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Algorithmic Interpretant: How Weibo's "AI Search" Reshapes Meaning Production

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Abstract: This study examines the phenomenon of algorithmic *interpretant*—a concept derived from Peircean semiotics—wherein the production of interpretants, traditionally a core aspect of human meaning-making, is increasingly delegated to artificial intelligence systems. Taking Weibo's "AI Search" as a case, this paper investigates how such algorithmic mediation reshapes the dynamics of meaning production in contemporary social media environments. Drawing on qualitative analysis of user-AI interaction traces and platform logics, the study reveals that Weibo's AI search engine functions as a quasi-interpretant that prioritizes computational efficiency, trend conformity, and platform-driven relevance over polysemic or resistant interpretations. Consequently, the algorithm exerts a subtle yet pervasive monopoly over meaning production by normalizing certain interpretive pathways while marginalizing others. The paper argues that algorithmic interpretant does not entail the complete surrender of human semiotic agency; rather, it generates a contested field where algorithmic power and user creativity constantly negotiate the boundaries of meaning. These findings contribute to critical algorithm studies, digital semiotics, and the broader debate on AI's role in cultural reproduction.

1. Introduction

Generative AI, led by ChatGPT, is rising so rapidly that it marks the arrival of a new stage for intelligent society mediated by AI assistance.[1] For algorithms, societal concern and understanding have transcended their technical and material existence, turning instead to the recognition of algorithms through their latent power in the social order.[2] The production of meaning—once understood as a distinctly human capacity rooted in semiotic interpretation—has become increasingly entangled with algorithmic processes. Informed by semiotics of Charles Sanders Peirce[3], this study foregrounds the concept of the *interpretant*, the mental effect or further sign generated through an interpretive act[4]. Traditionally, interpretants emerge from human engagement with signs within an unbounded, ongoing semiosis. Nowadays, AIGC technology mimics human ways of thinking at a more advanced level to produce content[5], and the composition of AI texts has aroused huge debate[6]. Therefore, the rise of AI-powered search engines has introduced a new configuration: algorithmic systems now routinely generate, prioritize, and deliver interpretants to users, effectively outsourcing a core dimension of meaning production. Technically, an algorithm is a set of instructions and steps that organizes and operates on a data

corpus to produce an output.[7] This phenomenon, which terms Algorithmic Interpretant, raises critical questions about the locus of semiotic authority and the extent to which algorithmic mediation reshapes how meaning is formed, stabilized, and circulated in social media environments.

As a scientific and technological artifact, algorithms have been widely deployed—from search engines and news distribution to entertainment recommendations, shopping prompts, map navigation, and food delivery labor—and are increasingly participating in and shaping the social order, thereby influencing people's daily activities.[8-9] With Weibo's AI search as a representative case, this paper investigates how algorithmic mediation transforms meaning production on one of China's largest microblogging platforms with the highest user activity[10]. Unlike traditional search engines that retrieve pre-existing content, Weibo's AI search engine synthesizes responses, predicts user intent, and ranks outcomes based on platform-specific logics of trend conformity and computational efficiency. Such systems function as quasi-interpretants—algorithmic substitutes that channel interpretive pathways toward normalized, platform-preferred meanings while marginalizing polysemic or non-conforming possibilities. By examining the structural affordances and operational logics of Weibo's AI search engine, this study contributes to critical algorithm studies and digital semiotics, revealing how AI technologies quietly monopolize the interpretative process. In doing so, it also invites broader reflection on the shifting boundaries between human semiotic agency and machine-led meaning production in the contemporary media landscape.

2. The Technical Essence of Algorithmic Interpretant

2.1 Weibo's AI Search

In terms of its functional positioning, AI Search takes online public events as its primary analytical target, covering a diverse range of domains such as entertainment hotspots, social issues, policy releases, and civic events. When a given topic attains communicative traction and generates a substantial volume of user-generated content (UGC), the function automatically initiates a process of data fetching and analysis, thereby transcending the efficiency constraints of manual information filtering and rapidly synthesizing large-scale textual data within a short time frame. Its core function is not merely to present raw information, but to distill the central narrative of the event, synthesize multiple perspectives, analyze user sentiment, and extract high-frequency keywords through algorithmic models. The output takes the form of structured reports, visualizations, and opinion labeling, delivering standardized interpretations of public events to users. For instance, in entertainment-related hotspots, the system can rapidly integrate event timelines, relational networks among figures, and prevailing sentiment; in policy-related debates, it extracts key arguments for and against, generating word clouds and opinion share distributions, thereby functioning as an algorithmic mediator through which users understand complex public events.

In terms of its operational context and functional characteristics, Weibo's AI Search is marked by two interrelated attributes: real-timeness and contextuality. Real-timeness is manifested in its dynamic data scraping and analysis, which evolves in tandem with the dissemination trajectory of public events. The algorithmic interpretation of signs is continuously adjusted in response to incremental changes and variations in UGC, synchronizing with the unfolding process of public events. Contextuality, meanwhile, refers to the algorithm's capacity to adapt to the distinct socio-communicative features of Weibo. Its model integrates multiple dimensions of platform-specific semiotic production, including the textual content of posts, interactive opinions within comment sections, and the diffusion heat of trending topics. Simultaneously, it incorporates factors such as users' social networks and content dissemination hierarchies, thereby aligning its sign interpretation with the unique semiotic context of the Weibo platform. Furthermore, the function exhibits a strong reachability. Its interpretive outputs are prominently presented—for

instance, through pinned displays on topic pages, in-feed recommendations, and prioritized placement in search results—establishing themselves as a key reference for understanding public events within the Weibo ecosystem. In some cases, these outputs are even cited by external media outlets or cross-posted on other social media platforms, generating a cross-platform semiotic diffusion effect.

In terms of user practice and platform configuration, the emergence of Weibo's AI Search has restructured the prevailing patterns of information access and meaning interpretation within the platform. For ordinary users navigating an environment of information overload, the function reduces the cognitive cost of filtering and comprehending public events, enabling them to quickly grasp the core narrative and dominant viewpoints. It thus serves as a crucial information-processing tool in the era of fragmented reading. For the Weibo platform itself, AI Search represents more than a technical upgrade aimed at enhancing service capacity. It also constitutes a form of deep exploitation and control over the platform's semiotic resources. By producing standardized interpretations of user-generated signs through algorithmic means, the platform is able to further steer the communicative rhythm and meaning trajectory of public events, thereby strengthening its governance and directional guidance over the platform's content ecology.

2.2 A Semiotic Interpretation of Weibo's AI Search

From the perspective of Peirce's triadic model of the sign, the technical essence of Weibo's AI Search lies in its role as an algorithm-driven producer of algorithmic interpretant, thereby completing a standardized process of sign processing and interpretation. This process begins with the platform's vast repository of UGC as the raw sign vehicle *representamen*. Through techniques such as natural language processing and sentiment analysis, the algorithm distills, integrates, and encodes discrete sign information to generate new sign vehicles—such as event chronologies and opinion tag sets—and ultimately outputs standardized sign interpretants in the form of structured reports, visualizations, and the like. In this way, a full chain of algorithmic mediation from raw signs to meaning interpretation is achieved. In this process, Weibo's AI Search is no longer a mere information retrieval tool. Rather, it becomes a central mediator between the sign vehicle and the object, fixing a determinate meaning orientation to raw signs through algorithmic logic, and thus emerges as a significant participant in the production of semiotic meaning within the networked public sphere.

The emergence of Weibo's AI Search has brought about two critical transformations in the domain of sign interpretation, thereby reconstituting the traditional mechanism of semiotic meaning production. First, the subject of interpretant production shifts from human beings to algorithms. In the traditional model, interpretants are generated through interaction and negotiation among diverse agents—users, media professionals, experts, and others. With the advent of AI Search, this process is supplanted by the technical rules of algorithms, which become the primary definers of semiotic meaning. Their technical logic directly determines both the direction and the presentational form of the interpretants produced. Second, semiotic meaning shifts from negotiated emergence to technologically prefabrication. Under the conventional model, the multiplicity and dynamism of meaning derive from the contestation and collision of interpretations across different subjects. AI Search, by contrast, solidifies meaning into standardized outcomes through techniques such as data labeling, percentage-based statistics, and the like. As a result, the interpretation of signs is no longer an open, negotiated process but a technologically prefabricated product predetermined by algorithmic design.

3. Mechanism of Semiotic Monopoly

3.1 Case Analysis

The monopoly exercised by Weibo's AI Search over the semiotic interpretation of online public events does not operate simply through information occlusion. Rather, it reconstructs the interpretive pathways of public events via algorithmic techniques, thereby fundamentally severing the traditional chain of multi-agent semiotic interpretation and establishing an algorithmically dominated hegemony of semiotic meaning production. This algorithmic reconfiguration of interpretive pathways becomes particularly evident through two typical cases: a celebrity divorce case in the entertainment domain and a policy controversy case in the public sphere. In the traditional model, a celebrity divorce case would typically unfold through multiple layers of interpretation: fans' emotional readings, media in-depth investigations, legal professionals' expert analyses, and eventually broader societal reflections on marriage norms and entertainment culture (see Figure 1).

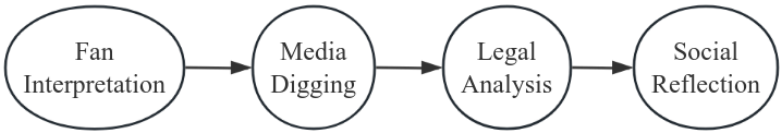

Figure 1. Traditional Semiotic Interpretation of a Celebrity Divorce

Figure 2. Traditional Semiotic Interpretation of a Policy Controversy

Similarly, a policy controversy would involve two-way discursive interactions among experts' academic debates, grassroots feedback, and governmental adjustments (see Figure 2). Both cases thus exhibit a multi-agent, multi-dimensional, and progressive pattern of semiotic interpretation. Under the intervention of AI Search, however, these complex interpretive processes are radically simplified. The polysemic meanings of a celebrity divorce are compressed into an emotional radar chart of "gossip/sympathy" (see Figure 3). The multifaceted deliberations over a policy controversy are reduced to binary "support/oppose" labels and word clouds of high-frequency terms (see Figure 4). Through datafication and visualization, the algorithm confines the semiotic meaning of public events within prefabricated interpretive frameworks, thereby directly rewriting the pathways of sign interpretation.

Figure 3. Semiotic Interpretation of a Celebrity Divorce after AI Search Intervention

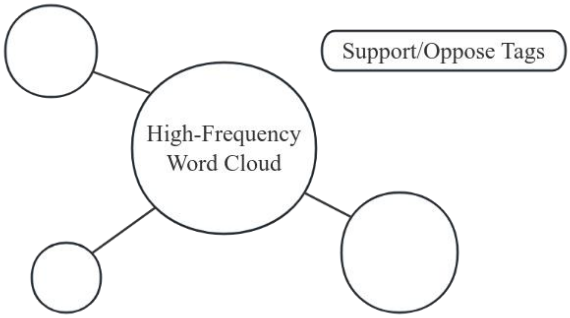

Figure 4. Semiotic Interpretation of a Policy Controversy after AI Search Intervention

3.2 Theoretical Critique

The semiotic monopoly constructed by AI Search manifests its core problems at two interrelated levels: interpretant flattening and semiotic chain shortening. Together, these two mechanisms erode the polysemy of public events and undermine users' semiotic agency as interpreting subjects. Interpretant flattening refers to the algorithm's efficiency-driven operation, whereby the complex social emotions, value judgments, and interest claims embedded in public events are compressed into quantifiable, visualizable data labels. The originally rich semiotic connotations are stripped away, leaving only surface-level information that the algorithm can recognize and tabulate. As a result, the semiotic interpretation of public events falls into a simplified and superficial condition, losing its original depth and breadth. Semiotic chain shortening, in turn, fundamentally degrades the role of users in sign production and interpretation. Within the traditional semiotic framework, users act as active interpreters and participants, driving the dynamic generation of meaning through interaction, debate, and re-creation. Under the technical logic of AI Search, however, the UGC produced by users is reduced to mere "raw data" for algorithmic scraping and analysis. Users no longer participate in the interpretive process of signs; they can only passively receive the standardized interpretants output by the algorithm. The original semiotic chain—"sign production→interactive interpretation→meaning production"—is truncated, leaving only the technical pipeline of "data input→algorithmic processing→result output." Through this process, the algorithm achieves full-spectrum control over the semiotic interpretation of public events, thereby establishing a semiotic monopoly that is difficult to break.

4. The New Semiotic Ecology of Human-Machine Collaborative Interpretant

The algorithmic monopoly over semiotic interpretants is, in essence, the suppression of semiotic multiplicity by the logic of technical efficiency. To reconstruct the semiotic ecology in the age of algorithms is not simply to negate the technical value of AI Search. Rather, it is to dismantle the algorithm's singular interpretive hegemony and to establish a human-machine collaborative mechanism for interpretant production—one in which the efficiency advantages of algorithms and the agential values of humans complement each other, thereby returning the production of semiotic meaning to its negotiated essence. Such collaboration is not merely a technical integration at the operational level. Instead, it entails redefining the roles and boundaries of algorithms, platforms, and users in semiotic production along three dimensions: rule design, rights empowerment, and technical oversight. Through these measures, standardized algorithmic interpretants become a reference for understanding public events rather than the definitive answer, while users' autonomous interpretation becomes the core of meaning production rather than a mere

supplement to algorithmic output. Ultimately, this approach aims to foster a pluralistic, dynamic, and balanced semiotic ecology within the networked public area.

4.1 The Principle of Transparency

Transparency constitutes the foundational prerequisite for human-machine collaborative interpretant production. Its core objective is to break through the "black box" nature of algorithms, enabling users to clearly understand the generative logic and information sources of AI Search's interpretant, thereby fostering a rational understanding of algorithmic interpretation while providing the necessary contextual support for users' autonomous meaning-making.

Requiring AI Search to annotate the derivation pathways of interpretants does not entail full disclosure of technical details. Rather, it calls for the visual presentation of key stages in semiotic processing. For instance, for interpretant outputs such as opinion tags, sentiment proportions, and event chronologies, the system should provide clickable links to the original source posts, along with annotations specifying the time range of data scraping, sample size, and filtering criteria. In this way, the standardized outputs of the algorithm can be traced back to the original UGC sign vehicles.

The implementation of such transparency rules can effectively mitigate the one-sidedness and biases inherent in algorithmic interpretation, while also promoting meaningful interaction between algorithmic outputs and user interpretation. When users are able to access the raw information behind algorithmic analysis via clickable links, they can independently assess whether the algorithmic interpretant fully capture the multiple dimensions of a public event, and whether any misinterpretation or distortion of semiotic meaning has occurred. At the same time, platform developers and algorithm designers, facing the requirement of interpretive traceability, are incentivized to pay greater attention to the comprehensiveness of data samples and the soundness of algorithmic models, thereby reducing interpretive biases arising from skewed data selection or flawed model design.

Furthermore, transparent interpretation pathways provide a foundation for users' secondary interpretation and semiotic re-creation. By enabling users to engage with both raw signs and algorithmic interpretant, transparency allows for pluralistic reflection rather than confinement within prefabricated algorithmic outcomes. In this way, the collaborative goal of algorithmic interpretation serving human interpretation can be genuinely realized.

4.2 The Right of Refusal

The core of the right of refusal is to grant users the power to dissolve semiotic associations, thereby positioning users as the ultimate arbiters of the content they produce. It disrupts the indiscriminate scraping and utilization of UGC by algorithms, safeguarding users‘ semiotic sovereignty at the level of rights—a crucial institutional response to the demands of user semiotic resistance. Specifically, users may delete the interpretive traces of their own content within AI Search reports. This means that users are entitled to decide whether the sign vehicles they produce participate in the generation of algorithmic interpretant, and to refuse having their opinions, emotions, and expressions stripped of context and incorporated into standardized interpretive frameworks. In doing so, they avoid being reduced to "passive data feedstock" in algorithmic semiotic production.

The establishment of such a mechanism not only respects users' rights to content creation and discursive expression but also improves the quality of algorithmic interpretant generation at the source, facilitating a shift from "one-way scraping" to "two-way interaction." When users possess the right to refuse, algorithms and platforms are compelled to pay greater attention to contextual

respect and fair use of user-generated content, thereby mitigating the semiotic distortion caused by indiscriminate data extraction. At the same time, users, with their rights secured, are less likely to engage in adversarial forms of semiotic resistance—such as intentional data pollution or anti-search declarations—and are more inclined to participate in semiotic production and interpretation in a rational manner.

In addition, the exercise of the right of refusal can also function as a reverse feedback loop for algorithmic optimization. When a large number of users refuse a particular interpretive trace, it often indicates that the algorithm has introduced a bias in its semiotic processing at that stage. Platform operators and developers can then adjust and refine the algorithmic model accordingly, ensuring that the generation of algorithmic interpretants better aligns with the original meanings of signs and more adequately responds to the pluralistic contexts of public events.

4.3 Public Audit of Algorithmic Logic

Opening up part of the algorithmic logic to public audit—without requiring full reverse engineering of AI Search's underlying code—refers, to the extent technically feasible, to allowing the public, scholars, and professional institutions to scrutinize the algorithm's semiotic compression processes. This imposes technical constraints on the algorithm's interpretive hegemony, subjecting its semiotic processing to the oversight of multiple stakeholders. The opening of algorithmic logic focuses on the core stages of interpretant generation—such as the generative formulas for interpretants, the criteria for compressing semiotic meaning, the dimensions of sentiment analysis, and the extraction rules for opinion tags—rather than the underlying source code that constitutes the platform's core technological assets. In this way, a balance is struck between technological protection and public oversight.

Opening select portions of algorithmic logic to public audit serves as a crucial means of verifying the fairness and validity of algorithmic interpretation. It also constitutes a key pathway for steering algorithmic technologies toward a closer alignment with the inherent regularities of human semiotic production. Professional academic institutions and technical researchers, by auditing the semiotic compression process, can identify logical flaws, value biases, and technical vulnerabilities within the algorithmic model—for example, whether it overemphasizes quantifiable data at the expense of contextual meaning, or whether it exhibits selection biases against specific groups or particular viewpoints. Based on such findings, they can propose targeted improvements, making the algorithm‘s semiotic processing more congruent with the multiplicity and complexity of semiotic meaning production.

At the same time, the process of public audit can also enhance algorithmic literacy among ordinary users, enabling them to understand more clearly how algorithms perform semiotic interpretation. With this understanding, users are empowered to engage in autonomous interpretation from a more informed perspective, thereby forming effective complementarity and checks-and-balances with algorithmic outputs. Ultimately, this form of technical oversight and optimization will transform AI Search from an "algorithm-dominated semiotic interpreter" into a "human-machine collaborative semiotic processing assistant," allowing algorithmic technologies to genuinely serve the construction of a pluralistic, dynamic, and balanced semiotic ecology within the networked public place.

5. Conclusion

This study reveals a shift in the semiotic order of the digital age: the progressive outsourcing of the interpretant—once the most intimate act of human meaning-making—to algorithmic systems. Through the case of Weibo's AI search engine, this paper have shown that algorithmic interpretant

is not merely a technical convenience but a quiet restructuring of semiotic authority. Algorithms no longer retrieve meanings produced by users; they pre-produce and standardize meaning itself, turning the open-ended, negotiated process of interpretation into a closed, efficient, and predictable pipeline. At stake is not simply the accuracy of information, but the very condition of semiotic agency—the capacity of individuals and communities to engage with signs, contest meanings, and generate alternative worlds.

The challenge posed by algorithmic interpretant is therefore not one of technological failure but of technological success taken to its extreme: efficiency without deliberation, standardization without multiplicity. Countering this trajectory does not require a nostalgic return to a pre-digital past, nor a wholesale rejection of AI. Rather, it demands a re-politicization of meaning production, a recognition that semiotic infrastructure is never neutral, and that the question of who produces the interpretant is as urgent as ever. By foregrounding transparency, user refusal rights, and public audit, a path toward a human-machine collaborative semiotics is outlined. But beyond institutional fixes, the deeper imperative is to reaffirm interpretation as a site of human autonomy, dissent, and creativity. In the end, the struggle over the interpretant is nothing less than the struggle over what it means to be a signifying being in an age of algorithmic reason.

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