From Form to Field: The Aesthetic Transformation of Technological Sculpture in China

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Abstract: This paper traces the evolution of Chinese sculpture from ritual vessels and religious icons to modern urban monuments and contemporary public artworks, examining the emergence and aesthetic foundations of technological and kinetic sculpture within today's Chinese context. It focuses on how, under conditions of rapid urbanization and digital technology, sculpture has shifted from a form fixed in matter to a force generated through field and process. Through the lens of traditional Chinese aesthetics, it argues that technological and kinetic sculpture do not sever ties with tradition but extend long-standing concepts of "qi" (vital energy) and "chang" (field) through new media such as mechanical systems, optical electronics, sensors, and artificial intelligence. The use of AI image generation during the conceptual and proposal stages of sculpture commissions further reveals a de-instrumentalized understanding of technology. In this sense, contemporary Chinese technological and kinetic sculpture constitutes both a technological continuation of native aesthetic traditions and an artistic response to the reorganization of public life in the digital age, offering a new perspective on the transformation of sculptural language in contemporary China.

Keywords: technological sculpture; kinetic sculpture; Chinese aesthetics

1. Introduction

Since the beginning of the twenty-first century, China's rapid urban expansion and renewal have created an unprecedented demand for public art that is both "identifiable" and "experiential". The widespread adoption of CNC fabrication, parametric design, digital imaging, interactive installations, and artificial intelligence has propelled sculpture—a traditional medium—into the forefront of technological transformation. Yet, in contrast with Western discourses framed by kinetic and new-media art, discussions of technological and kinetic sculpture in China often remain confined to issues of technical application or urban beautification. Few studies examine these practices through the lens of China's sculptural history and aesthetic heritage.

This paper begins from concepts such as "qiyun shengdong" (vital resonance) and "tianren heyi" (the unity of heaven and humanity), and, drawing on case studies from urban and everyday contexts, re-examines the roles of machinery, networks, and AI in contemporary sculpture. The goal is to provide a perspective that integrates historical depth with present circumstances. The following section returns to the critical lineage from traditional Chinese sculpture to the rise of kinetic forms.

2. From Traditional Sculpture to Kinetic Form

The long arc of Chinese sculpture may be read as a movement from ritual and religious implement, through urban public image, toward technologically mediated field. Liang Sicheng's dictum that "in the beginnings of art, sculpture comes first" remains instructive: from prehistoric jade and Shang–Zhou bronzes to the Qin–Han funerary armies, from grotto carvings of the Northern and Southern Dynasties to Tang–Song statuary and late imperial woodcarving, sculpture was embedded in liturgy, funerary architecture, and spatial order — an image that organized space while bearing belief.

With twentieth-century introductions of academic realism and modern sculpture, the medium gradually detached from sacred and architectural matrices. The socialist monument — reinforced concrete, welded metal — installed a civic rhetoric yet largely retained static memorial form. Reform and opening, coupled with industrialization and the arrival of installation, environmental, and conceptual art, displaced the object from the pedestal into relational space.

Within this displacement, kinetic sculpture secured its autonomy by admitting real motion and time. One strand extends aesthetic imaginaries of flow and field — wind, mechanical cadence, light and shadow, and audience action — so that sculpture unfolds as event. Another strand relies on transmission, sensing, real-time computation, and networks, rendering motion programmable and networked rather than merely mechanical. As new public spaces multiplied, theories of digital and interactive art placed experience, relation, and presence at the center. The emphasis shifted from fabricating a fixed ob-

ject to composing a situation that varies in time and negotiates with bodies and environments. What changed was not only the toolkit but the nexus binding sculpture to urban systems and embodied perception.

3. Practice: Technology as Extended Brushwork

Seen through indigenous sensibilities, "setting sculpture in motion" is less a fashion than an externalization of established habits of seeing. Chinese art conceives the world as the circulation of "qi", the disposition of "shi", the emergence of field. Painting pursues "qiyun shengdong", where vision travels and time inscribes the image; gardens stage scene after scene through the body's measured traversal; festivals, temple fairs, and dragon-and-lion dances generate communal field through rhythm, procession, and gesture. The world, in this account, discloses itself as rhythm, path, and atmosphere more than as a single frozen form.

Contemporary technological and kinetic sculpture resonates with this ontology. Oscillation, pulse, vapor, water, and wind relocate the work from isolated object to environmental node. Crucially, many Chinese artists treat technology as extended brushwork or instrument, neither spectacle nor mere utility. Mechanical and optical systems emulate the swells of water, the drift of cloud, astral procession; other works, through cyclical apertures of light and sound, recall ritual memory and festival time, temporarily suturing the city's fragmented tempos into a shared interval. For makers, motion translates the temporal beauty once cultivated in painting, gardens, and rites into a contemporary technical idiom. For viewers, moving sculpture becomes less a backdrop and more a hospitable interval, somewhere to dwell, idle, gather, participate. Here, "motion" names not only kinesis but the re-appearance — under technological conditions — of concepts embedded in Chinese aesthetics, preserving a way of sensing the world in flux.

4. Embedding in the Everyday

Over the past decade, technological and kinetic sculpture in China has shifted from gateway landmarks to environmental media insinuated into daily life. In transport and science infrastructures, multimedia installations, suspension, projection, ambient sound which convert circulation into immersive field, inviting pause rather than mere passage. Earlier dynamic works in major transit nodes employed metal frameworks, mechanical drives, and optical effects to figure flame, rain, and "tian xing jian" (Heaven's vigorous course), anchoring urban memory through cadence.

At community and commercial scales, programs that introduce mechanics, sound, and digital image into retail and neighborhood spaces reorganize attention and dwell time through light and motion. Along riverbanks and pocket parks, recycled materials and responsive lighting articulate low-carbon and heritage values while offering gentle nodes for evening routines. Residential quarters and cultural-tourism sites combine mist, water, light, and structure as slow kinetics cooling the air and composing a shared public living room. In all such cases, technology and motion function less as elitist art than as environmental literacy, attuned to seasonal rhythm and ritual atmosphere; the traditional predilection for fluid beauty thus finds its place at subway thresholds, quays, plazas, and malls.

5. De-Instrumentalizing Technology in the AI Era

Understanding the next phase requires releasing technology from a purely instrumental frame. As digital infrastructures and intelligent systems become environmental, technology operates as grammar and milieu rather than as detachable tool. In public-art competitions and commercial commissions, AI image generation now participates from the outset—multiplying sketches, materials, and luminous scenarios. Efficiency is only the surface; more decisively, algorithms enter formal imagination, shaping style and atmosphere upstream.

When sensors, algorithms, networks, and AI systems are treated as formative conditions on par with stone and metal, technology ceases to be auxiliary and becomes co-constitutive. AI then functions not only as back-end analysis but as a programmable mechanism of perception. Embedded as a decision core, it can process environmental data in real time and modulate behavior, displacing fixed scripts with situated emergence. Across the design chain, AI outputs are iteratively filtered, corrected, and retrained, condensing into a dynamic logic where personal judgment alloys with algorithmic preference. In effect, artists sculpt not only form but vital rhythm with code. In a world woven of data and intelligence where even proposal images are co-authored by machines, "sculpture" names less a static object than a negotiated, revisable slice of time-experience.

6. Conclusion

Technological and kinetic sculpture in China extends a historical continuum by translating sensitivities to qi, rhythm, and presence into mechanical motion, luminous flow, and participatory fields. Under a de-instrumentalized conception of

technique, CNC, sensing, networks, and AI become generative preconditions with material, space, and body. Sculpture consequently shifts from matter-bound form to field-generated force—a practice of world-making that bridges classical aesthetics and global technological transformations in contemporary public life.

Acknowledgments

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