

# A cognitive approach to urban systems: assessing resilience and sustainable transition pathways

**Marta Olazabal**

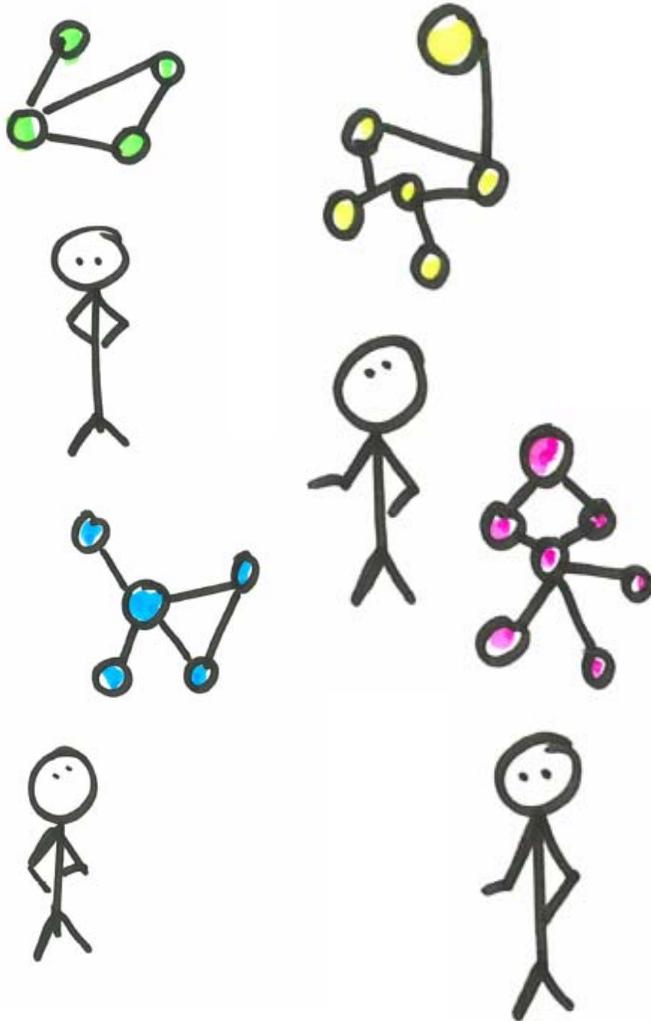
**Klimagune Workshop 2013**  
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Opportunities, Challenges and Barriers for Transitions  
Towards Sustainability in the Context of Climate Change

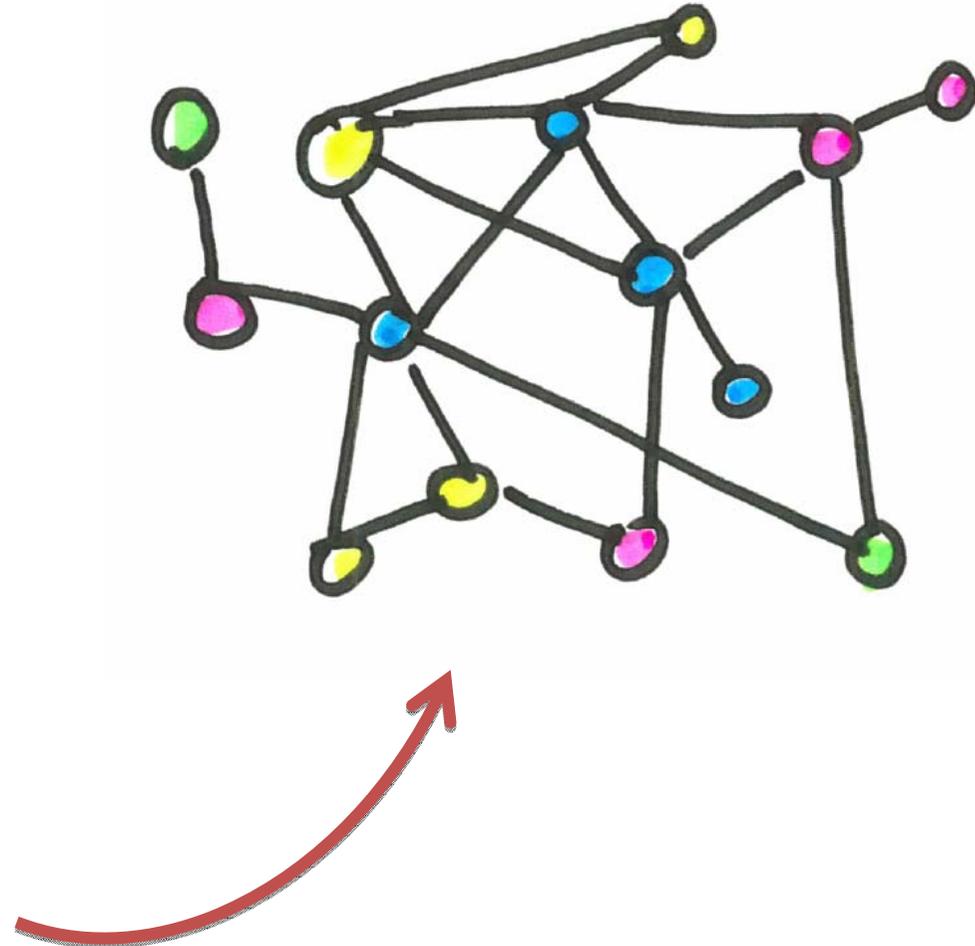
- Urban transformation involves a **process of decision making** as any other process of change
- This happens at **individual and at community level**
- This decision making processes are influenced by cognitions: **experience, judgements, values, culture, observations....**
- How we initiative a transition and even whether if we start it, will depend on the cognitive thinking of **ALL stakeholders involved** in urban policy making.

## The cognitive dimension of decision making

*Individual perceptions on how the system works....*



*Aggregated model including and connecting all Individual perceptions....*



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- **Urban energy system transformative potential in the city of Bilbao**
  - **Participatory process with 15 stakeholders**
  - **We acquire information from representatives of the local authority, energy companies, communities, energy experts, ...**
  - **We build an aggregated model including all their knowledge and simulate three scenarios of transitions. These are assessed in terms of sustainability**



Challenges and Barriers: lessons from Bilbao

1. **Participatory approaches are critical** to identify unintended policy impacts,
2. According to the stakeholders, better and reinforced positive impacts are obtained **combining local-institutional and social initiative**
3. **Strong negative impact of economic** subsidies (without complementary changes) → indicates strong resilience of the economic unsustainable system

Proposal in the context of Transitions Towards Sustainability in Cities

**Unilateral decisions** taken, specially, in a non-collaborative atmosphere, often **influence current patterns of urban development**.

4. Transitions towards sustainability in cities require changing policy making cultures towards more participatory approaches which rely on experience, learning and innovation.

**thank you!**

[marta.olazabal@bc3research.org](mailto:marta.olazabal@bc3research.org)

*This material is part of:*

**Olazabal M and Pascual U. *A cognitive approach to urban resilience and transformation.* (In prep)**

Olazabal M and Pascual U. (2013) *Identifying social determinants of urban low carbon transitions: the case of energy transition in Bilbao, Basque Country.* BC3 Working Paper Series 2013-11.

Olazabal M and Pascual U. *The cognitive facet of urban low carbon transitions.* Under review.