

A Study on the Contemporary Path to Sustainable Development from the Philosophical Perspective of Song Dynasty Furniture Design

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Abstract: Furniture transcends mere utility, serving as a vital medium that embodies cultural spirit and design philosophy. In the context of global sustainable development, the furniture industry is confronted with pressing issues, including rapid resource consumption, shortened product lifecycles, and a prevailing trend towards ephemeral aesthetics. Song Dynasty furniture, characterized by its minimalist aesthetic of ‘Qi yi Zai Dao’ (vessels bearing the Dao), its material philosophy of ‘Dao Fa Ziran’ (the Dao follows Nature), and its human-centric functionality derived from ‘Ge Wu Zhi Zhi’ (the investigation of things to extend knowledge), embodies a design philosophy that is highly congruent with contemporary sustainability concepts. This paper, taking the design philosophy of Song Dynasty furniture as its point of departure, employs historical comparison and critical analysis to contrast the deviations of contemporary furniture design in terms of material ethics, structural value, and aesthetic orientation. Based on this analysis, it proposes pathways for future development. The study concludes that the Song Dynasty’s design philosophy not only offers a cultural foundation and methodological support for the sustainable development of contemporary furniture but also provides inspiration for the application of modular design, the circular economy, and interdisciplinary thinking. It is hoped that this research will serve as a reference for the green transformation of the furniture industry and contribute to the refinement of future sustainable design theory.

Keywords: Song Dynasty Furniture; Design Philosophy; Sustainable Development; Modular Design; Circular Economy

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1.Introduction

As an integral component of interior design, furniture not only fulfills the role of meeting daily functional needs but also plays a crucial part in aesthetic construction and cultural inheritance. In recent years, with the increasing prominence of global sustainable development issues, the furniture industry has been facing challenges such as rapid resource depletion, a growing environmental burden, and shortened product lifecycles. How to achieve resource conservation and environmental friendliness while satisfying the demands of modern life has become a central issue in the transformation and upgrading of design. Against this backdrop, traditional design philosophies are being re-examined by both academia and industry, with Song Dynasty furniture serving as a particularly distinguished example. The design of Song Dynasty furniture, centered on

simplicity, naturalness, and human-centric principles, embodies an aesthetic pursuit of ‘Qi yi Zai Dao’ (vessels bearing the Dao), a material philosophy of ‘Dao Fa Ziran’ (the Dao follows Nature), and a functional philosophy of ‘Ge Wu Zhi Zhi’ (the investigation of things to extend knowledge). These principles not only reflect profound cultural wisdom but are also highly congruent with the emphasis on restrained consumption, green materials, and human-centeredness advocated by contemporary sustainable design. Consequently, Song Dynasty furniture is not merely a historical and cultural heritage; it may also serve as a vital reference for rethinking the path to sustainable design today.

Proceeding from this understanding, this paper takes the design philosophy of Song Dynasty furniture as its point of departure. It outlines its core tenets and conducts a critical analysis in conjunction with modern furniture practices, revealing the deviations of contemporary design in terms of material ethics, structural value, and aesthetic orientation. Concurrently, it explores the inspiration and application pathways that Song Dynasty design philosophy offers for the sustainable development of modern furniture. The aim is to provide a cultural foundation and theoretical support for the green transformation of the furniture industry, as well as to offer a reference for the construction of a theoretical framework for future sustainable design.

2.The Philosophical Connotations of Song Dynasty Furniture Design

The Song Dynasty represents a zenith in the development of traditional Chinese culture. During this period, the prevailing social ethos championed rationality and the pursuit of simplicity, which in turn gave rise to a unique philosophical vision in furniture design. Consequently, Song Dynasty furniture was not merely an object for daily life but rather the material manifestation of philosophical thought. With the confluence of Confucian, Buddhist, and Daoist cultures and the ascendancy of the literati and scholar-official class, furniture evolved from being purely functional items into a medium for conveying cultural meaning and aesthetic ideals. The core of Song Dynasty design philosophy is centrally embodied in three aspects: the minimalist aesthetic of ‘Qi yi Zai Dao’ (vessels bearing the Dao), the material philosophy of ‘Dao Fa Ziran’ (the Dao follows Nature), and the human-centric functionality derived from ‘Ge Wu Zhi Zhi’ (the investigation of things to extend knowledge).

2.1 The Minimalist Aesthetic of Qi yi Zai Dao (Vessels Bearing the Dao)

Song Dynasty society, which esteemed literati ideals and the Confucian Doctrine of the Mean, directly shaped the aesthetic orientation of its furniture design^[1]. The aesthetic philosophy of Song furniture emphasized Qi yi Zai Dao, positing that an object is not merely a physical vessel but a tangible expression of the Dao—a medium through which social ethics, cultural spirit, and philosophical pursuits are borne and manifested^[2]. This stands in stark contrast to the intricate carvings of Ming and Qing dynasty furniture; Song furniture placed greater emphasis on the harmony of overall proportions, the simplicity and fluidity of its lines, and the unadorned naturalness of its forms. This “simplicity” was not one of scarcity but rather a harmonious beauty born of rational restraint, embodying the aesthetic principle that “less is more.” In historical texts, such as the Yingzao Fashi (State Building Standards), the emphasis was on ensuring that the scale and proportions of furniture were suited to its function, rather than on excessive ornamentation^[3]. As can be seen in Song Dynasty paintings, furniture such as the side tables and writing desks used by Southern Song literati were predominantly characterized by clean lines and gracefully understated forms. For instance, the table upon which the figures in the painting *Listening to the Qin* lean is simple in form yet profound in its artistic conception.

This minimalist aesthetic was not merely a constraint on visual form but a manifestation of Qi yi Zai Dao: objects were endowed with moral and spiritual significance, where simplicity signified self-discipline and restraint reflected self-cultivation. Furniture was no longer just a daily utility but a vehicle for the literati’s self-cultivation and their investigation of things to attain the Dao. Through its perfectly balanced beauty, reflecting the Doctrine of the Mean, it guided the user to apprehend the philosophy embedded within the object. For this very reason, Song Dynasty furniture often transcends time and space to retain its artistic value, embodying a “timeless beauty” and providing a significant point of reference for the anti-consumerism ethos in contemporary sustainable design.

2.2 The Material Philosophy of Dao Fa Ziran (the Dao follows Nature)

The furniture of the Song Dynasty embodied the philosophy of Dao Fa Ziran in its selection of materials and craftsmanship. The furniture was primarily crafted from local woods, such as elm, fir, and nanmu, with an emphasis on using materials according to their inherent properties and honoring the natural grain and texture of the wood. In the design and crafting

process, artisans sought to work in harmony with the material's nature, rather than resorting to excessive carving or forcibly altering the wood's inherent characteristics. The mortise-and-tenon joinery of Song furniture is a quintessential manifestation of this principle. Through ingenious structural design, it allowed the wood to achieve its maximum potential within its own framework, minimizing reliance on external fasteners like nails or glue and thereby preserving the material's integrity and natural resilience. In its surface treatment, Song furniture often featured a clear lacquer or a light finish that preserved the wood's natural texture. It was repeatedly polished to accentuate the wood's inherent warmth to the touch and its delicate grain. This aesthetic principle of *yi su wei mei* (finding beauty in simplicity) not only showcased the natural qualities of the material but also avoided the resource waste and environmental burden associated with excessive ornamentation^[4].

This respect for the authentic nature of the material is, in essence, a tangible manifestation of the Daoist concept of *Tian Ren He Yi* (the unity of humanity and nature) at the level of the object. It not only embodies a reverence for and restraint in the use of natural resources but, through the medium of furniture, also constructs a profound relationship of harmonious coexistence between humanity and nature. Through the simplicity and naturalness of their furniture, the literati and refined scholars of the Song Dynasty cultivated an ambiance of serene and elegant artistic conception (*yijing*) within their homes, allowing the furniture to become a medium that connected indoor and outdoor spaces and conveyed the flow of nature^[5]. This integrated consideration of material ethics, resource conservation, and aesthetic conception undoubtedly provides an early and profoundly wise cultural paradigm, as well as deep philosophical inspiration, for the principles advocated by modern sustainable design, such as "the use of green materials," "reducing environmental impact," and "respecting the material lifecycle."

2.3 The Human-Centric Functionality of Ge Wu Zhi Zhi (the investigation of things to extend knowledge)

Song Dynasty Neo-Confucianism emphasized *Ge Wu Zhi Zhi*, the principle of attaining rational knowledge through the investigation of things, and this philosophy profoundly influenced furniture design. In its form and scale, Song Dynasty furniture gave full consideration to the daily lives and practical needs of its users, with a focus on both functionality and comfort^[6]. For instance, furniture such as chairs, tables, and daybeds were crafted in their height, proportions, and angles to conform naturally to the human body, allowing the user to achieve a sense of balance and ease in both body and mind. This human-centric design was not only an embodiment of "practicality" but, more profoundly, a reflection of "appropriateness" (*he yi*) in a philosophical sense. Song furniture did not merely pursue luxury; rather, through rational functional arrangements and appropriate forms, it became a medium for a dialogue between the person and their space, and between the person and the self. This human-centered view of functionality directly resonates with the "human-centered" principle emphasized by contemporary sustainable design.

3.A Critical Analysis of Contemporary Sustainable Design from the Perspective of Song Dynasty Philosophy

In the context of the design philosophy of Song Dynasty furniture, furniture is not merely an object for satisfying the needs of daily life but is, more significantly, a vital medium that embodies cultural ideals and reflects the harmonious relationship between humanity and nature. However, under the impetus of industrialization and consumerism, contemporary furniture design has gradually shown a tendency to diverge from this philosophical spirit. By drawing a comparison with the Song Dynasty's "minimalist aesthetic," "philosophy of natural materials," and "human-centric functionality," one can more clearly identify the predicaments and issues confronting contemporary furniture design on its path to sustainable development. These are primarily manifested as the degradation of material ethics, a shift in structural value, and the alienation of aesthetic orientation.

3.1 The Degradation of Material Ethics: From a Reverence for Nature and Materials to Excessive Consumption

In its selection of materials, Song Dynasty furniture adhered to the principle of *yin cai shi yong* (using materials according to their inherent properties), placing great value on the natural texture and performance of the wood^[7]. For example, Song furniture was often crafted in harmony with the wood's grain, avoiding excessive ornamentation and thereby embodying the

philosophy of Dao Fa Ziran (the Dao follows Nature). This can be seen in the meigui yi (rose chair, a type of side chair with a low back) depicted in the Southern Song painting *Bogu Tu* (Illustrations of Antiquities) (Fig. 1, left), and the writing table with an inset marble top and the speckled bamboo chair portrayed in the painting *Shiba Xueshi Tu* (The Eighteen Scholars) (Fig. 1, right).

In the contemporary era, however, furniture production relies more heavily on industrialized processing and globalized supply chains, with solid wood often being replaced by synthetic materials such as composite panels, plywood, plastics, and metals. Taking certain “flat-pack furniture” brands as an example, their products are predominantly made from particleboard with artificial veneers. The production process involves the extensive use of formaldehyde-based adhesives, which not only accelerates resource consumption but also poses health risks. Although this trend has lowered costs and increased production efficiency, it has led to the wasteful use of resources and an exacerbated ecological burden. More seriously, driven by consumerism, furniture is often designed as a low-durability, disposable good, resulting in a significantly shortened lifespan. This shift from a “reverence for nature” to “excessive consumption” indicates that contemporary furniture design has deviated from the principles of sustainable development in its material ethics.

Figure 1 Southern Song Dynasty “Bogu Tu”, “Eighteen Bachelor Diagram”



3.2 The Shift in Structural Value: From Centennial Durability to Rapid Iteration

Song Dynasty furniture, by virtue of its precision mortise-and-tenon joinery, already possessed a strong foundation for durability^[8]. By the Ming and Qing dynasties, the forms of mortise-and-tenon joints had undergone systematic development, with their types expanding to over a hundred, their structures becoming more rigorous, and their mechanical properties more balanced^[9]. A classic example of Ming-style furniture, such as the hongmu (rosewood) round-back armchair, can last for centuries under suitable preservation conditions, fulfilling the function of furniture as a material carrier of generational inheritance. The supreme wisdom of traditional mortise-and-tenon joinery lies in its nature as a flexible connection that adapts to the “life” of the wood. As wood naturally expands and contracts with changes in environmental temperature and humidity, the ingenious interlocking of mortise and tenon reserves minute space for such deformations. This allows the various components of the furniture to work in synergy while remaining interlocked, thereby avoiding the cracking caused by stress concentration. This stands in stark contrast to the “rigid” connections commonly used in modern furniture, such as screws and adhesives, which often work against the nature of the wood and accelerate structural deterioration. This evolution in craftsmanship not only reflects a profound understanding of materials and structure within the traditional craft system but also embodies a humanistic philosophy of creation under the concept of Ge Wu Zhi Zhi (the investigation of things to extend knowledge)—a philosophy that seeks to maximize the utility of objects and create them to be passed down through generations.

Contemporary furniture production, however, has shifted to a model of rapid iteration and mass manufacturing. It commonly employs screws, adhesives, and flat-pack modular designs, with the aim of reducing manufacturing costs and shortening time-to-market. While such structures facilitate transportation and on-site assembly, they are significantly inferior to traditional mortise-and-tenon joinery in terms of structural durability. It is noteworthy that some global furniture enterprises have begun to experiment with providing standardized connectors and replaceable parts, guiding users to extend the product lifecycle through partial repairs, which reflects an initial response from the industry to sustainability issues. Nevertheless, in the absence of a well-established, systemic repair service framework, rapid product iteration still tends to lead to frequent replacement and resource consumption, exacerbating the environmental burden. Therefore, the shift in structural value from “centennial durability” to “short-term usability” is, in essence, not merely a change in technical approach but a rupture in the philosophy of creation. It reflects a widespread neglect in contemporary design of enduring value, natural laws, and the philosophy of Tian Ren He Yi (the unity of humanity and nature) in its pursuit of efficiency. Consequently, this has inevitably intensified immense resource waste and severe environmental pressure.

3.3 The Alienation of Aesthetic Orientation: From Timeless Classics to Ephemeral Fashion

The aesthetic of Song Dynasty furniture emphasized *Qi yi Zai Dao* (vessels bearing the Dao), pursuing a timeless beauty that was restrained, simple, and thought-provoking. For example, the writing desks of Song literati possessed unadorned forms, relying not on complex decoration but on proportion, line, and material to exhibit an enduring elegance. This aesthetic vision ensures that the furniture retains its artistic value even centuries later. However, the aesthetic of contemporary furniture design is largely driven by consumerism, tending to cater to trends and market hotspots, thereby forming a “fast fashion” model. The appearance of furniture often changes rapidly with prevailing trends, trapping products in a cycle of being “fashionably perishable.” For instance, while the Swedish company IKEA is known for its “affordable design,” its furniture frequently changes with trends, and a large number of its products are discarded after just a few years due to being stylistically outdated or lacking in durability. In contrast, the contemporary aesthetic orientation places more emphasis on trends and instant gratification, lacking the “timeless classic” quality of Song furniture, which leads to premature disposal. The root of this alienation in aesthetic orientation lies in a shift in the philosophy of creation: from revering the principle of *Dao Fa Ziran* (the Dao follows Nature), which advocates conforming to the inherent nature of materials, to a logic of *ren ding sheng cai* (human will conquers materials), which emphasizes the dominance of human intention. This transition not only diminishes the enduring value of furniture as a cultural symbol but, more importantly, it reflects a disregard for and alienation from natural materials. When aesthetics are no longer rooted in respect for and understanding of the intrinsic properties of materials, but are instead reduced to a superficial style that can be rapidly replicated and iterated, the inevitable logical conclusion is an accelerated “production-disposal” cycle within a consumerist society. This model not only contradicts the core tenets of sustainable development but also constitutes a severe misappropriation and dissipation of the Earth’s finite resources.

4. Inspiration from Song Dynasty Design Philosophy for Modern Sustainable Furniture

After comparing the design philosophy of Song Dynasty furniture with the predicaments of contemporary sustainable furniture design, it becomes evident that traditional wisdom possesses not only historical value but can also provide theoretical resources and practical pathways for the contemporary green transition. The philosophical connotations of Song Dynasty furniture in aesthetics, materials, and functionality offer inspiration for the sustainable development of modern furniture design in three key areas: the inheritance of cultural value, the integration of modularity and the circular economy, and the expansion of interdisciplinary design thinking.

4.1 The Inheritance of the Cultural Value of Design Philosophy

The minimalist aesthetic of Song Dynasty furniture embodies the design wisdom of *yi jian yu fan* (governing complexity with simplicity). For example, the principles of proportional scale and functional suitability proposed in the *Yingzao Fashi* (State Building Standards) emphasize the beauty of “moderation.” Its restrained, controlled, and durable aesthetic orientation provides a valuable point of reference for contemporary furniture to counter “fast fashion.” If modern furniture design can absorb the spirit of the Song Dynasty’s *Qi yi Zai Dao* (vessels bearing the Dao) and integrate aesthetics with culture, it can break through the logic of short-term consumption and reshape the enduring significance of furniture as a cultural symbol.

This inheritance of cultural value not only elevates the spiritual substance of products but also helps to advance the furniture industry beyond mere function and market competition towards a higher plane of cultural and social responsibility.

Contemporary brands are already attempting to rediscover the value of a “durable aesthetic.” For example, the Swedish company IKEA has launched its “Buy Back & Resell” program, emphasizing the reuse of furniture. Similarly, local Chinese brands such as Shiwu Zhaoling (Lost & Found), which create new furniture from reclaimed wood, also embody the philosophy of ‘governing complexity with simplicity’. These practices demonstrate that translating the spirit of the Song Dynasty’s Qi yi Zai Dao into contemporary expression can not only enhance the cultural substance of a product but also help to curb waste.

4.2 Modular Design and the Circular Economy

The structural characteristics of Song Dynasty furniture inspire the possibilities of contemporary modular design. The flexibility and repairability embodied by mortise-and-tenon joinery are crucial prerequisites for the “disassemblable, replaceable, and recyclable” principles pursued by modern sustainable design. If contemporary furniture can draw upon the Song Dynasty’s concepts of yin cai shi yong (using materials according to their inherent properties) and structural durability, and combine them with modern craftsmanship to achieve modular production, it can not only extend the lifespan of furniture but also reduce its disposal rate, thereby promoting the establishment of a circular economy. Modern modular furniture design already reflects this line of thinking. For instance, the Aeron Chair by the American brand Herman Miller allows for the individual replacement of its components, thereby extending its overall lifespan. Similarly, the Stacked modular shelving system by the Danish brand Muuto can be freely combined and disassembled to adapt to different spatial needs. These design approaches echo the flexibility of Song Dynasty mortise-and-tenon joinery, reflecting the potential for achieving a circular economy under modern manufacturing conditions. By integrating traditional wisdom with contemporary manufacturing, the furniture industry can truly realize a sustainable path of “partial replacement for holistic longevity.”

Figure 2 Aeron Chair



Figure 3 Stacked Module Cabinet



4.3 The Application of Interdisciplinary Design Thinking

The philosophy of Ge Wu Zhi Zhi (the investigation of things to extend knowledge), as embodied in Song Dynasty furniture, emphasizes the achievement of a harmonious relationship between humans and objects through practice and rational understanding. This provides inspiration for interdisciplinary integration in contemporary sustainable design. The design of modern furniture cannot be confined to aesthetics and function; it must also integrate knowledge from fields such as ecology, materials science, ergonomics, and even sociology to construct a systemic approach to design thinking. Through interdisciplinary and collaborative innovation, the human-centric spirit found in Song Dynasty philosophy can be transformed into a new research paradigm, enabling furniture to truly achieve the dual goals of being “human-centered” and “nature-centered.” Some designers in China are integrating ecology with design by introducing renewable materials like bamboo and rattan into modern furniture and combining them with weaving techniques to explore new forms of sustainable expression. These cases exemplify the fusion of Song Dynasty philosophy with modern scientific methods: they not only focus on materials and ecology but also place a high value on human-object interaction and social responsibility.

Figure 4 Wicker Chair



Conclusion

This paper, proceeding from the design philosophy of Song Dynasty furniture, has explored its value and significance in the context of contemporary sustainable furniture development. The minimalist aesthetic, philosophy of natural materials, and human-centric functionality embodied in Song Dynasty furniture reveal a harmonious relationship between humanity and nature, and between humans and objects. However, contemporary furniture, driven by the logic of consumerism and industrialization, commonly suffers from the problems of material waste, structural fragility, and ephemeral aesthetics, progressively diverging from the core objectives of sustainable development. In response to this, the philosophy of Song Dynasty furniture offers three key lessons for the contemporary era: first, to counter the logic of fast consumption with an aesthetic concept that is both minimalist and timeless; second, to inspire modern modular design and the circular economy through the wisdom of mortise-and-tenon joinery; and third, to promote interdisciplinary approaches with the philosophy of Ge Wu Zhi Zhi (the investigation of things to extend knowledge), thereby strengthening humanistic care and ecological responsibility in design. From this, it is evident that Song Dynasty furniture is not only a crystallization of historical culture but also an intellectual resource capable of responding to the predicaments of our time. Its reinterpretation holds profound significance for the green transformation of the furniture industry and for the construction of a sustainable design theory with distinct Eastern characteristics.

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