A culture led approach to understanding energy transitions in China: The correlative epistemology

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Abstract: China hosts some of the most rapid renewable energy transitions. Due to the unprecedented scale and pace of transformation, the dynamics of China's energy transitions impact global trends of energy decarbonization. Transition theories within the Anglophone academic tradition tend to misrepresent the social, cultural, and political structures that shape energy transitions in China. Responding to recent calls for developing geographical perspectives on energy transitions that engage with place-based histories and socio-political dynamics, this research proposes a move from an analysis of energy transitions 'with Chinese characteristics' to a correlative interpretation that is truly rooted in Chinese epistemological and philosophical constructs. Correlative interpretations of innovation and transition processes in China frame energy transitions within broader societal transformations, define the operation of transition governance, and reveal that pre-existing guanxi networks shape the activities of actors in transition processes.

Background

In September 2020, Xi Jinping, President of the People's Republic of China (PRC), surprised an audience of world leaders at the virtual United Nations General Assembly by pledging that the country would become carbon neutral before 2060. The announcement anticipates a radical transformation of production and consumption in the country. China is the world's largest producer, consumer, and funder of renewable energy. Renewable energy transitions in China are unfolding at an unprecedented speed. From 2010 to 2018, the annual growth rate of China's installed capacity of renewable energy was 26%, compared to 17% globally. In the decade up to 2017, the 10-year average growth rate of renewable energy consumption was 41% in China, compared to 16% worldwide. Considering the unprecedented scale and pace of transformation, what happens in China will be globally relevant and influential.

Why is innovative research needed?

Transition theories within the Anglophone academic tradition, such as the multilevel perspective (MLP) and technological innovations systems (TIS), tend to misrepresent the social, cultural, and political structures that shape energy transitions in China. The main reason is the mismatch between assumptions of transition frameworks and empirical realities in China, including the relative instability of landscapes and regimes, the ambiguous and pervasive role of the public sector across social domains, the blurring of public-private boundaries, and the coexistence of forms of authoritarianism with relatively invisible processes of societal participation. These observations challenge the applicability of transition frameworks in China. What is required to understand the dynamics of these energy transitions are approaches and theories sensitive to the cultural context of China.

What is innovative about this research?

Our research interprets energy transitions in China from within a specific Chinese perspective, grounded on Chinese social sciences and humanities scholarship. The correlative epistemology is deeply rooted in the Chinese traditional philosophies, through which the universe is viewed as a structured order of relations. Relations (guanxi) are the fundamental constituents of Chinese society, which differs substantially from the structure of Western social networks (figure 1). To our knowledge, this is one of the first attempts at creating interpretations of energy transitions from the perspective of Chinese philosophy.
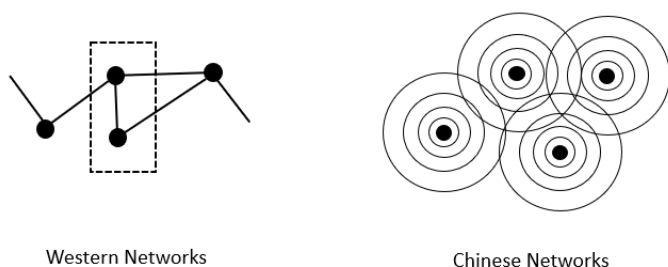

Western Networks   Chinese Networks

Figure 1. The structure of Chinese and Western social networks

How does the research address the Priority Question ("Renewables" Question 7: What are the lessons learnt from the most rapid renewable energy transitions?)

Our analysis reveals several entry points to understand transitions towards renewable energy in China. First, previous transition studies in China have struggled to apply frameworks that assume stability and continuity of material, political, and socioeconomic structures. The correlative epistemology situates energy transitions within broader processes of change and explains how every element of an imagined landscape or regime is interconnected with elements within and beyond the observed system. Second, transitions research in China that depart from governance theories based on 'Western' contexts have produced homogenous and stereotypical representations of state-led interventions. By contrast, the correlative epistemology explains that in a guanxi-based society, existing structures of guanxi condition the logics of action for different actors, as well as their mindsets and common goals. For example, this approach features the dynamic and dialectical relationship between niche (challenger) and regime (incumbent). The successful development of a niche depends on utilizing or reorganizing the existing network to reorient resources (figure 2, right) rather than on creating or constructing a new network (figure 2, left). This mechanism differs fundamentally from the assumptions of innovation networking and niche formation that shape conventional frameworks to understand energy transitions.

As China is a country accommodating some of the most rapid renewable energy transitions, it is crucial and urgent to understand the patterns and mechanisms of China's transition dynamics. The correlative epistemology might have paradigm-shifting implications for analyzing energy transition in China, addressing the unanswered question of why energy transitions gain momentum in some places but not in others. Besides, culture-led interpretations present new theoretical points of departure, which may be used to question the assumptions of dominant frameworks and approaches, such as systems thinking or governance theories that emerged from Anglophone societies.
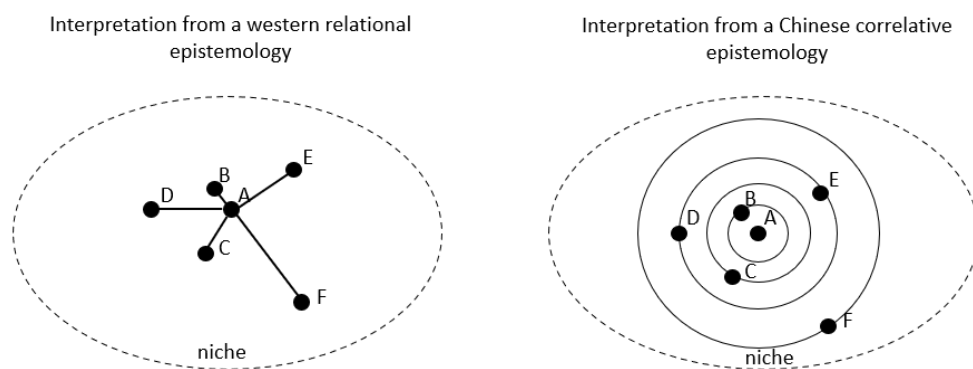

Interpretation from a western relational epistemology

Interpretation from a Chinese correlative epistemology

Figure 2. The Western and Chinese interpretation of networking in a technological niche