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Herath, Dinuka

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### Original Citation

Herath, Dinuka (2015) Team Problem Solving and Motivation Under Disorganization. In: Agent-Based Models (ABM) of Bounded Rationality, 7-8 May 2015, Slagelse, Denmark. (Unpublished)

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# Team Problem Solving and Motivation Under Disorganization

Dinuka Herath

Business School, Bournemouth U. (UK)

Dinuka.Herath@bournemouth.ac.uk

Joyce Costello

Business School, Bournemouth U. (UK)

Davide Secchi, PhD

University of Southern Denmark

Fabian Homberg, PhD

Business School, Bournemouth U. (UK)

# Aims and Objectives

- Exploring how disorganization affects teams and their motivation
  - Does changing the rules of interaction between team members affect problem solving and motivation ?
- Understanding of what type of organizational structure is suited to each type of team.
  - Does the manner in which the team members are connected affect problem solving and motivation?

# Disorganization

- First introduced in the 60's  
(Merton, 1968; Crozier, 1969; Cohen et al., 1972)
- Over the years various definitions have been given  
(Warglien and Masuch, 1996; Abrahamson, 2002)

## **Structural Disorganization**

Topology of the team

How the team is structured

## **Functional Disorganization**

Rules of Interaction

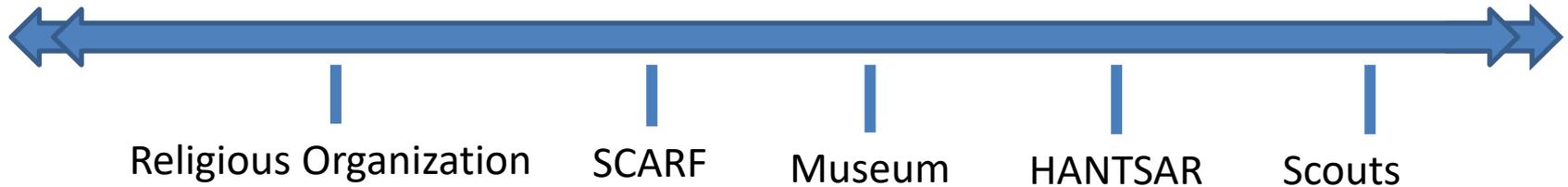
How the members of the team interact with each other and the environment

# Disorganization Continuum

## Volunteer Organizations

Disorganized

Organized



Fisher, D. R. (2006). The Activism Industry. *Journal: The American Prospect* 1(2): 1 – 30.

Inauen, E., Rost, K., Frey, B. S., Homberg, F. & Osterloh, M. (2010). Monastic governance: forgotten prospects for public institutions. *The American Review of Public Administration* 40(6): 631–653.

# The Data

- Data set
  - Individuals sought information through the New Forest Community Volunteering Centre about volunteering.  
N. 226 (Employed n. 118)
  - Web-based survey- Quantitative
- Measure
  - Validated PSM (Perry 1996) P-O fit volunteer (Bright 2008) and Volunteer Intensity scales (Rodell 2013)

# The Model

- The simulation contains 5 teams (Based on continuum)
- Each team consist of 5 – 7 members (volunteers)
- Each team is unique (different breeds)
- The main task for all teams is carry out is fund raising
- Each team member is a volunteers and only volunteers for a limited time
- The real world data is fed into the simulation through initial conditions

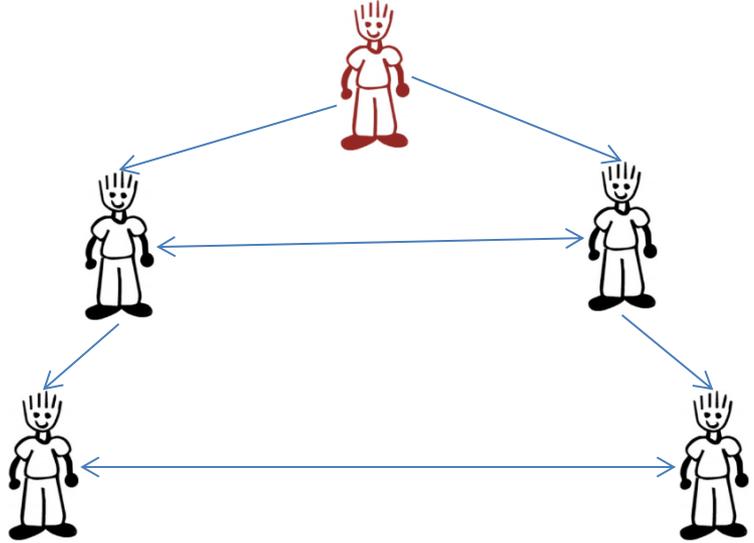
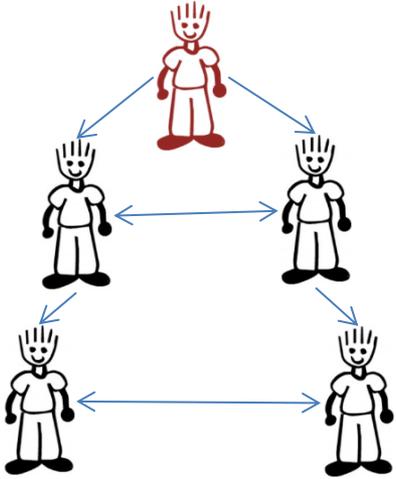
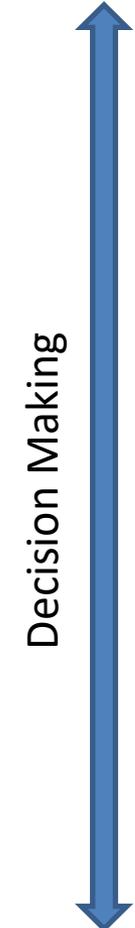
# The Model – Agents

- Two scenarios are modelled
  - Disorganisation (Structural and Functional)
  - Organisation (Structural and Functional)
- 4 Types of Agents

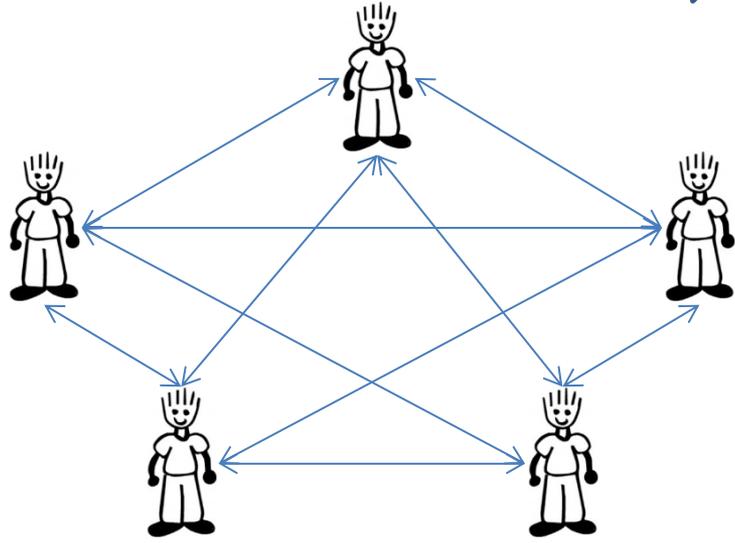
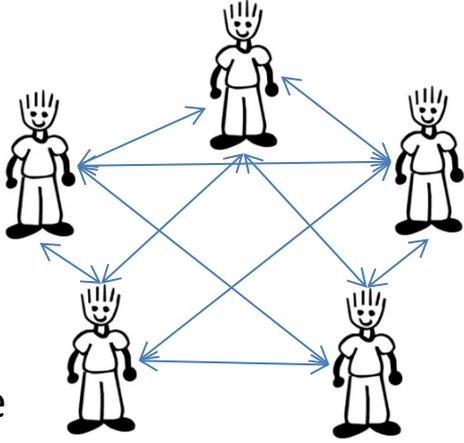
Volunteer (V)		Time volunteered in hours (t) , effort (Volunteer intensity) (e), PSM (m), POV fit (p), level (L)
Task/Problem (P)		Complexity (comp) , level (l)
Solution (S)		Efficiency (ef), level (l)
Opportunity (O)		Level (l)

# The Model – Structural

Top Down



Collective



# The Model – Functional

- Disorganised (Functional)
    - Teams move freely
      - Randomly selected directions
    - Team member can interact with any P, O or S regardless of level
  - Organised
    - Team members can only engage with P, S, O with on a similar level
- IF
- $$V_l \neq P_l \text{ OR } V_l \neq S_l \text{ OR } V_l \neq O_l$$
- Repulsion Happens

# The Model – Decision Making

- Decision Making

- Resolution

- Happens when a team and the other 3 agents come into contact

$$T_c \equiv \sum_{i=1}^n (Vt_i + Ve_i + Vm_i + Vp_i) \quad \leftarrow \text{Team Capability}$$

$$T_c + S_{me}(ef) \geq P_{comp}$$

$$R_c = R_c + 1$$

- Fail & Redistribution

$$T_c + S_{me}(ef) < P_{comp}$$

$$F_c = F_c + 1$$

# The Model – Motivation

$T_c > P_{comp}$  ← **Low Complexity Problem**

Increase Motivation ->  $Vm_i = Vm_i * 1.1$

$T_c \leq P_{comp}$  ← **High Complexity Problem**

Increase Motivation ->  $Vm_i = Vm_i * 1.2$

$T_c + S_{me}(ef) < P_{comp}$  ← **Failed Problem Resolution**

Decrease Motivation ->  $Vm_i = Vm_i * 0.8$

# The Model – Reporting

- The number of volunteers, opportunities, solutions and problems that are in the environment at any point in time
- Total efficiency of solutions
- Total difficulty of problems
- The number of completed tasks (team/total)
- The number of failed tasks (team/total)
- Motivation level (team/total)
- Problem latency
- Comparison between failed and completed

# Further Development

- What's next ?
  - Introducing new volunteers into the system and replace to the old volunteers
  - A new volunteer (N) can join any team I

$$\mathbf{F} \sum V_n < 7$$

- If a new volunteer encounters a team that is full it will check the following with each agent that are in its range

$$\mathbf{IF} \sum V_n < 7 \text{ and } \mathbf{IF} \mathbf{N} \sum t, e, m, p > \mathbf{V} \sum t, e, m, p$$

then N replaces V at the place

- Changing team leadership
  - After a certain amount of time lapses
  - Special leaders inserted into the system directly (occasionally)
    - Leader (depending on type) goes and replaces the leader of the team

# Conclusion and Outlook

- The next step is to further develop the simulation
  - Optimise and test
  - Run and Gather data
  - Data analysis
- Upon completion we aim to
  - Develop and understanding of what type of organizational structure is suited to each type of team
  - Exploring how disorganization affects teams and motivation

Thank You!

Q & A

Back up Slides

# Public Service Motivation

*“An individual’s orientation to delivering service to people with the purpose of doing good for others and society”*

(Hondegem and Perry 2009, p. 6)

- Motives: rational, norm and affective
- Original six dimensions:
  - Attraction to Policy Making
  - Social Justice
  - Commitment to Public Interest
  - Civic Duty
  - Self-sacrifice
  - Compassion