The research paradigm of post-classical narratology evolves after the AI era

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Abstract: *The intervention of artificial intelligence technology is driving a profound evolution in the research paradigm of postclassical narratology. This paper examines this theoretical transformation from three dimensions: methodological innovation, the reconstruction of subjectivity, and the expansion of textuality. At the methodological level, the computational turn shifts narrative analysis from interpretive description to computable verification, and quantitative models provide new operational pathways for the study of narrative structure. At the level of subjectivity, generative pre-trained models extend narrative production into the realm of algorithmic systems; the emergence of non-human narrators and the diffusion of authorship compel narratology to reconsider the concept of the subject. At the level of textuality, the digital generation of transmedia narratives breaks the centrality of linguistic signs, and multimodal fusion along with algorithmic curation reshapes the mode of existence of narrative. These transformations do not negate classical narratology; rather, they represent a necessary expansion of its theoretical framework in the AI era, marking a fundamental shift in narratological research from an anthropocentric paradigm to a human-machine symbiotic paradigm.*

Keywords: *artificial intelligence; postclassical narratology; computational narrative; generative models; transmedia narrative*

Introduction

Since its establishment in the 1960s, narratology has undergone an evolution from classical structuralism to postclassical pluralistic contexts, with its core always centering on the human subject as the fundamental category. The groundbreaking development of artificial intelligence technology is shaking this theoretical presupposition: generative models can autonomously produce texts that conform to narrative norms, algorithmic systems can identify plot patterns that humans have failed to notice, and in interactive narratives, human-machine co-construction of meaning becomes possible. These technological transformations pose fundamental challenges to narratology — is the narrative subject necessarily human? Does the nature of text depend on authorial intention? Responding to these questions constitutes the core task of narratological research in the AI era. This paper aims to systematically outline the paradigm shift facing postclassical narratology, reveal the theoretical issues triggered by technological intervention, and provide a conceptual framework for narratology's self-renewal in the context of digital humanities.

1. Methodological Innovation: The Computational Turn and the Algorithmic Intervention in Narrative Analysis

1.1 Quantitative Models of Narrative Structure and Computable Pathways

While absorbing the legacy of structuralism, postclassical narratology has long faced the methodological dilemma that the formal analysis of narrative is difficult to render objective and replicable. The intervention of AI technology provides a breakthrough for this dilemma: by converting narrative texts into computable symbolic sequences, researchers can construct quantitative models of narrative structure. Such models, based on parameters such as the word frequency distribution of narrative units, syntactic complexity, and the dependency relations of event sequences, transform traditional narrative grammar into a mathematical representation that algorithms can recognize and process. The quantification of narrative structure does not merely involve simple data extraction; rather, guided by narratological theories, it formalizes the hierarchical relations of narrative elements, their

functional modules, and their combinatorial rules, thereby opening up a quantitative analytical pathway from micro-level words to macro-level narrative flow.

The establishment of quantitative models pushes narrative analysis from interpretive description toward the new dimension of computable verification. Traditional narratology relies heavily on researchers' intuition and close reading skills for the identification of narrative structures, and its conclusions often carry subjectivity while remaining difficult to compare across different texts. The computable pathway, through unified quantitative indicators, enables the systematic analysis of large-scale narrative text collections. For example, by measuring the time series distribution of event density within the narrative progression, researchers can numerically present the differences in narrative rhythm across various text types; by calculating the network centrality of narrative nodes, they can identify key turning points in plot progression. This quantitative turn does not replace classical narratology; rather, it provides a more solid empirical foundation for it, granting the comparative study of narrative structures an operational methodological support.

1.2 Semantic Networks and the Vectorized Representation of Narrative Discourse

The meaning-generation mechanism at the level of narrative discourse gains new analytical tools in the AI era. The semantic network method constructs the conceptual entities in narrative texts and their interrelations into a graph structure, in which nodes represent narrative elements such as characters, events, and settings, while edges represent the semantic associations among them. This networked representation not only presents the explicit information flow of narrative discourse but also reveals the implicit meaning structures deep within the text. By calculating the network's density, modularity, and centrality indicators, researchers can quantitatively analyze the complexity, coherence, and thematic focus of narrative discourse, thereby providing a structured analytical framework for understanding the construction mechanism of narrative meaning.

The introduction of vectorized representation technology further deepens the computational analysis of narrative discourse. Word embedding techniques based on distributional semantic theory map words in narrative texts into numerical vectors in a high-dimensional space, enabling semantic similarity, analogical relations, and contextual dependence to be quantitatively analyzed through vector operations. Metaphorical constructions, emotional tendencies, and the expression of implicit meaning in narrative discourse can all obtain new dimensions of interpretation through distance measurement and directional calculation in vector space. This representational approach transcends traditional lexical statistical methods, captures the dynamic contextual features of narrative discourse, and provides an operational technical pathway for exploring narrative style, character discourse patterns, and the linguistic realization of narrative perspective, thereby promoting the transformation of narrative discourse analysis from qualitative description to vectorized computation and visual presentation[1].

1.3 Machine Learning-Driven Plot Pattern Recognition and Clustering

As a core category of narratology, plot pattern recognition has long relied on theoretical induction and classification. The introduction of machine learning technology brings a fundamental shift to this research paradigm. Through supervised learning methods, researchers can train classification models based on annotated narrative texts, enabling algorithms to automatically learn the characteristic patterns of different plot types. These features include not only the linear arrangement of event sequences but also deep structures such as causal networks, the trajectory of conflict evolution, and the functional configuration of characters. Machine learning models can identify pattern variations that have remained unclear in traditional plot classification, reveal the continuous spectrum relationships among plot types, and thus break through the limited framework of plot classification that has existed since Aristotle or Propp.

Unsupervised clustering algorithms provide a new research pathway for the discovery of plot patterns. By vectorizing the event sequences of a large number of narrative texts, clustering algorithms can automatically partition different clusters of plot types based on the similarities among these sequences. This method does not rely on preset theoretical categories; instead, it allows plot patterns to emerge naturally from the data, thereby offering the possibility of discovering hidden structures in cross-cultural and cross-era narratives. The visualization of clustering results enables researchers to intuitively grasp the distribution patterns and evolutionary trends of plot types. Furthermore, the prototype sequences identified by clustering algorithms can be compared with the categories of classical narratology, both verifying the explanatory power of traditional theories and revealing new

forms that they have failed to cover, thus promoting the data-driven self-renewal and expansion of plot theory[2].

2. The Reconstruction of Subjectivity: The Ontological Upheaval of AI as a Narrative Agent

2.1 Generative Pre-trained Models and the Automatic Production of Narrative Texts

The technological breakthrough of generative pre-trained models marks a fundamental transformation in the mode of narrative text production. Such models, trained on massive corpora, acquire the syntactic rules, semantic associations, and discourse styles of natural language, enabling them to autonomously generate narrative texts with coherent plots, character dialogues, and detailed descriptions based on input prompts. From a technical perspective, the generation process is not a simple concatenation of words; rather, through an autoregressive mechanism, the model predicts the most likely subsequent sequence word by word within a probability space, thereby simulating a narrative logic similar to that of a human author. This mechanism extends narrative production from the exclusive domain of the human mind to the operational realm of algorithmic systems, meaning that narrative texts are no longer necessarily the externalization of authorial intention but become the joint product of data distribution and computational architecture.

The realization of automatic production capability triggers a re-examination of the essential attributes of narrative texts. Traditional narrative theory views texts as intermediaries between authors and readers, with their meaning generation depending on human subjects' intentions and interpretations. However, narrative texts produced by generative models fully conform to literary norms in form yet lack authorial intention in the traditional sense. This "intentionless narrative" compels narratology to rethink the ontological status of the text: is narrativity necessarily dependent on human consciousness? Can the statistical learning of algorithms be regarded as a new type of "creative" mechanism? The pursuit of answers to these questions constitutes one of the core issues of narrative theory in the AI era and provides an internal driving force for postclassical narratology to expand its research objects and methodological framework.

2.2 The Illusion of Intentionality in the Non-Human Narrator and the Authorship Crisis

The emergence of generative narrative texts presents an unprecedented theoretical challenge to the concept of the narrator. Classical narratology distinguishes among the author, the implied author, and the narrator, but it always assumes a projection of some human subjectivity behind the act of narration. Texts generated by AI also exhibit narrative voice, perspective choice, and discourse style; however, these elements do not originate from the conscious activity of a subject but are outputs produced by algorithms based on statistical regularities. This "non-human narrator" generates a strong illusion of intentionality: readers, during the reading process, cannot help but attribute the narrative voice in the text to some anthropomorphized subject, endowing it with motives and emotions, even though such a subject does not substantially exist. The mechanism behind this illusion reveals the deep presuppositions of human cognition regarding narrative understanding and exposes the interpretive dilemma of traditional narrator theory when confronted with algorithmic texts[3].

The authorship crisis thus becomes a theoretical proposition that narratology must confront directly. When narrative texts can be generated algorithmically in large quantities and remain difficult to distinguish from human creations, the authoritative status of the author as the source of meaning is fundamentally challenged. Authorship is no longer the unique identifier of individual creativity; rather, it evolves into a distributed, networked effect of generation: model architects, training data providers, and prompt inputters all participate in the production of the text, yet no single subject can claim full creative responsibility for the text. This state of the diffusion of authorship requires narratology to redefine the connotation and extension of the category of "author," prompting researchers to shift from an intention-centered approach to a production-mechanism approach, moving the focus of attention from "who is speaking" to "how discourse is generated."

2.3 Human-Machine Collaboration in Interactive Narratives and the Deconstruction of Textual Authority

The evolution of interactive narrative forms provides an experimental field for human-machine collaborative creation. In AI-driven interactive narrative systems, users and algorithms jointly

participate in the narrative process: the user's choices influence the direction of the plot, while the algorithm generates corresponding narrative segments in real time to respond to the user's input. This collaborative mechanism breaks the unidirectional relationship between author and reader in traditional narratives, constructing the narrative text as a dynamic, iterative product of dialogue. Human-machine collaboration means that the generation of narrative meaning no longer belongs to a single fixed subject but continuously emerges and fluctuates during the interactive process. The text is no longer a pre-completed product but a space of possibilities in a constant state of becoming.

The deconstruction of textual authority becomes particularly evident in interactive narratives. Because each choice made by the user leads to a different narrative branch, the text presents an open structure with multiple paths and multiple endings, and the authority of any single version is dissolved. The real-time generation capability of algorithms further reinforces this trend: the system can dynamically adjust narrative rhythm, character reactions, and even thematic emphasis based on user behavior, keeping the text in a malleable state. In this form, the narrative text no longer carries fixed meanings but becomes a field for joint exploration between the user and the algorithm. The deconstruction of authority requires narratology to rethink the boundaries and stability of the text, prompting theoretical research to shift from static textual analysis to dynamic process studies, focusing on the mechanisms and effects of intersubjective negotiation in the process of narrative generation[4].

3. The Expansion of Textuality: The Digital Generation and Perceptual Reshaping of Transmedia Narratives

3.1 Narrative Encoding and Decoding Mechanisms in Multimodal Data Fusion

The digital generation of transmedia narratives first manifests as the fusion and interaction of multimodal data. Within the AI technology framework, heterogeneous semiotic systems such as text, image, audio, and video are no longer processed in isolation; instead, they are mapped into a shared semantic space through unified vectorized representation. This fusion mechanism brings a fundamental transformation to the narrative encoding process: narrative information no longer relies on the linear arrangement of a single semiotic system but generates composite meanings through the collaborative relationships of multimodal data. For example, the composition, color, and lighting of visual images can correspond to the emotional tone of textual narration, while the frequency and rhythm of sound can reinforce the perception of atmosphere in narrative time and space. Multimodal fusion encoding breaks the central position of linguistic signs in traditional narratives and extends narrative construction to multiple dimensions of sensory experience[5].

The corresponding transformation of the decoding mechanism also constitutes a new research issue for narratology. When facing multimodal narrative texts, the recipient's comprehension process involves cross-modal mapping and integration among different semiotic systems. Through attention mechanisms and cross-modal alignment techniques, AI systems can simulate this cognitive process and provide computational models for understanding human multimodal narrative interpretation. Decoding is not passive reception but active construction: the recipient establishes associations among information from different modalities, fills semiotic gaps, and forms a coherent narrative understanding. This multimodal characteristic of the decoding mechanism requires narrative theory to re-examine the recipient's role in meaning generation, shifting from the interpretation of a single text to the integration and coordination of multimodal information, thereby expanding the semiotic foundation of narrative analysis.

3.2 Algorithmic Curation and the Construction of Immersiveness in Interactive Narrative Spaces

Algorithmic curation constitutes the core mechanism for the generation of digital narrative spaces. In interactive narrative environments, the presentation of narrative content no longer follows a fixed linear sequence; instead, it is dynamically organized based on the user's actions and choices. The algorithm assumes a function similar to that of a curator: it selects appropriate content modules from a vast narrative repository and arranges narrative sequences in real time according to the user's participation path, thereby ensuring the coherence and logicality of the narrative progression. This curation mechanism transcends the pre-structured characteristic of traditional narratives and transforms narrative construction into a dynamic process of real-time response and continuous adjustment. Algorithmic curation determines not only which content is presented but also the order, rhythm, and relationships in which the content is presented, thereby shaping the user's overall narrative experience.

The construction of immersiveness is one of the core effects pursued by algorithmic curation. Interactive narrative spaces create a perceptual state in which the user feels placed inside the narrative world through the input of information via multiple sensory channels, the spatial presentation of narrative, and the interaction design involving the user's bodily participation. The algorithm plays a key regulatory role in this process: it adjusts the parameter settings of the narrative environment in real time based on data such as the user's gaze trajectory, operation frequency, and emotional responses, thereby maintaining and reinforcing the sense of immersion. Immersiveness is not merely sensory envelopment but a dynamic balance achieved between the user's cognition and algorithmic generation: the user invests attention and emotion, while the algorithm provides a coherent and responsive narrative world. This constructive mechanism requires narratology to rethink the conditions for the formation of immersive experiences from the perspective of reception aesthetics, viewing the algorithm as an active constructor of the narrative environment rather than a passive transmission medium.

3.3 The Topological Deformation of Narrative Time in Digital Media Environments

Digital media bring a structural deformation in the topological sense to narrative time. Traditional narrative time is based on linear sequences, forming specific temporal rhetoric through the anachrony of order, the expansion or contraction of duration, and the variation of frequency. In digital media environments, narrative time acquires a completely new mode of existence: the user's temporal intervention becomes a constitutive element of the narrative progression, and the real-time generation of algorithms enables narrative time to exhibit a complex structure that is reversible, branchable, and cyclable. Narrative no longer unfolds along a single temporal axis; instead, it forms multiple temporal paths at the branching points determined by user choices. These paths are not simply juxtaposed but are interwoven and cross-referential, forming a continuously deformable structure analogous to a topological space[6].

The topological perspective provides a theoretical tool for understanding this deformation of time. From the topological perspective, narrative time no longer focuses on the positional relationships of events on the timeline but rather on the structural invariance that allows different temporal paths to be transformed and mapped onto one another. Digital narrative allows users to jump between multiple points in time, repeatedly enter the same event sequence from different perspectives, and even alter the conditions for subsequent events through intervention. Such operations turn time into malleable narrative material rather than an irreversible container. The topological deformation of narrative time simultaneously transforms the recipient's temporal experience: the user no longer passively follows the narrator's temporal arrangement but actively constructs his or her own temporal sequence through the selection and switching among multiple temporal paths. This deformation requires narrative theory to re-examine the constitutive mechanism of temporality from the phenomenological dimension, viewing digital media as reconfigurers of temporal experience rather than mere transmitters.

Conclusion

The evolution of the research paradigm of postclassical narratology in the AI era presents a threefold logical trajectory. At the methodological level, the computational turn provides narrative analysis with technical support from quantitative modeling and algorithmic recognition, shifting the study of narrative structure, discourse, and plot from intuitive interpretation to systematic, computable verification, thereby offering a more operational methodological foundation for classical categories. At the level of subjectivity, the emergence of generative pre-trained models and non-human narrators compels narratology to reexamine the boundaries of the subject; authorship evolves from an identifier of individual creativity into a distributed, generative effect, while human-machine collaboration in interactive narratives dissolves the unidirectional authority of the text, pushing the research focus from "who is narrating" to "how narration is generated." At the level of textuality, the digital generation of transmedia narratives breaks the centrality of linguistic signs, and multimodal fusion, algorithmic curation, and the topological deformation of narrative time reshape the mode of existence of narrative, transforming the text from a static product into a dynamic space of possibilities. These transformations point to a fundamental shift in narratology from an anthropocentric paradigm to a human-machine symbiotic paradigm. Future research may deepen its inquiry in the following directions: exploring the reception-aesthetic characteristics of AI-generated narratives; constructing analytical models of narrative in human-machine collaborative contexts; and integrating the theoretical resources of digital media studies and classical narratology. The theoretical renewal of narratology must establish its unique explanatory power within the landscape of digital humanities through the creative

transformation of technological logic and classical categories.

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