

Research on the Minimalist Design of Short Video APP Interface Interaction Based on the Principle of “Great Way is Simple”

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Abstract:

Short video APP interface interaction design under the double squeeze situation Under the background of rapid development of mobile internet and information overdose, short video APP has become a universal way for people to enjoy entertainment and obtain information, but in general, its interface interaction design has problems such as functional redundancy, visual clutter and cumbersome operation, which seriously affects the user experience. The “simplicity is the ultimate principle” comes from traditional Chinese philosophy, “simplicity” is the essence of “to remove complexity and return to simplicity, and return to essence”. The application of this idea into the design of interface interaction of short video APP can effectively solve the current problem of interface interaction design. Through literature research, case analysis, this paper sorts out the core connotation of the concept of simplicity, the core elements of short video app interface interaction design, analyzes the design status and problems, studies the design principles and specific strategies under the concept of simplicity, and verifies the feasibility of the strategy in practice. It can bring theoretical support and practical reference for the simplistic design of the interface interaction of short videos apps and the high-quality development of the short video industry.

Keywords:

Simplicity of the Great Way, Short Video APP, Interface Interaction, Minimalist Design, User Experience

1. Introduction

1.1. Background

With the 5G technology popularized, mobile terminal lightweight development, and scattered user time growing, the short video APP features of “short, fast and lively” have been deeply integrated into people’s daily life, and become an important carrier for information dissemination, social entertainment, content monetization. According to the 53rd Statistical Report on Internet Development in China, as of December 2023, the number of short video users in China reached 1.053 billion, accounting for 96% of the total internet population 4%. [1] The industry has now entered an era of competition for stock with user experience becoming the key to the retention rate and

competitiveness of apps. The quality of interface interaction design directly affects users' willingness to use and satisfaction.

Nowadays, in order to compete for extensive functions and commercial interests, most short video apps stack functional modules and insert redundant visual elements, forming a cluttered interface layout and operation process that is cumbersome to operate. This exerts users' cognitive load and operation fatigue, which is inconsistent with users' requirements of "simplicity, efficiency and convenience".

The thought of "the great way is simple" originated from "the great way is simple, developing into complicated" in Lao Zi's TaoTe Ching. Its essence is to eliminate the redundant, coming back to the nature [2], and the simplest way to reach the most basic goal. Incorporating this idea into the interface interaction design of short video apps, starting from the core needs of users, and simplifying the interface elements and operation process of the interface, can effectively improve user experience and make apps take the lead in the application competition of old users. Therefore, this research has important practical significance and application value.

1.2. Research status at home and abroad

1.2.1. Current research status abroad

The research of minimalist design outside China started by the architecture and art in the 60s of the 20th century, which later spread to industrial design, interaction design and other fields [3]. "The research core of functional simplification, visual simplicity and operation efficiency", with the user needs as the design goal of "less is more"

Based on the analysis of social platforms such as Facebook, YouTube, and Instagram, foreign scholars mainly analyzed the interaction process optimization and user behavior characteristics of social media platforms. Meanwhile, the application of cognitive load theory and Hick's Law to minimalist interaction design has verified the role of concise design in reducing cognitive burden and enhancing operational efficiency, providing case studies and theoretical support for the practice of minimalist design.

Domestic research on minimalist interaction design started relatively late, but has gradually increased in recent years with the development of mobile internet. Most research focuses on the field of short video apps, mainly revolving around user behavior [4] and application research [5]. However, there is relatively little research on user experience related to mobile short video apps, which mainly focuses on interface design [6] and flow experience [7]. At the same time, the exploration of design principles and strategies is not comprehensive enough, and still needs to be comprehensively explored from multiple dimensions.

In the context of enhancing cultural confidence and building a strong cultural nation, the idea of "the great way is simple" contained in the "Tao Te Ching", as an important part of traditional Chinese aesthetic thought, provides a new perspective and approach for the interface interaction design of short video apps.

2. Relevant Theoretical Basis

2.1. The core connotation of the concept of "Great Dao is simplest"

2.1.1. Origin and Development

The concept of “The Great Way is Simplicity” originates from traditional Chinese philosophy, tracing back to the “Tao Te Ching” at its earliest. It is the source of all things core thought, the essence of “Tao” is simple, plain and natural, and the key feature is to discard the superfluous, back to the essence. [8]

In contemporary times, the “simplicity is the ultimate principle” is brought with new connotation, and the essence is “to do the most fundamental thing in the simplest way”, highlighting the simplification and pointing to the essence. In the form of design, it concretizes into “simplicity, the efficiency, the practicality and the naturalness”, and needs to “return to the essence needs of the users”, eliminate the unnecessary “redundant” factors, realize “the simple in the form, the richness in the meaning” of design.

2.1.2. Core features

The “Great Dao is simple” combined with traditional philosophy connotation and the requirements of modern design, “Great Dao is simple” has three characteristics: Firstly, essentiality, grasping the essence, capturing the essence of things, focusing on essential goals. In design, on the one hand, core needs should be clarified, functions should not be piled up and unrelated functions should be avoided, and it should be as close as possible to the concept of Occaman’s razor. Secondly, as the core external manifestation of simplicity, simple form, clear logic and convenient operation are needed to save users' cognitive and operation costs. Thirdly, naturalness, emphasizing conforming to nature and obeying laws. In the design, you should make the user’s habits and cognitive style conform to the system design, so that the use is natural and smooth, and achieve the impact of “man - machine symbiosis”.

2.2. Core elements of interface interaction design for short video APPs

The core objective of interface interaction design for short video apps is to enhance user experience and meet needs such as viewing, creation, and sharing. Its core elements mainly include four aspects: First, interface layout, as the design foundation, encompasses layout design for the homepage, detail pages, creation pages, etc. It requires rationality, prominent focus, and clear hierarchy to facilitate users in quickly finding core functions. Second, interaction process, which is the core path for users to use the app, includes processes such as video viewing, creation, and sharing. It requires simplified steps, clear logic, reduced number of user choices, and adherence to Hick’s law, which states that fewer choices lead to faster decision-making [9]. Third, visual elements, which are the external manifestations of the design, include colors, fonts, icons, etc. They require simplicity, uniformity, prominent focus, visual comfort, and avoidance of visual clutter [10]. Fourth, information architecture, referring to the organization and presentation of internal information within the app, requires clear hierarchy, logical reasoning, classification of information around user needs, and simplification of information levels.

3. Current Status and Problem Analysis of Interface Interaction Design for Short Video APPs

3.1. Design Status

Although the interface interaction design of short video apps is gradually maturing, it presents a polarized state: on the one hand, excellent design practices are continuously emerging. Mainstream platforms such as Xiaohongshu and Tiktok focus on minimalist design, focusing on core user needs and simplifying interface elements and operational processes. For example, Tiktok (Figure 1) adopts a full-screen immersive homepage layout, retaining only core functions and presenting simple and unified visual elements. [11]

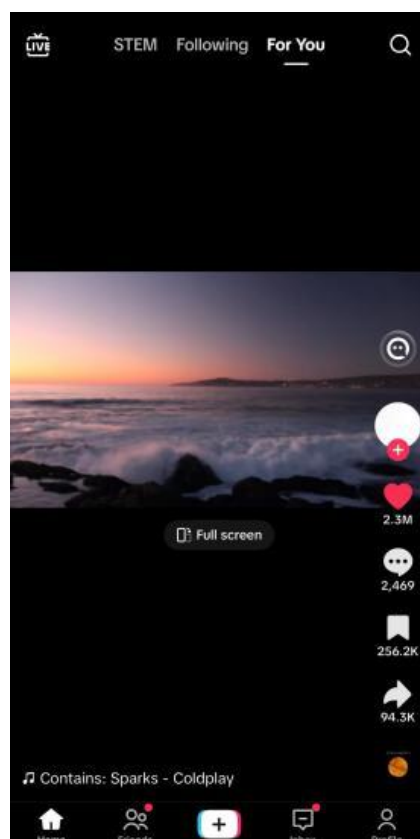


Figure 1. TikTok interface.

On the other hand, homogenization and redundant design issues are prominent. Most small and medium-sized short video apps, in pursuit of comprehensive functionality and commercial interests, excessively pile up functional modules, adding numerous elements such as pop-up ads and message notifications, resulting in a crowded interface and visually cluttered appearance. At the same time, the interaction process is cumbersome, with too many core process steps such as creation and sharing, complex operational logic, and a lack of uniformity in visual elements, seriously affecting user efficiency and experience. The phenomenon of industry homogenization is significant.

3.2. Core design issues

Based on literature research and case analysis, the core issues of interface interaction design in current short video apps are concentrated in four key elements: First, the interface layout is cluttered, with core functions not prominent. A large number of function entries, pop-up advertisements, and other elements are piled up, resulting in a chaotic interface hierarchy that fails to focus on users' core viewing needs and reduces usage efficiency. Second, the interaction process is cumbersome, with high operational costs. The number of core process steps is excessive (e.g.

creation, sharing, search), and the operation logic is complex, not meeting Hick's Law, Cognitive Load, and other theories, causing low user satisfaction. Third, visual elements are redundant, with poor visual experience. The color matching is chaotic, and the font and icon design are not standardized, and the redundant decorations and advertising elements are numerous, resulting in user visual fatigue and distraction. Fourth, the information construction is chaotic and it is difficult to search for information. Content and function are cumbersome and low - frequency functions are mixed and message notifications are not filtered, but users' information acquisition costs have risen.

3.3. The causes of the problem

The interface interaction design of short video app is mainly based on three reasons for the existing problems: Firstly, the design concept is deviated. Overexceeding pursuit of function accumulation and commercial interests, the designer indulged himself into the design misunderstanding of "the more, the stronger." Failure to understand and apply the principle of simplicity, neglecting the user's essential needs and cognitive patterns. Secondly, there is a lack of user demand research. They do not deepen their understanding of users' core needs, use habits and pain points before designing. The design is not specific, and there is a general imitation of mainstream platforms, which causes serious homogenization. In addition, they do not fully consider the needs differences of different users, do not love the feedback and testing of users. Thirdly, technical and resource limitations. Small and medium-sized platforms lack technical strength and resources, and even use template-based design, which cannot achieve interaction design optimization and innovation. In addition, the excessive dependence on advertising monetization further intensifies the interface redundancy. Large platforms will not keep up to date with the design optimization with such rapid iteration of Products, resulting in redundant design problems that have existed for a long time.

4. Principles and Strategies for Minimalist Design of Short Video App Interface Interaction Based on the Concept of "Great Dao is Simple"

4.1. Design Principles

Starting from the core spirit of "simplicity is the ultimate philosophy", according to the key elements of interface interaction design of short video application and design theory, the four design principles of minimalist design are summarized for the purpose of design practice.

As the embodiment of the concept of simplicity in the great way, it needs to focus on the three basic needs of users, namely video viewing, creation, and sharing, attach importance to the practicability and fluency of the core functions, eliminate irrelevant functions and commercial interference, and make the value of every design element and operation process serve the basic needs, which is in line with the famous principle - Occam's Razor (Don't multiply entities beyond necessity - "Entities cannot be reduced beyond necessity"). [12] For instance, on the Alipay homepage (Figure 2), there are several functional modules, but they have nothing to do with users' use. Each module is an independent function, separated by different background colors or icon colors, and the layout appears very simple, allowing users to quickly find the function they want to use and complete the interaction.

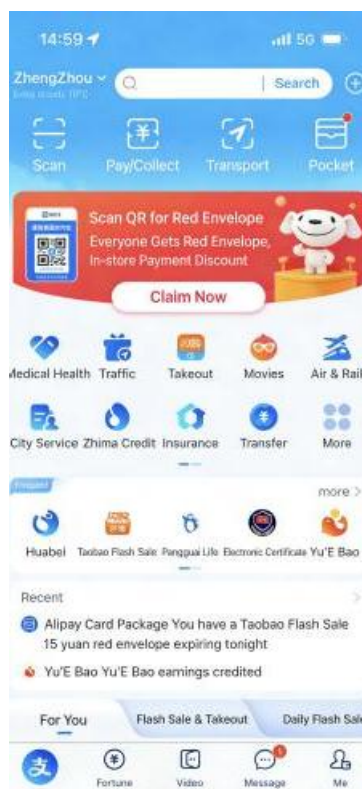


Figure 2. Alipay interface.

Principle of Simplicity and Unification: It requires that interface elements be concise, with a reasonable layout and consistent visual appearance, to reduce user cognitive and visual fatigue. At the same time, the design style should be unified to help users form a stable perception, ensuring a logical, efficient, and convenient interaction process. As Hara Haruki stated in “Designing Design,” an excessive variety of colors can slow down users’ ability to store and process color information. The mixing of multiple color elements can easily lead to visual confusion. [13]

Principle of natural usability: It requires respecting users’ usage habits and cognitive patterns, adhering to mobile device interaction norms, designing interfaces and processes that are natural and smooth, and reducing users’ learning costs. At the same time, it emphasizes interactive feedback, allowing users to clearly grasp the operation results, aligning with BJ Fogg’s behavioral theory. [14]

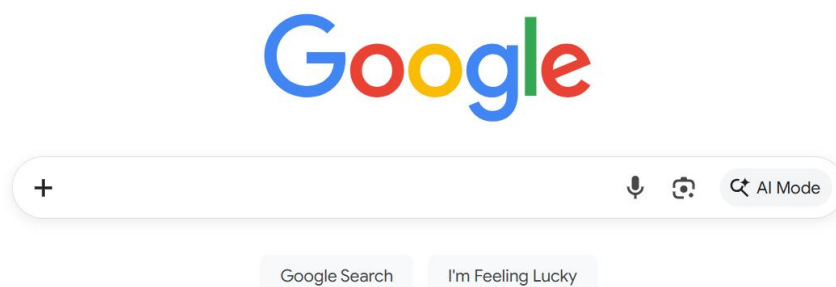


Figure 3. Google search interface.

The principle of moderate white space: It requires the retention of reasonable blank areas in interface design [15]. By leaving white space, the core content is highlighted, user attention is guided, content blocks are separated, visual comfort and information transmission efficiency are improved, and user cognitive load is reduced. For instance,

the Google search homepage is known for being almost spartan, its search box the one occupying the absolute visual space, most of the page is designed in white so the users do not even need to think about it before simply start typing. (Figure 3)

4.2. Specific design strategy

Based on the above four principles, aiming at the essence of the problems in the current short video APP interface interaction design, the corresponding minimalist design strategies are put forward from four design aspects: interface layout, interaction process, visual elements and information architecture:

4.2.1. Interface layout minimalist strategy: Focus on the core and simplify the layout

Facing the problems of interface layout clutter and not prominent core functions, according to the principle of emphasizing essence and simplicity and uniformity, we optimize the core page layout. Firstly, center core functions, simplify the mainline, full-screen immersive design, only leaving the head with search and message notification, 5 core function icon position, and the main section of the video playback, the reduction of redundant advertising and recommendation entries. Secondly, we optimize the layout design of detail page, with “full-screen video + interactive icon on the bottom” as the core, to emphasize the video content and hide non-main content of recommendation and etc., so that not to interfere the user’s viewing. Thirdly, the layout of the personal center is simplified, the user information and work management and other important sections are emphasized, and the low-frequency function is hidden through the collapsible menu to achieve clear classification and convenient operation.

4.2.2. Minimalist interaction process strategy: simplify steps to enhance efficiency

Aiming at the problems of tedious interaction process and high operation cost, and following the principles of simplicity, uniformity, naturalness and ease of use, we make users’ experience simple and the interaction process simple [16]. Firstly, in the registration and login of users, it is convenient to log in quickly by one click. We support one click quick login by phone number, we chat and so on., without filling in complex information. Second of all, after logging in, a step-by-step mode is used to guide users to complete their profiles, thereby saving user steps. Secondly, we condense the creation process into three steps of “shooting - uploading - simple editing - publishing”, only the cropping, music adding and other core editing functions are retained, the image is published and the channels are published by default, and the creation threshold is lowered. Thirdly, we simplify the process of sharing and searching. Sharing process realizes the one - click sharing function through “click” - “select channel” - “confirm”, and automatically creates a copy by default. The search process optimizes the algorithms, and ensures the accuracy of the searching results to as great extent as possible, as well as minimizing useless searching information and improving performance. For instance, Sora App (Figure 4) transforms the connection process into a string of social function designs, re - building the creation, distribution, and consumption mode of video content [17]. It not only displays and distributes user-generated AI videos in a waterfall format but also breaks through the limitations of tool attributes by rapidly accumulating initial users through invitation code fission. Then, it activates users’ creative enthusiasm through various

functions such as “UGC topic challenges” and “creative Remix”, forming a social chain of “browsing - gaining inspiration - creation - sharing - interaction”.

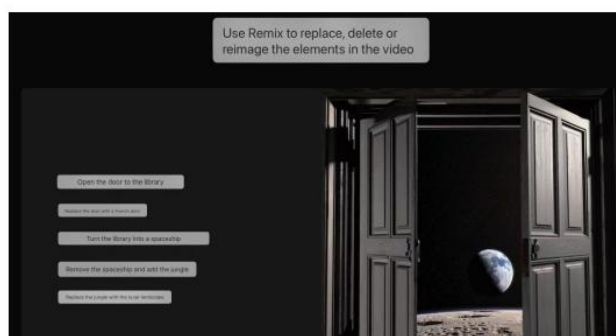


Figure 4. Sora APP.

4.2.3. Visual element minimalist strategy: Simplicity and unity to enhance user experience

Addressing the issues of visual element redundancy and poor visual experience, we optimize visual design by combining the principles of simplicity, uniformity, and appropriate white space: Firstly, we simplify color matching, adopting a “primary color + secondary color” approach. The primary colors are chosen from simple hues such as black, white, and gray, while the secondary colors highlight core interactive elements. The overall color palette should not exceed three colors to avoid visual clutter. Secondly, we simplify icon and font design. Icons are designed in a minimalist line style to ensure they are easy to understand and recognize. Fonts are of a uniform type and clearly layered to ensure clarity and readability. Thirdly, we reduce redundant visual elements by eliminating unnecessary borders, decorations, and advertising icons. We also provide enough white space between video zones and functional icons, the native form of advertisement is adopted in order to reduce users’ visual disturbance of announcement. [18]

4.2.4. Minimalist strategy for information architecture: clear classification, easy to find

Taking into account the problems of chaotic information architecture and information retrieval difficulties, the principles of prioritizing essence and simplicity and uniformity are combined to optimize the information organization and information presentation. Firstly, we reduce content classification. We start with the three main areas of “Recommendations”, “Followed” and “Local”. Divided content is displayed through search and tags which are simple information hierarchy. Secondly, we prioritize functional classification. We put high-frequency functions in the front and hide the low-frequency functions in the collapsed menus or other ways to not interfere with the core operations. Thirdly, we refine message notifications into friend messages, system notifications, and advertisement notifications. We offer filtering functions and the do-not-disturb function to mitigate the interference of irrelevant notifications and improve users’ efficiency in information acquisition.

5. Conclusions

This article focuses on the “simplicity is the ultimate principle” concept on the short video app interface interaction minimalist design of the systematic study. Around the current short video app interface interaction design of the design pain points such as

cluttered structure, cumbersome process, visual redundancy, chaotic information organization, etc., using the literature research, case analysis, user research, design practice and other design methods, “Simplicity is the ultimate principle”, The essence of the concept and the key points of short video app interface interaction design are extracted. Firstly, it clarifies the high consistency between the two in terms of the key points of the objectives, users and design principles. Secondly, based on the support of related theories such as cognitive load theory and Hick’s Law, this article gives “priority to essence, simplicity and uniformity, natural usability, and white” four design principles and minimalist design strategies from four levels: interface layout, interaction process, visual elements, and information architecture. This paper cannot only further expand the application scenarios and cultural connotations of minimalist design theory, but also realize the integration of traditional Chinese philosophy and culture and modern interaction design. It not only provides systematic theoretical support and clear practical paths for the minimalist interaction design of short video APP interfaces, but also offers reference for minimalist interaction design in other mobile interfaces.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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