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# Designing resilient creative communities through biomimetic service design

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# Research question

This study aims to explore how the adoption of biomimetic tools in the design of services in the context of social innovation can increase the resilience of the community. Increased resilience acts as an exit strategy for the designers, as a way to enable the evolution of the diffuse design capacity within the community and as strategy to flexible address scale in the context of reconstituting the domains of everyday life.

# Creative communities

- Creative communities are grassroots, bottom-up initiatives of people who through their diffuse design capacity propose new, desirable service futures that address the problems of their everyday life.
- These creative communities exist within a transition from modernity towards sustainment, the next epoch of human development. The adversarial character of these systems causes them to embody alternative values such as conviviality, solidarity, openness and shift the focus from growth to flourishing (Ehrenfeld, 2008).
- Creative communities use diffuse design capacity (Manzini 2016) to create these solutions.

# Design for sustainability

- The inability of modernity to work within the planet's carrying capacity has created a society that is unsustainable, and unless some of the core values change, it cannot be salvaged. The scale of environmental degradation puts our existence on the planet in jeopardy.
- Approaches that aim to reduce environmental or societal impacts whilst preserving the current model of growth are impossible to lead to sustainability. These approaches reduce unsustainability but one must ask oneself whether reducing unsustainability to zero lead to the emergence of sustainability? (Ehrenfeld, 2008).
- We propose two antithetical positions presented here can be seen as a spectrum within which all ideas concerning sustainability can be situated.
- Eco-modernist approaches provide a pragmatic short-term way to apply incremental changes. On the other side, more radical, long-term approaches contain a glimpse of utopias necessary to act as a lighthouse guiding us into the future.

# Design for sustainability

This process aims to lead to a **decentralized** and **diversified** structure of everyday life which is in contrast to the centralized and increasingly homogenized structure that we have become accustomed to. The main goals of designing with creative communities for social innovation are:

- Creating micro-narratives that challenge the dominant narrative of modernity
- Empowering local distributed creative communities
- Challenging the addiction of consumption and the institution of private property and fostering degrowth (D'Alisa et al.2014)
- Fostering lifestyles based around conviviality, reciprocity and solidarity

# Biomimicis

- Biomimicis is a framework that designs solutions inspired by biological systems. It opens up possibilities of seeing the way nature works, teaches and informs arts and sciences (Sanchez Ruano, 2016).
- Ecosystems display differing degrees of resilience. Understanding the strategies developed by nature to increase the resilience of eco-systems is a first step. Identifying and reframing these solutions can foster the resilience necessary for creative communities to flourish.
- The emerging fields of biomimetic design of services can support the evolution of service design (Ivanova, 2014).
- Biomimicis has proven a robust methodology for the development of solutions in the fields of material engineering and product design, applying lessons from nature is a frontier for service design and the creation of resilient organisations.

# Designing services through Biomimicry

- Biomimicry is a trans-disciplinary approach to problem solving which has emerged through the integration of design with other disciplines, such as biology and engineering. It opens up possibilities of seeing the way nature works, teaches and informs arts and sciences. It encourages deeper studies in order to arrive at technologies and strategies that may be achieved through interdisciplinary dialogues.
- The creative process of biomimicry relies on finding fundamental questions regarding the challenge, making inquiries through prototyping and bringing together interdisciplinary teams.
- Biomimicry has tended to focus on engineering projects, we postulate that the adoption of a biomimetic posture in the design of services, especially social innovation can provide answers to many issues emerging in the field.

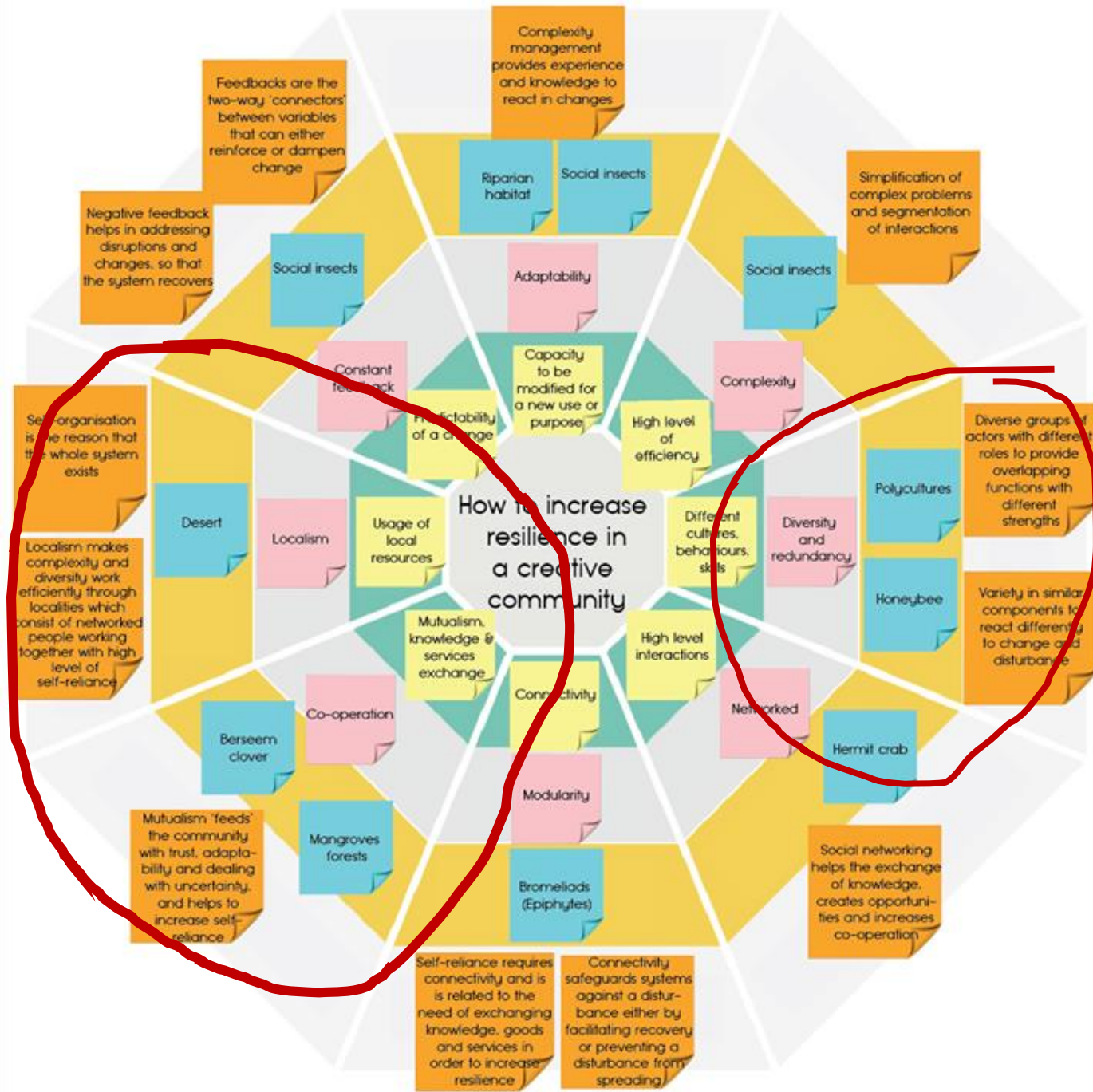




# Ideation

Using the 'Problem-driven idea generation tool for biomimetic service design (Ivanova, 2014) different strategies used to increase the resilience of a biological system where mapped.

These examples were crystalized into organizational and design directions.



# Ideation

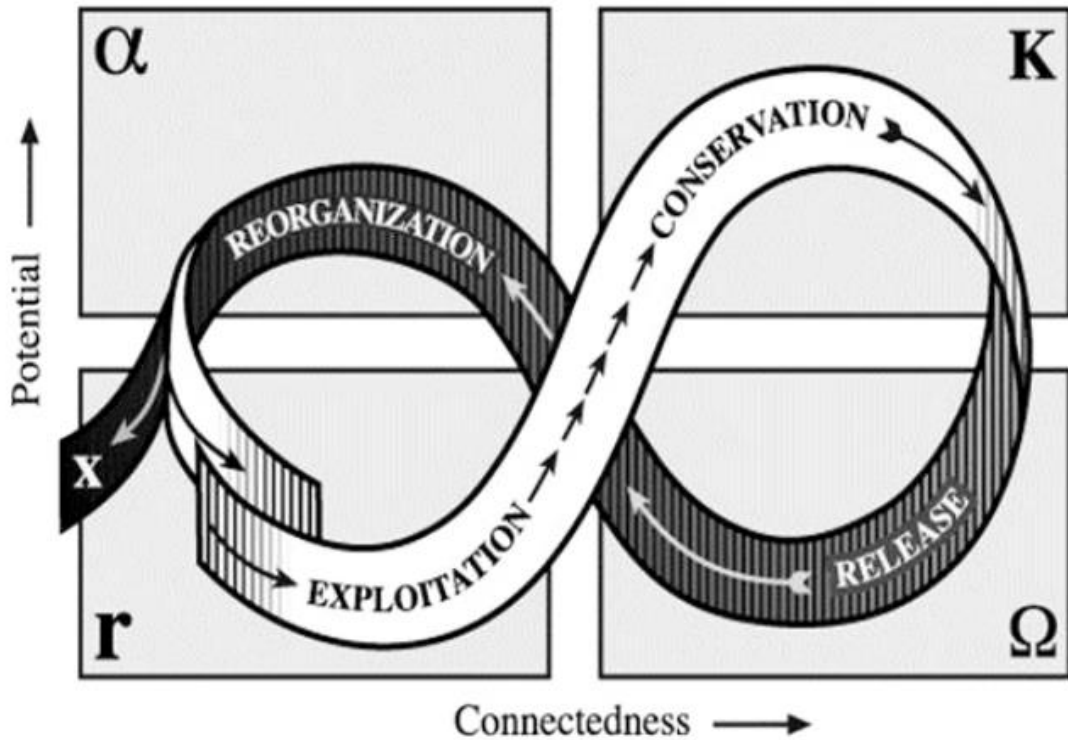
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# Permaculture and diffuse design capacity

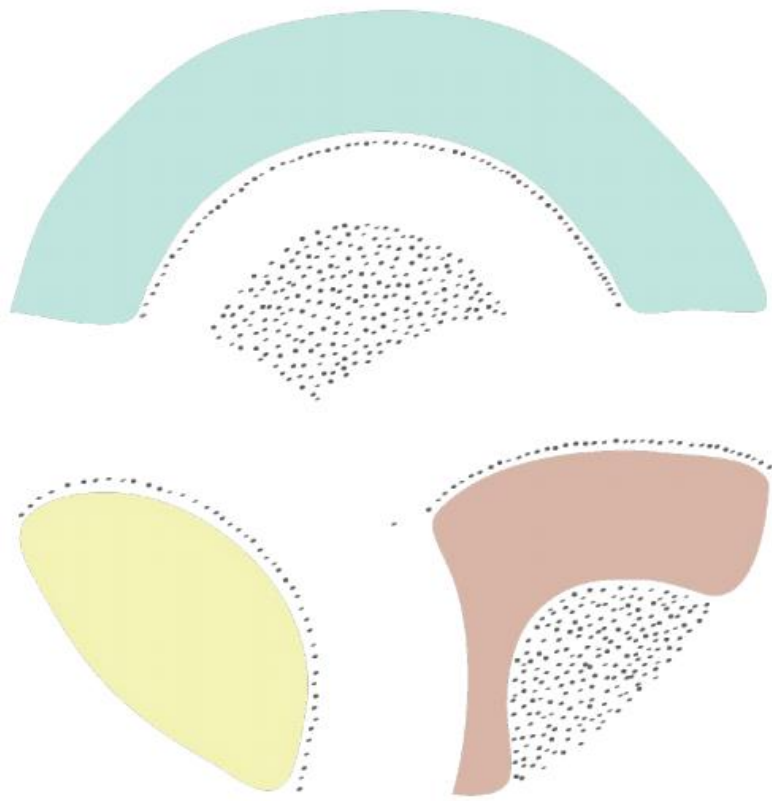
- Permaculture, an agroecological systemic design tradition (Cassel, 2015), provides an interesting direction for the development and research in the context of social innovation. In contrast to monoculture where only one type of value is the goal of the system, permaculture provides a systemic view that is focused in fostering virtuous cycles and cooperation between different symbiotic systems. Looking at creative communities as an interconnected ecosystem instead of discrete systems provides a different avenue for increasing their resilience and capability for flourishing by creating positive feedback within a wider ecosystem of bottom up initiatives on both a local and global level.

# Resilience



Resilience is defined as the capacity of a system to retain its organisational closure while absorbing external perturbations (Walker and Salt, 2012).

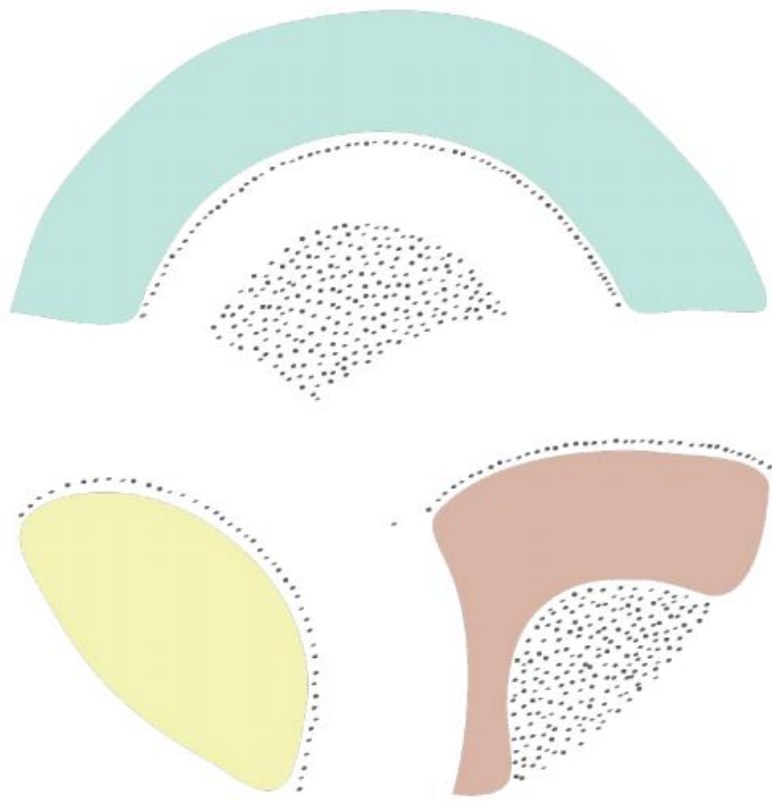
The sociotechnical system that is a creative community creating social innovation faces constant threats due to the collapse of traditional support structures and their disruptive, adversarial character. Identifying strategies to increase the capacity of any system to resist external forces are necessary to ensure their survival in a time of unprecedented environmental and social pressures but in the context of the wider transitions towards sustainment and the necessary reconstitution of the domains of everyday life.



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# The 'Apano Meria' Social enterprise

- The 'Apano Meria' Social enterprise will be analysed with respect to the relationships between different focus groups and how these can increase the overall resilience of the system.
- Three main themes have been adopted: the **environment**, **culture** and **society**.
- Each of these themes is made up of different special interest groups that are interconnected both within the theme and in the wider scope of the community.



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# The 'Apano Meria' Social enterprise

- The Apano Meria social enterprise is comprised of different and diverse special interest groups.
- There is overlap of people within different groups.
- In some cases it acts as a metasystem, a collection of different, mature communities.
- There is good communication of the long term vision and goals.
- Holistic approach of the three categories.

# Steps

- Mapping the organization, understanding the different formal and informal connection between the sub-groups
- Identifying the dense points of the system
- Increasing the diffuse design capacity in the dense nodes of the network
- Understanding and refining the educational aspect of the process
- Widening the scope
- Creating a “manual” of this process

# Conclusions

- Monoculture in the context of social innovation has the same disadvantages as in agrarian studies.
- Creating networks of diverse cells that communicate and cooperate creates increased redundancy that in turn increases resilience.
- Biomimicry brings a perspective that is more holistic and does not fall into the mechanistic fallacies of scientific operationalism. In addition his alternative perspective is synergistic with the shifts necessary for the transition towards sustainability
- The evolution of diffuse design capacity is a robust exit strategy for designers engaged in social innovation projects.
- Biomimicry situates nature in a position that is more compatible with sustainability and goes beyond its instrumentalisation, fostering new bioethics.