

How does design intervention promote sustainable rural transition – An analytical framework based on the multi-level perspective model



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Abstract

Rural socio-technical system has become an emerging area for design to expand its field of practice, and a large number of localised design interventions in rural areas have emerged in China. Although numerous literatures on design research for rural transition, seldom has answer the question how it happens from theoretical aspect, rather than merely from case descriptions. In order to analyse the processes and pathways of design intervention for rural transition, an analytical framework based on multi-Level perspective theory has been implemented, in which nested layers of landscape, regime and niche illustrate how does design Intervention promote sustainable rural transition from a dynamic and multi-layer perspective. According to the framework, localized design practices for sustainable rural transition in China accelerate niche innovation by three internal processes and one external process, with the internal process consisting of taking rural values as the core, promoting multi-actor collaboration, and two-way learning process between designers and local people, and the external process being the urban-rural factor flow. With niche innovation as the cornerstone, there are two pathways to design intervention promote sustainable rural transition: *top-down landscape influence* and *bottom-up grassroots breakthrough*. For the pathway of *top-down landscape influence*, development of macro-landscape accounts for sustainable rural transition by affecting grassroots design practices and the regimes for design practices, while for the pathway of *bottom-up grassroots breakthrough*, the dominant model of design intervention for sustainable rural transition acts as leverage points in rural socio-technical system, which is formed and merged by the interactions of multiple elements in various design interventions, and eventually brings about the upward momentum for rural transition.

Author keywords

design intervention; multi-level perspective model; sustainable rural transition.

Introduction

Rural areas as organic systems, besides ecological conservation function, their diverse economic activities, a unique social life and a rich cultural heritage contribute to diversity of functions (Akgün, Baycan, and Nijkamp 2015), which require the joint efforts of multiple shareholders to push rural

systems to sustainable transition. Sustainable rural transition is a wicked problem and also a systemic process, implying comprehensive weighing of issues such as top-level design and grassroots innovation, as well as comprehensive consideration of the systemic relationships among industry, talents, organisation, ecology and culture. The practicality, openness and flexibility of design make it a meaningful constructor to deal with the complexity. In China, environmental landscape design, packaging and branding design, cultural and creative product design, service and experience design have empowered the countryside in different ways.

The explosion of design interventions in rural areas has also given rise to relevant academic research on design practices from a micro perspective. However, there is still a gap in terms of comparing and analysing the various practice patterns of different design interventions in rural areas, condensing common features, exploring how design influences the social regimes and macro strategies of sustainable rural development from the micro realm. This paper draws on the analytical framework provided by the Multi-Level Perspective model (Geels, Frank W., 2002) to build a comprehensive perspective on design interventions for sustainable rural transition in China. It analyses the common features of different models of design interventions in sustainable rural transition and explore the pathways of design interventions.

A MLP analytical framework of design interventions for rural transition

Multi-Level Perspective theory provides an analytical and heuristic framework for analysing the sustainability transition of socio-technical systems (Geels, 2002). It divides the transition process into three levels: (1) niche innovation at the micro level, (2) socio-technical regime at the meso level, and (3) socio-technical landscape at the macro level. The macro landscape is influenced by exogenous environmental factors, the meso regime is nested within the macro landscape and explains the stability and trajectory of change, and the micro niche is nested within the meso regime and represents a protected space that provides the seeds for change and determines the occurrence and incubation of new things (Geels, 2008). Transition is achieved through a non-linear process of interaction and synergistic evolution between the three layers, where niche innovation establishes the internal dynamics of change, the environ-

mental landscape create pressure for institutional change, and institutional instability creates windows of opportunity for niche innovation (Geels and Schot, 2007). A successful transition depends on coherent development of three levels, with different patterns of interaction and development leading to two different paths of change: Technological substitution and Wider transformation (Kemp et al., 2001; Geels, 2005). However, layers of macro-landscape and meso-regime, respectively, are more exogenous and have a stronger lock-in effect, designers usually act on the niche level, providing leverage and triggering innovation to bring about systemic change.

Based on the knowledge from MLP model, a framework of design interventions for rural transition has been constructed in Figure 1:

Firstly, the government has issued policy to actively promote the rural transition to sustainability, and the main strategy on which various rural policy based in China, Rural Revitalisation strategy, becomes the landscape for design intervention in rural areas.

Secondly, Under the appeal of the Rural Revitalization strategy, multiple actors such as new villagers, social enterprises, the grassroots government, public institutions, and especially, the First Secretary in the village, gather in rural areas with their own interests and values. The social structure formed between these multiple actors and elements is the regime layer of the rural field, which provides guidance and coordination for the practices of the relevant groups of actors institutionally, organizationally, economically and culturally.

Finally, various localised design practices for rural transition, such as architecture acupuncture, art interventions and community empowerment, are niche innovations by taking design as an effective means. Niche provides a protected space for design intervention with internal processes including the articulation of expectations and visions, the building of social networks, and learning processes at multiple dimensions (Pereno and Barbero, 2020), while the external processes include linking to wider rural-urban integration strategies.

Localised practices of design intervention in niche level

According to design practices for rural transition in China, there are three main patterns of design intervention: architecture acupuncture, art interventions and community empowerment, which have the common processes in niche level (See table 1).

Architecture acupuncture means to intervene in sustainable rural transition by environmental landscape design. There are two main implementation paths for the localisation practices of architectural acupuncture: firstly, to protect traditional villages and enhance their overall appearance through environmental and landscape planning; secondly, to renovate public space in rural community through architectural design. These two main paths are mostly based on sorting out the historical and cultural resources of the villages, and some projects will give the villages some new businesses to boost the village economy on this basis.

Art interventions are a series of actions, such as artistic performance, art exhibition, aesthetic practice, art education, carried out by contemporary artists and aim to promoting the emotional communication between people and people, people and gods, people and artefacts in rural network. These actions focus on the cultural dimension of rural society and the emotional demands of local people, and affirm the cultural values of the countryside to make it relevant to the times.

Design practices of community empowerment for sustainable rural transition focus on “making things happen” (Manzini, 2015) by empowering people and objects in rural communities and using design to establish an endogenous mechanism for rural development, thus activating, sustaining and guiding rural communities in a sustainable direction, mainly through the integration of design.

Pathways of design intervention for rural transition

According to the MLP framework of design interventions for rural transition, design interventions not only have internal

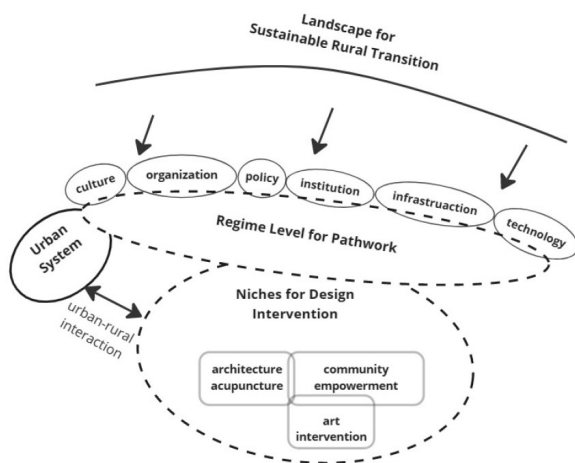


Figure 1. MLP analytical framework of design interventions for rural transition.

Table 1. common processes of design intervention in niche level

MLP framework	Architecture acupuncture	Art interventions	community empowerment	Common processes
articulation of expectations and visions	Respecting the rural fabric to rebuild public space	Reinventing rural communities based on cultural traditions	Establishing endogenous mechanism for rural transition	taking rural values as the core
building of social networks	Multi-actor building	Multi-actor linkage	Multi-actor participation	promoting multi-actor collaboration
learning processes at multiple dimensions	A two-way education for villagers and architects	Artist's artistic action in locality	Co-creation of values for villagers and designers	two-way learning process between designers and local people
Urban-rural integration	Attracting urban people to form a mutual benefit between urban and rural areas	Building complementary urban-rural communities	Urban-rural value swap	urban-rural factor flow

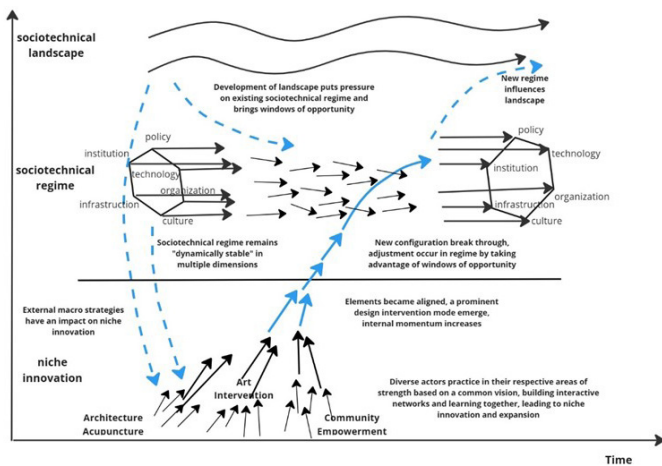


Figure 2. Design intervention pathways for rural transition.
(Adapted from Geels, 2002)

and external processes at the niche level, but also have certain pathways by interactions within three levels. There are two pathways of design intervention for rural transition: top-down strategic influence and bottom-up grassroots breakthrough, to influence the meso-regime and macro-landscape.

1 Top-down landscape influence (See blue dotted line in following Figure 2)

On the one hand, the development of macro-landscape for sustainable rural transition affects grassroots design practice within existing social regimes. On the other hand, the development of macro-landscape for sustainable rural transition brings pressure and windows of opportunity to existing layers of regimes, and gives rise to a series of adjustments in social regimes that help sustainable rural transition.

2 Bottom-up grassroots breakthrough (See the solid blue line in following Figure 2)

First of all, multiple actors gather at the rural grassroots to carry out practical exploration in their respective areas of

strength based on the common vision. Then, multiple types of localised design practices interact, merge and develop together into a dominant model of design intervention in rural areas, and an internal impulse is created. Finally, the internal impulse breaks through the existing social regimes upwards, taking advantage of the window of opportunity, and the meso-regimes level changes accordingly and eventually indirectly influences the macro-landscape level.

Conclusion and Further Studies

Design interventions for rural transition in China have illustrated vividly the processes in niche level and two pathways on which they influence regimes and landscape for sustainability transition. Design practices can bring about a series of internal and external processes at the niche level, thereby progressively influencing the mechanistic and landscape levels of rural transition. However, could the framework apply into other rural context, where rural conditions of economic, environmental, cultural, and social, are thoroughly different from China. In order to answer this question, further studies may be as follows:

First, do further research on design practices for sustainable rural transition around the world for further development and optimization of the framework.

Second, based on the framework, the strategic portfolios embedded in design practices are still under the black box. Thus, in-depth exploring should be paid on design portfolios by comparative case studies of sustainable rural development.

Acknowledgements

This short paper is under dual-supervised of professor Xie Yumei from Jiangnan University and professor Silvia Barbero and Amina Pereno from Politecnico di Torino.

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