



# Empathy, Resonance and Interconnection: The Coupling Effect of Hypermedia in Knowledge Sharing Service in Pluralistic Community

Hepianjue Miao<sup>(✉)</sup>

Library, Jiangsu Open University, Nanjing 210017, China  
mhpj91@pku.org.cn

**Abstract.** “Community” as a “dynamic organism” in pluralistic cities increasingly represents a shift from diversity to pluralism, in the form of a collection of different subjects, cultures and new forms of business with distinct differences and symbioses. However, due to the high level of urbanisation, the supply and distribution of resources in the pluralistic community shows significant differences and knowledge sharing faces many problems. Based on two key variable questions, the study explores the motivations for hypermedia embedded in knowledge sharing in the pluralistic community and the pathways through which coupling effects are generated and reinforced. It also contributes to the resilience and sustainability of a pluralistic community through innovative and interdisciplinary approaches.

**Keywords:** hypermedia · pluralistic community · knowledge sharing · coupling effects

## 1 Introduction

As urban development fostered economic prosperity, a rich and pluralistic urban culture has emerged; communities in pluralistic cities also increasingly show a shift from diversity to pluralism, presenting themselves as a collection of different subjects, cultures and new forms of business with distinct differences and symbioses. Pluralism is thus an inevitable trend in the evolution of human society. The creative interpretation of community as a dynamic organism has also emerged (Xuerong Wang, 2022) [1]. Knowledge sharing is an important application of information technology in community services. However, the city enters a plateau period after high urbanisation, and then the accumulated contradictions in knowledge sharing in a pluralistic community explode. On the one hand, the high level of economic and social development and the expansion of the urban scale make people’s demand for various knowledge and resources more urgent, but on the other hand, the rapid growth of the urban population intensifies the ever-increasing pressure on the supply of resources for community public services. This calls for an effective balance between social demand and resource supply.

Current knowledge sharing in the diverse community suffers from problems such as single participants, lack of participatory dynamics, weak humanistic awareness, low-quality service platforms and low innovation efficiency. As a scholar-practitioner of

communication and knowledge sharing, I argue that based on the coupling and resonance of the demand and supply sides, the hypermedia is expected to break the ‘shackles’ of the traditional service model and promote the innovation of community knowledge sharing services which can provide humanistic care to community entities with different identity backgrounds, help bridge cultural prejudices and ensure the equity, mobility and inherent vitality of knowledge sharing.

## 2 Problem Classification

The two primary research questions are: “What are the motivations for embedding hypermedia in knowledge sharing in pluralistic communities?” and “Can hypermedia create a coupling effect in a knowledge sharing service in pluralistic communities?”.

### 2.1 Two Main Motivations

There are two main motivations for embedding hypermedia technologies in knowledge sharing: one is the empathetic nature of knowledge sharing itself. Community members spontaneously generate cooperation needs based on specific social needs, which can be expressed as actionable and shareable dynamic content through hypermedia technology to achieve effective transfer and sharing of knowledge and resources between individuals and groups; the other is that knowledge sharing requires more empathy and resonance.

The nonlinear network structure of hypermedia itself determines the ability to organise and manage chunks of multimedia information (including text, images, video, etc.) in a digital environment, which means that the essence of hypermedia is the combination of hypertext and multimedia in an information-symbolic context.

Vachtsevanou (2023) define a formal model for the contextual exposure of signifiers in hypermedia environments that aims to promote the exploitation of affordances [2]. The digital interpretive content of knowledge sharing is dynamic, diverse, interpretive, non-linear and interactive. The real-virtual continuum describes the span between real and virtual environments. It integrates community resources with its digital interpretive content, which has cross-textual and dynamic interactive properties, taking full advantage of each. It also provides richer, more exciting and interactive interpretive information. The overlay of this information does not break the link between the diversity of the multi-community and its environment, but rather strengthens the temporal and spatial link between the virtual digital information and the real environment. It gives the citizen a great sense of ‘being there’ and can deepen their understanding of cultural recognition in the diverse community by comparing the visual narrative and text of the multimedia in space.

### 2.2 Production and Reinforcement of Coupling Effects

If there is a relationship between two things that interact and influence each other, then this relationship is called ‘coupling’, and if multiple groups form a dynamically related coupling resonance, then an interconnected field effect is generated. Based on Roger Azevedo and Dragan Gasevic’s research (2019) [3], multimodal multichannel data play

a role in understanding the interplay between cognitive, affective, metacognitive and social processes.

The dimensions and diversity of knowledge sharing arise not only from the reinterpretation of old knowledge and the generation of new knowledge, but also from innovation and cross-borrowing across knowledge boundaries (2022) [4]. Unfortunately, the persistent marginalisation of indigenous perspectives, languages and knowledge in pluralistic community, and the silencing of the voices of minorities, disadvantaged groups, women and children, as well as the lack of necessary and sufficient regulation and support from community organisations and cultural systems, exacerbate the closure of knowledge and various barriers prevent people from equitable access to and contribution to knowledge sharing.

The author argues that in order to break the current ‘blockages’ and ‘clogs’ in knowledge sharing within pluralistic community, a linkage effect needs to be built. This is because hypermedia, as an emotional machine, constructs an emotionally interconnected ecosystem of pluralistic community that have the capacity to allow us to experience different worlds, thus influencing our cognitive and emotional responses and potentially changing our ‘empathetic’ perceptions of social issues such as ethnic minorities and cultural diversity, as well as our attitudes or behaviours towards open access to knowledge resources. Attitudes or behaviours towards open access to knowledge resources.

From the perspective of media anthropology, a pluralistic community is the original sites for digital ethnographic research. As a vehicle for connecting the virtual landscape with the real world, soft immersion technology accelerates the interactive and communicative properties of ubiquitous learning communities across time and space, providing information users with a site that fuses dialogue, narrative and experience across the “here and now”, eliminating boundaries, giving users of the service a more pronounced intersubjectivity of community interaction, expanding the boundaries of culture, organisation and society, constructing a self-reflexive cognitive and narrative bridge for the ‘digital self’, and enriching the diversity of hypermedia narratives. It gives users of the service a more pronounced intersubjectivity of community interaction, expanding the boundaries of culture, organisation and society, constructing a self-reflexive cognitive and narrative bridge for users’ ‘digital selves’, and enriching the diversity of hypermedia narratives, and the production of community discourse is achieved through the intersection, derivation and reconfiguration of meaning (Kozinets, 2016) [5].

Autoethnographies, based on hypertextual constructions, are ‘personal’ narratives of cultural experience by an individual or ethnic group within a pluralistic community. Alan Chamberlain (2017) notes that anthropologists are relied upon to relate autobiographical narratives to broader forms of culture [6]. The imagined connection between voice and place can be described as private, but the connection between experiencing voice and place can be actively public. Public sounds gain importance in the soundscape by creating a strong imprint in the mind that reflects the context of the community as a whole. Autoethnography plays a significant role in the advancement of audio technology and mobile human-computer interaction, enabling interactive applications from space and place to social media, music, composition and more.

On the other hand, the organic integration of multiple technologies has given rise to new knowledge dissemination scenarios, and the pluralistic community itself generates

a large amount of generative and process information, which becomes a ‘new learning resource’, i.e. the public users in the community are both learners and contributors of learning resources, which not only promotes the exchange and sharing of learning resources but also allows them to deeply experience and feel the knowledge content in an interactive environment driven by flexible screen technology, which enhances the cognitive effect and enables the flow and sharing of knowledge.

The hypermedia information environment will be more concretely and three-dimensionally integrated into all corners of daily production and life, manifesting itself in the accessibility of information dissemination to pluralistic community, the depth of interactivity in the production of meaning, and the humanistic care of human services. The service and dissemination of knowledge in the pan-knowledge context are no longer limited to physical public cultural institutions such as libraries, cultural centres and museums, but the plural subjects themselves become the authors, experiencers, observers and evaluators of the cross-media network ethnography, constantly reinventing and reshaping themselves in the flow and connectivity of each time and place, enriching the common memory narrative and coalescing identity.

### 3 Discussion and Conclusions

The surge in the number of Chinese in Europe has changed the local social structure, socio-economic and regional cultural landscape (Jiayi Shi. et al., 2017) [7]. Taking just Italy as an example, the number of Chinese in Italy in January 2020 was 305,089, accounting for 5.7% of the total number of foreign migrants currently living in Italy. Taking just the Italian region of Lombardy as an example, Lombardy ranks first among all Italian regions in terms of the Chinese population, with approximately 71,446, representing 5.9% of the region’s foreign resident population; by 2022, 300,216 of the 50,307,216 foreigners in Italy were Chinese; and in terms of regional data, Tuscany overtakes Lombardy as the region with the largest Chinese population (Istat, 2020–2022) [8].

Moreover, all regions show a downward trend in Chinese data compared to the pre-epidemic period. This indicates that Chinese immigrants have a relatively low level of political legitimacy and socio-cultural integration, and that the Chinese community is easily targeted by social discrimination and racism; the Chinese community has less communication with the local population and is generally less involved and active in local socio-cultural activities. At the same time, the increasing influx of refugees into mainstream Italian cities poses significant challenges for the sustainable development of local communities of origin.

After 23 years of development, the NpL programme in Italy has been constantly innovated and enriched by the current situation, real needs and development needs, from reading guide toolkits to multilingual picture book floats, to technology-enabled VR and AR digital picture books, to creative hypermedia-integrated international book fairs, providing local integration and ‘dignified’ social survival strategies and viable solutions for ethnic minority families living in Italy’s mono-nuclear diversity, and focusing on issues such as dyslexia, effectively contributing to the process of educational equity and bringing significant social and economic benefits. Annual data from 2000 to 2019 show that the proportion of families who shared reading at least four times a week

increased from 16.4% to 38.9%, while the proportion of children who never or rarely had reading experience decreased from 46% to 10.9% (Valeria B. et al., 2019) [9], suggesting that NpL programmes have significantly changed families' reading habits. However, community libraries in China are still mostly stuck in the stereotypical thinking of providing spaces for reading when engaging in family-based intergenerational shared reading practices, while humanistic services, the spirit of place building, and rational allocation of resources oriented towards readers of different ages and psychological states are exposed as major shortcomings.

On the other hand, there is also an uneven development of cultural re-creation and creative sharing in the main core communities (i.e. indigenous communities). For example, in Nanjing, the renovation and expansion project of the Nanjing Children's Library is based on the "demand-feedback" evaluation mechanism, and through various forms of interactive technological experiences, spatial redesign, creative book selection and workshop experiences, readers and families of different ages, backgrounds and personalities are transformed from passive recipients of knowledge to active disseminators and media, thus forming a knowledge-sharing audience. In this way, they can form a knowledge-sharing audience, which in turn can accumulate the potential energy for knowledge-sharing dissemination and further expand the positive power of knowledge-sharing (Hepianjue Miao, 2021) [10]. However, the cultural and creative transformation of the Nan Gang community in the Da Chang district of Nanjing, just across the Yangtze River to the north, has fallen into an awkward situation. The cultural heritage and innovation of the industrial base of the patriotic era should have had a strong creative vitality, but the 'island' development between the creative community and the local cultural resources could not be dovetailed, and the happiness of the locals was lower than expected before the renovation, while the foreigners living here could not be well integrated and had a greater sense of alienation in terms of cultural consensus.

In my opinion, hypermedia embedding in community knowledge sharing and cultural regeneration, requires the creative use or transformation of the historical memories or lifestyles of the original inhabitants, so as to attract foreign residents to live and work in the community through the power of cultural sympathy, and thus enhance the charm of knowledge sharing in pluralistic community, rather than the simple and brutal 'uprooting' of the community and forced integration or a 'cultural show' of empty shells and repainted landmarks.

In terms of knowledge flow and integration within and outside the community, the experience of Guangling community of Yangzhou is worth learning from. By 2022, Yangzhou has been built 60 urban study rooms and 1,333 comprehensive cultural service centres in villages and townships [11]. Through the intervention of installation art and non-heritage art in community spaces, traditional crafts such as painting, wood carving, stone carving and paper art are applied to the cultural reconstruction of knowledge-sharing blessed places in pluralistic community, where the original ancient Yangzhou characteristics are inherited and the contemporary characteristics of the new China-chic trend attract young people from different regional and cultural backgrounds to live in the local community, resulting in a blend of old and new and cultural co-prosperity.

Hypermedia has been the most important mechanism of the driving force needed to build the service network and interactive platform for the diverse community. The shared

narratives of community subjects contribute to people's sense of identity and belonging to their communities, while users of different ethnic groups in the same community, through the intervention of emotional machines; accordingly, the cultural diversity and inclusiveness of the community are further enriched by the hypermedia narrative.

The narrative system of hypermedia in the community is constantly enriched and changed, promoting the construction and dissemination of community culture. With the continuous development of virtual and augmented technologies, the ubiquitous 'field' will give rise to new and unprecedented contexts where hypermedia will be embedded in the production of meaning and value transmission for knowledge sharing in pluralistic community, and where empathic self-construction, emotional interaction, and deep immersion and interconnection will become the three most prominent features.

As an empathy machine, hypermedia has forcefully created a more diverse cultural and creative landscape, promoting an inclusive social context (2022) [12]. It also bridges inequalities in knowledge sharing. The expression of pluralistic culture can be achieved through dialogue and respect.

## References

1. Xuerong Wang. "Logical Structure of 'Pluralistic Integration': Multi-dimensional Publicity of Chinese National Community Consciousness in the New Era", *Social Sciences in Ningxia*, 2(2022) DOI: <https://doi.org/10.3969/j.issn.1002-0292.2022.02.003>
2. Danai Vachtsevanou; Andrei Ciortea; Simon Mayer; Jérémy Lemée; "Signifiers As A First-class Abstraction in Hypermedia Multi-Agent Systems", *ARXIV-CS.AI*, (2023). <https://doi.org/10.48550/arXiv.2302.06970>
3. Roger Azevedo; Dragan Gasevic. "Analyzing Multimodal Multichannel Data About Self-Regulated Learning with Advanced Learning Technologies: Issues and Challenges" *COMPUT. HUM. BEHAV.* 96 (2019): 207-210 <https://doi.org/10.1016/j.chb.2019.03.025>
4. International Commission for UNESCO. *Reimagining our futures together: A new social contract for education*. Beijing: Educational Science Publishing House, (2022).
5. Robert V. Kozinets, translated by Weiming Ye. *Netnography: Doing Ethnographic Research Online*. Chongqing: Chongqing University Press, (2016).
6. Alan Chamberlain; Mads Bødker; Adrian Hazzard, et al. "Audio Technology and Mobile Human Computer Interaction: From Space and Place, to Social Media, Music, Composition and Creation", *INT. J. MOB. HUM. COMPUT. INTERACT* 9 (2017): 16, <https://doi.org/10.4018/IJMHCI.2017100103>
7. Jiayi Shi, Bonian Hao et al., "Urban social integration of the Chinese in Italy". *Journal of Chang'an University (Philosophy and Social Science Edition)*, 19(2017): 86-93. DOI: <https://doi.org/10.3969/j.issn.1671-6248.2017.06.011>
8. Tuttitalia.Cittadini Stranieri:Cinesi in Italia January, 2022. <https://www.tuttitalia.it/statistiche/cittadini-stranieri/repubblica-popolare-cinese/> Accessed 20 February 2023.
9. Valeria Balbinot, Elisa Maria Colombo, Giovanna Malgaroli, Alessandra Sila, Giorgio Tamburlini. *Nati per Leggere 1999-2019 La storia, le attività, i risultati, le prospettive*. Trieste: Centro per la Salute del Bambino, (2019).
10. Hepianjue Miao. "The Service Paradigm of Family-sharing Reading in Italy from the Perspective of Multiculturalism", *Journal of Academic Library and Information Science*, 39(2021):48-55. DOI: <https://doi.org/10.3969/j.issn.1006-1525>

11. Yangzhou Statistical Yearbook 2022, March, 2022. <http://tjj.yangzhou.gov.cn/nj2022/index.htm> Accessed 20 February 2023
12. International Commission for UNESCO. Reshaping Policies for Creativity: Addressing culture as a global public good. third edition, (2022). 8 February 2022, <https://www.unesco.org/reports/reshaping-creativity/2022/en> Accessed 17 February 2023.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

