

The Research Paradigm of Post-Classical Narratology Evolves After the AI Era

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Abstract: With the advent of artificial intelligence, many changes have occurred in the research model of postclassical narratology. The three directions of the theoretical change in this paper are methodological innovation, reconstruction of subjectivity and expansion of textuality. With the development of computation, narrative analysis has moved from interpretive description to computable verification at the level of methodology, and thus, quantitative models have been introduced to study the structure of narratives. At the level of subjectivity, generative pre-trained models have extended narrative creation to the field of algorithmic systems, and with the appearance of non-human narrators and the spread of authorship, narratology has been forced to reconsider the concept of the subject. At the level of textuality, the new generation of transmedia narratives is no longer made up of linguistic signs; rather, multimodality and algorithmic curation have changed how these stories are told. Although this change is not in conflict with traditional narratology, it is necessary for the development of the theoretical system in the era of artificial intelligence, and thus narratological research has shifted from an anthropocentric view to a human-machine symbiotic one.

Keywords: Artificial Intelligence, Postclassical Narratology, Computational Narrative, Generative Models, Transmedia Storytelling.

Introduction

Narratology began in the 1960s, and although it has changed from the classical structuralism to post-structuralism and other directions, the human subject has always remained the basic idea. With the new development of artificial intelligence technology, the previous theoretical premise has changed; generative models can independently create texts in accordance with narrative norms, algorithmic systems can find plot patterns that have gone unnoticed by humans, and in interactive narratives, human-machine co-creation of meaning has also been achieved. With the development of technology, people have started to doubt the need for a "narrator". Does the Nature of Text depend on Authorial Intentions? The answers to the above questions are the subject of narratology in the age of AI. Systematise the paradigm shift in postclassical narratology, reveal the theoretical problems that have arisen as a result of technological intervention, and put forward a conceptual framework for the self-renewal of narratology in the era of digital humanities.

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

1.1 Quantitative Models of Narrative Structure and Computable Pathways

Although post-classical narratology has taken some of the ideas of structuralism, it has long been in trouble with the problem of achieving objectivity and replicability in the formal analysis of narrative. Artificial intelligence technology can solve the problem mentioned above; that is, convert the narrative text into a computable symbolic sequence and then build a quantitative model of narrative structure. The parameters of such models include the word-frequency distribution of narrative units, syntactic complexity and dependency relations among events in a story, etc., so traditional narrative grammar has been transformed into a mathematical form that can be recognised and processed by algorithms. Quantification of narrative structure is not just the collection of data; rather, in accordance with narratological theories, one should organise the hierarchy of narrative elements, their functional modules and combinatorial rules, etc., to create a quantitative analysis path from micro-level words to

macro-level narrative flow.

The development of quantitative models has advanced the field of narrative analysis from interpretive description to new computational verification. Traditional narratology is based on the intuition and close-reading ability of researchers to identify narrative structures, and its conclusions are often subjective and difficult to compare among different works. A single quantitative index has been created for the computable path and is used systematically in many works of literature. For example, one can measure the time-series distribution of event density in the narrative progression to show numerically how different types of texts vary in narrative rhythm, and calculate the network centrality of narrative nodes to find key turning points in the plot. Although there is now a large amount of data, traditional narratology is still needed; at the same time, new quantitative methods can also be used to study narrative structure.

1.2 Semantic Networks and Vectorised Representation of Narrative Discourse

How meaning is created in narrative discourse is now also being studied in the age of artificial intelligence. A semantic network method is used to build a graph of conceptual entities and their relationships in narrative texts, and the nodes of this graph are narrative elements such as characters, events and settings; the edges are the semantic associations among them. The network form shows both the open flow of information in the story and the hidden system of meaning in the text. Calculate the density, modularity and centrality indices of the network to determine the complexity, coherence and thematic focus of the narrative discourse, and then build an organized analytical system for understanding the construction mechanism of narrative meaning.

With the addition of vectorisation technology, computation and analysis of narrative discourse have also been developed. Based on the theory of distributional semantics, word embedding methods can map words in narrative texts to numerical vectors in a high-dimensional space, so semantic similarity, analogy and context dependency can all be expressed as vector operations. Metaphorical constructions, emotional tendencies and the expression of implicit meaning in narrative discourse can all be interpreted in a new way by means of distance measurement and direction calculation in vector space. Thus, representation is no longer confined to traditional lexical statistics; at present, various forms of representation can be employed in different contexts of narrative discourse, and applied techniques have also been introduced to explore narrative style, patterns in character speech, linguistic expressions of narrative perspective, etc., shifting the focus of research in narrative discourse analysis from qualitative description to vectorized computation and visualisation^[1].

1.3 Machine Learning-Based Plot Pattern Recognition and Clustering

Plot pattern recognition has long been based on theoretical induction and classification as a basic division of narratology. With the development of machine learning, this area of research has also begun to change. Supervised learning can be employed to train a classification model based on annotated narrative data, and then this model will learn the features of all kinds of plot types automatically. Attributes are not only the linear order of a sequence of events but also have deep structures, such as causal networks, the development path of conflict, and functional arrangements of characters. Machine learning models can find patterns that have gone unnoticed in previous research, uncover the continuous spectrum relationships among all kinds of plots, and thus address the shortcomings of the plot classification framework that have existed since Aristotle and Propp.

Unsupervised clustering can be used to find patterns in the plot without labels. Vectorise the event sequences of a large number of narrative texts, and then cluster algorithms can automatically divide different clusters of plot types based on the similarity of these sequences. It does not use theoretical categories in advance; instead, it will discover plot patterns naturally from the data and thus be possible to find hidden structures in cross-cultural and cross-era stories. The pictures of the clustering results can show us how the different kinds of plots are distributed and have changed. In addition, the prototype sequences obtained by clustering algorithms can be compared with the categories of classical narratology to both verify the explanatory power of traditional theories and discover new forms that have not been covered by these theories; thus, it can promote data-driven self-renewal and expansion of plot theory^[2].

2. 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

A new kind of writing for fiction is about to be produced by generative pre-trained models now. Models trained on a large amount of data have learned the grammar, semantics, etc., of language; thus, they can independently generate all kinds of stories with reasonable plots, characters and dialogue based on prompts. Generation is not just the arrangement of words; it is an autoregressive method that predicts the most likely next word in a probability distribution at each step to create a story with some internal logic, similar to how a person writes. Therefore, the creation of narratives is no longer limited to the field of human cognition but has also entered the working area of algorithms; thus, narrative texts are no longer merely the external manifestation of the author's will but are also the results of data dissemination and computational structures.

With the development of automatic production capacity, people have started to think about what makes a story attractive. According to the old narrative theory, a text serves as a medium for the author and the reader to express their intentions and interpretations of life. However, the narrative texts produced by the model are fully in line with the norms of literary works in form but lack the author's original ideas. This "unintentional narration" makes us reconsider the ontology of the text: must narrativity be the result of human consciousness? Can the statistical learning of algorithms be considered a new kind of "creative" mechanism? Now, one of the main contents of narrative theory research in the AI era is to find answers to these problems, and thus postclassical narratology has been able to extend the scope of research objects and methods.

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

The appearance of generative narrative texts has posed a new theoretical problem for the concept of the narrator. Classical narratology distinguishes among the author, the implied author and the narrator, but it always presumes that there is some human subjectivity in the act of narration. AI-generated text also has narrative voices, choices of perspectives and styles, but these attributes do not originate from the conscious actions of subjects; rather, they are the results of algorithms based on statistical regularity. This "non-human narrator" gives rise to a strong illusion of intentionality; during reading, we are unable to help but attribute motives and emotions to the narrative voice in the text, treating it as if it were an anthropomorphised subject, even though such a subject does not actually exist. How this illusion works shows the deep assumptions people have about narrative knowledge, and it can be seen that the old theory of narrators is not well-suited for algorithmic texts^[3].

Thus, the problem of the crisis of authorship will be directly addressed in narratology. When algorithms can generate a large number of narrative texts that are indistinguishable from those written by people, the old idea that authors are the origin of meaning will be undermined. Authorship is no longer the sole attribute of a single creative person; rather, it has become a distributed and networked phenomenon of generation, with contributions from model builders, trainers of training data, prompt writers, and others, and no single individual can be held fully responsible for the creation of the text. Given that there is a diffusion of authorship, narratology needs to revise the concept and scope of the category of "author", and researchers should change from an intention-oriented mode to a production-mechanism mode; thus, attention will be paid to "how discourse is produced" rather than "who is speaking".

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

New kinds of interactive stories are being created that allow people and computers to work together. Both users and algorithms are participating in the creation of stories in AI-driven interactive narrative systems; the modifications made by users will change the plot, and then algorithms will generate new parts of the story in real time based on these changes. The collaboration between the writer and the reader is no longer one-sided; rather, both actively participate in the creation of the work at different times. Cooperation between people and machines is a way of creating narrative meaning, and it is no longer confined to a single place but changes constantly with interaction. The work of literature is no longer a fixed thing but an open field for creation that is constantly changing.

Deconstruction of Textual Authority can be applied to Interactive Narratives. Since each choice by

the user leads to a different story path, the text has an open structure with many branches and many ends, and no one version is more correct than another. The algorithm can also generate text in real time, and it is possible to change the speed of narration, the responses of characters, and even shift the focus of themes according to changes in user behaviour to create many different types of text dynamically. Therefore, the narrative text will not have a single fixed meaning but will be a place for joint exploration by users and algorithms. Deconstruction of authority requires narratology to re-examine the boundaries and stability of the text; thus, theoretical research has moved away from the traditional method of static analysis of the text and begun conducting process studies that focus on the mechanisms and effects of intersubjective negotiation in the process of narrative generation^[4].

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

3.1 Narrative Encoding and Decoding Mechanisms for Multimodal Data Fusion

The first use of digital generation for transmedia narratives is the combination of all kinds of data. With the development of artificial intelligence technology in recent years, many kinds of semiotic systems, such as text, images, sound and video, are no longer processed independently but have been combined into a single semantic space via joint vector representations. A new way of organising narrative information has been established; it is no longer arranged according to the order of a single system of signs but is rather the result of combining many kinds of data. For example, the composition, colour and light of visual images can present the emotional mood of text, and the frequency and rhythm of sound can create a sense of place and time in a story. The encoding of multimodal fusion moves away from linguistic signs in traditional narratives and incorporates all kinds of sensory experience in the construction of stories^[5].

A new problem of research in narratology is also the corresponding change in the decoding mechanism. To understand a multimodal narrative, one needs to map and integrate the information presented by all kinds of sign systems. Attention mechanisms and cross-modal alignment can be employed to construct a computational model that is in line with how the human brain processes all sorts of information. Decoding is not passive reception; rather, it is an active construction. The receiver gathers all the information and links it with other parts of the sign language system to form a sense of meaning through comprehension. Given that the decoding mechanism is multimodal, narrative theory needs to be revised to consider how receivers construct meaning from all kinds of modes, and it should focus on combining and integrating all kinds of information to expand the foundation of semiotic analysis for narratives.

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

Algorithms are employed to build the world of digital stories today. The presentation of story materials in interactive narratives is no longer fixed; rather, it will be different depending on what users do and choose. According to how much a user has been involved in the story so far, the algorithm will select appropriate content modules from a large pool of stories and organise them to ensure coherence and rationality in the development of the narrative. The curation mode does not have to be that of traditional stories, and narrative creation can be changed and adjusted at any time. Algorithmic curation decides not only which content to show but also the order, speed and relationships among all these pieces of content to create a complete story for the user.

The goal of the construction of immersion is to be realised by algorithms. Interactive narrative spaces have many sensory materials for immersion in a story and can present the world of fiction in various ways through different senses, allowing people to feel it directly by participating. Based on the data it has gathered on where users look, how often they operate, and what emotions they feel, at this time, the algorithm will dynamically change the parameters of the narrative environment to keep up with or even enhance the sense of immersion. Immersiveness is the interaction between people's consciousness and the world created by algorithms; it is the result of a person's attention and emotions in the face of a reasonable and rational environment. Based on the above construction, narratology needs to rethink the necessary conditions for creating immersive experiences from the perspective of reception aesthetics and regard the algorithm as an active constructor of the narrative environment rather than a passive carrier of narratives.

3.3 The Topological Deformation of Narrative Time in Digital Media Environments

The Structure of Narrative Time has changed with the development of digital media. The old way of narration is chronological, and some time-related rhetoric is achieved by adding anachronisms to extend or shorten the duration, and by changing their frequency. With the development of digital media, narrative time has begun to take on a new form; at present, user intervention is required in time for the development of stories, and algorithms can be used in real time to build complex structures of narrative time that are reversible, branchable and cyclical. Narrative no longer needs to be a single line over time; instead, at the branch points chosen by users, many different timelines can be created. The Paths are not placed next to one another; rather, they are connected and cross-referenced to form an unbroken deformation that is a topological space^[6].

One can study how time is distorted in the sense of topology topologically. Topologically, narrative time is no longer the spatial arrangement of events in time; rather, it is a structural invariance that allows all the temporal paths to be transformed and mapped onto one another. Digital narratives can take users to different times in history, have several loops of the same event from different perspectives, and even change the circumstances of the next event by interference. Time is therefore a flexible material for the story and is no longer fixed. Topological deformation of narrative time is also a way for the audience to experience time; they are no longer passive receivers of the narrator's organisation of time but can actively build their own sequence of events by selecting and switching among different paths in time. Therefore, based on the ideas of phenomenology and narrative theory, one needs to modify the original concept of temporality to regard digital media as organisers of temporal experience rather than just conveyors of it.

Conclusion

The progress of the research paradigm for postclassical narratology in the AI era has taken the form of three stages. At the level of methodology, computation has offered technical support for narrative analysis in the form of quantitative model construction and algorithmic recognition; thus, the study of narrative structure, discourse and plot can be carried out through systematic and computable verification rather than solely by intuition. At the level of subjectivity, with the development of generative pre-trained models and non-human narrators, narratology has had to reassess the boundaries of the subject; authorship is no longer the result of individual creation but a distributed and generative phenomenon, and with the cooperation of humans and machines in interactive narratives, the unilateral authority of the text has been broken, so research focus has shifted from "who narrates" to "how narration is produced". At the level of textuality, the digital generation of transmedia narratives has broken the traditional dominance of linguistic signs, and through multimodal fusion, algorithmic curation and topological deformation of narrative time have altered the mode of existence for narratives; thus, the text is no longer an objective thing but rather an unstable area of potentiality. Therefore, narratology is no longer about people but has moved to consider the idea of human-machine symbiosis. The problems mentioned above will be addressed in the following ways in future research: investigate the reception-aesthetic features of AI-generated narratives, construct analytical models for narrative in human-machine collaboration, and integrate theoretical resources from the field of digital media studies and classical narratology. The theoretical renewal of narratology should have its own explanatory power in the field of digital humanities by creatively transforming the logic of technology and classical categories.

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