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Sustainable transformation of age-friendly community centres based on transition design

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Abstract
The world's population is ageing and countries are urgently seeking new solutions to ageing issues. According to Irwin (2015), Transition Design (TD) is a new design proposition for a rapidly changing society based on thinking about the concept of the "long-term" and the idea of global localism, placing the natural world in a more macro context, and advocating a more systematic approach to the transition to a more sustainable future for a design-led society. In the context of active ageing, this PhD research aims to explore how TD guides Design Research and Practice, taking the example of the sustainable transformation of age-friendly community centres (AFCC), from the vision of stakeholders, and the perspective of designers and policymakers, incorporating stakeholders, especially older people, into the design decision-making process, recognizing their entire lifestyle, and involving the infrastructure reimagination, including the products, services, environment, and social systems involved. Through wicked problem in AFCC, stakeholder relations, historical evolution of wicked problem, future visions, and designing system interventions, discussing the transitional design strategy and future trends for AFCC. The transition framework and design strategies for sustainable inclusive AFCC under TD core tenets will be addressed. This will enrich the theoretical and practical basis of TD and have significant implications for the sustainable development of ageing communities.

Keywords
Transition Design; Age-friendly; Community centres; Sustainable transformation; Design strategy

Introduction
In 1972, planner Horst Rittel identified a complex class of "wicked" problems for which the traditional design process was inadequate for solving (Rittel & Webber, 1973). "Wicked problems," such as climate change, biodiversity loss, forced migration, natural resource depletion, and the widening gap between rich and poor etc. require new approaches. Wicked problems affect multiple stakeholders at multiple system levels (Palmieri et al., 2022). Today, population ageing has become a new "wicked problem". The ageing trend is spreading rapidly worldwide. In the United Nations (UN) *World Population Prospects 2019* (UN, 2019), it states that by 2050, one in six people in the world will be over age 65 (16%), up from one in eleven in 2019 (9%), see Figure 1. Ageing has become one of the major social issues that countries need to address, and will have a direct impact on economic development, policy planning, infrastructure, social security and many other levels. Meanwhile, cities and communities are also facing a huge test. The contradiction between the proliferation of the number of elderly people and the construction of local infrastructure and service is also becoming increasingly evident. Existing community living spaces are no longer able to meet the growing needs of older people, and the environment and social services constructed without an all-ages inclusive perspective have caused many inconveniences to older people's lives (Fan et al., 2017; Guo & Pan, 2013; Hu, 2020; Wang & He, 2021). Therefore, the need for age-friendly transitions in communities and spaces becomes urgent, and the systematic and sustainable nature of the transition approach becomes a key factor in measuring the success of the transition.

Scholars have generally suggested that design is an important part of integrating spaces into communities (as cited in Shin & Planning, 2006; Tubbs, 2012). However, there is limited research on the involvement of design in the sustainable transformation of communities and community spaces for older people. Transition Design (TD) is a practice and knowledge that originates from other disciplines and incorporates their principles, and envisages the mediating role of design itself to facilitate multi-level and multi-stage socio-technical transitions (Palmieri et al., 2022). In transition studies, TD is of great relevance and necessity, as it aims to move from understanding to action. Unfortunately, to date, the academic and non-academic fields know very little about the effects and implementation of this new discipline in practice and always end up with an unfulfilled promise. The role, value and potential of transitions has been well defined and explained as the design discipline has increasingly focused on TD. The subject has also been mentioned in several academic literature and conferences. Nevertheless, more importantly, only a very limited number of academic case studies can be found that implement and validate methods and tools, thus validating the potential of TD (van Selm & Mulder, 2019). TD approaches require a highly interdisciplinarity, collaboration and are rooted in an understanding of how change manifests itself in complex systems, coupled with a vision of a sustainable future that expands the problematic framework and therefore requires further discussion and debate. Designers working in the field of social innovation have developed important new approaches from fields such as sociology, organisational science and business that can and should be expanded and deepened in the emerging field of TD (Irwin, 2015). The tran-

Figure 1. Percentage of population aged 65 years or over in 1990, 2019 and 2050, according to the medium-variant projection (UN, 2019).

sition of future communities is inseparable from the involvement of TD.

Aim and Objectives

Identify the wicked problems of Age-Friendly Community Centres (AFCC)–the status quo, problems, and historical evolution–and make theoretical contributions to the relations and approaches between stakeholders' transition products, services, environments, and social systems to propose transition framework and design strategies for AFCC. To explore how TD can engage in design research and practice to influence the planning and design of AFCC, and how stakeholders can actively participate in the design process and play a key role in providing a sustainable vision for finding new paradigms for system-level transitions in design-oriented social transformation and thinking change to make our future community environment more inclusive and sustainable.

Background

With the emergence of economic development, population growth, internationalisation, networking and other factors leading to an increasingly complex society, which is also a source of many problems, as it is a breeding ground for new approaches to these problems. Particularly for specific types of problems at the societal level, which cannot be solved by simple short-term solutions (Loorbach, 2010). According to Ekardt (2020), sustainable transformation will only be achieved if many disciplines contributing to the behavioural sciences are put together to form an overarching theory of individual and collective change. On the path of such transformative research, some fundamental methodological issues must be considered. Sustainability transformation requires a variety of activities by different participants, from a completely different policy approach to (non-verbal or occasional) establishment of new everyday behaviours of people.

In essence, older people are currently on hold as an important human resource and potential force that is not being properly utilised. It is at this point that some scholars propose that how to make community centre (CC), which are "near-home" places of public life, better guide the elderly to live a scientific and healthy life, face aging with a positive attitude and participate in social activities more actively, so as to stimulate the potential positive energy in the elderly and improve the quality of life of the elderly, is an urgent problem that needs to be solved in society nowadays (Gong, 2015; Hu et al., 2021; Lu, 2016). A quality CC is a valuable asset to any community and a well-functioning CC is a thriving hub of activity for youth, families, seniors, civic organisations, parks and recreation departments and more. Unfortunately, in many cities, CC are unable to meet the needs of those around them. In some areas, there are currently no CC (Jumpsix2, 2016).

This shows that CC are in urgent need of development in the city. Therefore, the establishment of an inclusive shared CC in an age-friendly community (AFC) is particularly important. Age-friendly urban planning has gone beyond healthcare considerations to include neighbourhood design and increasingly complex concepts of place (Lui et al., 2009). Recognising that age composition is a dimension of diversity, urban planners now emphasise the value of inclusive design in maintaining community heterogeneity (Gilroy, 2008). Thus, unlike traditional senior centres and day care centres, CC in AFC, although designed primarily for older people, are open and accessible to all ages, promoting active living and becoming an important part of the "lifetime" community.

The discipline of design has developed into a profession that addresses business and social issues through the use of design principles. The design discipline is now studying and experimenting with TD to develop itself as a discipline capable of solving complex ongoing problems and transforming society. TD aspires to be an integrated discipline with multiple knowledge and skills, acting as a medium to facilitate, accelerate and guide transitions (van Selm & Mulder, 2019). We need to reconceptualise and re-imagine everyday life, based on local and regional ways of living, and to communicate new consciousness and approaches on a global scale. Setting a long-term vision and backcasting to the present, drawing on the experience and knowledge of cross-disciplines, dynamically adjusting the methodology and mindset in the step-by-step realisation of the short- and medium-term vision, with a view to eventually arriving at a more sustainable future (Irwin, 2015).

Methodology

Based on the core tenets of TD, this research will be divided into five sections: Wicked Problem in AFCC (data collection and data analysis), Stakeholder Relations, Historical Evolution of Wicked Problem, Future Visions and Designing System Interventions (transition framework and design strategies). The data collection consisted of two simultaneous parts: theoretical and practical. Data analysis will be based on different types of data.

Theoretical Part: (1) Literature research (a systematic literature review). (2) Interviews (qualitative analysis). (3) Survey research (quantitative analysis). *Practical Part:* Workshops (based on TD approach, and the results such as problem map, stakeholder relations map, stakeholder concerns, future visions, transition pathway, and potential projects etc. will be mapped and analysed as the practical data sources for the study).

Stakeholder Relations, Historical Evolution of Wicked Problem, Future Visions and Designing System Interventions (transition framework and design strategies) will be constructed based on the analysis of wicked problem. The AFCC transition framework and strategies will be driven by the future vision, and proposed by combining the *Age-Friendly*

Figure 2. Transition Design Workshop in Prague (Source: author).

Communities (AFC) domains and suggested spatial indicators (Davern et al., 2020) with the *Design for Sustainability Evolutionary Framework* (Ceschin & Gaziulusoy, 2016), based on the World Health Organization (WHO)'s framework *Global Age-Friendly Cities: A Guide* (WHO, 2007).

Case Study

As this research relies on design and practical experience as the basis for academic research, and is based on local and regional lifestyles, the findings of the unstructured interviews with stakeholders led to the proposal for a 3-day workshop on "TRANSITION DESIGN WORKSHOP Age-Friendly Community Centres in 2050," see Figure 2. A total of 19 stakeholders (55-70-year aged people, community and nursing home volunteers, social workers, and architecture and design students) from the Czech Republic, Poland, and China who were working and living in Prague participated. The workshop identified the current problems and complex relations faced by AFCC through the Problem Map of CC in Prague, Stakeholder Relations Map, and Stakeholder Concerns Map, as well as through a four-stage design intervention - How Might We, Snapshots in 2050, Projects Informed by Future Visions, and New Projects to create a vision of AFCC's future and backcasting to present to analyse the transition pathways, resulting in four innovative and integrated solutions. Once the final projects were completed, a public presentation was organised, a feedback survey was conducted with participants, notes were taken on site, and photographs and videos of the workshop were filmed.

Some groups developed projects in the form of services, while others designed products or proposals to intervene in environmental or social systems. For example, a group designed a social system intervention in AFCC in the form of a retirement mentoring programme. The intervention helped people join the programme before retirement age and aimed to alleviate retirement-related fears and ease the feeling of disconnection from social work to retirement life by providing practical and emotional support, such as financial planning and job search assistance. These interventions, which ranged from technical solutions to physical improvements to mentoring projects, illustrated the need for a multi-faceted approach to support older people in the community in the future AFCC, showing the potential of transitional approaches to facilitate design actions. The findings of this workshop demonstrated that using the TD approach is an effective way to generate innovative solutions for the sustainable transformation of AFCC, providing a multidimensional method for addressing the complex challenges of AFC and positively impacting people's lifestyles. This is significant for policymakers, designers, and community members interested in creating more inclusive and supportive community environments for older people. The unique interventions proposed by the groups, based on long-term thinking, addressed different aspects of the wicked problem and were able to systematically consider the rationality and sustainability of the projects. Meanwhile, stakeholders played a pivotal role in the overall design decision-making and intervention process, actively contributing to the implementation of the process and making the vision of the future the best possible for everyone's imagination.

AFCC Transition Framework

The framework first envisages a sustainable future vision for design-oriented AFCC, and subsequently elaborates a transition strategy for AFCC from the individual to the holistic, and from technology to human-centred concepts from a design perspective. Using TD theory as a guideline to conduct research, and the 8 domains of AFC as indicators, the transition process is divided into four stages: product, service system, environment and social system, with product design, service design, social innovation design and system/transition design as the main design methods, and the stages and methods are developed progressively while backcasting to test the rationality and effectiveness of the process. This is complemented by sustainability, participatory design, collaborative design, interaction and user experience, and inclusive design approaches, incorporating the involvement of the disciplines of sociology, gerontology, psychology and economics, with a view to transitioning to a desired future, see Figure 3.

Figure 3. AFCC Transition Framework (Source: author).

Conclusion

In summary, applying the TD approach to address the ageing population, and using the transformation of AFCC as a fulcrum to design a bottom-up solution strategy for older people based on a long-term vision to radically improve their lives, change their lifestyles to be healthier, more inclusive and sustainable, and explore new solution paradigms will be the focus of this study, and will also contribute to TD theory and the ultimate goal of transition to a sustainable future.

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