Power to reconfigure health: the evolutionary logic and future path of health concepts in urban planning

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Abstract:

The awakening of human and public rights has pushed urban planning to pay attention to health, which is essentially a profound reconfiguration of power. Different planning schools offer distinct health concepts: rational planning constructs technological hegemony; advocacy planning challenges elite power; spatial justice theory exposes structural exclusion; resilient city theory is caught in the paradox of technocracy and equity. By systematically reviewing major planning theories, this paper defines health from a power perspective and proposes future paths – deconstructing technological hegemony, strengthening legal protection of health rights, and building multi-stakeholder governance networks. "Health spatial justice" should be placed at the top of the value sequence.

Keywords

power relations; health spatial justice; theoretical evolution; healthy cities

1. Introduction

Urban planning and public health share a trajectory of "common origin—differentiation—convergence" [1]. Modern urban planning emerged during the Industrial Revolution to address sanitation and housing crises [2,3]; early public health acts directly influenced garden city theory [1]. With the development of bacteriology and epidemiology, the two fields diverged [5]. Since the mid-20th century, growing health inequalities have refocused public health on the built and socioeconomic environment [1].

Planning theory has long linked health to "power." Traditional health planning was controlled by the state, experts, and capital [8,9]; health was seen as a tool for maintaining social order and labour efficiency [10]. Planning decisions by elites often exacerbated inequality [11,12]. The spread

of human rights – especially the right to health – and public rights awareness has challenged this structure. The WHO Constitution establishes health as a basic human right [13], shifting planning from technical to rights-based approaches [14,15].

This awakening of rights is a reconfiguration of power. Different planning schools reflect divergent health concepts (Table 1). Rational planning (1940s–1960s) regards health as a technical problem [16,17]. Advocacy planning (from late 1960s) deconstructs elite hegemony, viewing health as a product of social justice [18,19]. Spatial justice theory (e.g., Soja) reveals health inequality as spatial exclusion [20–23]. Resilient city theory defines health as adaptive capacity under shocks [24–26]. Power shifts – from expert monopoly to capital commodification to public rights – drive these differences. This paper reviews these theories, defines health, and proposes future paths for "Healthy China."

Table 1 Analytical Framework for the Comparison of Health Concepts in Various Theoretical Schools

Analytical Dimension	Rational Planning	Advocacy Planning	Spatial Justice Theory	Resilient City Theory
Definition of Health	Physiological + Environmental Health	Social + Psychological Health	Health of Social Structure	Health of System Function
	• Individual disease-free state	• Collective well-being	• Fairness in resource allocation	• Disturbance resistance capacity
	• Negative health (harm avoidance)	• Positive health (empowerment)	• Realization of collective rights	• Guarantee of group survival
Root Causes of Health Problems	Environmental exposure + individual behavior	Deprivation of participatory opportunities	Structural inequality	Systemic vulnerability
Role of Planning	Technical expert (providing optimal spatial solutions)	Community empowerer (assisting disadvantaged groups to voice)	Social reform promoter (challenging unjust spatial production)	System coordinator (optimizing multi-sector collaboration)
Key Intervention Strategies	• Physical space design	• Community participatory decision-making	• Resource redistribution	• Redundant design
	• Standardized norms	• Cultivation of local organizations	• Institutional reform	• Intelligent systems
Core Value Orientation	Efficiency + Order	Equity + Freedom	Equity + Justice	Resilience + Sustainability
Knowledge Basis and Methodology	Empirical science	Experiential narrative	Critical theory	Complexity science
Attitude Toward Power	Technically neutral (avoids political controversy)	Mediates conflict (balances multiple interests)	Challenges structural exclusion (exposes capital–power alliance)	Maintains system stability (may reinforce technocratic authority)

2. Health Concepts and Power Relations in Various Theoretical Schools

2.1. Rational Planning: Technological Hegemony and Health Discipline

Rational planning defines health as a set of environmental parameters optimizable through scientific models [27]. Its framework prioritizes spatial accessibility [28], risk avoidance [29], and efficiency [30]. It simplifies complex health issues into spatial optimization problems, assuming that meeting physical environment standards automatically promotes health [27,31]. Humans are seen as rational economic actors, ignoring cultural and emotional needs [32]. Technocrats maintain professional barriers, viewing planning as a tool to preserve order [33]; space becomes a measurable geometric unit [34]. This embodies technological utopianism but ignores psychological health, cultural identity, and social networks [35,36].

2.2. Advocacy Planning: Empowerment, Resistance, and Health Equity

Emerging from 1960s social movements, advocacy planning fights for spatial rights of disadvantaged groups [19]. It directly asserts that health inequality is a product of unequal power distribution [37]. It critiques rational planning's indicators for concealing inequitable resource allocation, arguing that health is shaped by structural power struggles, social networks, and cultural identity [38,39]. Advocacy planning promotes knowledge democratization and local experience [19,40,41]. However, it risks "elite capture" within communities [42]. Overemphasis on community empowerment may obscure government responsibility. It restores health from a technical problem to a rights issue.

2.3. Spatial Justice Theory: Struggles for Spatial Rights and the Decolonization of Health

Lefebvre argues that space is permeated by social relations and produced by power [43]. Spatial justice theory reveals that the configuration of health resources reflects systemic exclusion [20,44]. Health behaviours are constrained by spatial power and social networks. It criticizes traditional health assessments for ignoring language barriers and cultural taboos [20]. Upholding "local experience first," it resists global-scale "health colonialism" [45]. As Soja states, "health without spatial justice is the health of the privileged" [20]. The root lies in imbalanced rights in the production of space [46].

2.4. Resilient City Theory: The Paradox of Power under Systemic Resilience

Resilient city theory marks a shift from single-hazard to complex systemic shocks. Health is

defined as the capacity of an urban system to maintain functions and transform under disturbances, integrating engineering, ecological, and evolutionary resilience [47]. Individual health behaviour is influenced by group immunity thresholds and risk perception networks [48], but this view often ignores structural oppression [49]. Big-data-driven crisis prevention conceals "technological hegemony" [50,51]. Resilience can become either an instrument of neoliberal governance or a lever for spatial justice [54,55].

2.5. The Operation of Power Behind Health Concepts

Foucault shows that rational planning transforms health into a calculable biopolitical object [56]. Spatial commodification under neoliberal logic privatizes health resources and serves elites first [57]. Advocacy planning seeks to safeguard marginalized groups' health claims through resistant knowledge production [58]. In the US, redlining led to medical deserts and a 15-year life expectancy gap [59]. In Brazil's favelas, environmental racism manifests as spatial violence [60]. Spatial justice theory advocates for geographical redistribution of health rights [20]. Resilience theory often reinforces technocratic power, overlooking the digital divide [50]. Only by liberating health from technical discipline and restoring it to spatial power struggle can we achieve Harvey's "geography of difference."

3. On the Core Definition of Health in Urban Planning

3.1. International Research on Health Issues in Urban Planning

International planning research targets reducing non-communicable diseases, physical activity, environmental exposures (air, noise, green space), and health equity, encompassing walkability, public transport, community safety, and food environments [60–65]. Key studies include Giles-Corti et al.'s [60] eight active-travel interventions, Nieuwenhuijsen's [64] community-level environmental effectiveness, Kent and Thompson's [63] activity–connectivity–food access domains, and Northridge and Freeman's [66] three inequality mechanisms (resources, environments, political power). Collectively, these frame health holistically, emphasize social determinants, and elevate health equity as a central planning goal.

3.2. Domestic Research on Health Issues in Urban Planning

China's urban planning health research emerged late, localizing after the "Healthy China" strategy (2013) [4]. Tan Shaohua advocated a multi-scalar preventive shift [67,68]; Chen Juan et al. found urbanization's mixed effects require context-sensitive assessment [69]; Dong Wei et al.

identified social equity and cohesion as key determinants [70]; Wang Lan's team localized HCI/HIA tools in Suzhou Industrial Park [71]. Other work spans green infrastructure, evaluation frameworks, healthcare allocation, and mental health.

Overall, Chinese definitions follow the WHO's multidimensional view, emphasizing health promotion, quality of life, and equity through planning and policy.

3.3. On the Core Definition of Health

This paper reframes health through power: narrowly, as a basic right to perfect physical and mental well-being and equal spatial resources, with the urban system sustaining both residents and itself; broadly, as a continuous power-shaped process where urban systems and residents sustain vitality, resist inequitable interventions, adapt to disturbances, and advance toward spatial justice in health (Figure 1).

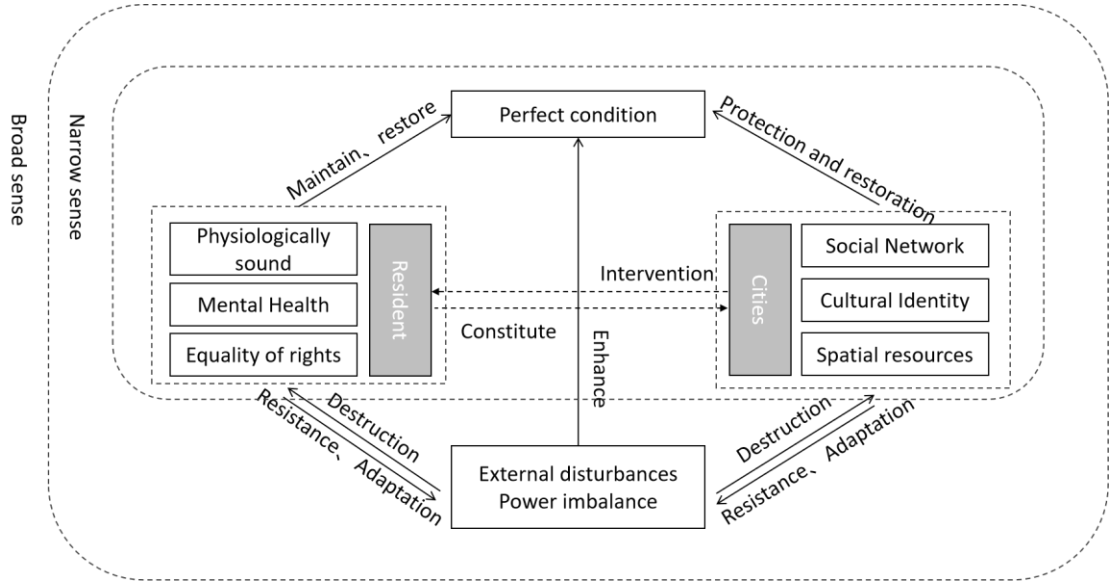

Figure 1 Structure Diagram of Health Definition

4. Actions and Prospects

4.1. Analysis of Urban Health Spatial Practices and Power Games at Home and Abroad

London's "Healthy Streets Strategy" (2018 Transport Strategy) targets a 2041 liveable city via legal empowerment, autonomy, and data democratization (Fig.2). The official framing (fewer casualties, more activity) conflicted with minorities' worship-space needs and capital's "healthy

social space," privileging commercial and middle-class interests while sidelining minority merchants and drivers. Although 60% of proposals were resident-voted and minority health access improved, market-driven investment in high-return zones triggered "health gentrification," displacing vulnerable groups to underserved peripheries.

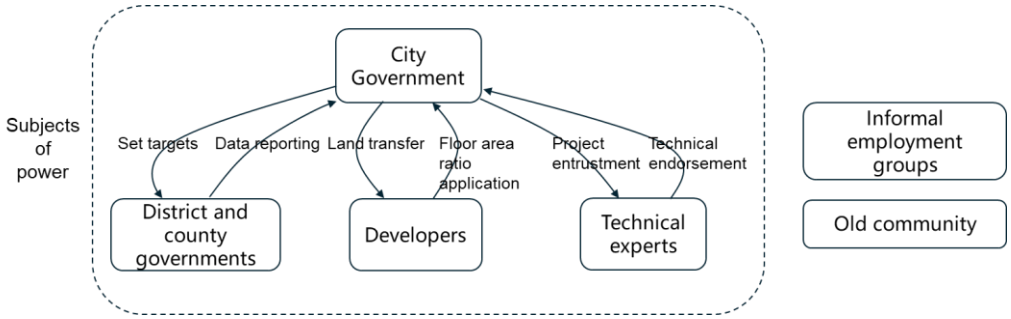

Figure 2 Schematic Diagram of the Power-Balancing Mechanism in the "Healthy Streets Strategy"

"The Healthy Beijing Construction Plan" operates through administrative orders, technological governance, and symbolic participation (Fig. 3). Health is reduced to 18 measurable indicators, neglecting elderly stress and culturally unsuitable health education for migrants. Disparities are stark: 5.4 facilities/km² in the sub-center versus symbolic "health graffiti walls" in southern districts; only 41% smart-monitoring coverage in aging neighborhoods—a "data divide." Per capita green space rose to 16.9 m², yet white-collar workers use it far more than ordinary residents, and play facilities for migrant children remain 68% short, reflecting structurally trapped distribution.

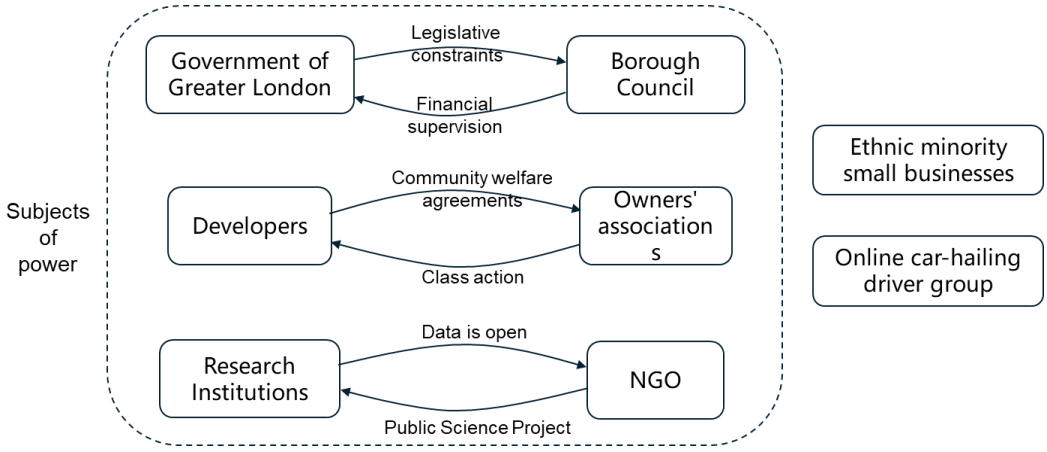

Figure 3 Diagram of Power Flow Characteristics in the "Healthy Beijing Construction Plan"

Healthy-city spatial practice requires power reconstruction. Beijing should grant community

health-budget autonomy and certify informal workers; London should fund anti-gentrification compensation from property gains and mandate corporate investment in low-income areas. Healthy-space practice is a contest over spatial rights—it needs conflict transformation mechanisms and safeguards against health elitism so health does not become a class symbol.

4..2. Health City Planning Oriented Toward Power Reconstruction

4.2.1 Deconstructing Technological Hegemony and Promoting Knowledge Democratization

Technocratic planning quantifies health into seemingly neutral parameters, sidelining vulnerable groups and social determinants [27,33,56]. Mandatory critical review of HIAs must expose embedded values and biases. Health knowledge must be democratized through institutionalizing local knowledge, PAR, and community-led assessments. Technological hegemony depends on opacity; therefore, all data, models, reports, and stakeholder views must be mandatorily disclosed in accessible language and visuals.

4.2.2 Strengthening Legal Protection and Clarifying Residents' Right to Health

Ambiguous legal standing, unclear responsibilities, and weak enforcement leave the right to health in planning vulnerable to capital and technocratic logic. Legal frameworks must embed health rights as a core planning objective: higher-level legislation should guarantee equitable environments and spatial access, and cities should define "healthy spatial rights" by ordinance. A mandatory Health Impact Assessment regime and inclusivity standards are required. Ultimately, government bears primary responsibility for curbing the over-commodification of health resources.

4.2.3 Deepening Health Empowerment and Building a Multi-Stakeholder Governance Network

Knowledge democratization and legal rights are hollow without mechanisms. Real power shift demands breaking the state–capital–expert monopoly and engaging communities in polycentric governance. Participation remains tokenistic [72]; legal mechanisms must secure marginalized groups' substantive voice. Community and NGO empowerment builds an autonomous civic force. Digital platforms can democratize or entrench; health empowerment thus requires inclusive, ethical governance.

5 Conclusion

The evolution of health concepts in urban planning is a history of power reconstruction. From

rational planning's technical rationality to advocacy planning, spatial justice theory, and resilient city theory, each paradigm reorganized power among state, capital, experts, and the public, transforming health from a technical object into a socio-spatial right.

International and domestic practices show that every health-space practice entails negotiating who defines health, who benefits, and who bears the cost. Future healthy cities must build a multi-dimensional governance framework integrating technical rationality, legal protection, and public participation: deconstructing technological hegemony, strengthening legal guarantees for the right to health, and establishing cooperative governance through community empowerment. Only through such reconfiguration can health become a core mechanism of social justice, enabling all citizens to equally enjoy the right to health, participate in spatial decision-making, and share development dividends—the ethical foundation of "Healthy China."

6. References

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