TEAM POWER ASYMMETRY, EGALITARIANISM, AND TEAM LEARNING:
THE MODERATING ROLE OF ENVIRONMENTAL HARDSHIP

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- PhD - Industrial/Organizational Psychology (Michigan State University, USA)
- Expertise: Psychometrics, Selection & Training and Team Performance
- Focus: Effects of team composition, team processes (Voice, Conflict and Power) on team decision-making, learning and performance

- Over 15 years at DSTG – Land Division / Joint Operations and Analysis Division
- Worked closely with Maya Drobnjak, Paul Lancaster & Steven Talbot
- Topic: Organizational Learning
- Data: over 4000 individuals; two waves of data; nested within operational units (multi-level paradigm)

Australian Government
Department of Defence
Science and Technology

WHAT MOTIVATED US TO EXPLORE POWER AND LEARNING AT THE TEAM LEVEL?

LEARNING predicts PERFORMANCE

- Operational units are TEAMS – Team learning is a form of adaptability and change and is key for performance

- **Majority Work:** Focuses on individual level of analysis – individual cognitive performance

POWER ASYMMETRY in UNITS– is an explicit reality in these ARMY TEAMS

- Defence Forces are hierarchical – within team asymmetry in rank/positional power

- **Literature:** Power asymmetry → lower upward voice and information exchange → performance decrements

INTRIGUING QUESTIONS:

- What are factors that can reduce the negative relationship between team power asymmetry and team learning climate?

- Under what circumstances can "Egalitarianism" emerge- even when there is structural asymmetry of power – so that team learning is not hurt?

WHAT ARE THESE CONSTRUCTS? DEFINITIONS!

- **Team Learning: Climate Variable -** Shared perception of norms – encourage engagement in expansive patterns of thinking, inquiry, dialogue and mutual sharing of knowledge – with a focus on detecting failures, incorporating feedback and learning as a collective *(Edmondson, Bohmer & Pisano, 2001)*

- **Team Egalitarianism:** Shared perception of a current team state of interactional equality- wherein members feel respected and treated as equals *(Kozlowski, Gully, McHugh, Salas, & Cannon-Bowers, 1996)*

- **Team Power Asymmetry**: Differentiation of formal power among members within a team- *e.g. denoting variance of ranks.*

- **Environmental Hardship:** Continuous experience of adversity in which multiple, dynamic, ambiguous and complex events occur in the external environment which exceed the team's capacity to prevent causing extensive (or potentially extensive) psychological, material or physical harm.

CLIMATE FOR TEAM LEARNING

- Shared collective perception of norms supporting expansive patterns of inquiry/dialogue around mistakes; mutual sharing of knowledge – with a focus on incorporating feedback and learning as a collective *(Edmondson, Bohmer & Pisano, 2001)*

- Known predictor of operational performance and adaptability in volatile environments

    - Known antecedents of team learning climate:

Team Goal Setting & Norms

Team composition (on traits)

Team leader behaviour

Hierarchy Team Power asymmetry??

WE KNOW A LOT ABOUT INDIVIDUAL POWER

- "asymmetric control over valued resources in social relations" (Magee & Galinsky, 2008); captures the relative state of dependence and influence between two or more parties.

Formal power

- RANK - Coercion & Reward
- Resources (e.g. budget, time etc)

Informal power

- Referent Power: Liking; Status
- Information/ Expertise

Organisational psychology/management

POLITICAL SCIENCE
Niccolò Machiavelli (1469, 1527)

PSYCHOLOGY
William James (1842, 1910)

John Dewey (1859, 1952)

Aristotle (384–322 BC)

Karl Marx (1818, 1883)

PHILOSOPHY

POWER

SOCIOLOGY

Plato (born 429 / 423 BCE)

Émile Durkheim (1858,1917)

John Stuart Mill (1806, 1873)

LAW

Max Weber (1864, 1920)

ANTHROPOLOGY

TEAM POWER – Whole is more than the sum of its parts!

A. Team Power Level

- Aggregated level of member team power
  - Mean/Average

B. Team Power Asymmetry

- Power differences among members within a team
  - Standard deviation

- **POWER ASYMMETRY:** Form of Hierarchy – Rank differences: visible, explicit, inert, overt and important in the Army

- **Conceptualization:** Global & objective property of the team; not perceptual

- **Effect on Team Processes and Performance** – not the same as the effect of Individual Power or the Aggregated power of individuals!!

A Double Edged Sword!

TEAM POWER ASYMMETRY: A "DOUBLE EDGED SWORD"

BENEFITS: Functionalist

- Increases social order:

    - Reduce role ambiguity
    - Clarifies expectations
    - Division of labor: role specialization

- Increases coordination

    - Clarity of decision authority ; communication lines
    - Compliance norms for decision process

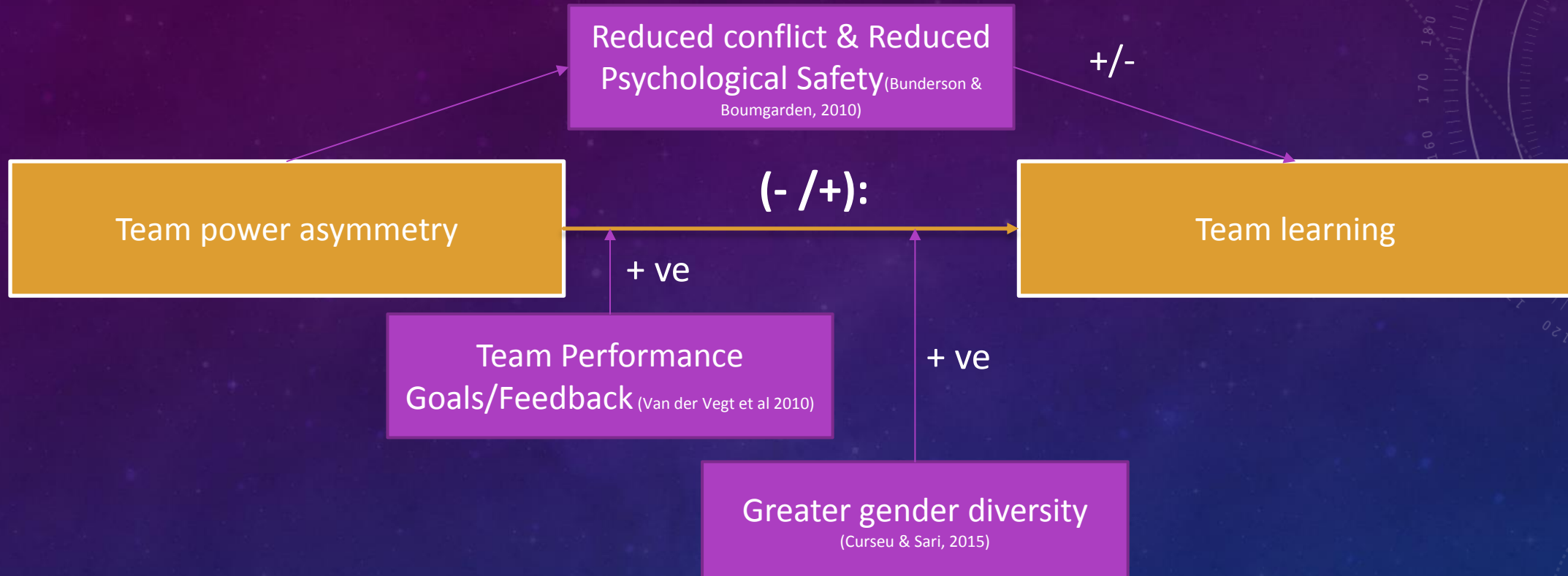- Increased efficiency of team performance (see reviews by Magee & Galinsky, 2009; Halevy, et al, 2011)

COSTS: Relational

- Increases psychological distance

    - Reduces approach and increases avoidance (review by Greer, 2014)

    - Reduces overall team communication (Greer & Van Kleef, 2010)

- Reduces organizational innovation (meta analysis by Damanpour, 1991)

Theoretically proposed to:
    - reduce team learning (Edmondson, 1999; 2004)

EMPIRICAL EVIDENCE

Reduced conflict & Reduced Psychological Safety (Bunderson & Boumgarden, 2010)

+/-

Team power asymmetry

(- /+):

Team learning

+ ve

Team Performance Goals/Feedback (Van der Vegt et al 2010)

+ ve

Greater gender diversity (Curseu & Sari, 2015)

- Double Edged Sword: Precarious relationship; it shifts between positive, negative and no relationship

- Moderators: What external context factor remain unexplored?

HOW CAN WE ACHIEVE EGALITARIANISM WITH TEAM POWER ASYMMETRY?

| Team power asymmetry | **- ve** → | Egalitarianism | **+ ve** → | Team learning |

- Egalitarianism: Perceptions of equality → less psychological distance; to be able to voice/speak up efficiently (Kipnis, 1972).

QUESTION: What are some generative forces that can increase perceptions of equality in the presence of formal hierarchy: mystery!!

THE EXTERNAL ENVIRONMENT MATTERS!!

"THE SURROUNDINGS ASSOCIATED WITH PHENOMENA …."

"That which doesn't kill us, makes us stronger" Neitzsche

ENVIRONMENTAL HARDSHIP

- Continuous experience of adversity in which multiple, dynamic, ambiguous and complex events occur in the external environment which exceed the team's capacity to prevent causing extensive (or potentially extensive) psychological, material or physical harm

**Adapted from Hannah et al., 2009; Bell & Kozlowski, 2002; Bell, Fisher, Brown, & Mann, 2016- Action team, extreme team, and extreme action team literatures

Environmental Hardships: Bundle of Stimuli – Shapes behaviour and attitudes ; provides behavioural opportunities and constraints .

CONCEPTUAL MODEL: SHARED HARDSHIP

Environmental hardship

+ve

Team power asymmetry	→	Egalitarianism	→	Team learning climate

-ve   **+ve**
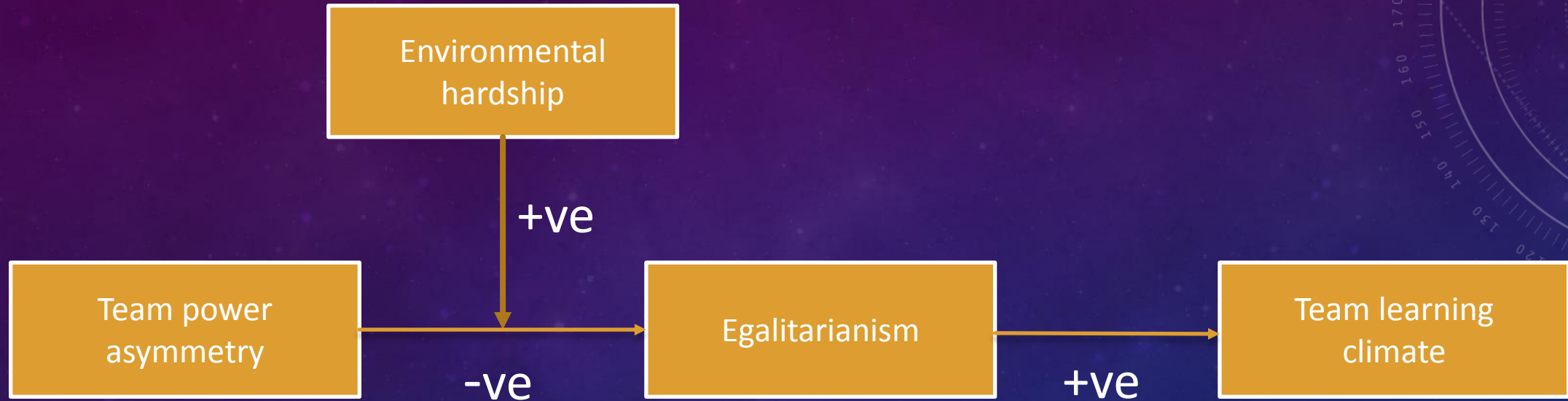
- H1: Team power asymmetry and egalitarian climate will be positively associated, when teams experience greater exposure to environmental hardships.

- H2: Higher levels of egalitarian climate will positively predict team learning climate

ENVIRONMENTAL HARDSHIP
CAN BE GENERATIVE
re-evaluate and re-interpret normative expectations

Situated focus theory of power (Guinote, 2007)

Adversarial Growth (Tedeschi & Calhoun, 1999; 2004)

LOW RANKING MEMBERS

- May be asked to provide more inputs -power distance is reduced – as superiors seek input

- Role assumptions are questioned and clarified - greater appreciation for the role of the leaders

- repeated exposure to above: re-examine assumptions about power distance

HIGH RANKING MEMBERS

- Can no longer be complacent about subordinate's roles in team functioning and task

- Seek, see, respect and appreciate subordinate's knowledge, skills and role duties necessary to complete team task

- Repeated exposure to above: re-evaluate their assumptions about subordinates' value in team tasks

RESEARCH CONTEXT / SAMPLE

- Larger study on Army Learning by Land Division, Defense Science and Technology Group (DST Group).

- Sample: Australian Army- representative in terms of age, gender, rank, and role.

- Two waves of surveys; Over 4000 respondents nested in operational units

- 143 units retained for analysis

- Included: special forces, combat, combat support, administration and executive teams

- Field Data:
    - Non-experimental – less control
    - High fidelity – more relevance and representativeness → generalizable

TEAM LEVEL MEASUREMENT OF CONSTRUCTS

Team power asymmetry:
- Disparity / standard deviation (SD) of rank within team
- Objective team property ; E.g. Ranks: *Private, Warrant Officer, Captain, Major.*

Team egalitarianism:
- 6 item scale *(Marsick & Watkin, 2004).*
- E.g. "unit treats members as equals regardless of rank, culture or other differences", and "we treat each other with respect".
 - α =0.85, ICC(1)=0.11, R_{wg}=.83.

Team environmental hardship:
- Mean number of deployments E.g. deployments –*conflict (Middle East), peacekeeping (East Timor) and reconstruction (Aceh)*
- global team property (not perceptual or configural)

Team learning climate:
- **7** items - *Edmondson (1999) and Marsick and Watkins (2004).*
- *E.g.* "in this unit we view problems as an opportunity to learn", and "we help each other learn".
  - α = 0.87; ICC(1)=0.13, $p<0.05$; R_{wg}=0.83

RESULTS: ENVIRONMENTAL HARDSHIP AS A MODERATOR
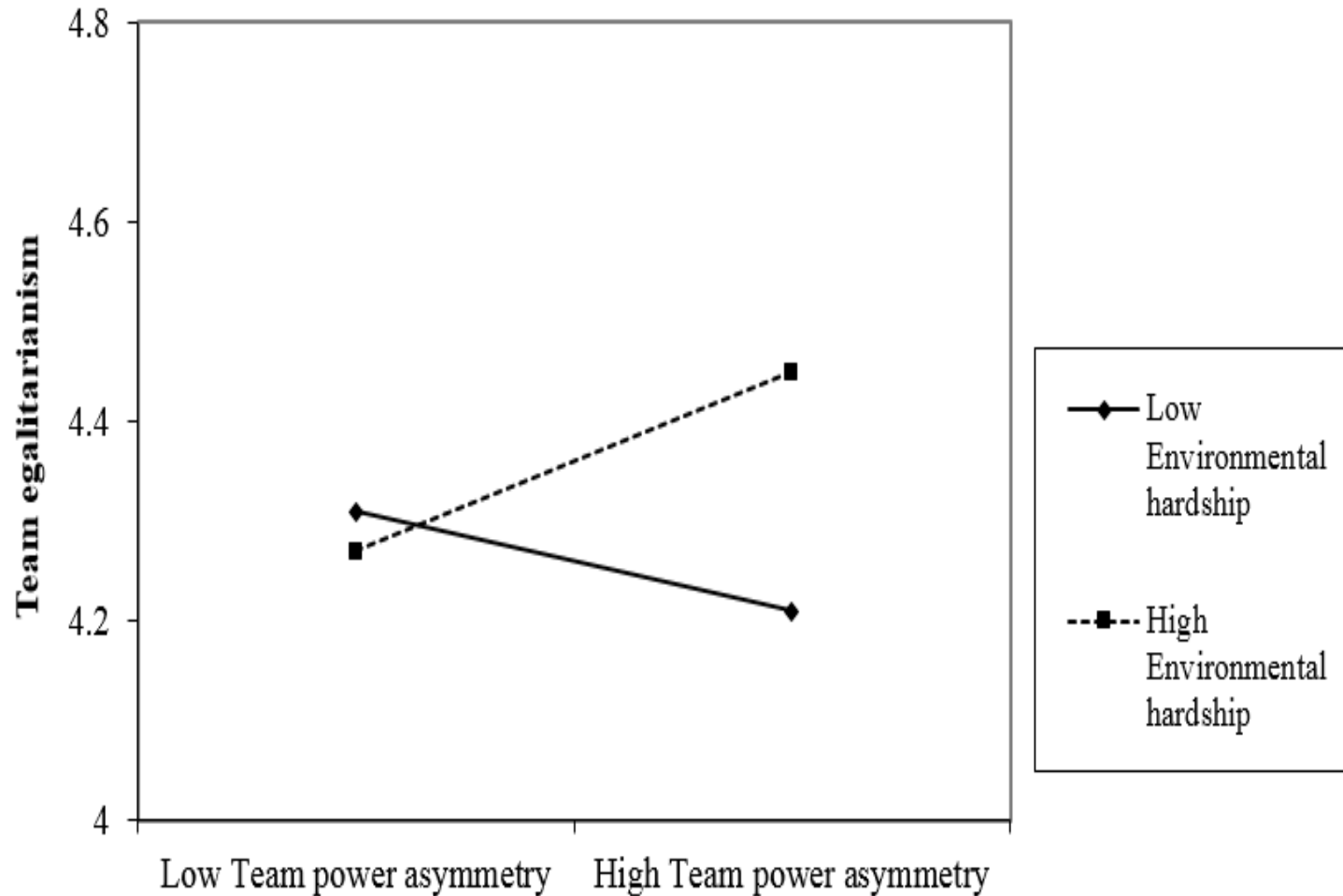
Significant interaction: (B=0.33, SE=.11, p<0.05; R^2=0.22; R^2 change=0.17, p<.05)

- **Egalitarianism fully mediates the relationship between team power asymmetry → team learning**

(B=.84, SE=0.7, p<.05; R^2 = 0.73; R^2 change=0.68, p<.05)

CONCLUSIONS **Team Power Asymmetry → Team Learning Climate**

- *Team external context effects internal dynamics*

  - Environmental Hardship can be a generative force (though dark side exists)

  - Perceptual re-evaluation - optimizes hierarchy's benefits and reduce its negative effects

Egalitarianism – critical team state that facilitates learning

- Team power asymmetry can hurt overall perceived equality in teams

Limitations: Did NOT explore micro-mediating mechanisms

The next steps…

NEXT STEPS

- Explore the internal dynamics through mission analysis report

- Identify what factors/processes triggers this generative change during environmental hardship

- Experimental evidence to understand if we can simulate the effects during training to build a team learning climate early in operational units?

Looking for collaborations!

RESEARCH NETWORK FOR UNDERSEA DECISION SUPERIORITY - 2019-2022 FUNDING

Prof. Ina Bornkessel-schlesewsky ; Matthias Schlesewsky; **Dr Maarten Immink**
& Dr Ruchi Sinha *(University Of South Australia)*

A1. Identify neurobiological markers (EEG, Hrvar, GSR, IAF) for cognitive performance, decision making and learning capabilities

Outcome: Innovative, practical and reliable personnel selection tools based on neurobiological marker profiles and complementary behavioral profiles!

A2. Provide evidence-based approach to enhancing individual cognitive and learning capacities - cognitive training

Outcome: Protocols for individualized cognitive training with integrated neural technology for different profiles

A3. Identify evidence-based approach for team composition to enhance team performance dynamics –

Outcome: Provide guidelines to develop ideal configurations of individual cognitive profile that improve non-cognitive interaction patterns related to team mental models and collaboration in decision making.

If you are keen to know more about mapping team dynamics using behavioral and social network method, OR if you are keen to work on team neuroscience…

…Do reach out!

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