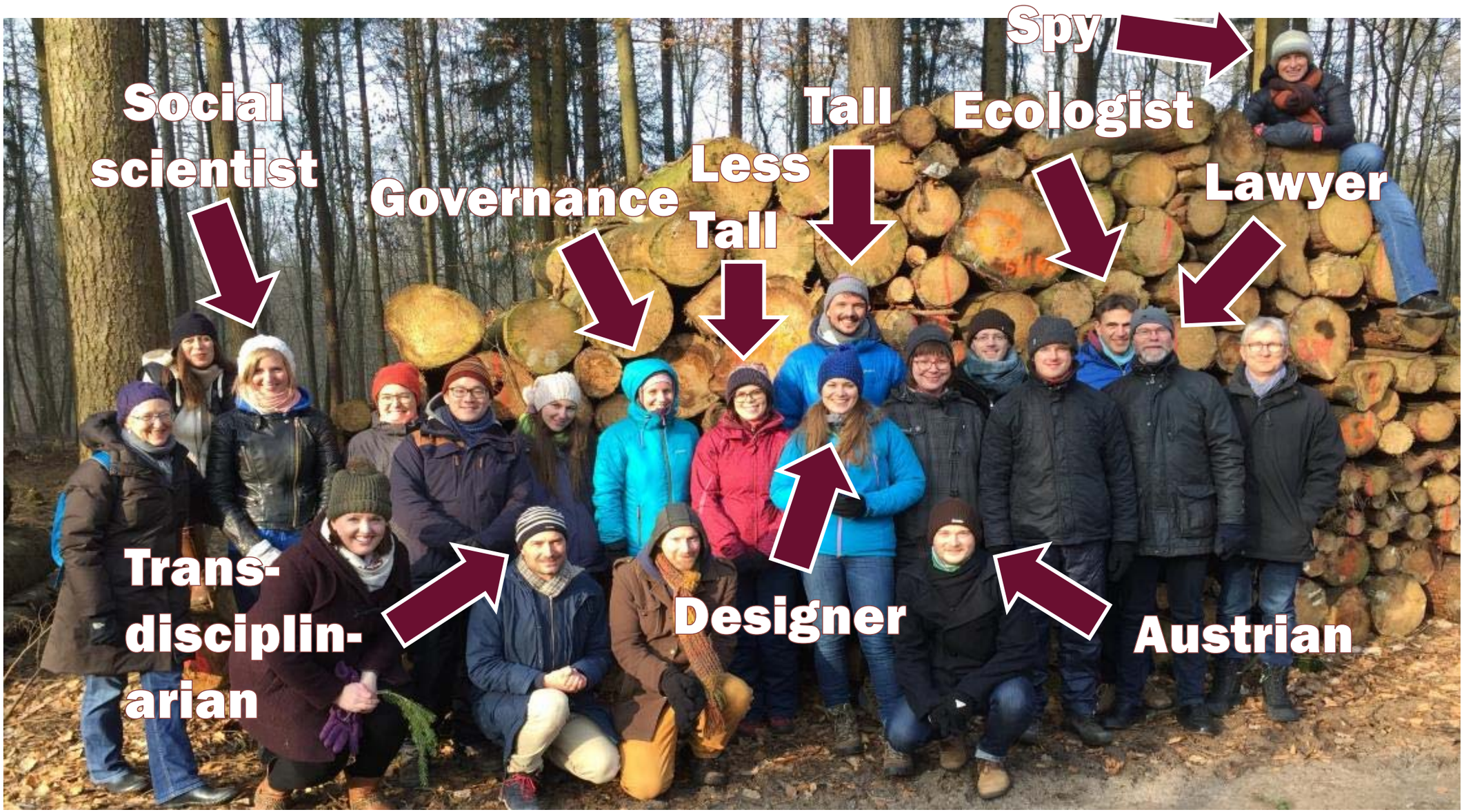
- 8 different nationalities
- 4 major languages
- natural and social sciences + humanities orientations
- 7 major fields of study + several ‘outlier’ disciplines

Disciplinary backgrounds

Broad disciplinary field	No. people (at least 2)
Environmental science / studies / management	6
Ecology / landscape ecology / human ecology	5
Geography / geo-ecology / geobotany	5
Sustainable development / sustainability science	5
Political science / social political science	4
International development	2
Communication	2

Plus some outlier fields: environmental law, mechanical engineering, product design and social work

Diverse in many ways …



8 Principal Investigators, 5 Post Docs, 10 PhDs

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Connections and contributions to SciTS

Connection points:

SciTS is "…focused on understanding and enhancing the processes and outcomes of TS and mitigating challenges" (Vogel et al (2013). Especially in relation to:

- intra- and inter-personal competencies for TS
- team processes

✧ "factors **that facilitate or constrain** transdisciplinary team science collaboration" (Hall et al. 2008)

✧ **learning** to collaborate (Lottrechiano, O'Rourke, Khuri)

Complements SciTS study of collaboration readiness and collaboration effectiveness with:

- Qualitative, inductive approach
- Methodological innovation
- Positioned as an insider-outsider to the teams being researched
- Focus on tacit aspects of collaboration

My research: Tracking collaborative experiences of the team

FAR research questions

Why temperature?

Temperature as a metaphor of intensity of:

- Intellectual exchange
- Emotion
- Group dynamics
- Pace (sense of urgency)

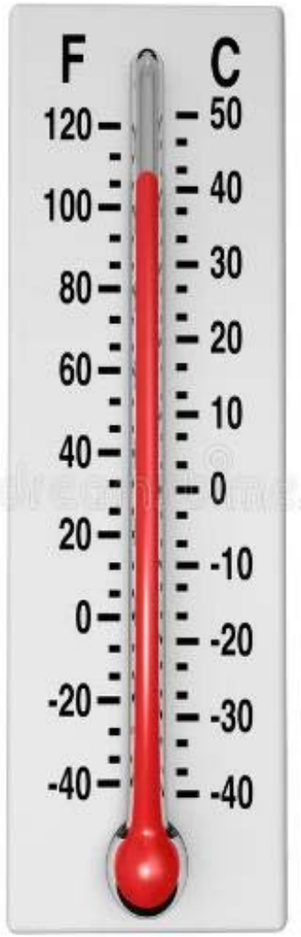
Heat as a binding force in research collaborations

e.g. Parker & Hackett (2012)

Heat as a catalyst of change

e.g. Heifetz & Laurie (1997)

"… nothing cooks without some heat."



Why might tracking temperature be useful?

Many reasons why research collaborations succeed or fail

- Explicit factors reasonably well documented (i.e. what is visible and can be measured)
- Implicit factors less well documented (i.e. where an 'evidence base' is harder to assemble)
  - "subtarranenan logics" (Fitzgerald et al, 2014)
  - "hidden obstacles" (Strober, 2011)

I'm interested in more implicit factors, which suggests a research approach that:

- Tracks *patterns* of a collaborative team's experience
- Pays attention to *signals* of what might be happening below the surface.
  - ✧ Temperature is a signal. Changing temperatures create a pattern over time

Temperature can gives clues to dynamics in a team which may be influential but remain hidden and un-addressed

Temperatures in science: what's familiar and comfortable?

The view of science as 'rational' and 'objective' is often associated with staying 'cool' – calm temperament, cool logic, considered arguments

Heat is often associated with high levels of diversity, divergence, urgency, conflict

Temperature preference and tolerance

Scorching
Sizzling
Burning

Tepid
Lukewarm

Cool

Crisp
Frosty
Icy

Observations: Temperature as intensity of intellectual exchange

- An early moment of heat occurred during a discussion about methodological differences
- “I realized we have these centrifugal tendencies … so I’m embracing this freedom for myself”

“Emotive and epistemic elements of collaborations are inseparable; they motivate participation, fortify group boundaries, and initiate members into a “thought style” that focuses and apportions scientific attention.”

Parker & Hackett, 2012:24

Observations: Temperature as emotional intensity

- Preferences: “I like harmony”; “I like people to be happy”
- Not much overt expression of emotion in the team
- Tensions are felt but not usually expressed
- De-escalating rather than escalating moves in interpersonal exchanges

Emotions spark creativity, tighten social bonds, and lower barriers to collaboration. Emotional processes also recruit new members and instill commitment to a group and its ideas”

Parker & Hackett, 2014:24

Observations: Temperature as intensity of group dynamics

- A preference for seeking common ground rather than divergence
- Stated orientation: conflict averse and avoidant
- Use of non-inflammatory language
  - ✧E.g. “just a little bit”
  - ✧E.g.”… and that’s neither good or bad”

Debate in literature about whether to name and address tensions in collaborations:

Rabinow and Bennett (2012) on being frank and transparent
versus
Fitzgerald et al. (2014) on “equivocal speech” that discerns “things better left unsaid”

Observations: Temperature as intensity of pace

- Relatively low intensity of collective work
  - “we had a slow start”,
  - “we should have been here a year ago”
- Gathering intensity of individual research (esp. PhDs)
- Turning point: 2 years in

Late 2017: A few weeks of heat

Critical juncture: Will we be able to *meaningfully* integrate our work?

- Rise in emotional intensity
- Increased intensity of group dynamics
- Spike in sense of urgency (project end in sight + pressure on PhDs + issues of sustainability)

Triggered an increase in intensity of collaborative work

What am I learning?

- This is a team that prefers cooler temperatures
- Cooler temperatures are likely more comfortable for most of us
- But are “happy people” always more productive?
- In collaborative work, some heat and resulting discomfort may trigger greater productivity
  - i.e. heat as a source of leverage in research collaborations

… IF discomfort is recognised and available for reflection and conversation

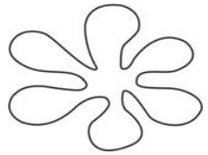
Reflection points

1. When do warmer temperatures benefit collaboration? When are cooler temperatures useful?

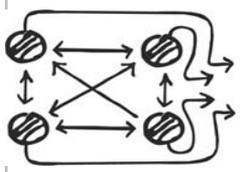
2. What does this mean for designing and working in collaborative research projects?
   - What **conditions** might enable us to span a useful range of temperatures and to tolerate temperatures that we're less comfortable with?
   - What **capacities** do we need? How can we learn these on the job?

3. How could this enhance both the experience and the effectiveness of collaborative research?

Implications: Creating conditions for collaboration

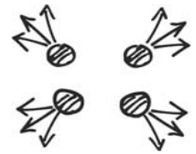


Differentiation
(focus is on difference)

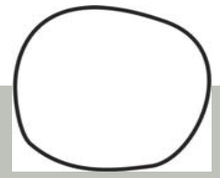


Integration
(focus is on
togetherness)

Individuation
(focus is on
separateness)



Homogenization
(focus is on commonality)



Source: Barry Oshry: “Seeing Systems”

Implications: Building collaborative capacity

What kind of collaborative capacities are needed?

Learning together to:

- Recognise, regulate and tolerate a wider range of temperatures (beyond own comfort zone)
- Address disagreements and conflicts (with courage, skills and discernment)
- Hone “social sensitivity” – empathy, honesty, clarity, integrity and accountability (Cheruvelil et al. 2014)
- Pay productive attention to implicit tensions and what might be simmering below the surface
- Differentiate between “time wasting” collective experiences and “valuable moments for developing trust” (Felt, 2015)
    - Vulnerability-based trust

Some implications for SciTS researchers, facilitators or leaders (people who accompany research collaborations)

- Catch temperature signals
- Inquire into what they signal: reflect and discuss in order to learn from this information
- Do this *during* the collaboration so as to:
  - Course correct
  - Learn to collaborate while collaborating

Thank you

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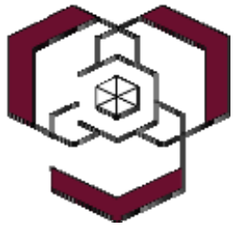
Patterns in an interdisciplinary *shared* epistemic living space (Felt)

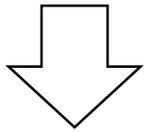
Dimension	Focus on…
Epistemic	Different assumptions about which research questions are central, how knowledge should be produced and what constitutes good knowledge; Different habits of thinking; Different ways of handling key shared concepts research
Social	The range of ways of being together in research; Relations with both peers and competitors; Emotional dynamics of interdisciplinary collaboration
Symbolic	Power differentials and how these manifest – e.g. as • Competing values and modes of order in governing and organizing research; • Expectations that trickle down to researchers; • Competing normative goals in sustainability research
Spatial	Ways in which different spaces enable or constrain collective research work; Sense of belonging within different research communities
Temporal	Different tempos, time regimes and forms of time in academic work; A sense of urgency in relation to the wellbeing of social-ecological systems

Our approach: Research levels



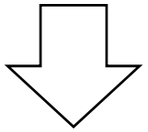
Conceptual

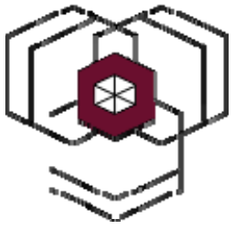
Develop a systems based conceptual framework for social-ecological change



Empirical

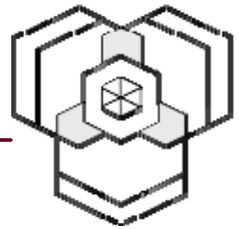
Multi-dimentional Regional analyses
(food and energy)





Transdisciplinary

Deep, participatory, comparative case studies, ground truthing



Integration

Iterative synthesis across research levels, thematic fields (food and energy) and leverage points (Restructure, Rethink, Reconnect).

Formative accompanying research

Critically reflect on the processes of knowledge production in inter- and transdisciplinary research projects