

Erasmus+ PECUS  
European landscapes of transhumance

## **Fuzzy Cognitive Mapping: possible applications in teaching and research**

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U-Space srl

**Final project conference**

Universidad Pablo de Olavide  
Sevilla, 14 June 2022

# Mental models

## a **MENTAL MODEL**

is an individually and internally held cognition of external reality,  
used to code, filter, and interpret the external world,  
allowing individuals to reason, explain, and interact with their surroundings

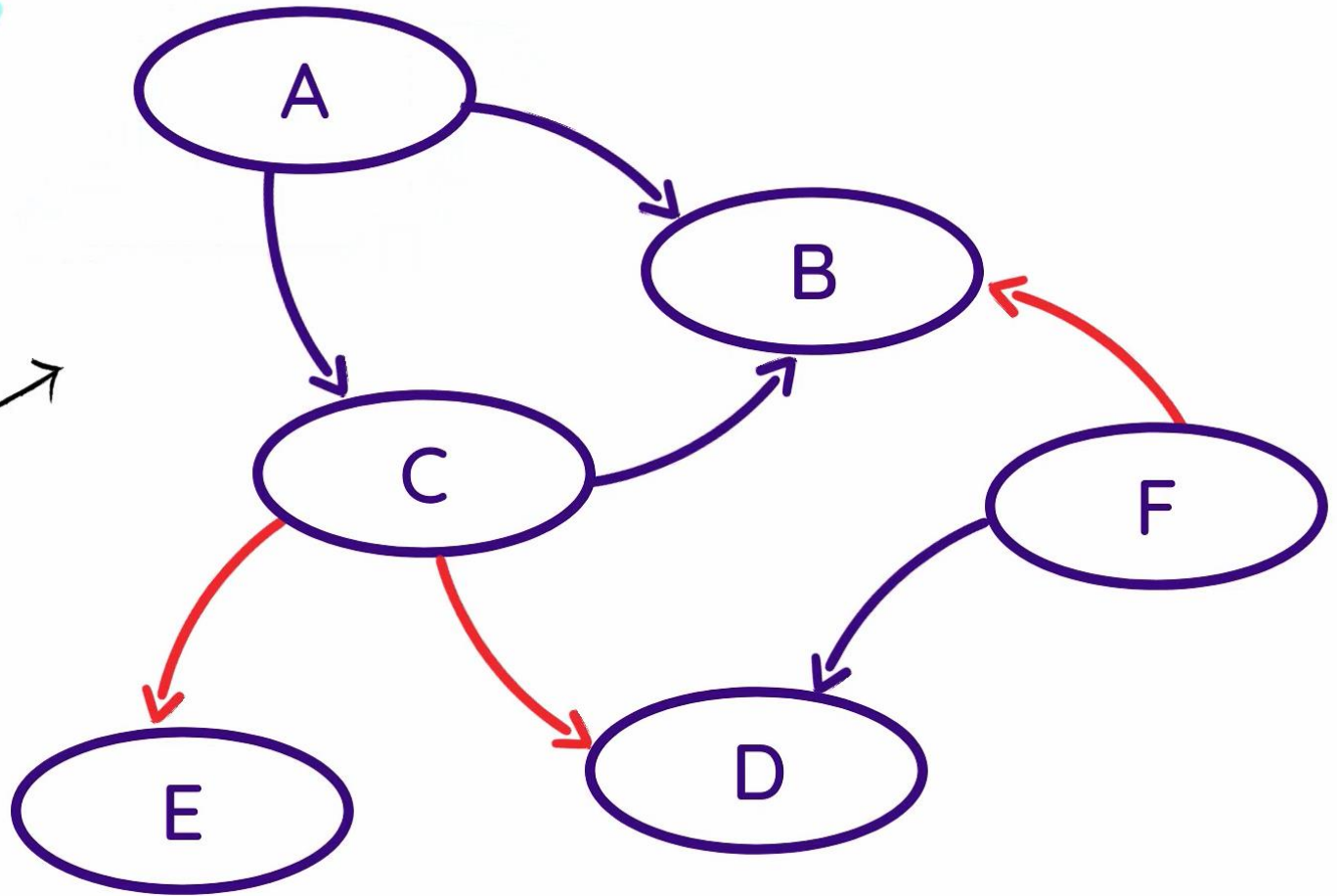
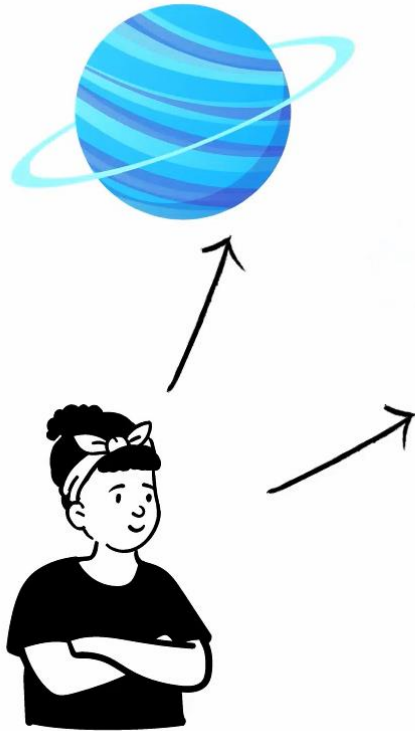


a **MENTAL MODEL**

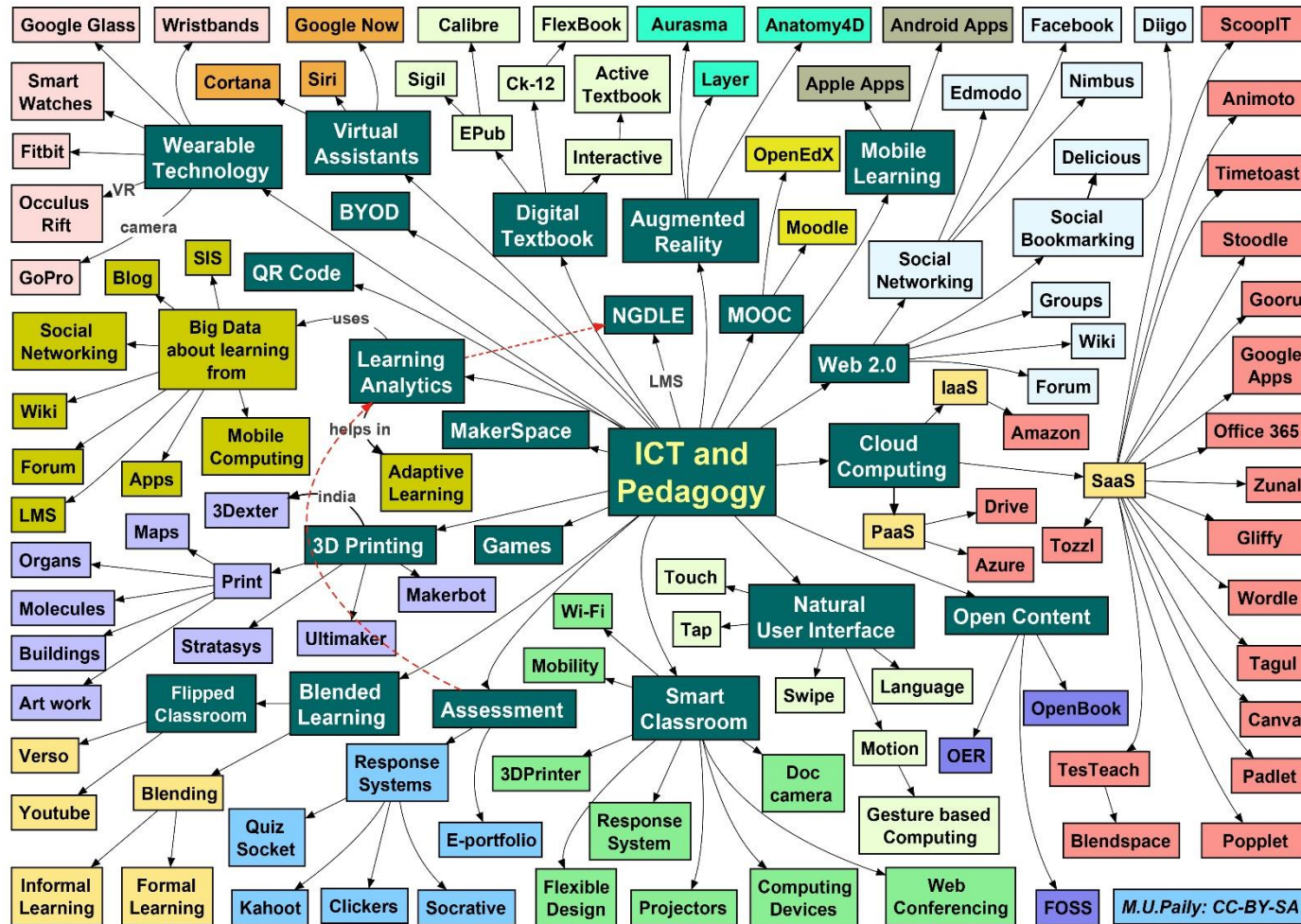
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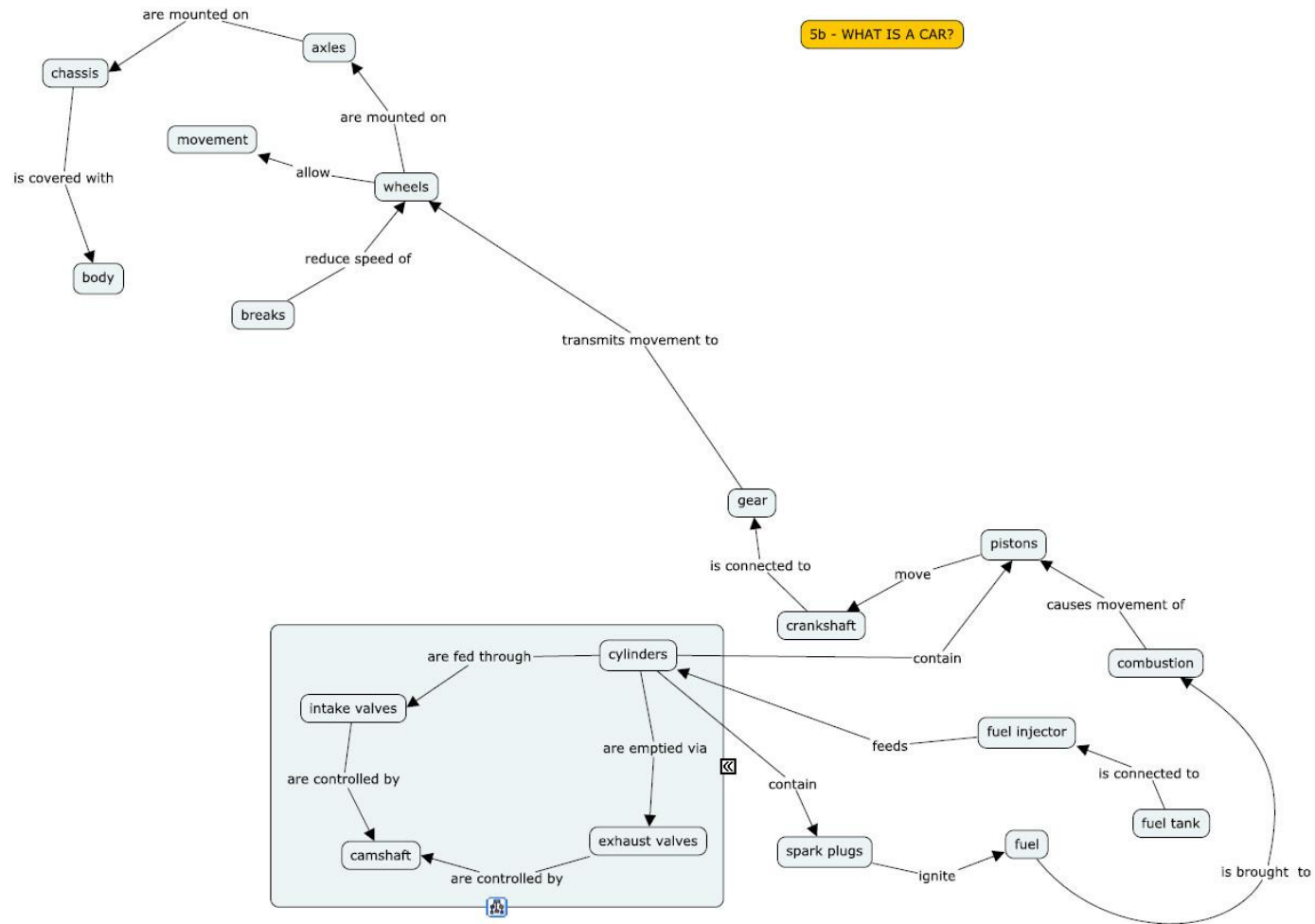
**a mental model representation**  
enables individuals to reason and make decisions  
allowing different scenarios to be examined



# Mind maps



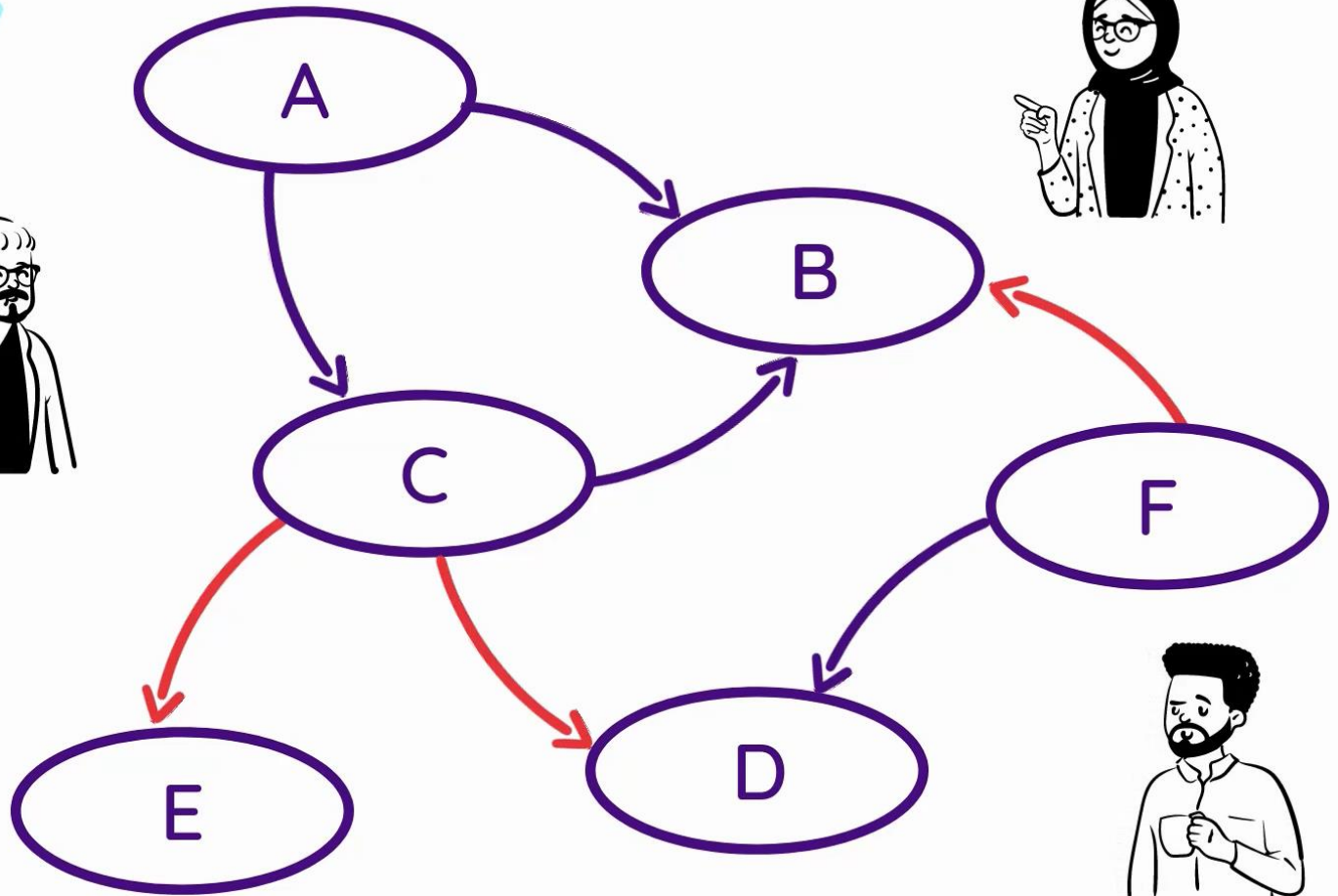
# Concept maps

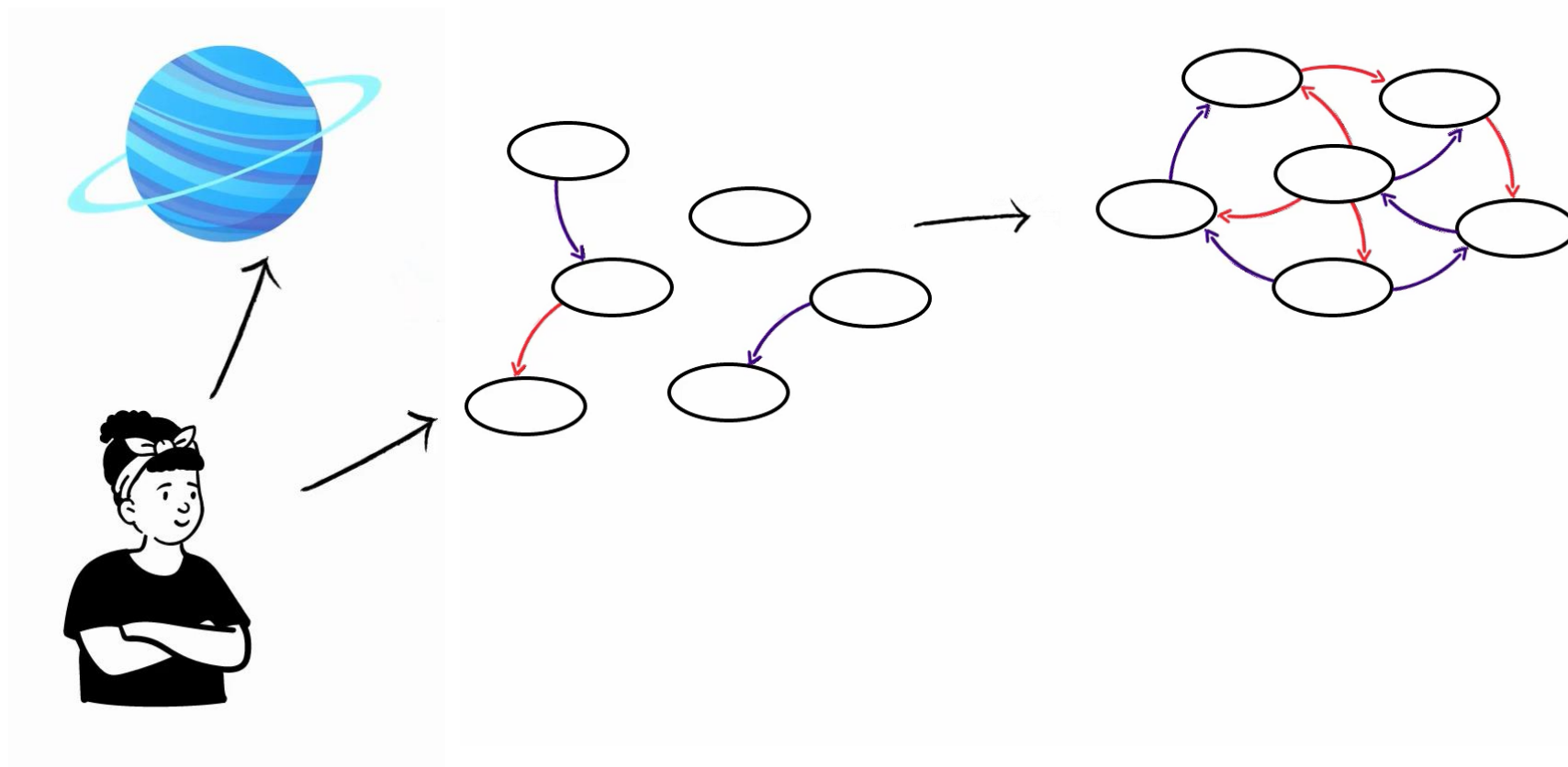




**sharing mental models**  
is useful to improve communication  
and reduce collaboration barriers







**changing your mental model**  
is a type of learning!



## Why “fuzzy”

“Using the **imprecise nature of common language**,

FCM permits individuals to interpret and express the **complexity of their environment** and experiences by **combining their knowledge**, preferences and values

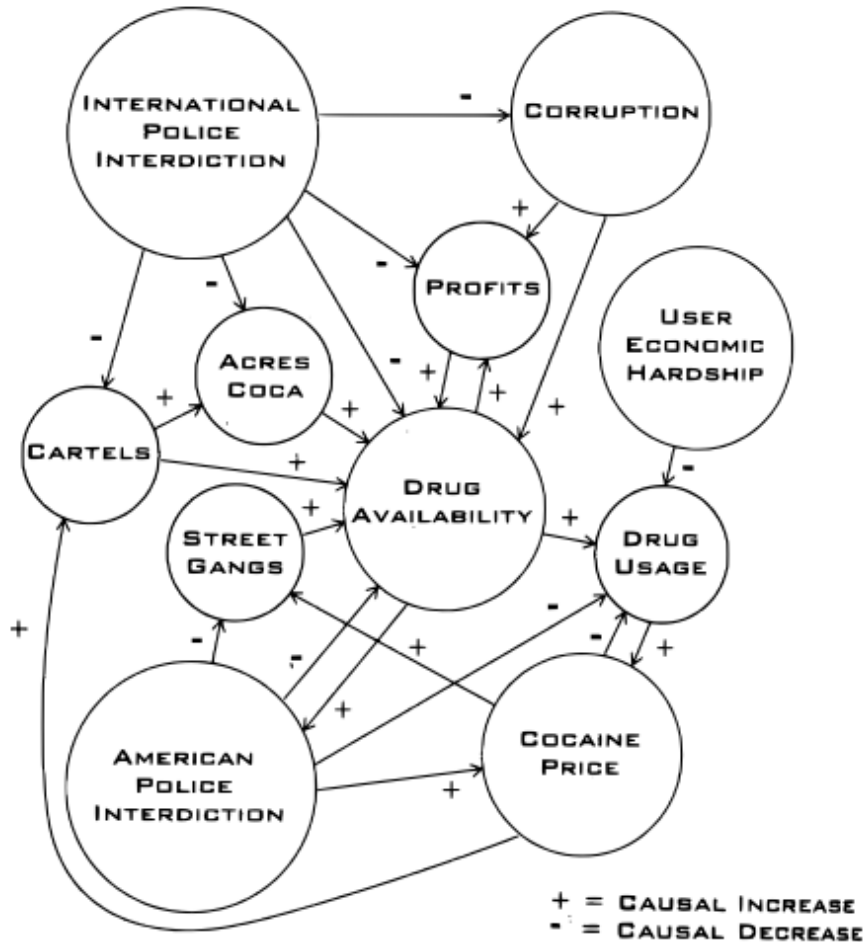
with quantitative estimations of the **perceived relationships** between components within a particular context of interest”

(Grey et al., 2014)

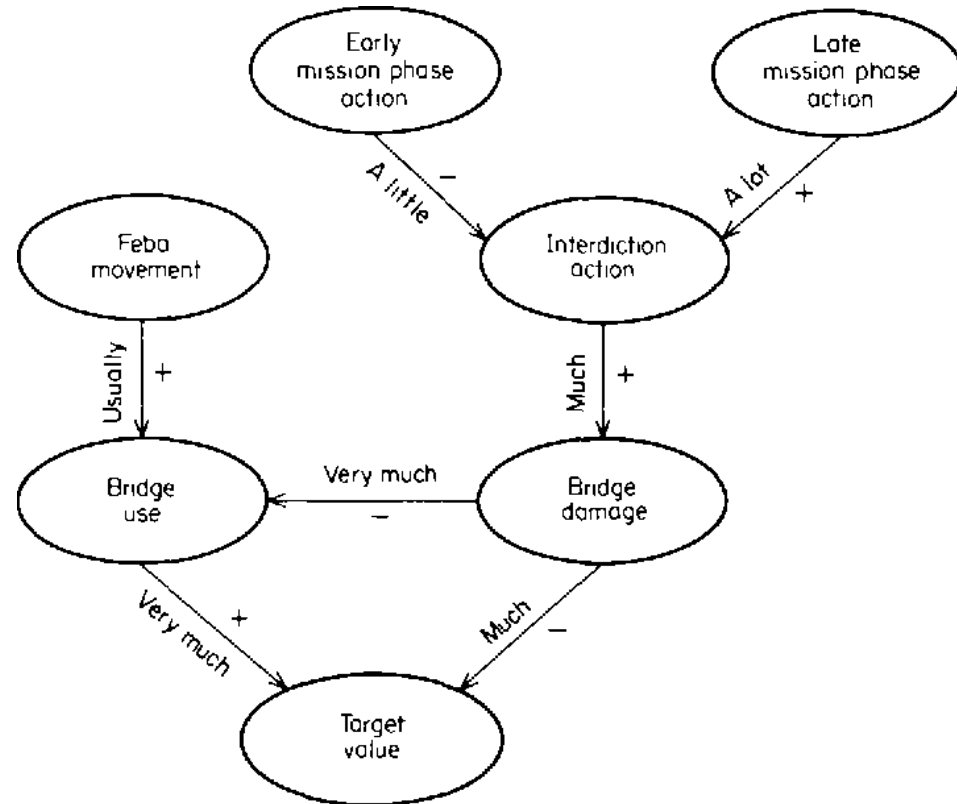
Classical sets would define membership over  
“**crisp**” numbers (0/1; yes/no; true/false)

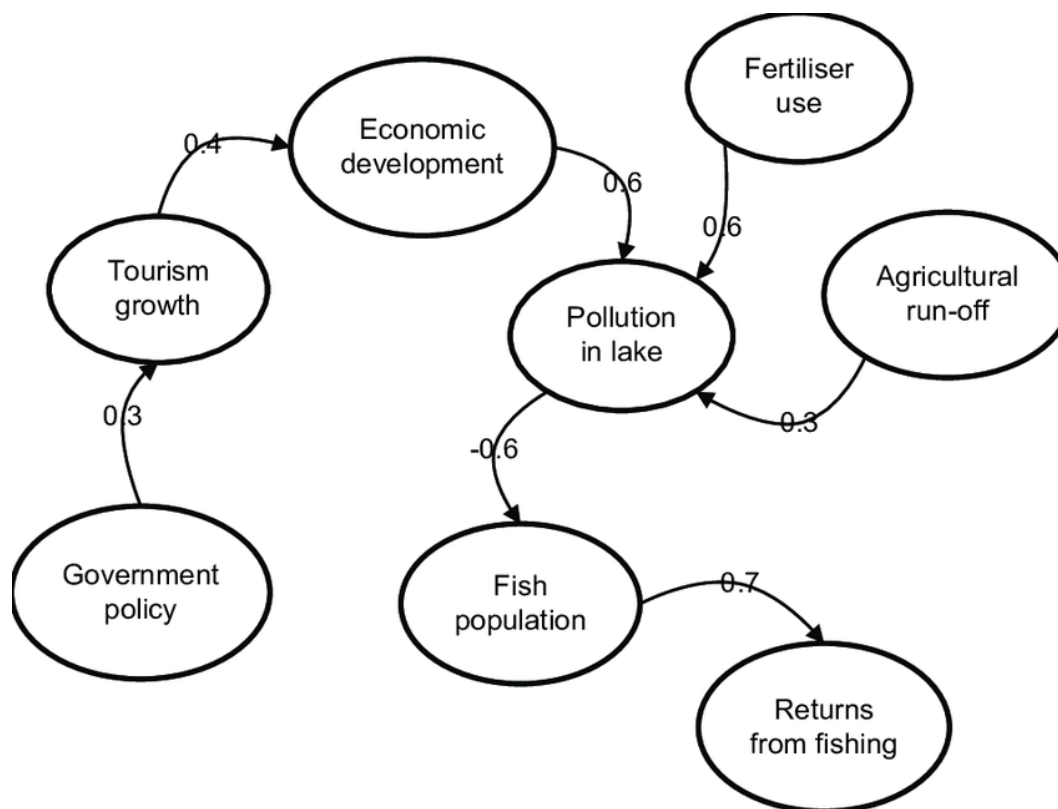
Fuzzy sets define membership over **varying**  
**degrees** (0.6 yes – 0.4 no)

## Examples



Rod Taber: Knowledge Processing with Fuzzy Cognitive Charts, 1991, Expert Systems with Applications, vol. 2, no. 1, pg. 83-87





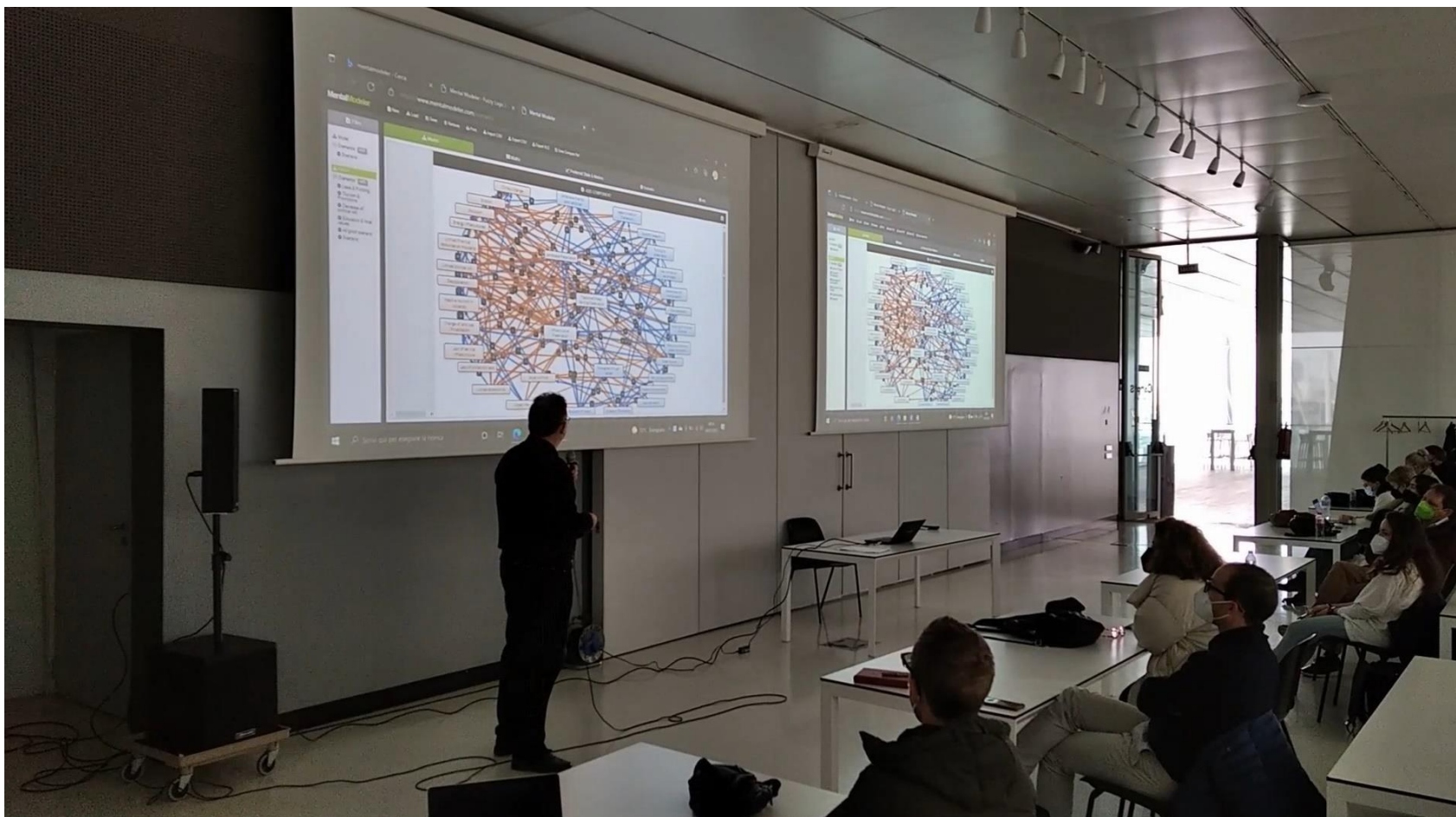


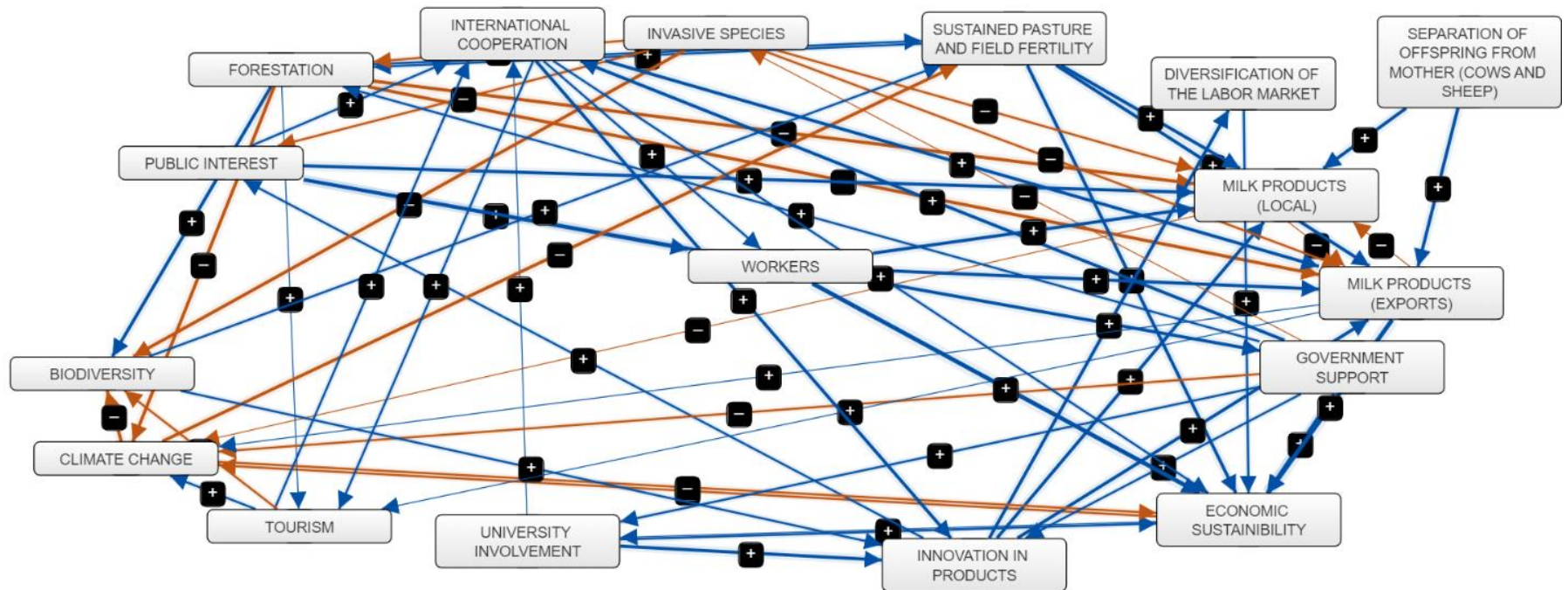




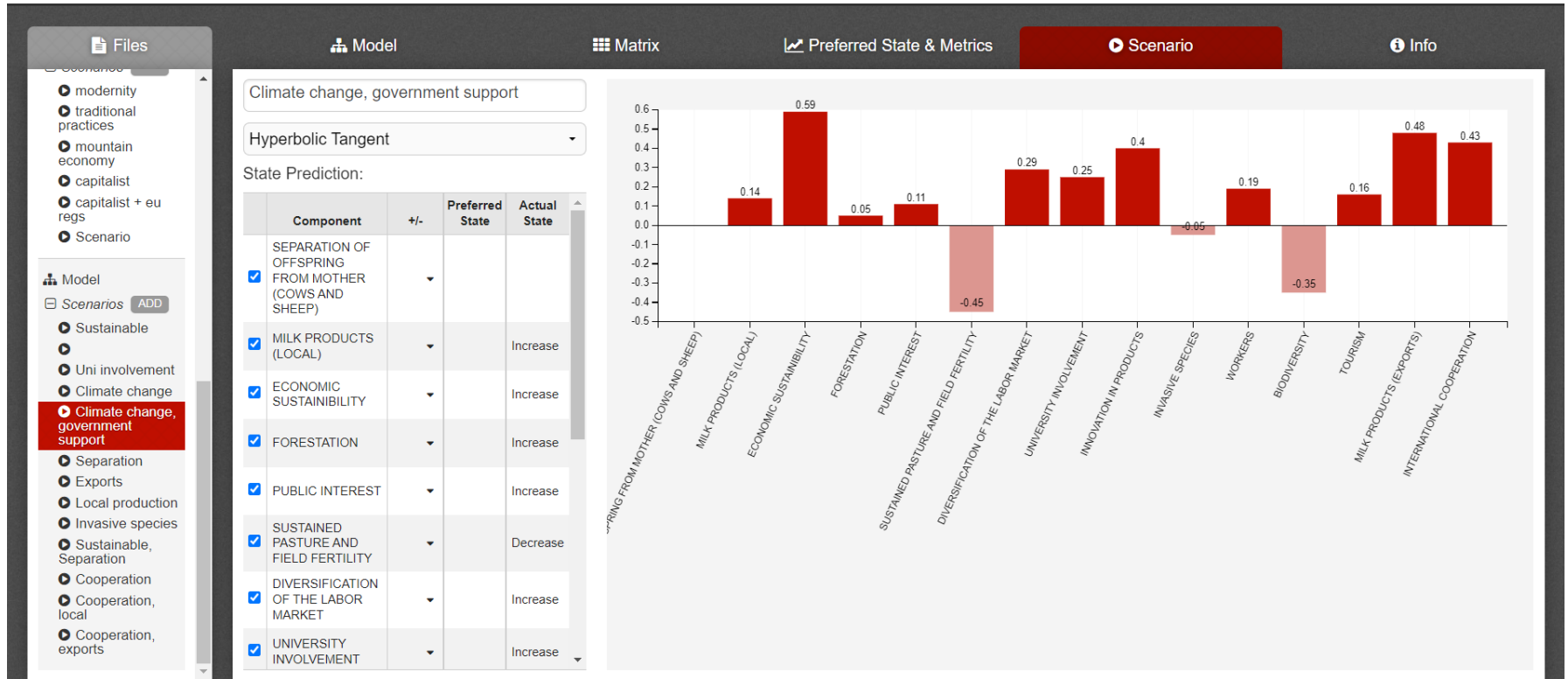












# Methodology

assignment of topic

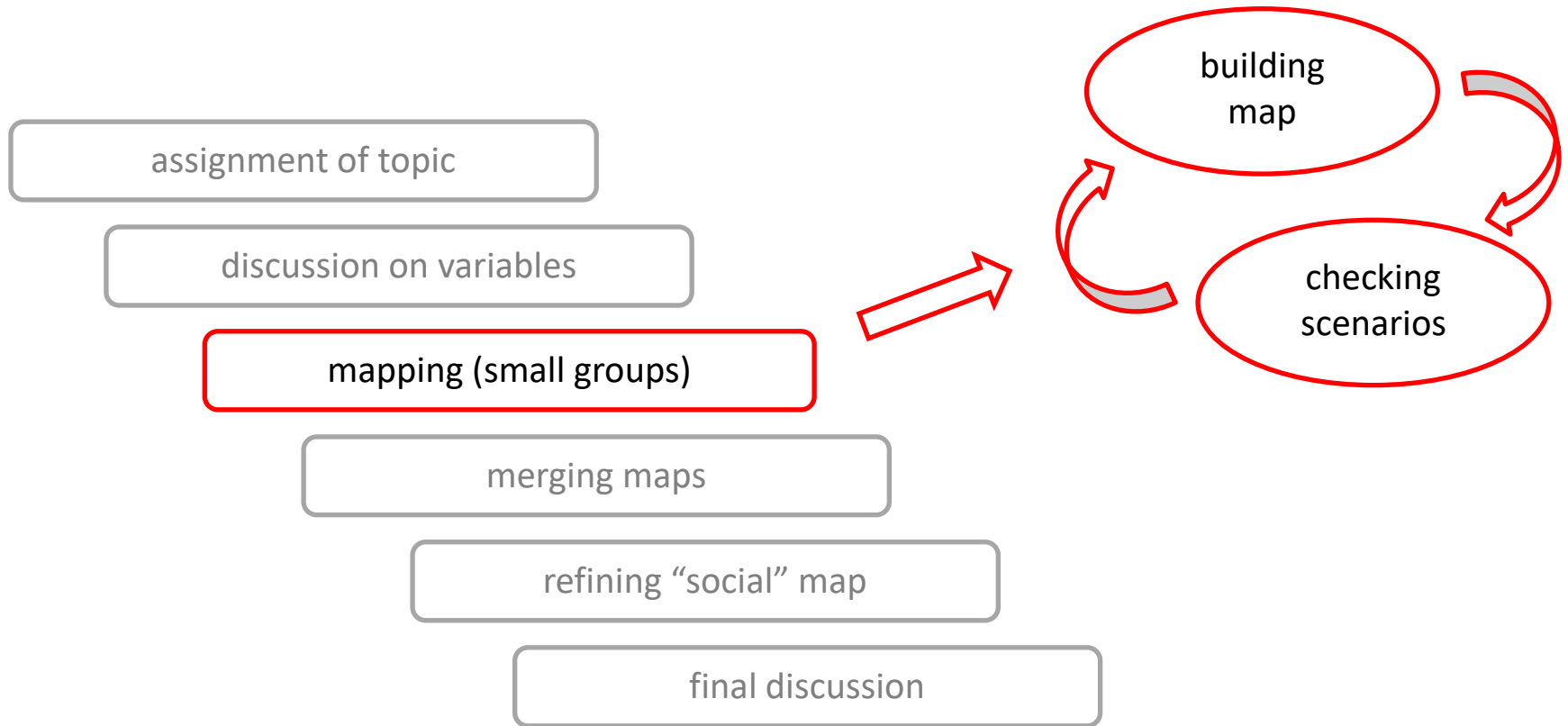
discussion on variables

mapping (small groups)

merging maps

refining “social” map

final discussion



# MAPPING NÄÄS

(Fuzzy) Cognitive Mapping Workshop  
2 November 2021

*Anna Tonk  
(PhD candidate, University of Newcastle)*



# A Radical New Interdisciplinary Space for Sonification



## RADICAL

Sonification, aesthetics, and listening



Twitter



GitHub

## Welcome to Project RADICAL

Project started 11 Jan 2021

Project RADICAL has the ambitious goal of developing a fundamental understanding of the relationship between sonification design and the listener and to stimulate a revitalised agenda for sonification research and practice.

Follow this page for project news, links to events, publications, and software.

See [the about about page](#) for a basic summary of the project.

**Leverhulme Trust Research Project Grant**  
**Number RPG-2020-113**  
*with Jorge Boehringer (University of Newcastle)*



# Fuzzy

# Fuzzy Maieutics

Fuzzy  
Maieutics  
**Interventionism**

Fuzzy  
Maieutics  
Interventionism  
**Comfort zone**

Fuzzy  
Maieutics  
Interventionism  
Comfort zone  
**Iteration**

Fuzzy  
Maieutics  
Interventionism  
Comfort zone  
Iteration  
Medium

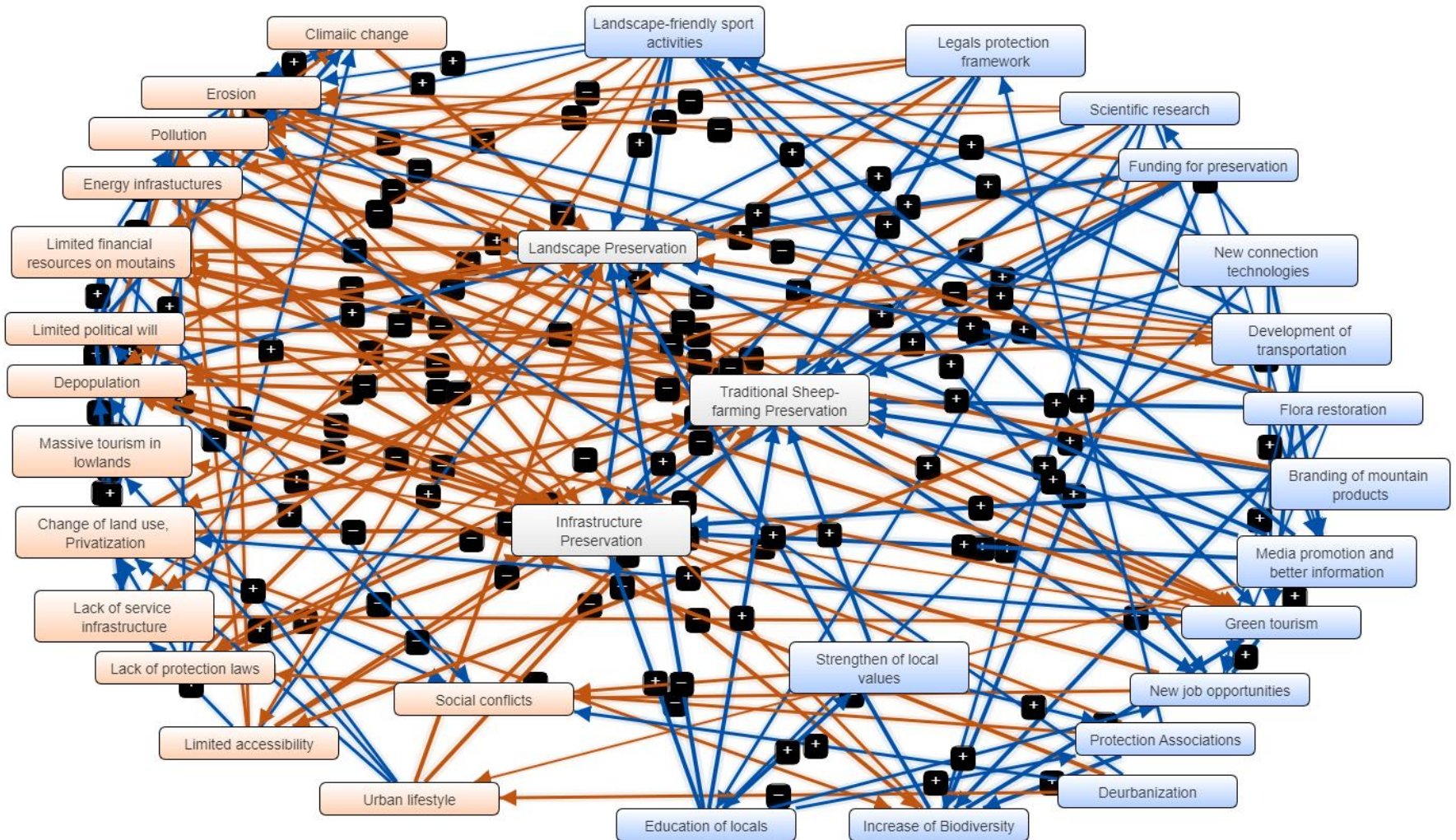
**Fuzzy**  
**Maieutics**  
**Interventionism**  
**Comfort zone**  
**Iteration**  
**Medium**  
**Scale**

Fuzzy  
Maieutics  
Interventionism  
Comfort zone  
Iteration  
Medium  
Scale  
**Equilibrium**



Fuzzy  
Maieutics  
Interventionism  
Comfort zone  
Iteration  
Medium  
Scale  
Equilibrium  
**Purpose**

## Example from PECUS



# Erasmus+ PECUS

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