

The Evolution of Social Interaction in the Digital Age: A Multi-dimensional Analysis from “Spark Continuation” to “Little Fire Person” Postprint

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Abstract

Objective: Against the backdrop of rapid digital technology development, this study conducts an in-depth analysis of emerging digital social phenomena ranging from “spark continuation” to “little fire avatars”. **Methods:** The research adopts a multidimensional perspective, integrating theories from sociology, psychology, and communication studies. **Results:** It reveals the achievement motivation, emotional needs, and mainstream trends of social evolution underlying digital social interaction, including the emerging trend of people seeking emotional connections and social identity through digital means in virtual spaces. **Conclusion:** Digital social interaction reflects the diversity of socializing in the digital era, yet it also necessitates reflection on the impact of virtual socializing on real-world relationships and its potential issues of emotional alienation.

Full Text

Preamble

Title: The Evolution of Social Interaction in the Digital Age: A Multi-Dimensional Analysis from “Continuing Sparks” to “Little Fire People”

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Abstract

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and communication studies. **Results:** The study reveals the achievement motivation and emotional needs underlying digital social interaction, as well as mainstream trends in social evolution, including new patterns of seeking emotional connection and social identity through digital means in virtual spaces. **Conclusion:** Digital social interaction reflects the diversity of social engagement in the digital age, while simultaneously necessitating reflection on the impact of virtual socializing on real-world relationships and its potential for emotional alienation.

Keywords: digital age; social evolution; digital social interaction; Continuing Sparks; Little Fire People

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Introduction

With the rapid development of information technology, we are now in a digital era characterized by an endless stream of new technologies and platforms, including the internet, smartphones, and social media. “The development of digital technology to the point where it grants individuals the opportunity to connect with any stranger or object in the world is a historical process” [1]. According to data from the 55th “Statistical Report on China’s Internet Development” recently released in China, “the number of internet users has grown from 620,000 in 1997 to 1.108 billion in 2024, with internet penetration rising to 78.6%” [2]. Against this backdrop, social media platforms have continuously introduced new social features and interaction modes, innovations that have not only transformed how people communicate but also reshaped their social habits. From simple text chats to complex virtual socializing, digital age social phenomena have emerged in endless varieties. The new social interaction models launched on the Douyin platform, such as “Continuing Sparks” and “Little Fire People,” may appear to be simple interactive behaviors but actually embody rich sociocultural connotations, reflecting new trends in the development of digital social interaction. These social behaviors—maintaining “sparks” through sustained chat interactions and cultivating “Little Fire People” through sharing, liking, and commenting—have not only significantly enhanced user stickiness and activity levels in today’s fast-paced, pluralistic society but also driven innovation in social interaction models. These emerging social elements have become important markers of development in the digital social domain, propelling social transformation in the digital age.

1. Continuing Sparks: An Initial Experiment in Digital Social Interaction

“Continuing Sparks” originated on QQ and was later introduced to the Douyin platform as a social interaction badge. It requires users to chat continuously with friends and maintain interaction through liking, commenting, forwarding, or private messaging. When two parties maintain continuous interaction for a certain number of days (e.g., three days) and exchange no fewer than a specified number of messages daily (e.g., six messages), a spark icon appears in the chat interface. This mechanism aims to enhance the chat interface’s playfulness and visual appeal while encouraging users to sustain contact through continuous interaction. As an initial experiment in digital social interaction, it has laid the foundation for digital socializing by increasing the frequency of fragmented social interactions, introducing relationship markers for social achievement, and establishing a “breakpoint continuation” mechanism for social maintenance.

1.1 Increasing the Frequency of Fragmented Social Interactions

In the process of social modernization, traditional interpersonal bonds have begun to fracture, and people have transitioned from a society of acquaintances to one of strangers. Social activities have become increasingly convenient yet simultaneously more fragmented, with individuals often maintaining relationships through rapid interactions such as simple chats, likes, or comments. According to Maslow’s hierarchy of needs, esteem and self-actualization needs occupy higher levels in human need structures. “When lower-level needs are basically satisfied, people begin to pursue self-actualization” [3]. Despite tremendous changes in social patterns in the digital age, people still need to establish connections, share experiences, and seek identity through social interaction to satisfy their esteem and self-actualization needs. Interaction driven by social needs represents an enhancement of individual socialization. The Douyin “Continuing Sparks” mechanism precisely addresses the problem of superficial socializing by increasing the frequency of fragmented interactions through quantification. Users can assess their social performance based on the illuminated status of spark icons and interaction metrics, adjusting their interaction strategies and content strategies accordingly. “Continuing Sparks” serves as a visualized quantitative standard (such as consecutive interaction days or frequency). Under this intuitive evaluation of interaction effectiveness, users engage to maintain frequent contact. To a certain extent, “Continuing Sparks” can increase opportunities for contact between users, encouraging them to maintain connections with friends in daily life and sustaining relationships that might otherwise gradually drift apart due to busy lifestyles. This type of interaction is unrestricted by time or location, aligning with the fast-paced lifestyle of modern people and representing a new social model for the digital age.

1.2 Introducing Relationship Markers for Social Achievement

American sociologist George Herbert Mead proposed symbolic interactionism, arguing that social interaction requires mediation and that language and other forms of symbols serve as the medium for social interaction. Individuals use these media to understand their interactions with others and society. In other words, social behavior is not directly determined by external forces but rather by the interpretation and use of symbols. “Only when various symbols and general vocal gestures exist can thought possibly exist” [5]. This means that individuals in specific social contexts assign meaning to things through symbols (such as language, text, emoticons, etc.) and use these meanings to guide their behaviors and attitudes. Without symbolic carriers, thoughts are difficult to record, disseminate, and understand. The Douyin “Continuing Sparks” function precisely introduces spark symbols to signify social achievement between users. People participating in virtual online social interaction typically have social purposes. David McClelland argued that “people with strong achievement needs desire to do things more perfectly” [6]. Driven by social achievement motivation, individuals participate more actively in social interaction to keep the sparks alive. As consecutive interaction days increase, the sparks become more dazzling, with spark icons continuously upgrading and changing. This transformation satisfies individuals’ visual and psychological needs for social fulfillment and achievement.

1.3 Establishing “Breakpoint Continuation” for Social Maintenance

In the digital age, social media and instant messaging tools have become the primary means of daily communication. Korzenny’ s perspective reveals a unique phenomenon: communication mediated by symbols in electronic media environments creates a form of “electronic intimacy.” Because “contemporary youth, whose real-life kinship relationships fail to meet their deep emotional needs, can obtain emotional connection through ‘electronic relatives’ ” [7], individuals who establish electronic intimacy in mediated environments will choose “breakpoint continuation” even when they fail to maintain continuous interaction for some time. However, “breakpoint continuation” still carries the risk of social disconnection. To address this risk, “Continuing Sparks” uses visual symbolic features to intuitively display the continuity of bilateral interaction. Over time, “Continuing Sparks” has become a responsibility and mission, with young people beginning to view it as an important task for maintaining social relationships, even incorporating it into their daily must-do lists. Self-efficacy refers to an individual’ s subjective judgment or confidence in their ability to successfully complete a task or achieve a goal. Every successful spark continuation signifies successful maintenance of social connection with others, and this successful experience enhances their self-efficacy. “When people use symbols to represent things themselves, they are forming a kind of conditioned reflex” [4]. In this process, a connection is established between the symbol (“Continuing Sparks”) and what it represents (social interaction). As long as users resume interaction within the specified time frame and maintain the spark icon, they can preserve

the stability of their social relationships. In summary, the “breakpoint continuation” social maintenance mechanism enables users to rely on this digital intermediary to achieve emotionally interactive presence across temporal and spatial boundaries, establishing a virtual emotional community.

2. Little Fire People: An Innovative Trend in Digital Social Interaction

Following “Continuing Sparks,” the Douyin platform introduced a new feature called “Co-raising Elves,” popularly known as “Little Fire People.” Compared with “Continuing Sparks,” which serves merely as an activity indicator, “Little Fire People” has become an innovative force in the digital social domain. Through the anthropomorphic evolution of social symbols, the gamified upgrade of interaction patterns, and the virtualized deepening of emotional connections in the form of virtual pets, it has further led the transformation trend of digital social interaction. The emergence of “Little Fire People” has greatly enriched the diversity and experiential depth of digital socializing while strengthening the depth of interaction and emotional bonds between users, further pioneering innovative development in digital social interaction.

2.1 Evolution of Social Symbols: Anthropomorphic Markers

“We live in a digitally driven ‘network society’ ” [8]. “Real individuals are gradually placed in a digitally constructed symbolic world, where symbols increasingly become the manifestation of individual existence and shape lived reality” [9]. The virtual nature of digital social interaction makes users pay greater attention to emotional acquisition and expression. Anthropomorphizing social symbols by endowing social media with human characteristics such as appearance, personality, and behavior allows users to perceive these symbols as real human states. To enhance user engagement and experience, social platforms have begun introducing more concrete and anthropomorphic social symbols. “Little Fire People” is a product of this trend. By contrast, Douyin’s original “Continuing Sparks” symbol was relatively abstract, relying primarily on users’ continuous interaction to illuminate or maintain it. Although it symbolized the activity level and intimacy of bilateral relationships, it lacked concrete imagery and emotional expression. “The important prerequisite for social symbols to be perceived and communicated by humans comes from anthropomorphic characteristics” [10]. “Little Fire People,” by granting human features to inanimate objects, enables users to establish emotional connections with them. In the digital age, the relationships between people and between people and the world are undergoing an unprecedented digital transformation. This transformation reshapes how individuals interact with the world, allowing users to experience more authentic and intimate communication on social platforms. The anthropomorphic design of digital symbols represents not merely a technological breakthrough but also a profound insight into human emotional expression and social interaction, opening up vast space and possibilities for the

future development of digital socializing.

2.2 Upgraded Interaction Patterns: Game Elements

“Play is human nature, as well as a physiological and psychological need” [11]. In the digital age, communication behavior has shifted from traditional one-way transmission to two-way interaction, and the essence of games is precisely a form of interaction. Social gamification introduces game elements to stimulate participants’ interest and enthusiasm, making activities more enjoyable and motivating, thereby changing behavior patterns and increasing participation. “Influenced by network technology, this generation has become accustomed to various game metaphors and scenarios, and is used to receiving real-time feedback, recognition, and rewards for their actions” [12]. “Little Fire People” is a typical nurturing game incentive mechanism in digital social interaction, where users upgrade virtual character levels through interactions with friends, thereby unlocking new appearances, actions, and outfits while obtaining interaction achievements. “Games are a concrete display of situations from which organized personalities emerge.” Mead believed that games are not merely for entertainment but are situations capable of influencing and shaping personality. The self is gradually formed through social interaction. In this process, game elements—particularly those emphasizing social interaction—provide individuals with a platform that simulates social environments, enabling them to engage in role-playing, social interaction, and situational experiences. Individuals continuously take on others’ roles, imagining how they are perceived by others, and adjust their behaviors accordingly. The vivid and concrete “Little Fire People,” with their yet-to-be-unlocked new appearances, become a psychological expectation for users. This expectation differs from the task-based achievement of “Continuing Sparks,” representing instead the sense of self-identity and satisfaction derived from gaming success. Co-nurturing virtual “Little Fire People” with friends, this gamified design not only increases the fun and participation in socializing but also promotes relaxed, enjoyable interaction and cooperation among users.

2.3 Deepening Emotional Connections: Virtual Pets

Virtual pets exist in the digital world as pet images simulated through computer programs. Since ancient times, pets have become important emotional anchors for humans through their unconditional love and loyalty. “From a social context perspective, most contemporary youth work alone far from their hometowns, and the alienation from peer culture combined with long-term escape from parental culture makes young people eager to seek spiritual comfort and group identity through the internet” [13]. The emergence of virtual pets provides users with emotional sustenance and companionship. Digitally symbiotic virtual pets can simulate real pet behaviors, allowing users to alleviate loneliness through intimate interaction with them. Simultaneously, as a new element in social media, virtual pets can enhance social interaction between users. Users

establish connections and communication with others by participating in activities related to virtual pets and exchanging pet-raising experiences. The virtual pet “Little Fire People” in Douyin platform interactions possesses simple intelligence and emotional expression capabilities, becoming a bond for emotional connection between users. Users invest substantial time and energy in interacting with “Little Fire People,” forming deep emotional dependencies. Meanwhile, “Little Fire People” has also become an important vehicle for users to showcase their personality and taste, further deepening mutual understanding and recognition among users. In summary, the application of virtual pets in social media is regarded as a deepening of emotional links because they can satisfy people’s emotional needs, enhance social interaction, and promote emotional expression and communication. This deepening of emotional connections not only enriches people’s social lives but also provides new possibilities and methods for emotional exchange between individuals.

3. From “Continuing Sparks” to “Little Fire People” : Development Trends in Digital Social Interaction

“Continuing Sparks” symbolizes relationship activity levels through the quantitative accumulation of consecutive messages between users, offering a new perspective on modern social interaction. The emergence of the virtual pet “Little Fire People” has elevated this social model to a new height. Both “Continuing Sparks” and “Little Fire People” are grounded in the virtual social spaces provided by digital social platforms, enabling users to engage in diverse interactions unrestricted by time or space. Beyond the increasing virtualization of social fields and the diversification of interactions, emotional expression has also shown a trend toward digitization. Traditional social interaction primarily conveyed emotions through physical presence and perception in physical spaces, whereas modern digital social interaction relies on digital means such as text, emoticons, images, and videos to measure emotions.

3.1 More Virtualized Social Fields

With the continuous development of digital technology, social fields have gradually extended from the real world into virtual realms. Virtuality refers to the use of science and technology to simulate or create non-physical environments and interaction modes in digital space that correspond to yet differ from the real world. “Unlike the acquaintance socializing of the agricultural era or the semi-acquaintance and stranger socializing of the industrial era, the loose virtual socializing of the digital age exhibits new characteristics such as digital embodied interaction, interest circle differentiation, professional vertical segmentation, and emotional interaction polarization” [14]. The virtuality of digital social interaction is often manifested in virtual environments, virtual characters, and virtual interactions. Currently, the social functions of both “Continuing Sparks” and “Little Fire People” are implemented on the Douyin social platform—that is, within virtual environments. Some users can also engage in virtual social inter-

action with strangers through virtual identities. Socializing in virtual fields not only provides individuals with more convenient channels for information acquisition, storage, and sharing but also offers highly concealing functions that allow users to drop their guard and vigilance from acquaintance socializing, becoming a sanctuary for escaping real-world constraints. The shared virtual social fields of “Continuing Sparks” and “Little Fire People” not only break the limitations of time and space, providing users with a freer and more open social environment. In the future, with the support of various technologies, users will experience more virtual and immersive interactive scenes. However, “social media has communication barriers such as users’ tendency to experience alienation and insecurity due to its virtual construction characteristics” [15], so it cannot completely replace the genuine emotions and deep connections brought by offline communication.

3.2 More Diverse Interaction Forms

Digital social interaction forms are exhibiting a trend toward diversification. In traditional socializing, “spatiotemporal structures are often limited by media forms, making it difficult to completely break free from the constraints of linear time” [16]. “When digital technology allows people to break through the physical space of embodied presence, it also breaks through the cultural and rule constraints of friends’ social spaces, giving people opportunities to expand their own social and mental spaces, and consequently to construct their own life relationships” [4]. In other words, geographical distance is no longer a barrier to social interaction, while digital technology has also broken the cultural and rule constraints of traditional social circles, enabling people to access more diverse cultures and values. Against this backdrop, individuals have unprecedented opportunities to expand their social networks and inner worlds, possessing unprecedented expressive space. Traditional face-to-face conversations and text chats in social interaction are gradually being replaced by multimodal interaction forms such as voice, images, videos, emoticons, and GIFs, allowing users to express themselves through more diverse means. The development of both “Continuing Sparks” and “Little Fire People” has evolved from simple chatting, liking, and commenting to complex gamified interactions and virtual pet nurturing. These diverse interaction forms not only meet users’ different needs but also enhance the fun and participation in socializing. Beyond this, other digital social platforms also feature gamified elements such as leaderboards and points, as well as new multimedia interactive experiences generated from original photos or videos through AI, stimulating users’ participation enthusiasm. Evidently, digital social interaction forms are moving from singular to plural, from flat to three-dimensional, from static to dynamic. Gamification, virtualization, and AI-driven innovation are providing users with richer and more immersive social experiences. In the future, as digital social technology continues to advance, its interaction forms will continue to expand.

3.3 More Digitalized Emotional Expression

“Social users in the digital age not only ‘quantify the self’ but also ‘quantify socializing,’ using data-driven means to understand and optimize social interaction” [17]. In digital social interaction, emotional expression is gradually showing a trend toward digitization. First is the data-based manifestation of emotional symbols and emotional interaction. Traditional social emotional interaction was transmitted through non-digital means such as language, facial expressions, and body movements, whereas emotions in digital social interaction are transformed into flame icons and virtual images. Markers such as “100 consecutive chat days” and “elf level” have become digital indicators for measuring emotional relationships. Second is the digital storage of emotional memory. Before the advent of digital socializing, emotional retention relied on individual memory and feelings, which easily faded with time. In the digital social era, whether it’s the record of chat days in “Continuing Sparks” or the growth trajectory of the virtual image “Little Fire People,” both have become digital witnesses to users’ emotional journeys. Finally, there is the quantitative management of emotional expression and the digitization of emotional value. In traditional socializing, emotional resonance originated from genuine interaction and empathy, making emotional expression difficult to manage through quantification and emotional value impossible to reflect through data. “The extremity and particularity of digital emotion mainly stem from the special relationship between ‘the digital’ and ‘things’ ” [18]. The digital ‘thing’ has no concrete space and transforms into form, much like the size, color, and style of flame icons, which can all serve as visual expressions of emotional value. Simultaneously, users can manage the degree of emotional investment through data or the growth progress of virtual pets. This digitalized emotional expression is not only more convenient and intuitive but also helps promote emotional exchange and resonance between users. Additionally, digitalized emotional expression has become an important marker of social identity among users.

From the phenomenon of “Continuing Sparks” to “Little Fire People,” we can capture a brief developmental trajectory of digital age socializing from initial exploratory attempts to gradual innovation. In the future, with the further development of emerging technologies such as 5G, artificial intelligence, and the metaverse, digital social fields will continue to evolve toward greater virtualization and immersion, with new social elements continuously enriching people’s social interaction experiences. Digital social interaction will persistently exhibit characteristics of greater diversity, personalization, and intelligence. However, the process of digital socializing is accompanied by a series of questions requiring our consideration. For instance, do “Continuing Sparks” and raising “Little Fire People” maintain or consume friendships? Does this check-in style social model create social pressure? To maintain social status, stimulated by notifications like “Your spark is about to disappear,” users easily develop anxiety, leading them to frequently check their phones, reply to messages, and even develop compulsive behaviors, ultimately potentially resulting in digital addiction.

Additionally, due to differences in education, economy, and culture, the digital divide phenomenon is gradually becoming apparent, and those unable to keep pace with technological advances may face social exclusion and marginalization. Evidently, while algorithm-dependent personalized socializing on digital platforms improves interaction efficiency, it may also lead to information cocoons and social bubbles. In response, it is particularly important for digital social platforms to design healthier and more sustainable social incentive mechanisms, and users themselves should remain rational, learn to balance online and offline life, share personal information prudently, and cultivate healthy social habits. In conclusion, the essence of digital social interaction is a tool that contains both tremendous opportunities and non-negligible challenges. Only through rational and prudent utilization can its positive effects be fully realized.

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