

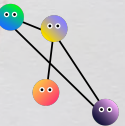
Participatory research for collective flourishing

Relational embodiment, Social Arts
and the Pedagogies of Togetherness

Marc Santolini
Research Associate
Learning Planet Institute, INSERM

Cambridge THRiVE Seminar
26 Mar 2026

<https://interactiondatalab.com>



speaking while moving

What I want to talk about

- **Learning to be** (together) vs **learning to solve**
- Socio-Emotional **literacy**
- The importance of **embodiment**
- The role of **social arts**
- How do we measure the **intangible**?

Social and Emotional Learning

From the classroom to the community



The Collaborative for Academic, Social, and Emotional Learning (CASEL), 1994

Pedagogies of human flourishing

“The **questions that parents ask** of the school system **change from: “Is my child getting homework? [...] to “Is my child being kind? Is my child making friends? Is my child solving problems? Is my child taking initiative? Is my child helping someone else?”** And teachers, instead of looking at children's ability to memorize and repeat knowledge, are they observing children's behavior around ideas like **kindness, creativity, empathy, self-awareness?** How is the **community** responding to that? How are **employers** responding to that in their hiring policies? So **can hiring policies change from when you're looking at a resume to see what kind of grades an individual has to what kind of a human being?”**

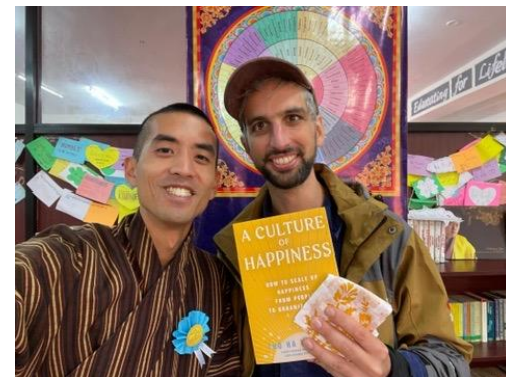
Vishal Talreja (Dream a Dream), Global South Learning Ecosystems project at LPI

See full report: <https://www.learningplanetinstitute.org/en/programs/learning-ecosystems-2/>



A “happy” school (Bhutan)

Practices of mindfulness, sharing circles with staff, children, parents...

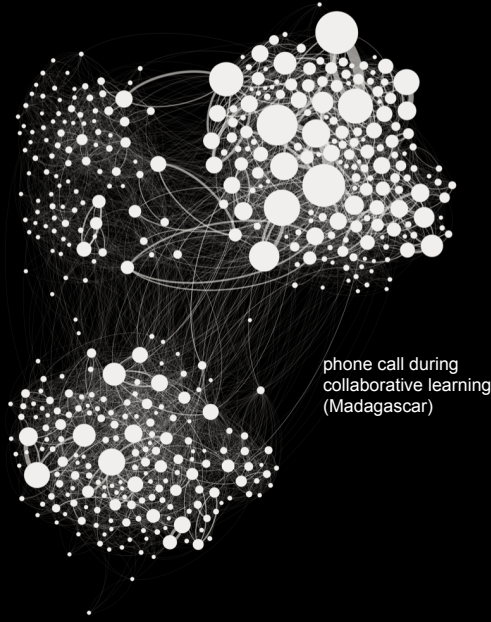




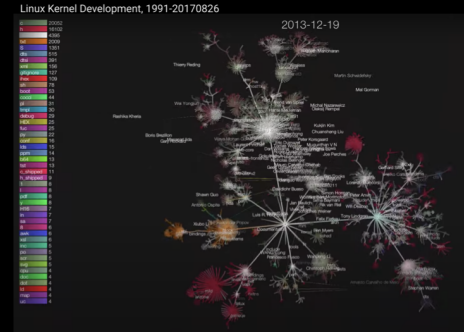
The need for **research**

- Some anecdotal evidence, but can we provide **rigorous insights**?
- How do we **learn to feel the “social body”**?

Network science and Collective intelligence

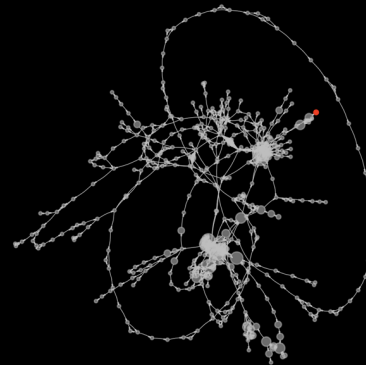


phone call during collaborative learning (Madagascar)

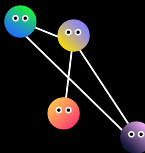


Linux collaborations

Organisational networks
growth process
structure vs performance
contagion models
resilience

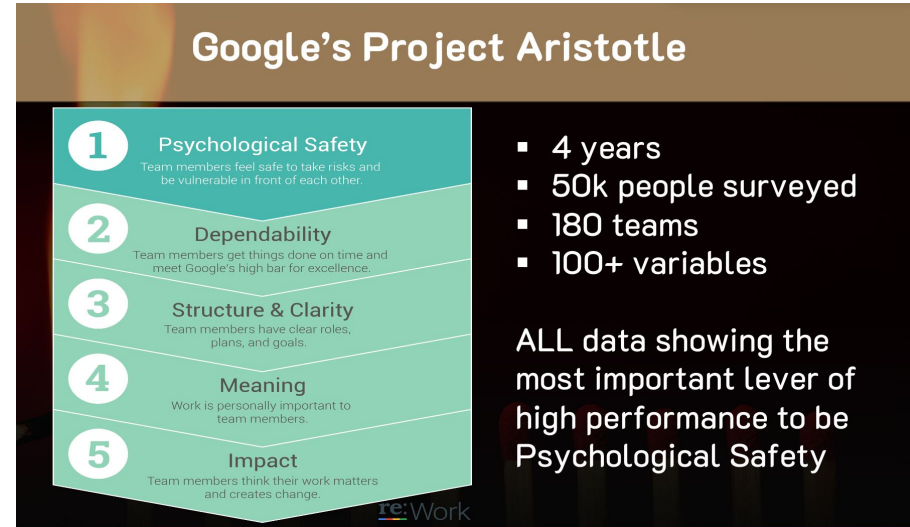


Activity network of a construction project



The importance of containers for collective intelligence

- Interactions do not happen in a vacuum - there is the importance of the **container** that allows to generate a healthy feedback culture (**psychological safety**)
- **“Collective intelligence** is a group-level factor correlated with the average **social sensitivity** of group members, the **equality in distribution of conversational turn-taking**, and the **gender diversity** of the group” (Wooley 2010)



Duhigg (2016). What Google Learned From Its Quest to Build the Perfect Team. *The New York Times*.

Collective adaptation and the “social permaculture”

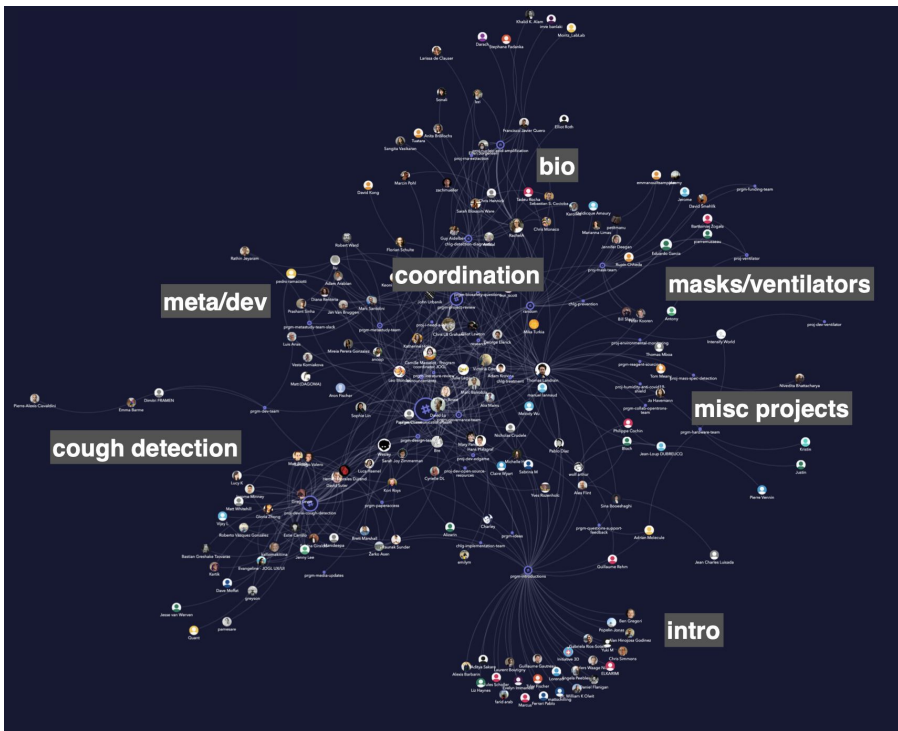
- Containers are typically guided by facilitators who “**sense**” the community to resolve tensions and promote synergies
- Capacity of **sense-making** (Poquet 2024) at the system level towards **collective adaptation** (Galesic et al 2023)
- Metaphors of “social permaculture”, “social osteopathy”



Cultivating relations in an open community

OpenCovid19 community

4,000+ participants, 100+ projects, Slack data (2 years)

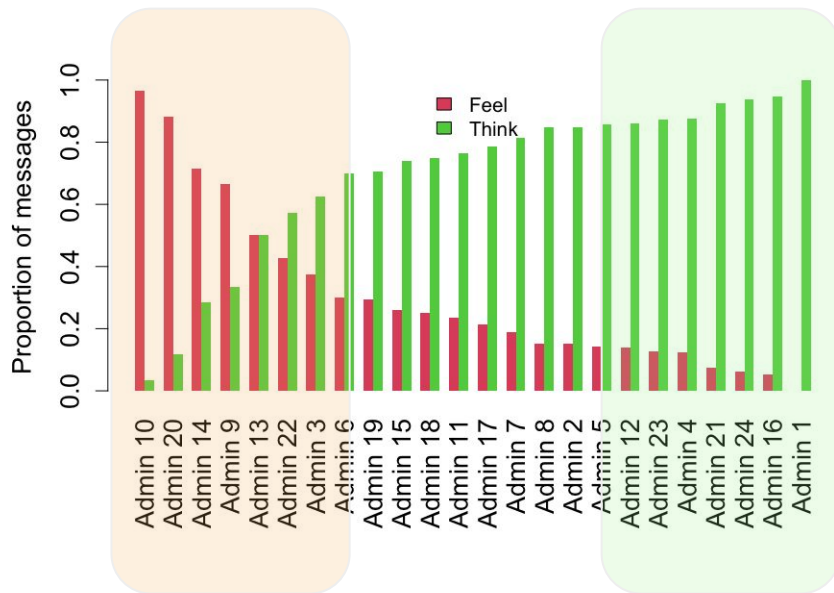


sensing

facilitation,
onboarding

doing

implementation,
leadership



Kokshagina, Santolini, Riedl (in prep. 2026)

Graham et al. 2023

Kokshagina 2021

Collective flourishing as the sustained **capacity of a group to generate conditions** in which its members—and the collective as a whole—can **develop, contribute, and adapt** in ways that **enhance shared well-being, agency, and meaning over time.**

(VanderWeele Global Flourishing Study, Singh's Ecological Collective Flourishing, Seligman's PERMA model, Sen's Capability framework)

Relational well-being: a situated construct

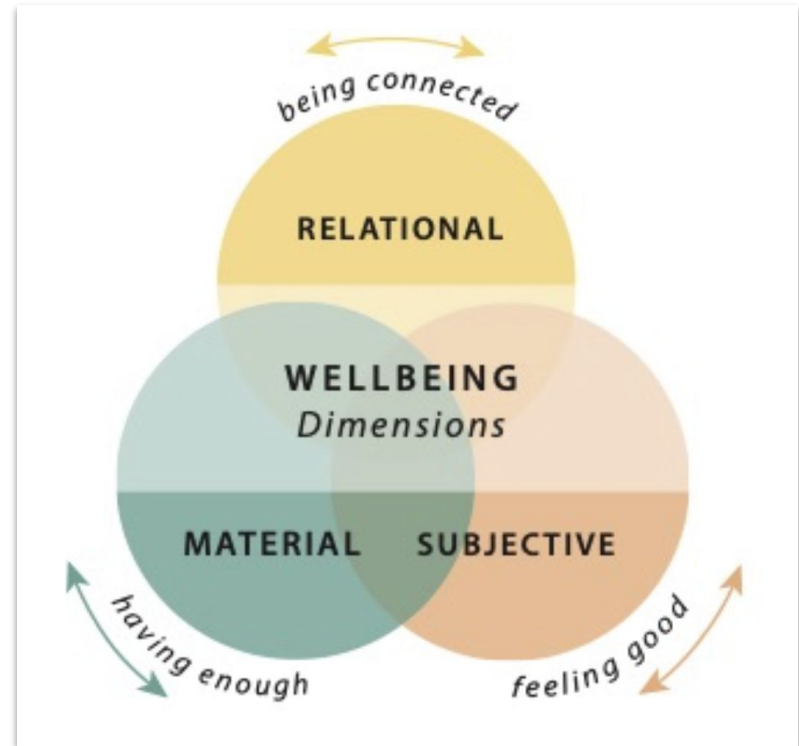
Anthropological approach: **relational well-being** as a *situated* **co-designed** construct designed for Global South context

Relational wellbeing: re-centring the politics of happiness, policy and the self

Sarah C White, s.c.white@bath.ac.uk
University of Bath, UK

The ubiquity of references to happiness and wellbeing indicates widespread anxiety that all may not be well, reflecting the erosion of the social in late capitalist modernity. The paper finds that, rather than helping to solve this problem, individualist formulations of wellbeing in policy mimic or deepen the underlying pathology. Drawing on empirical research in Zambia and India, it advocates an alternative approach, relational wellbeing, which is grounded in a relational ontology that can challenge dominant ideologies of the self, places central the generative quality of relationality which is critical to societal change and engenders a socially inclusive political vision.

White, SC (2017) Relational wellbeing: re-centring the politics of happiness, policy and the self, Policy & Politics



Relational well-being in challenge-based learning

→ Youth (~20-25 yo) participating to **challenge-based learning** activity in Africa

→ **Randomized control trial (N=77): AI-based team formation** matching diverse personalities and competencies **vs random assignment**

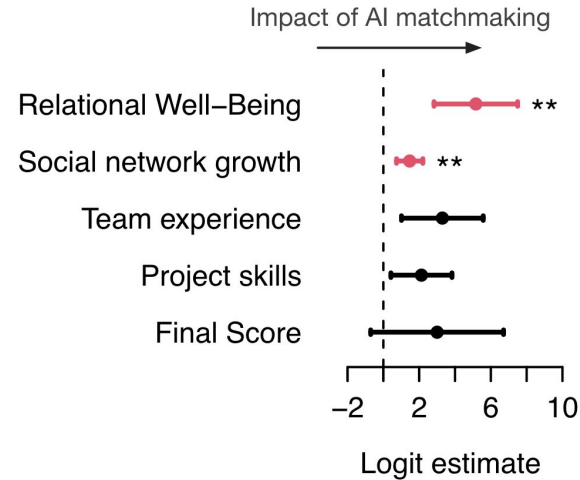
→ Team diversity enhances RWB (e.g. increase in **confidence**, change in ways of **relating to others...**)

Optimising Team Dynamics: The Role of AI in Enhancing Challenge-Based Learning Participation Experience and Outcomes

Athina Georgara^{a,*1}, Marc Santolin^{b,c}, Olga Kokshagina^{b,d}, Camila Justine Jacinta Haux^f, Desmé Jacobs^g, Gloria Biwott^h, Marcela Correaⁱ, Charles Sierra^j, Jose Luis Fernandez-Marquez^k and Juan A. Rodriguez-Aguilar^l

^aArtificial Intelligence Research Institute, Spanish National Research Council (IIIA-CSIC), Bellaterra, Spain
^bLearning Planet Institute, Research Unit Learning Transitions (UR LT, joint unit with CY Cergy Paris University), Paris, F-75004, France
^cSchool of Public Policy, Georgia Institute of Technology, Atlanta, Georgia, USA
^dEDHEC Business School, Paris, France
^eUniversity of Geneva, Geneva, Switzerland
^fUNICEF Eastern and Southern Africa Regional Office, Cape Town, South Africa
^gRLabs *Reconstructed Living Lab, Cape Town, South Africa
^hCambridge, London, UK

Georgara et al. (2025) *Computers and Education: Artificial Intelligence*

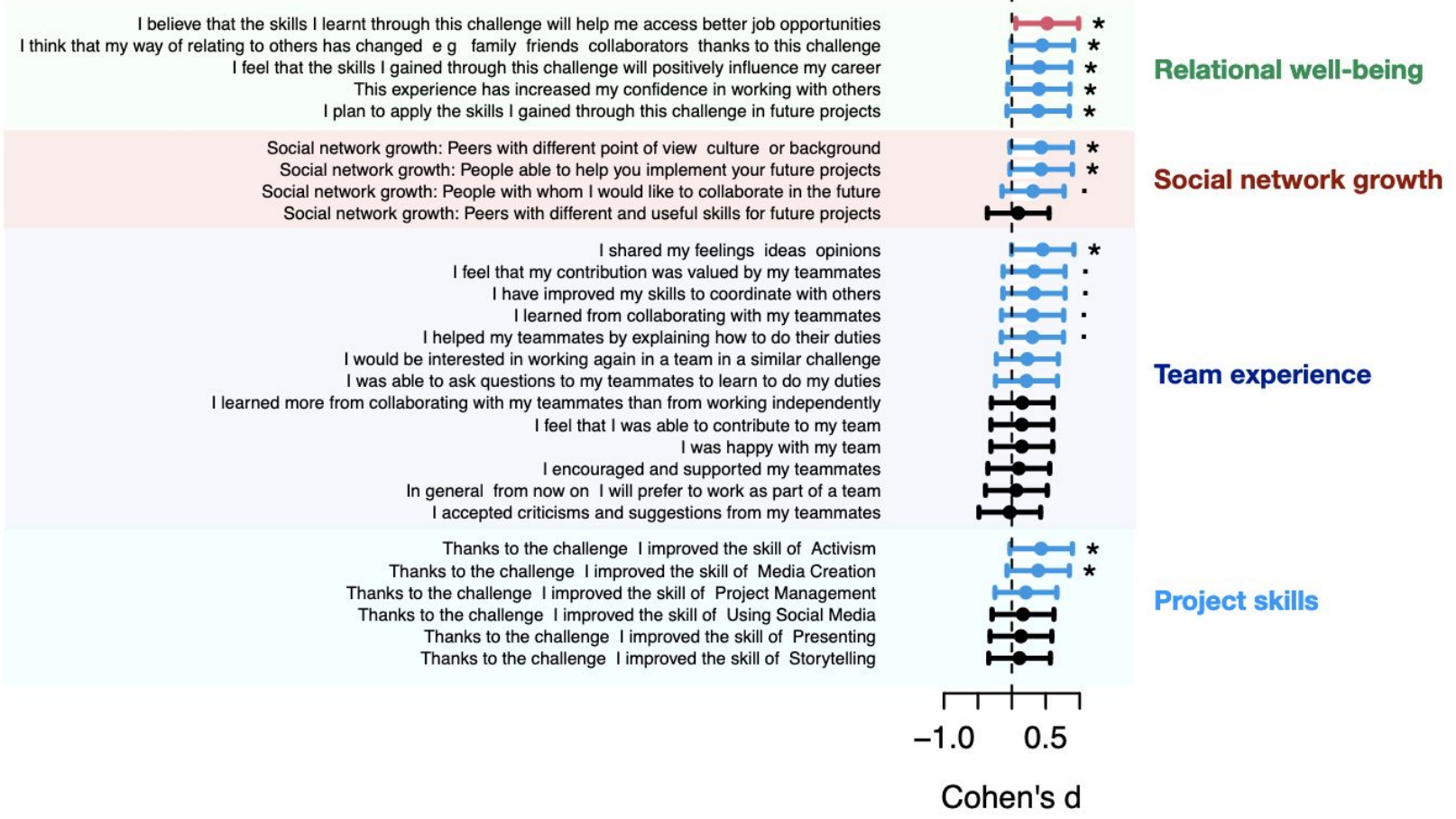


fondation
BOTNAR



Olga Kokshagina
(LPI)

Impact of AI matchmaking

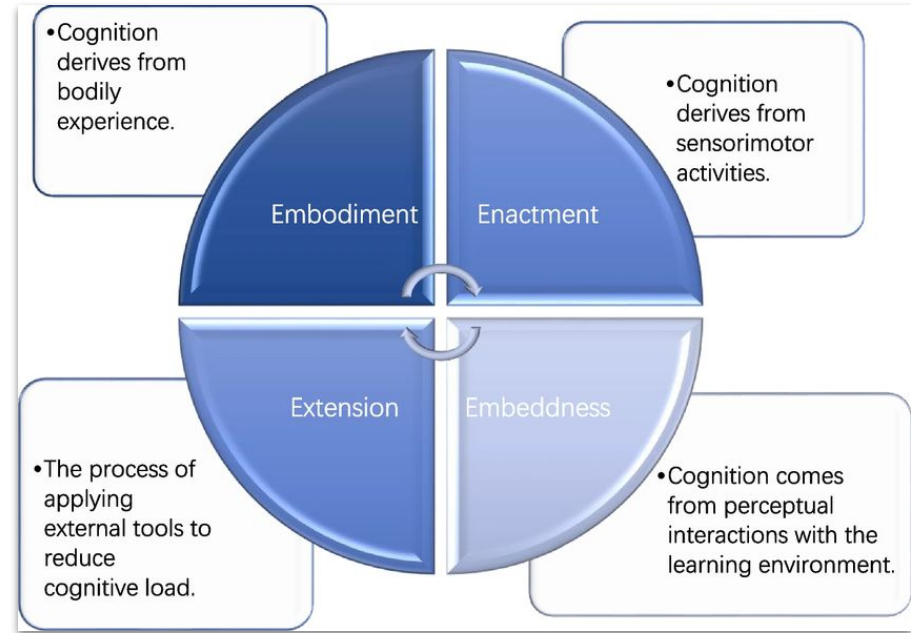
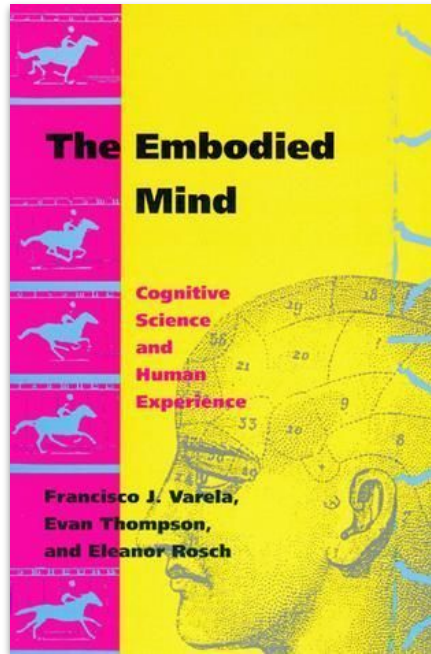


→ **Group diversity** impacts **experience, not just outcome**

→ But what about the **process**?

A note on embodiment

4E cognition: embodied, embedded, enacted, extended (Varela, Thompson, Rosch 1991)



Collective practices and the **social body**

→ **Relational practices** that foster a felt sense of the group level (“**social somatics**”)

→ **Dialogical**

- ◆ **Collective presencing / “we” spaces** (Ria Baeck)
- ◆ **Circling** (Sengstock)
- ◆ **Emergent Dialogue** (Steininger and Debold)
- ◆ **Dialogos** (Vervaeke)
- ◆ **Resiliency circles** (Feldman)

→ **Kinesthetic**

- ◆ **Social Presencing Theater** (Ayashi)
- ◆ **Awareness-Based Design** (Gonçalves 2024)
- ◆ **Systemic constellation** (Hellinger)
- ◆ **Theater of the Oppressed** (Boal)



Peer Review Article

Awareness-Based Design:
Bringing Design to Social Presencing Theater

Ricardo Dutra Gonçalves
Department of Art & Media, Aalto University
ricardo.dutragoncalves@aalto.fi

Lisa Grocott
Department of Design, Monash University
lisa.grocott@monash.edu

Dutra Gonçalves & Grocott (2024)

Relational embodiment practices



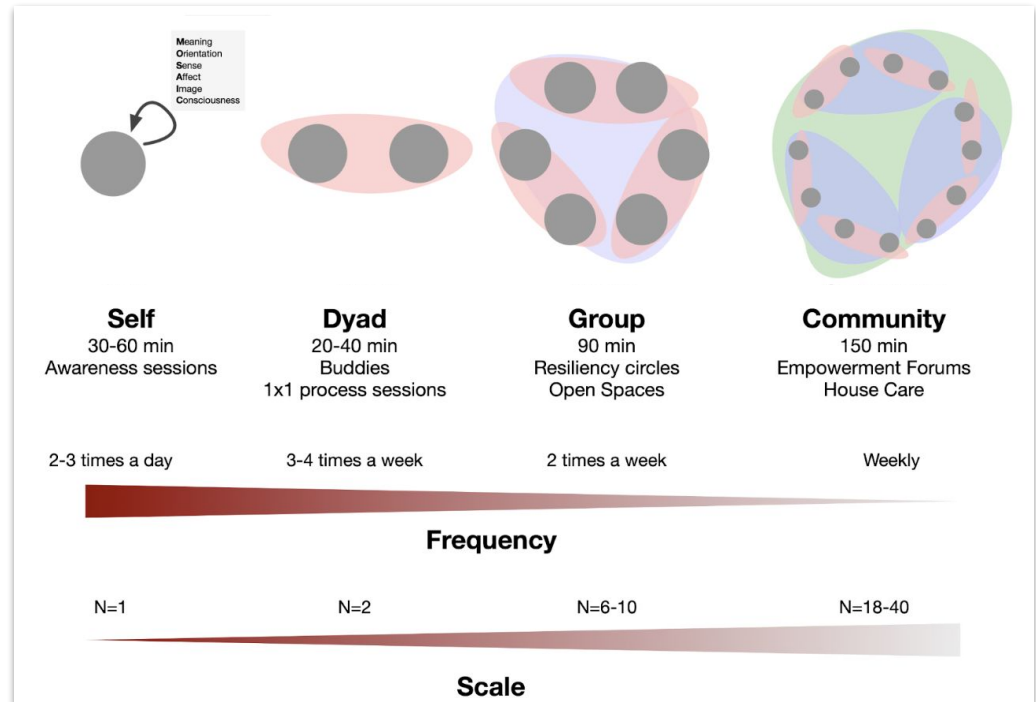
Boaz Feldman
(Cambridge)

- Residency format (2+2 weeks, 12 participants)
- Daily practices of **relational reflexivity** (“*social somatics*”)
- **Data collection as a practice** (journaling, restitution)

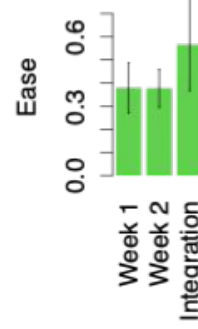
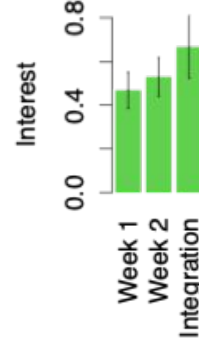
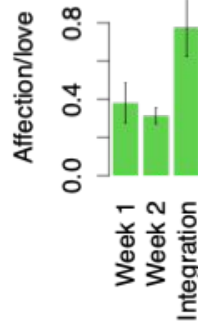
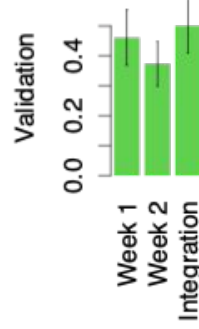
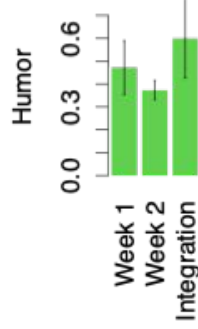
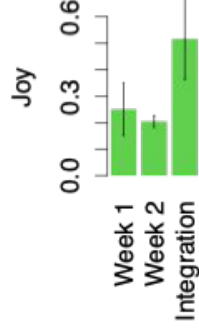
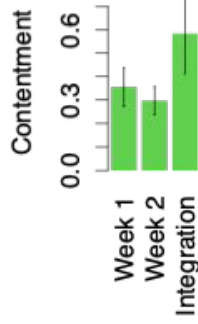
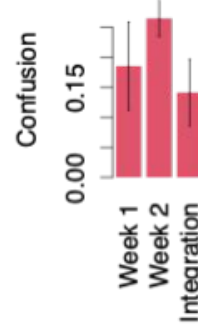
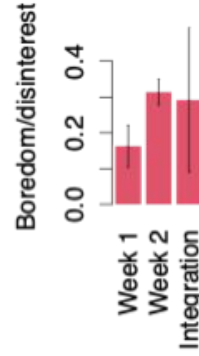
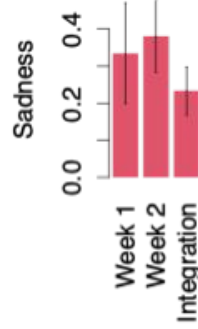
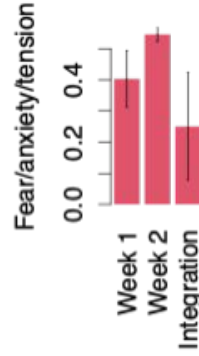
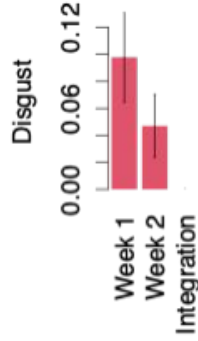
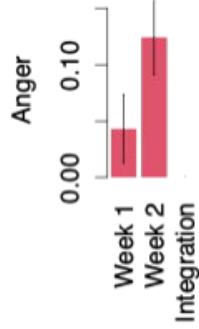
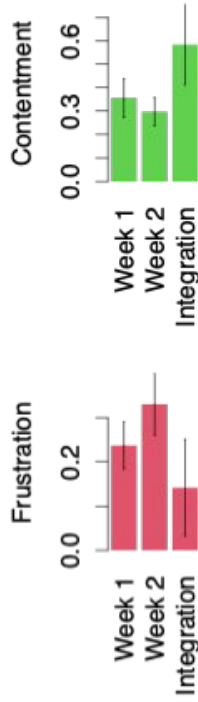
Feldman, Santolini (2026), *Social Somatics in a reflexive group context: From relational activation to integration*, in prep.

Feldman, Santolini (2025). *Beyond Individualism: A Multi-level Approach to the Inner Development Goals*. In *Inner Development Goals—Stories of Collective Leadership in action*.

Feldman., Tupikina, Santolini (2025). *From Self to Group to Community: Integrating Developmental and Multi-Level Approaches in Somatic Therapy*. *Group* (in press).



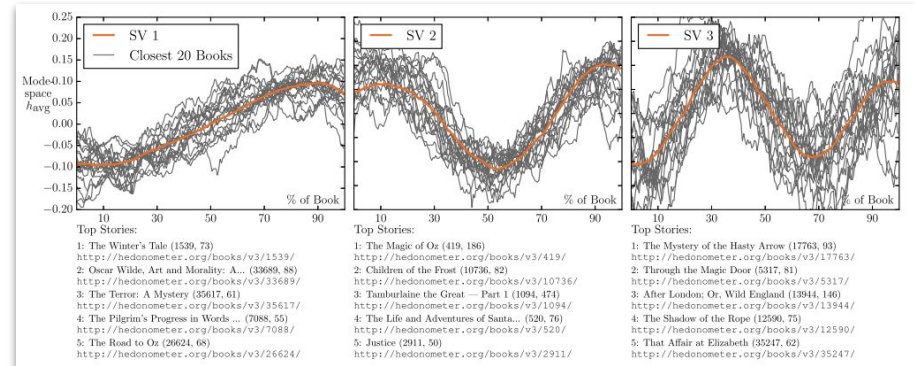
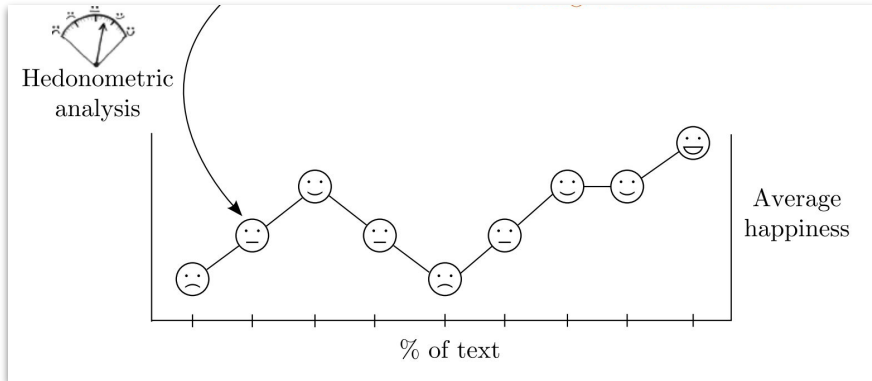
Measuring emotional journeys



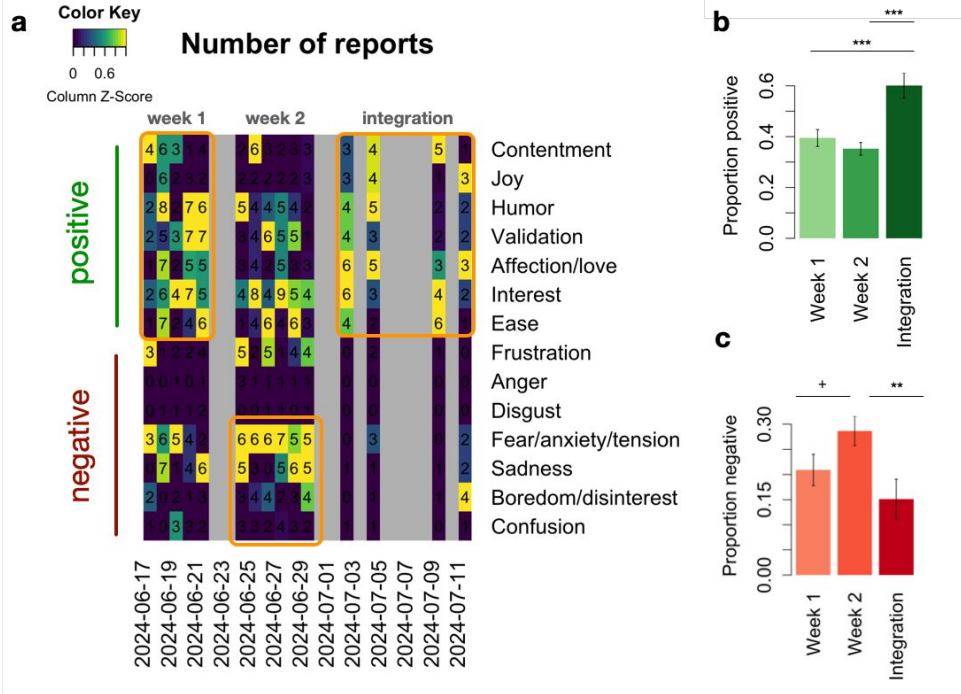
Inspiration: emotional arcs in stories

Hedonometric analysis to map the experiential “shape” of stories

Reagan et al (2016)



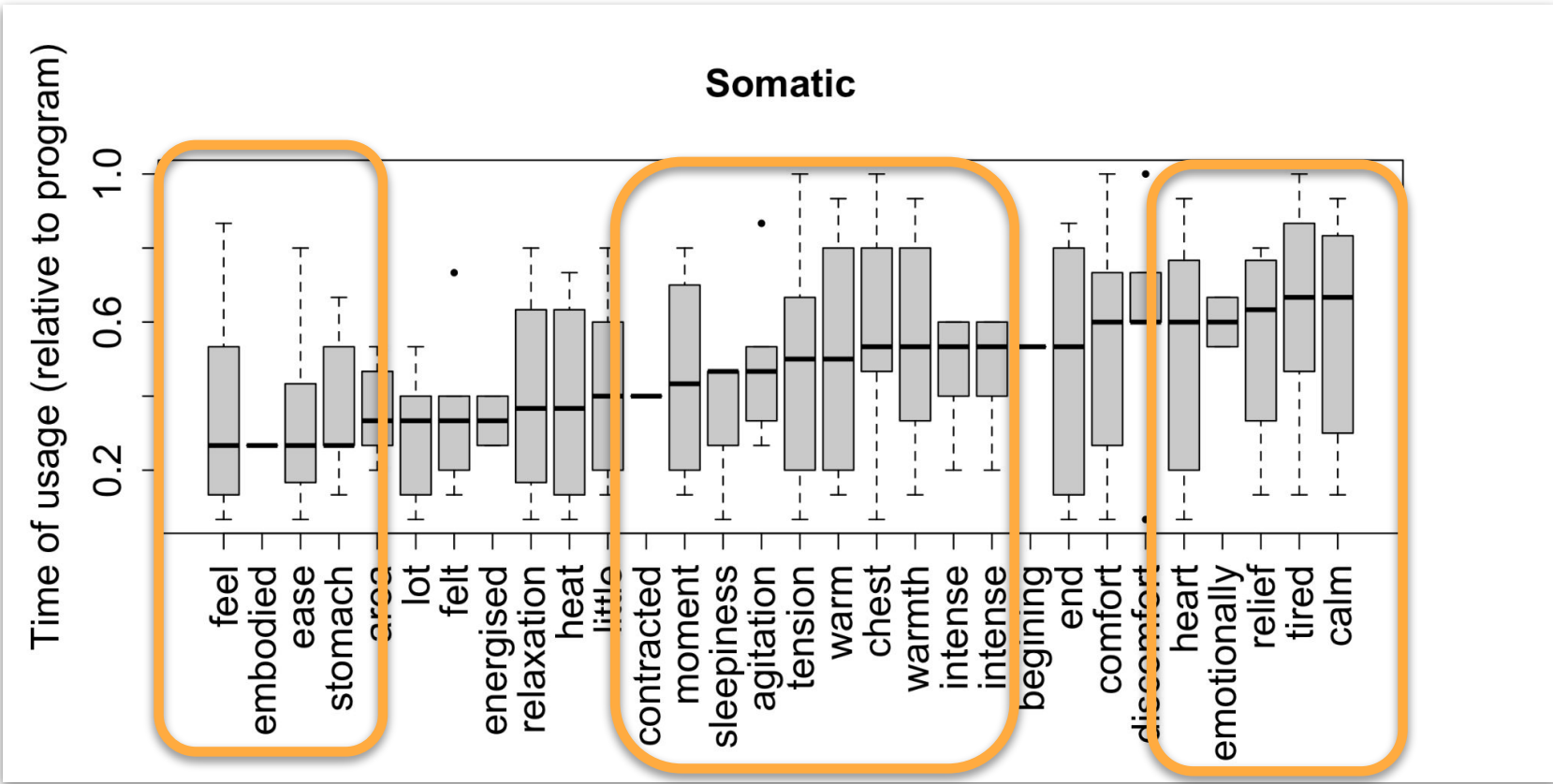
Measuring emotional transitions



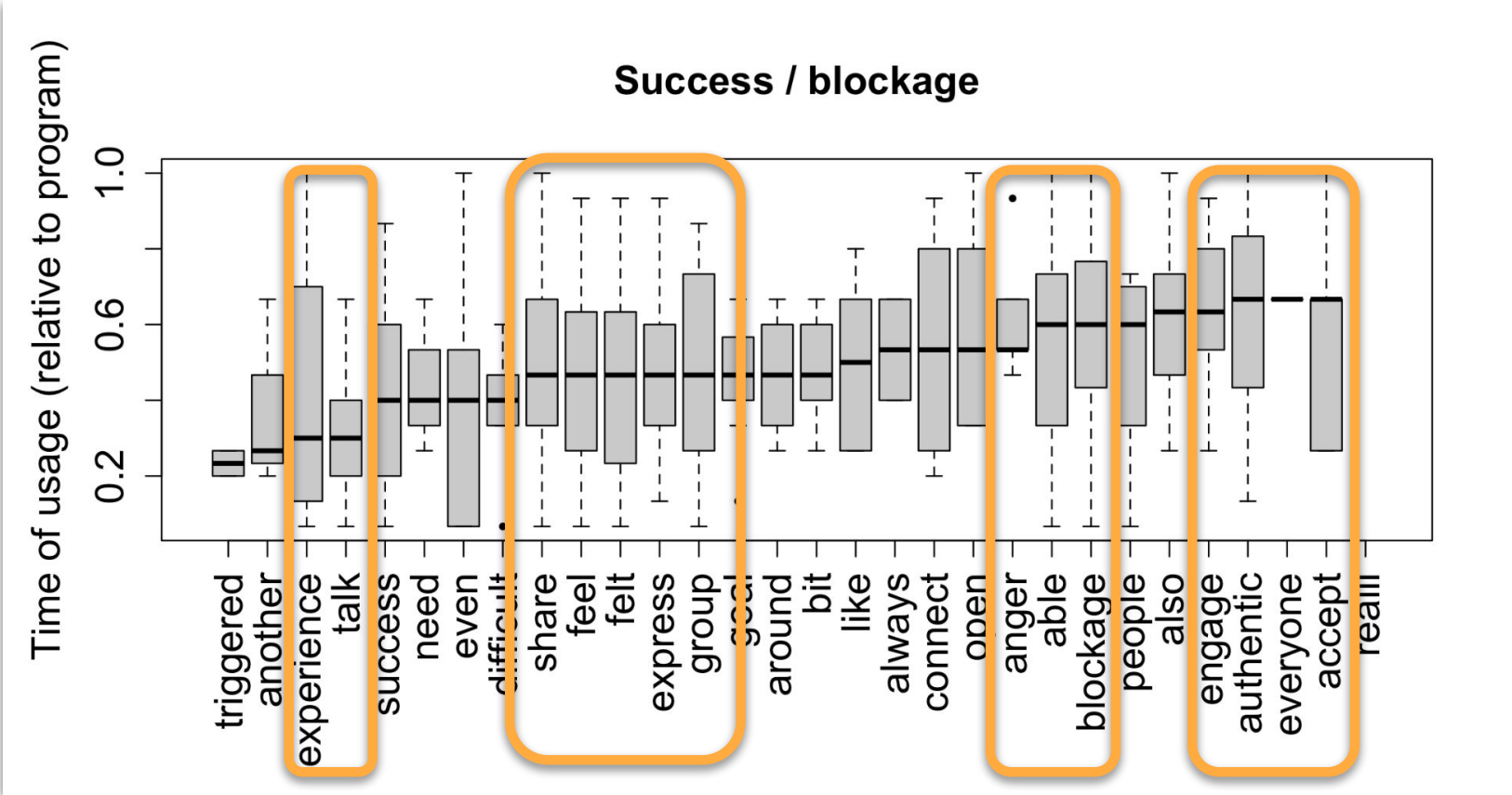
Journaling: self-reported emotions at the end of each group practice (n=137)

Emotional arc going through tension to integration (see 3rd wave mindfulness research on transforming “negative” experiences, Sparby and Sacchet 2025)

Narrative arc: somatic experiences

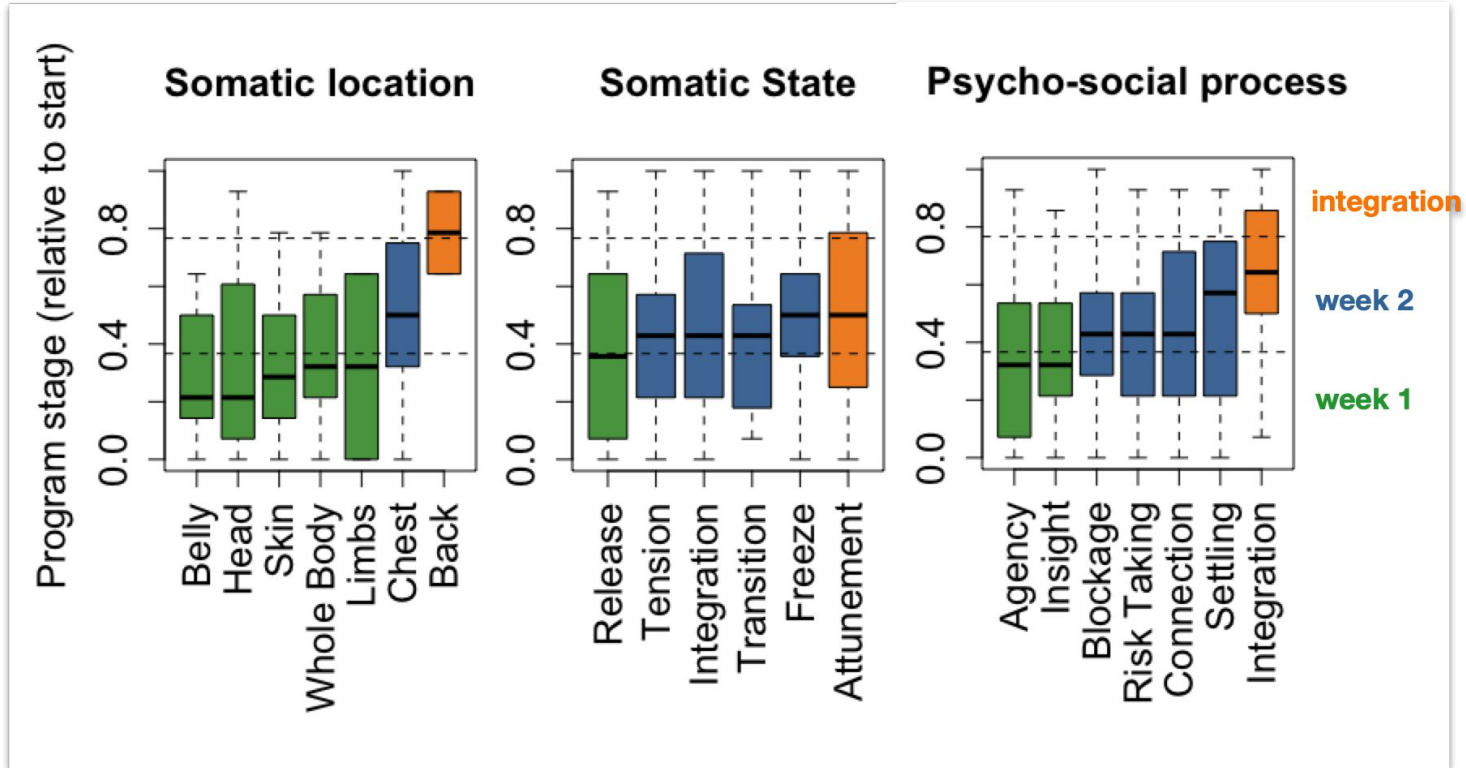


Narrative arc: success/blockage



Thematic analysis

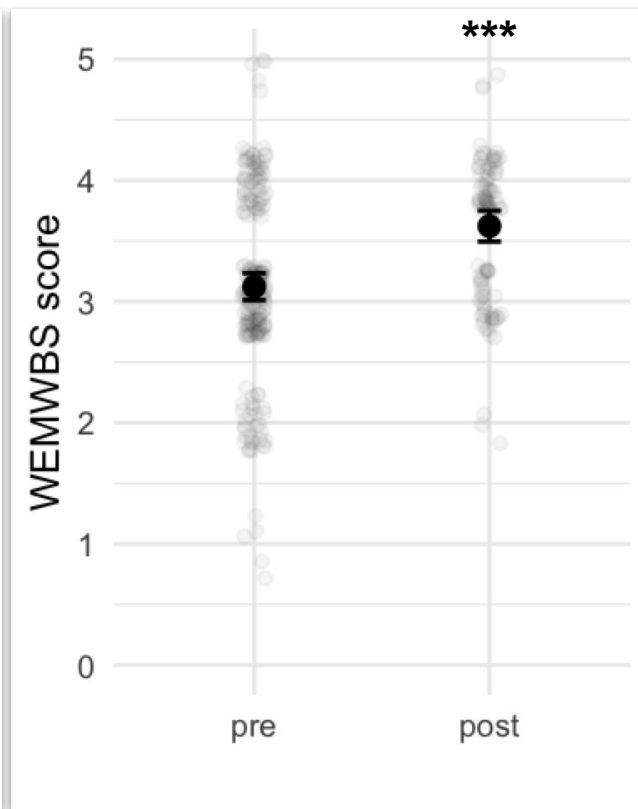
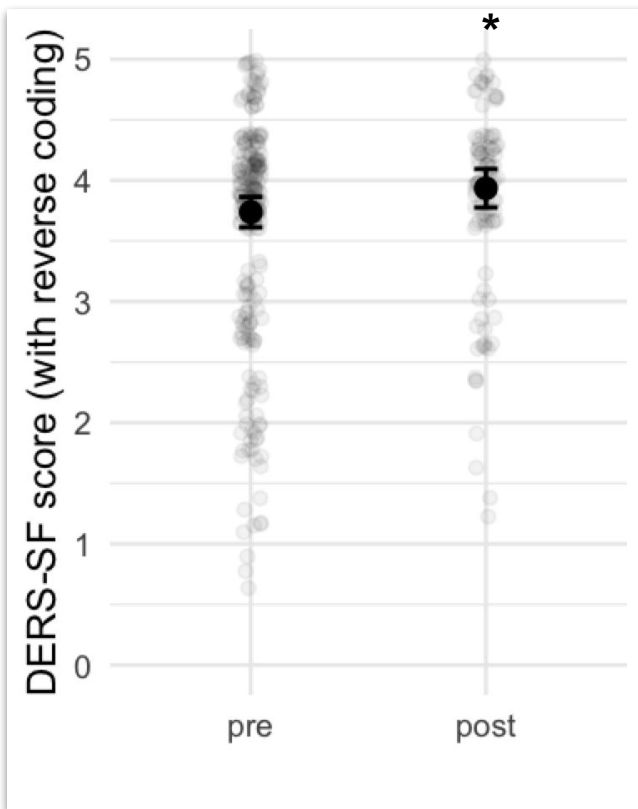
Thematic coding of qualitative insights to reveal developmental arcs



Pre-Post Questionnaires

Difficulties in Emotion Regulation Scale (DERS-SF)

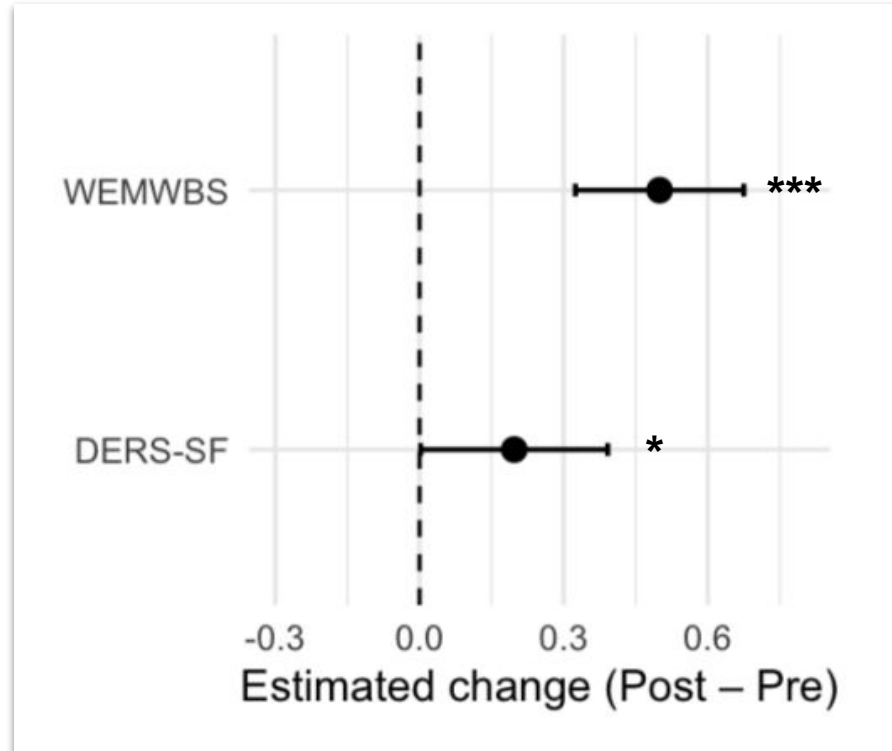
Warwick Edinburgh Mental Wellbeing Scale (WEMWBS)



Pre-Post Questionnaires

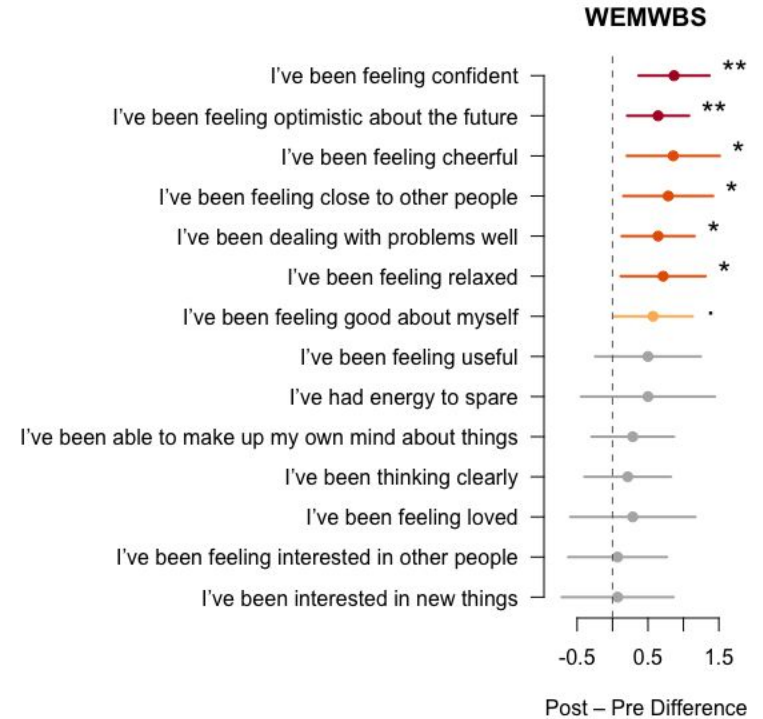
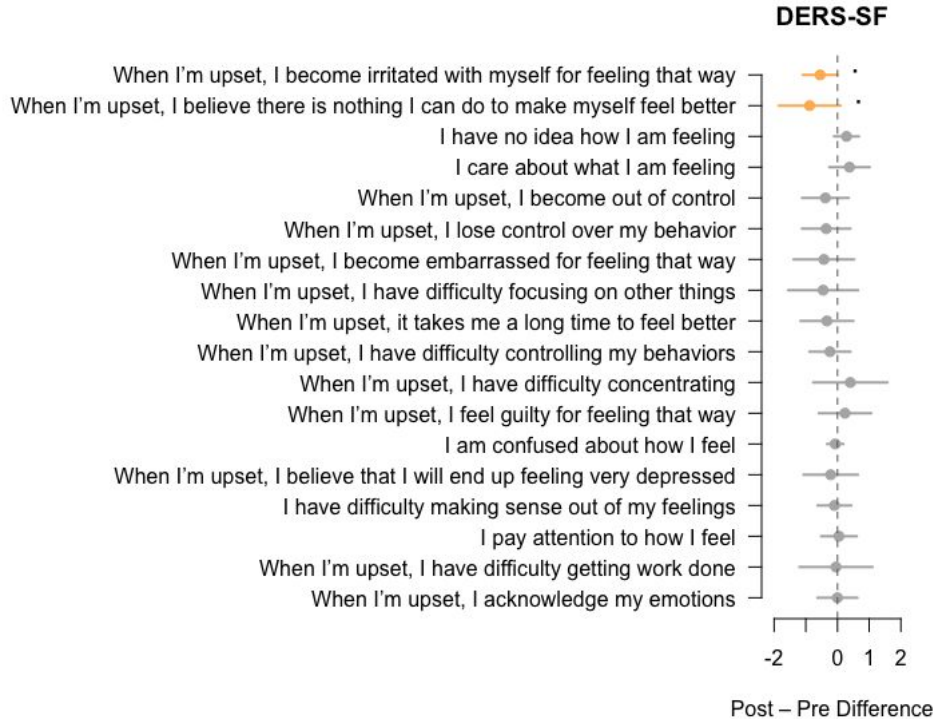
Difficulties in Emotion Regulation Scale (DERS-SF)

Warwick Edinburgh Mental Wellbeing Scale (WEMWBS)



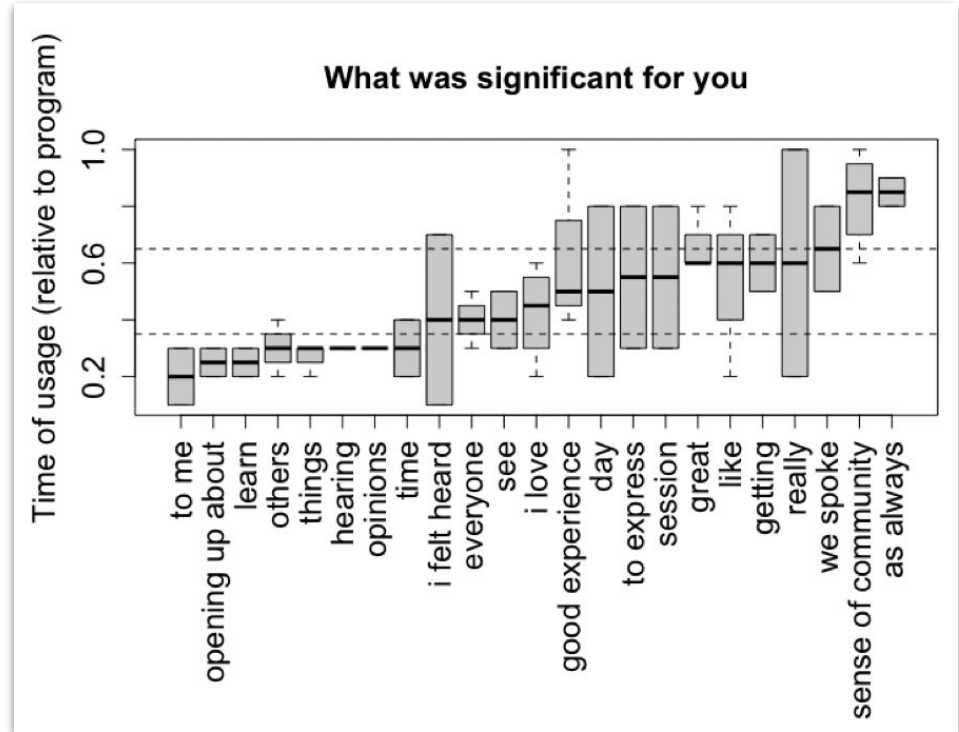
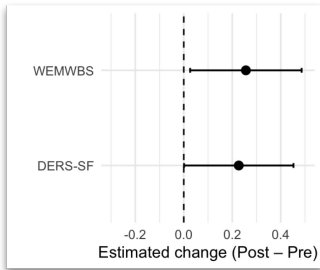
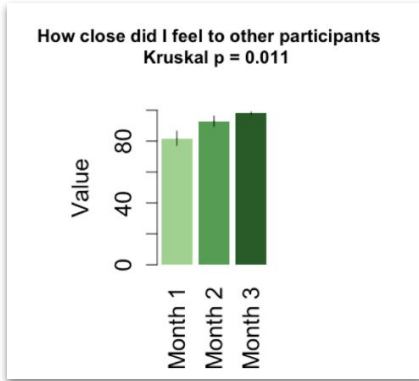
Pre-Post Questionnaires

Difficulties in Emotion Regulation Scale (DERS-SF)
 Warwick Edinburgh Mental Wellbeing Scale (WEMWBS)
 Increase in regulatory capacity, self-confidence, positive outlook



A different context: Opportunity Youth

Replication with N=21, 3 months, Opportunity youth in South Boston (2025)



Crafting Pedagogies of Togetherness

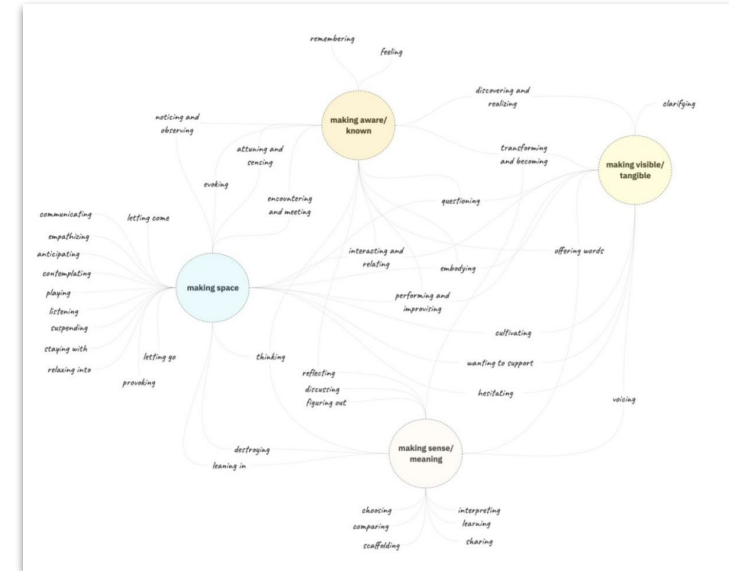
- **Erasmus+** funded program in 2025
- Prototype a **togetherness curriculum** using **social arts**
- Consortium with **Designers, Educators** from Primary to Vocational training, **Artists, researchers...**
- Europe, India, Brazil, South Africa

<https://studioatelierista.org/paris-2#residency-paris-2025>



Crafting Pedagogies of Togetherness

- Togetherness as a “**social soil**” that enables **collective sense-making and action** (Gonçalves & Hayashi, 2021).
- Role of **social arts** to foster **relational and experiential capacities** to navigate complex societal challenges (Hayashi, 2021; Scharmer & Kaufer, 2025)
- Six learning outcomes: **embodied presence; relational awareness; relational creativity; describing experience; sensing and expressing possibilities; and courage and confidence in uncertainty.**



Gonçalves, R. D., & Hayashi, A. (2021). A pattern language for social field shifts: Cultivating embodied and perceptual capacities of social groups through aesthetics and social field archetypes. *Journal of Awareness-Based Systems Change*, 1(1), 35–57. <https://doi.org/10.47061/jabsc.v1i1.478>

Hayashi, A. (2021). *Social presencing theater: The art of making a true move*. Cambridge, MA: PI Press.

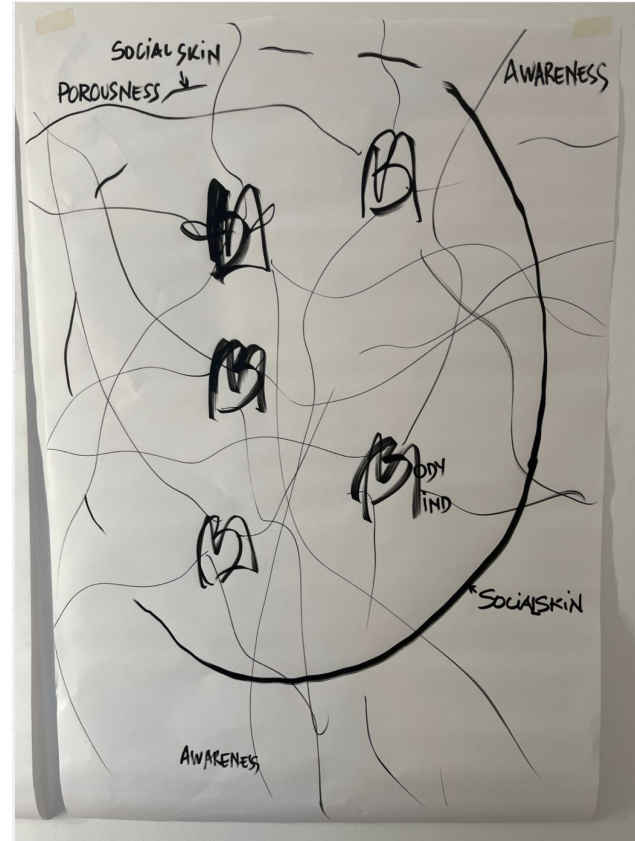
Scharmer, C. O., & Kaufer, K. (2025). *Presencing: 7 practices for transforming self, society, and business*. Berrett-Koehler Publishers.

Gonçalves & Grocott “Awareness-based design” (2024)

The social field

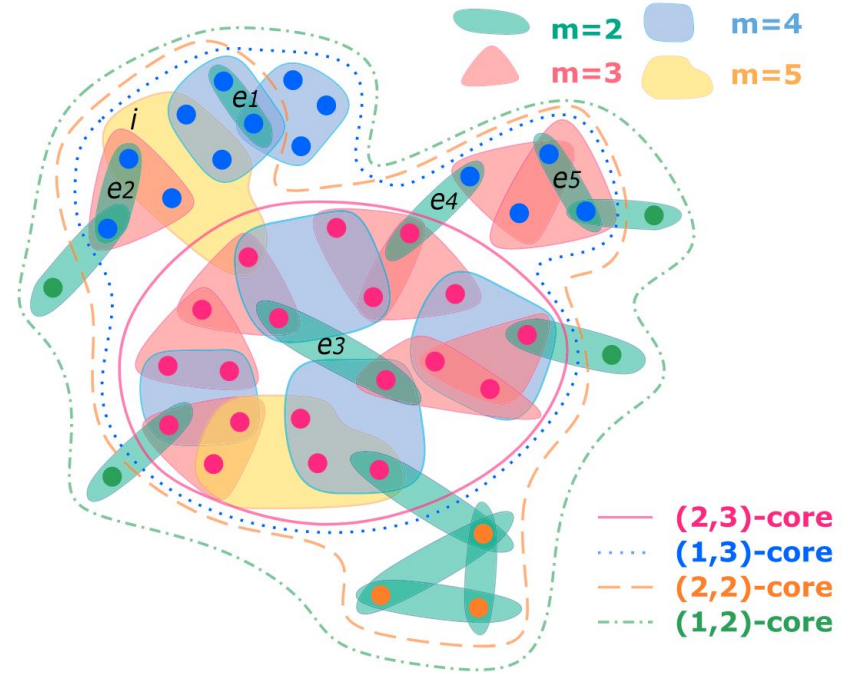


Arawana Hayashi
(Social Presencing Theater)



The social field: nested social processes

- Individuals as “**nested selves**” (Krakauer et al. 2020)
- In physics, description with **hypergraphs**, higher-order interactions... (Mancastropa 2023)

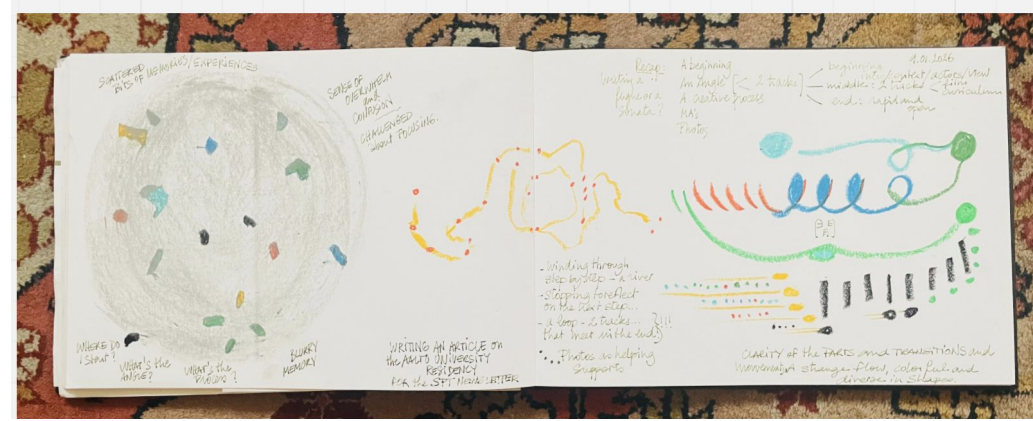


Mancastropa et al (2023), “Hyper-cores promote localization and efficient seeding in higher-order processes” *Nature Communications*

“Holding polarities” Exploring tensions and their generative potential

Embodied Futures

Involving the body in foresight practices



Facing the storm @ NYC Climate Week

Using clay to materialize relation with nature during a conference talk



Julienne DeVita, Parsons School of Design

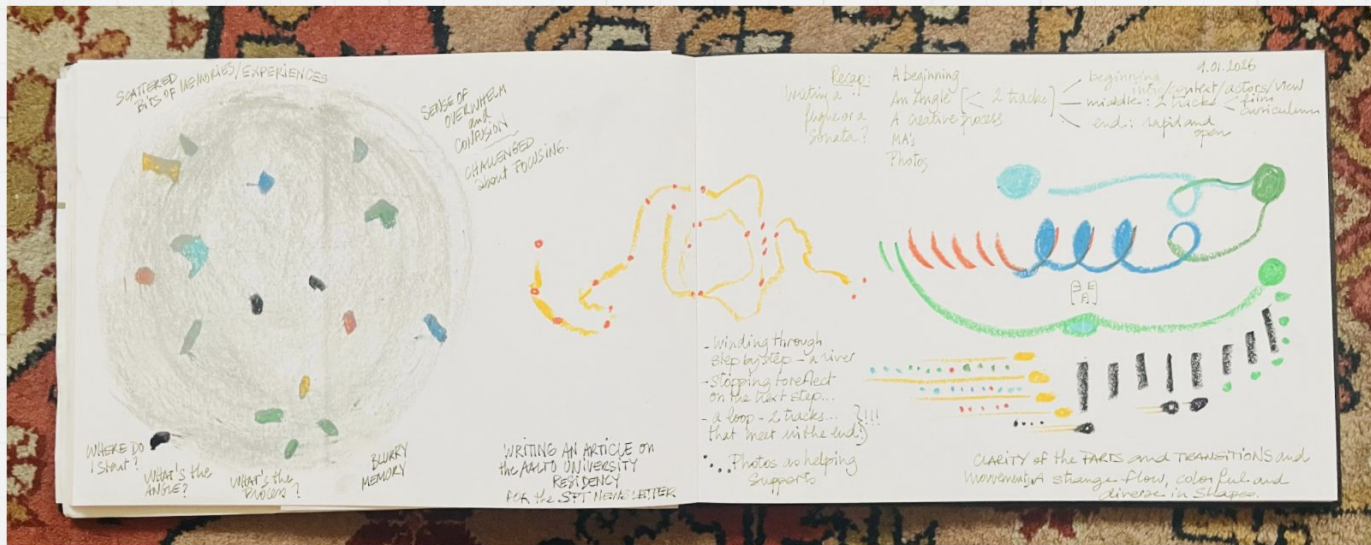


Agathe Pelterau, Ninni Sødahl, art-researchers



“Holding polarities”

Exploring tensions and their generative potential



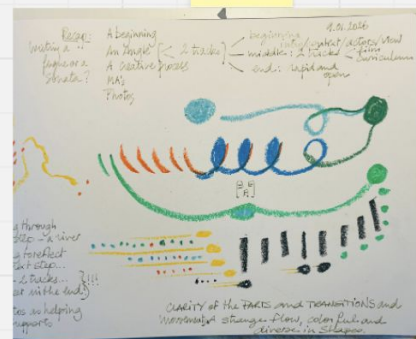
Drawing 1: state of stuck

Drawing 3: bridging both

Drawing 2: State of Flow



Agathe Pelterau, Ninni Sødahl



Social arts as a research practice

Material awareness in design practice: integrating embodied learning and aesthetic sustainability

STORYTELLING EMBODIED COGNITION SOMATICS ART 2023-2024 EMPATHIC DESIGN +4

We explore how embodied knowledge and bodily experience are integrated into design education and research with the aim to connect theoretical frameworks and expert insights.

Public: visible to any visitor of the website

4 12

Use of SPT Stuck practice as part of research protocol

Link to [Project](#) and [Report](#) by Louise Massacrier and Zoe Lina Wehmeyer

MATERIAL AWARENESS IN DESIGN PRACTICE

Integrating Embodied Learning
and Aesthetic Sustainability

Soma Design and the documentation of body awareness

BEFORE ----- **AFTER**

Please illustrate how you experience your body.
Feel free to add your own words!

BEFORE

- COMPACT
- SYMMETRIC
- THIRSTY
- HEAVY
- SMALL
- JITTERY
- BIG
- SOFT
- ASYMMETRIC
- UNBALANCED
- BALANCED
- LIGHT
- STIFF

Arched my spine

heavy

Over cautious or heavier than the rest of the body

AFTER

- COMPACT
- SYMMETRIC
- THIRSTY
- HEAVY
- SMALL
- JITTERY
- BIG
- SOFT
- ASYMMETRIC
- UNBALANCED
- BALANCED

Energy of pulse

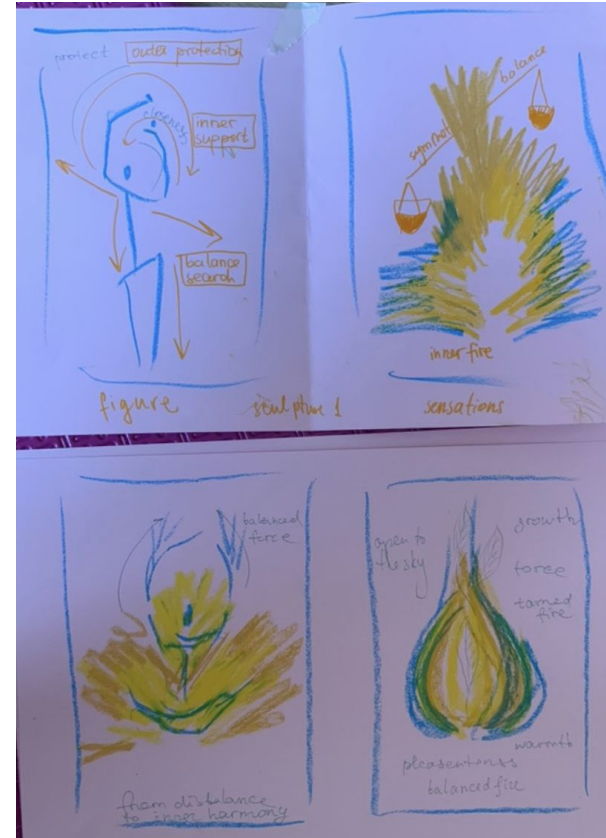
A shell dispersing what I have that got inside

Great sense of my joints

Body awareness documentation

Body Scan
Done with closed eyes and involves a set of questions to focus your attention to particular body parts. Followed by documenting on the Body sheet.

Tsaknaki et al. (2019). Teaching Soma Design.



Restitution from SPT "Stuck" practice, Paris

EMBODIED METHODS ANALYSIS

The individual stuck is a practice from the Social Presencing Theater, where the practitioner lets their body incarnate a defined struggle and one of its potential future. The practice puts the body at the forefront of sense-making. During the research, the stuck was practiced alone by each researcher, recorded, then shared with each other. In response, the other would send a word corresponding to the first word coming for the “from” pose and the “to” pose.

	Openness		Height of the pose		Body direction towards the camera			Face direction towards the camera		
	closed	open	up	down	facing	right	left	facing	right	left
Zoe -from	10	3	7	6	8	1	4	4	2	7
Zoe -to	4	9	11	2	10	0	3	4	2	7
Louise -from	7	6	1	3	7	4	2	1	9	3
Louise -to	3	10	8	5	7	2	4	3	3	7

A total of 52 different poses were recorded, representing 13 days of practice spread across the first two months of the research. Those poses are separated into 2 intentions: The first pose is the “from” or current embodiment of a stuck, the second pose is the “to” or emerging future of the stuck.

EMBODIED METHODS ANALYSIS



Archetype 1: -from
Closed up
(body) facing
(face) right

Archetype 2: -to
Open up
(body) facing
(face) left

EMBODIED METHODS ANALYSIS

This first analysis has many limitations. Its primary objective was to explore one way of analysing the stuck pose in relation to the research. No triangulation was done when it would be necessary to enhance the fidelity of the parameters. Furthermore, the recordings were done in the span of two months: a longer period of time would give a better overview on the potential benefits/transformations of such techniques on the research itself.

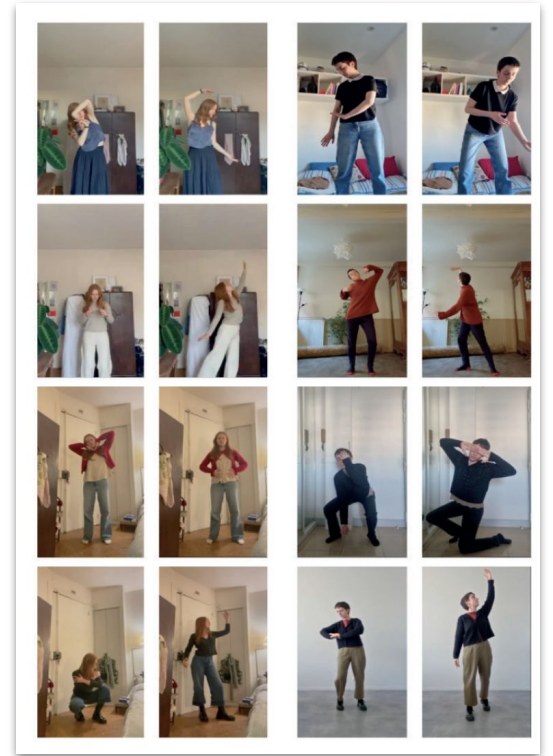
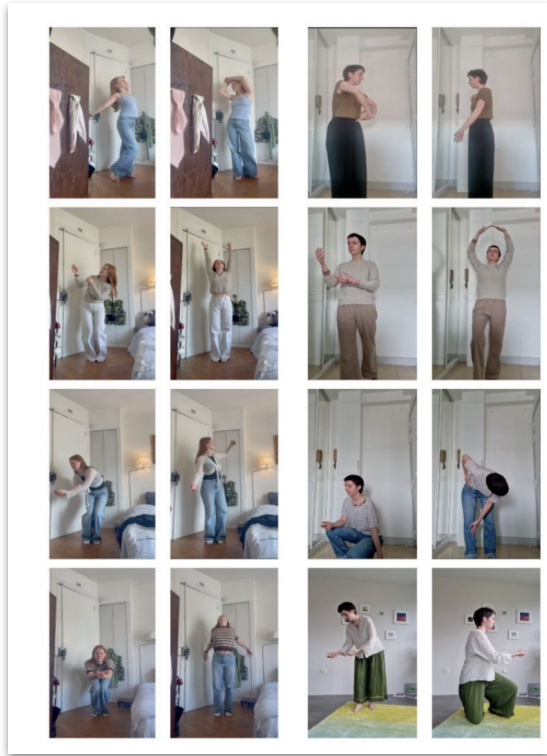
FROM

Restricted, contrast, torn, attentiveness, loath, rest, tribes, protection, inflating, trials, cryptic, connection, crawl, quietness, theorising, expectations, caring, questioning, success, care, caring, shifting, receiving, toning down, stability, extent

TO

Grow, grounding, fusion, let it go, choice, instinct, belief, decision, openness, humility, poised, offerings, shine, confidence, conductance, freedom, allowing, regret, horizon, truth, respecting, giving, expanding, longing, intention

However, practicing the individual stuck and sharing with teammates did enhance the trust and collaborative aspect of the work. It allowed for deepening the connection to embodiment and the subject of the research itself. Further explorations should include journaling alongside the stuck practice in order to track the inner state of the researcher as well during a longer timeframe.

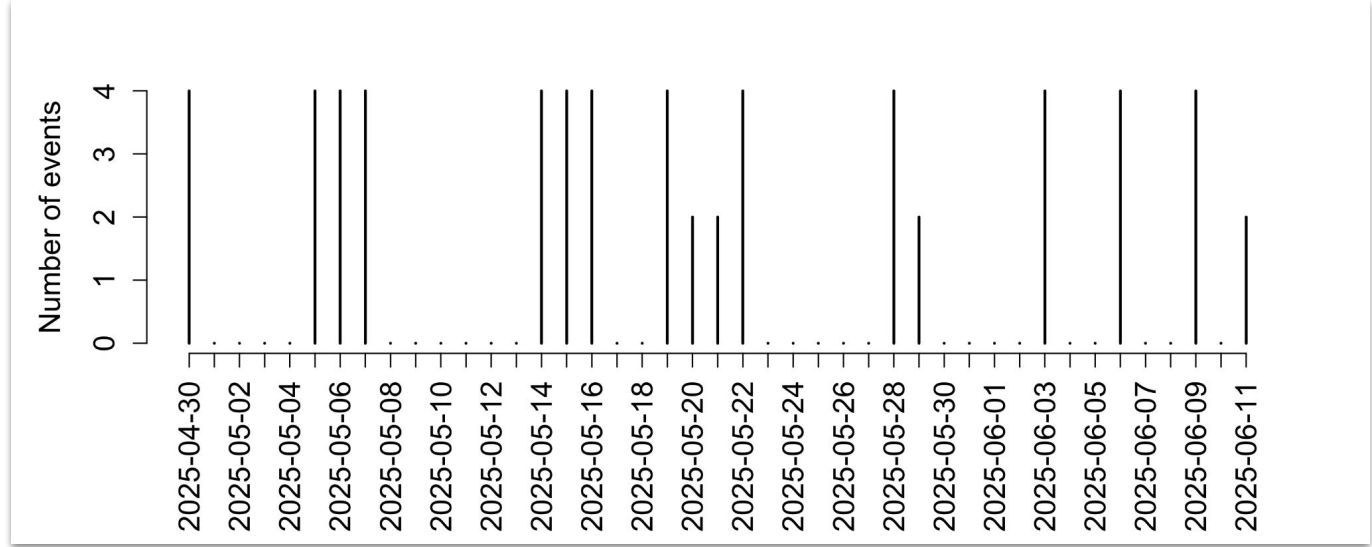


Wehmeyer, W., Zoe Lina, & Massacrier, L. (2025). Material Awareness in Design Practice: Integrating Embodied Learning and Aesthetic Sustainability. Master Thesis, Learning Planet Institute.

Overview of the data

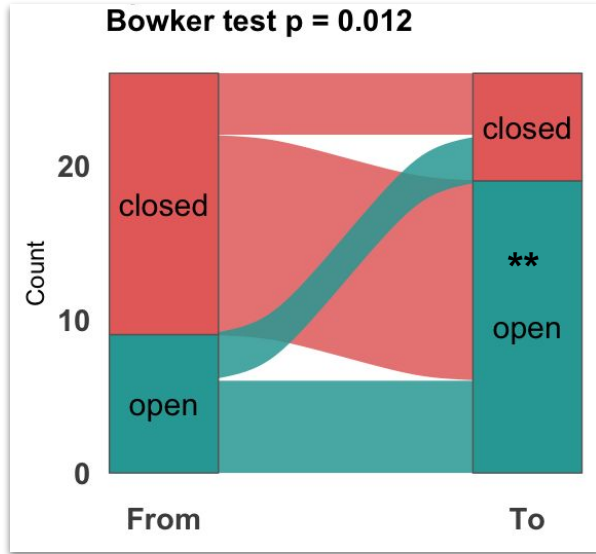
Usually 2 persons (Zoe and Louise) report, so 4 max per day.

We have a total of **N=52** documented reports

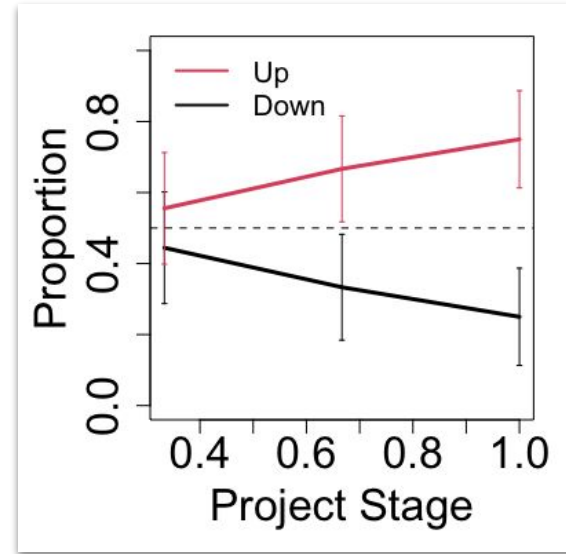


Impact of “Stuck” SPT practice

“Opening-up”



Posture rising up during program



“Stuck” narratives...

From

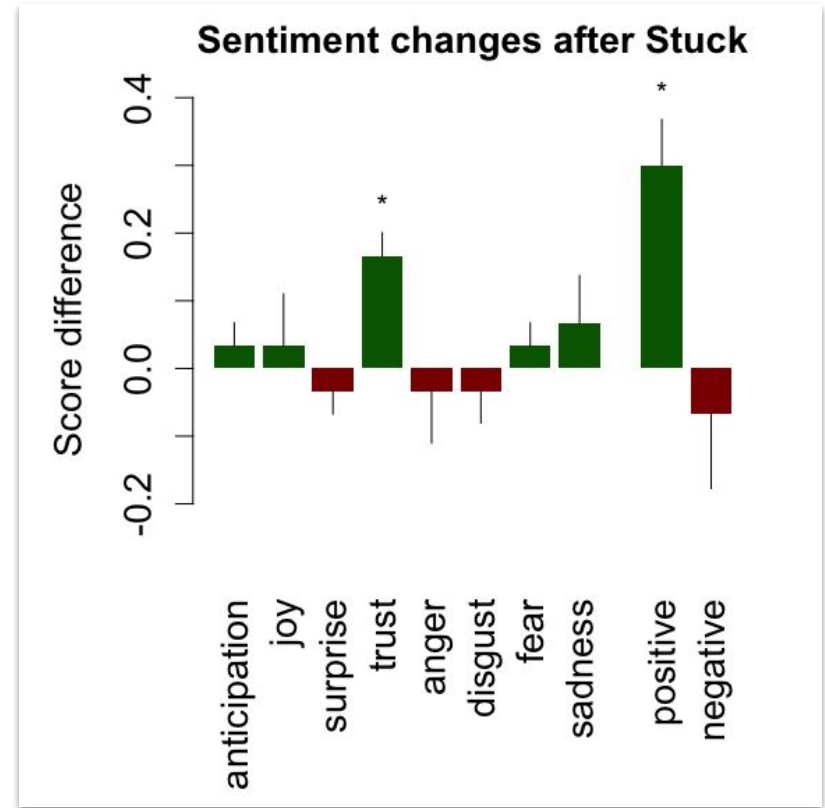
success quietness
inflating questioning
loath connection trials
crawl carerest torn
receiving **caring** stability
attentiveness shifting
contrast extent
expectations toning
protection theorising
restricted

To

respecting
regret openness
humility grounding
expanding
instinct confidence
horizon allowing poised
conductance
grow belief freedom
shine choice
decision giving
truth fusion longing
intention offerings

Sentiment analysis

- Comparing word after vs before Stuck practice
- Sentiment analysis
- Significant increase in **trust** ($p < 0.05$) and more positive words



Longitudinal analysis

- The starting word trends to switch from negative to positive in time
- Arrival is pretty constant positive

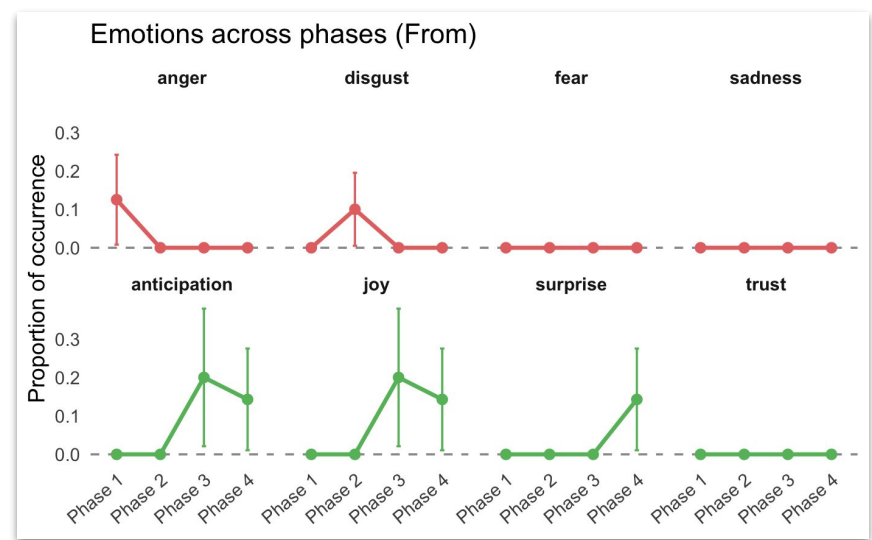
→ It seems that across time, there is a change in the valence emanated by the **starting posture from more “negative” to more “positive”**



Longitudinal analysis

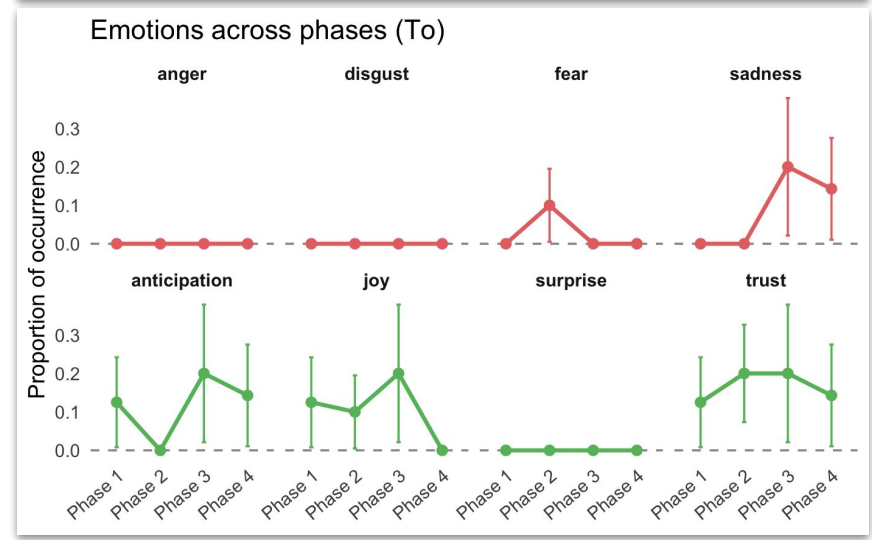
From:

- negative emotions decrease
- Positive emotions increase (especially anticipation and surprise as the project progresses)



To:

- trust and joy are constant
- arising of anticipation and sadness as project closes



→ Possible mediating role of trust / joy to support unknown (anticipation) and challenging emotions (sadness)

Summary

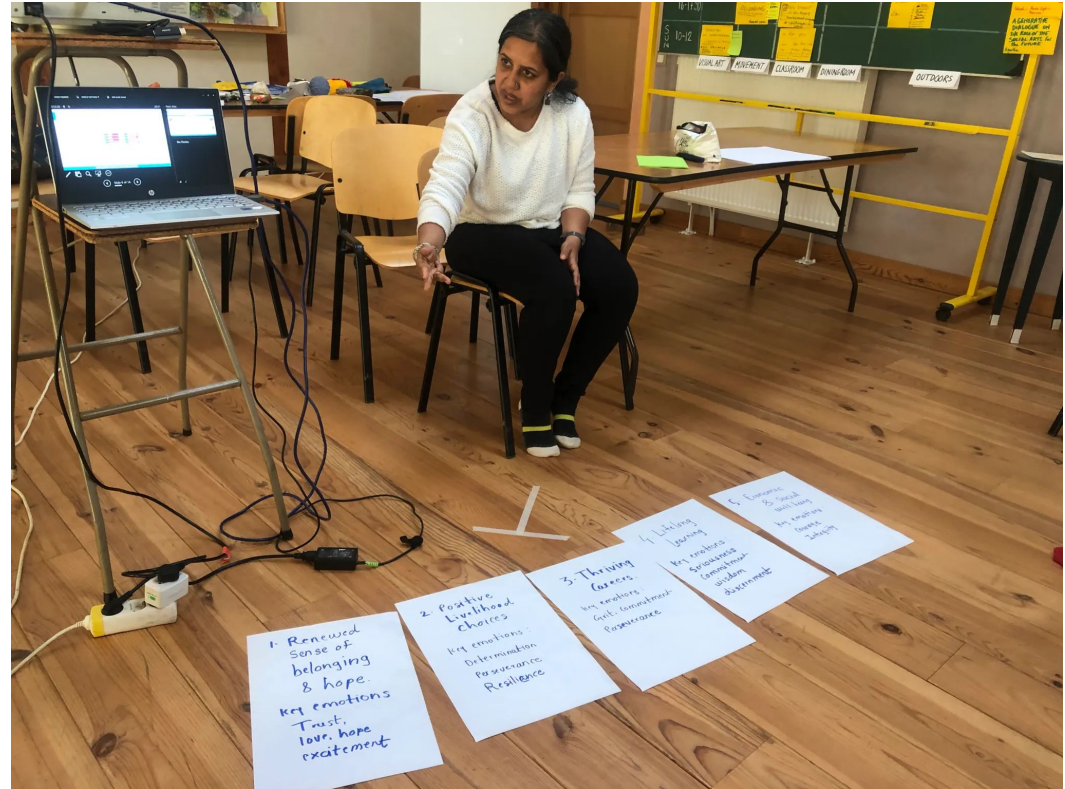
- Early stage works - **pilots** and **prototypes**
- **Longitudinal analysis** uncovers **narrative arcs** of developmental shifts, from self to relational awareness
- The process of documentation (**Restitution / Journaling**) is itself **part of the process of self/social-awareness**, and somatic and emotional literacy
- Generative role of working with **tensions** and **polarities**
- Value of **art-research** (aesthetic knowing) alongside more **quantitative** approaches

Perspectives: vocational training



Amruta Bahulekar

- Lighthouse Community, India
- 15k Youth / year
- Measure impact of embodied practices on agency and life skills
- Surveys, interviews, narrative elicitation



1. Renewed Sense of belonging & hope
Key emotions
Trust, love, hope excitement
2. Positive Livelihood Choices
Key emotions
Determination
Persistence
Resilience
3. Thriving Careers
Key emotions
Self-Confidence
Resilience
4. Lifelong Learning
Key emotions
Curiosity
Persistence
Resilience
5. Empowerment
Key emotions
Self-Confidence
Resilience

Perspectives: Curriculum design

4D System Mapping - stakeholders, dynamics

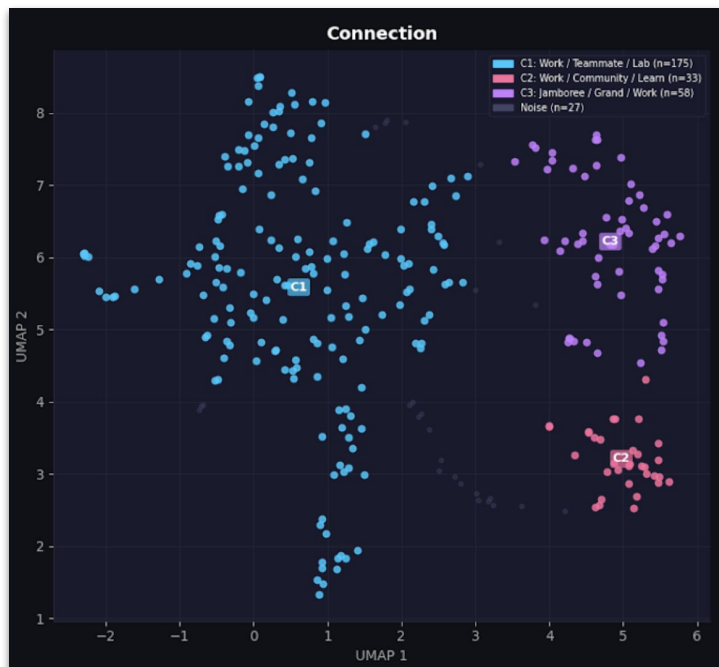


Recording practices in Aalto University (2025)



Perspectives: broad listening for narrative analysis

Embedding methods, hierarchical clustering and semantic summary on large scale free text corpora



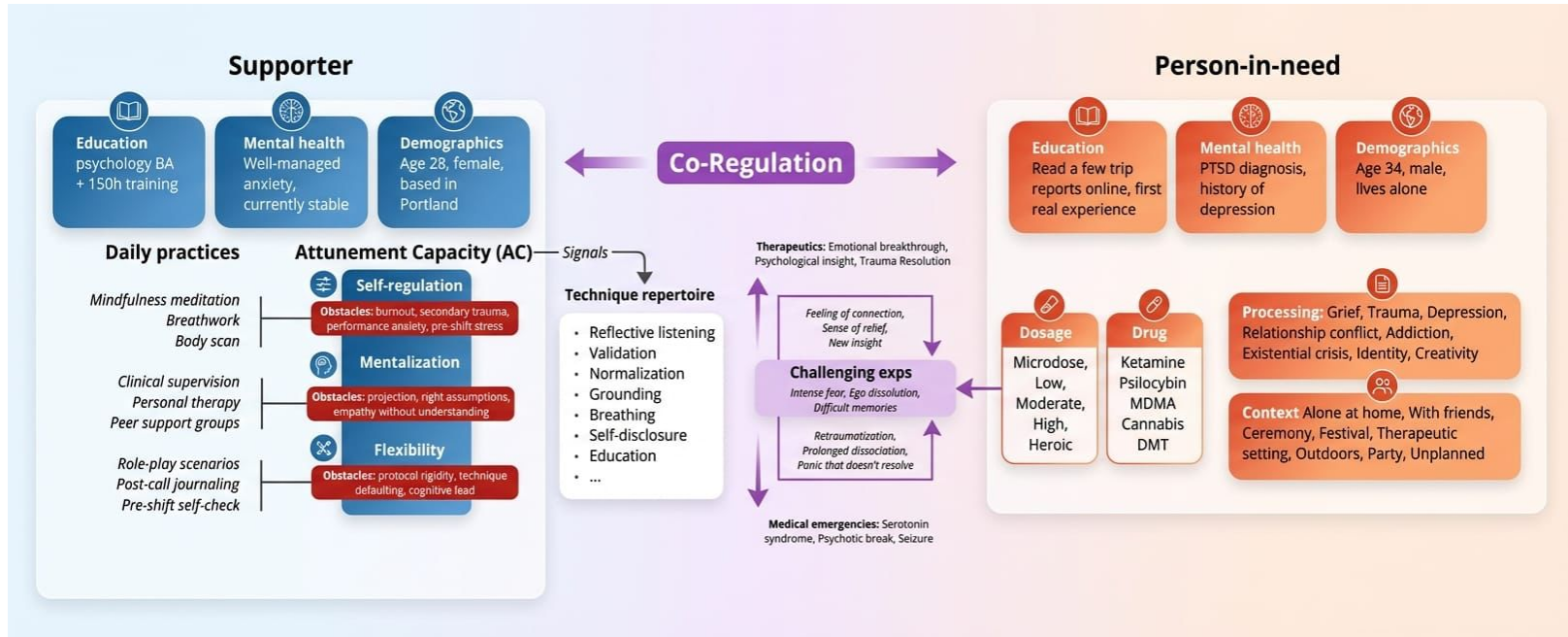
Perspectives: care training

Fireside Labs - Research on training program for volunteer support of individuals with challenging psychedelic experiences → How to **train presence in care**?

The Fireside Database: Large-Scale Evidence from 25,419

Psychedelic Support Interactions

Felix Schoeller^{1*}, Marc Santolini^{1,2,3}, Dana Xiadani¹, Mickael Eskinazi^{1,4,5}, Ashwin Murali¹,
David Esselman¹, Houtz Wyatt^{1,6}, Wesley Belanca¹, Joshua White¹



Perspectives: embodiment in the classroom

Figure 2

Women's Rights Group performing a routine captured in three frames over time



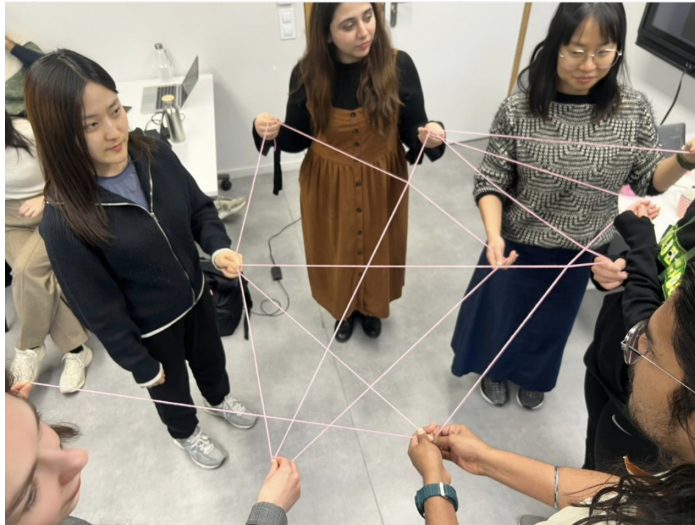
International Society of
the Learning Sciences

Dancing with Data: Embodying the Numerical and Humanistic Sides of Data

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Megan Silander, Education Development Center, msilander@edc.org

Perspectives: **embodiment** in the classroom

- **Data Science class:** representing data visualisations using the body
- Social arts for exploring leadership and supportship (w/ Agathe Pelterau)
- **Playful campus** Student Club
-



An abstract drawing on a light-colored background, featuring several vertical columns of overlapping, colorful scribbles in shades of red, blue, green, and yellow. A semi-transparent white rectangular box is centered over the drawing, containing the word "Thanks!" in a bold, black, sans-serif font. The overall style is expressive and gestural.

Thanks!

speaking while moving.

A practice!

- Groups of 3
- Prompt: “What is my relation to emotions in learning?”
 - ◆ Focal person talks (2 min)
 - ◆ 1 person **listens to facts**, restitution (1 min)
 - ◆ 1 person **listen to emotions and energy**, restitution (1 min)
 - ◆ Focal person restitution (1 min)
- Rotate roles (left)!
- 3 rounds
- Feedback to main group

Scharmer's 4 Levels of Listening

