The Generation and Dissolution of Adversarial Discourse: An Analysis of Medical Documentary Danmaku from Encoding-Decoding Theory Perspective

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Abstract. Tensions in doctor-patient relationships represent a longstanding structural contradiction within China's healthcare sector. In the new media context, medical documentary content intended to foster understanding may instead evolve into a public discourse arena that exacerbates polarization. Using the first season of *The Human World* as a case study, this analysis employs encoding-decoding theory and social identity theory to examine the adversarial discourse within its danmaku(A type of comment-based subtitle that appears when watching videos online, originating from Japanese video-sharing websites.). The documentary's specific symbolic coding, differences in viewers' social identities, and narrative dissemination methods within the new media environment collectively form the foundation for generating adversarial discourse. Conversely, rational discourse can effectively mitigate adversarial sentiments through three pathways: knowledge supplementation, empathetic connection, and structural attribution. This shifts public attention from individual moral judgments toward reflecting on structural challenges like healthcare resource allocation. As an emerging form of public participation, danmaku preliminarily establish a four-party communication mechanism involving medical professionals, patients, media, and citizens. This offers new theoretical perspectives and practical references for understanding and improving the discourse ecosystem surrounding public issues.

Keywords: Encoding-Decoding Theory; Adversarial Discourse; Danmaku; Medical Documentary; Sentiment Analysis.

1. Introduction

1.1. Background

The healthcare sector in China currently faces a prominent structural contradiction: the strained doctor-patient relationship. The 2021 China Physician Survey Report released by Tsinghua University's School of Social Sciences in April 2021 indicates that physicians exhibit an “overly sensitive” perception of doctor-patient relations. Among surveyed physicians, 37.54% perceive current doctor-patient relations as “tense,” while an additional 13.16% describe them as “extremely tense.” Notably, 44.32% of surveyed physicians expressed “fear” regarding potential medical disputes, while 13.63% reported feeling “extremely fearful.”[1] This tense dynamic not only undermines the quality and efficiency of healthcare services but also poses a severe challenge to achieving China's “Healthy China 2030” strategic goals.

At the cognitive level, the understanding gap between physicians and patients stemming from differences in social status warrants attention. The aforementioned survey report indicates that over 90% of physicians have encountered situations where “patients or their families raised unreasonable questions due to a lack of medical knowledge.” Research data also reveals that physicians generally perceive urban patients with higher socioeconomic status as demonstrating better communication skills and treatment compliance. Asymmetry exists between doctors and patients in terms of knowledge structures, information access, and social status. This asymmetry can easily lead to a gap between patients' expectations of medical services and actual outcomes, thereby triggering conflicts and disputes. In the communication environment of the Web 3.0 era, the “decentralized” nature of cyberspace has given public discussions on doctor-patient issues new characteristics: on one hand,

the participation of diverse stakeholders promotes the free expression of viewpoints; on the other hand, the collision of differing discourses readily escalates into adversarial discourse practices, potentially triggering online group polarization. The intensification of such opposing discourses not only fails to resolve doctor-patient conflicts but may exacerbate societal cognitive divisions. In extreme cases, it can even provoke incidents of online violence.

Based on this, this paper seeks to address the following research questions: First, why might medical documentary content intended to foster mutual understanding between doctors and patients instead become a space that intensifies conflict in the new media environment? Specifically, what adversarial discourse characteristics emerge in discussions of doctor-patient issues within the context of emerging interactive formats like danmaku? This study will conduct a systematic analysis of the danmaku from the first season of the medical documentary series *The Human World*. By integrating encoding-decoding theory with social identity theory, it will delve into the generative logic and evolutionary patterns of adversarial discourse surrounding doctor-patient issues in cyberspace. This research aims to provide theoretical and practical insights for establishing constructive doctor-patient communication mechanisms.

1.2. Significance

Current academic research on danmaku exhibits a tendency to prioritize application over foundational studies. Most investigations treat danmaku as an evaluation metric to analyze video effectiveness, lacking in-depth exploration of the mechanisms underlying danmaku generation. This study adopts computational communication methods to collect and categorize 70,730 danmaku from the first season of the medical documentary series *The Human World* on Bilibili.Python-based coding processes the data, integrating sentiment analysis techniques with textual analysis methods. By employing dual interpretations through data analysis and theoretical discussion, this research offers a novel methodological pathway for danmaku studies.

Current research on doctor-patient relationships both domestically and internationally has yielded substantial findings, yet two limitations persist: First, most studies adopt a retrospective analytical perspective, focusing on conflict management and resolution mechanisms while neglecting pre-conflict preventive communication mechanisms. Second, research predominantly centers on either the medical provider or patient perspective, with relatively limited exploration of third-party public participation in discussions surrounding doctor-patient issues. This study incorporates the interactive method of public danmaku into its analytical framework. By conducting adversarial discourse analysis, it offers a novel theoretical perspective for research on the dissemination of doctor-patient issues.

As a phenomenon-level medical documentary, *The Human World* captures various conflicts and reconciliations within the healthcare process through an authentic lens. Its portrayal of critical departments like emergency rooms and ICUs presents typical scenarios of doctor-patient interactions. The timestamped comments feature provides precise data support for analyzing audience reactions in real time, offering unique research value. By dissecting the mechanisms behind adversarial discourse generation in these settings, the documentary offers forward-looking insights for preventing doctor-patient conflicts.

This study breaks through the traditional binary analytical framework of doctor-patient discourse by incorporating public participation into the research of doctor-patient relationships. It provides a theoretical basis for establishing a positive four-party interaction mechanism among doctors, patients, media, and the public. This approach holds significant implications for promoting rational societal discussions on healthcare issues and reducing online group polarization.

2. Literature Review

2.1. Danmaku Research

As an emerging form of online interaction, danmaku has undergone an evolutionary trajectory in theoretical research since its introduction to Chinese academia in 2013, progressing from cultural phenomenon analysis to exploration of its dissemination mechanisms. Early studies primarily approached the phenomenon from a youth subculture perspective. Chen Yi et al.'s (2013) foundational research highlighted that danmaku creates a unique "virtual synchronicity" experience, reshaping cultural consumption patterns in the internet era [2]. As research deepened, scholars increasingly focused on the dual effects of danmaku at the user interaction level.

Existing research indicates that danmaku primarily promote user interaction through three mechanisms: First, the entertainment creation mechanism, Li Bo et al. (2023) found through semi-structured interviews that sports fans send danmaku during events for entertainment purposes [3]; second, the emotional expression mechanism, Xie Mei et al. (2014) discovered through focus group interviews that users employ danmaku to express emotions [4]; third, the social fulfillment mechanism, He, Haixiang et al. (2025) empirically demonstrated that danmaku interactions satisfy users' interpersonal relationship needs [5], additionally, Mingxuanzou et al. (2024) constructed a sequential chain mediation model indicating that danmaku participation enhances users' sense of belonging and alleviates loneliness [6].

Additionally, some studies have highlighted potential risks associated with danmaku interactions: First, regarding content quality, Zhang Chai (2015) noted that danmaku content often suffers from low quality and vulgarity, with some users transforming danmaku into tools for emotional venting [7]. Second, on the level of communication ethics, Tang Tiantian et al. (2016) employed carnival theory to analyze that the non-standard nature of danmaku language may encourage online deviance [8]. Third, concerning the online environment, Yue Lu et al. (2021) highlighted that profanity in certain danmaku severely disrupts the online ecosystem and may even trigger cyber violence [9]. Finally, regarding cognitive impacts, scholars express concern that excessive reliance on danmaku may lead to a decline in users' critical thinking abilities.

Despite existing research exploring the danmaku phenomenon from multiple angles, three significant limitations persist: First, most studies focus on general interactive characteristics of danmaku, lacking in-depth analysis of discourse patterns under specific topics (such as doctor-patient relationships). Second, discussions on the negative effects of danmaku often remain at the descriptive level, lacking empirical research on the mechanisms generating adversarial discourse. Third, no connection has been established between danmaku interactions and group polarization. Therefore, this study employs computational communication methods to identify textual characteristics of adversarial discourse within danmaku by examining their content generation mechanisms, thereby providing empirical evidence for improving doctor-patient communication.

2.2. Encoding-Decoding Theory

In the 1970s, British cultural studies scholar Stuart Hall proposed the encoding-decoding theory. This theory posits that during communication, the sender transforms the message, intent, or viewpoint being conveyed into a symbolic system governed by specific rules—a process termed encoding. The receiver then interprets these symbols based on their own cognitive frameworks and cultural backgrounds—a process termed decoding [10]. Encoding-decoding theory transcends the limitations of traditional linear communication models, emphasizing that communication is a dynamic process of meaning negotiation.

Academic research on the encoding-decoding theory primarily unfolds along three main directions: First, studies on the theoretical essence, such as Zong Yixiang (2021), who examines the encoding-decoding theory within the broader context of British Marxist media theory. This work argues that the encoding-decoding theory is not merely an audience analysis tool but also a critical ideological analysis framework, thereby reestablishing its central position in media and cultural

studies [11]. Second, comparative theoretical studies. Lin Yufeng (2023) contrasts Hall's encoding-decoding theory with David Berlo's "encoding-decoding" thesis, arguing that Berlo's approach remains within the traditional effects research paradigm, whereas Hall's theory pioneered a new audience-centered research path, laying the theoretical foundation for audience studies [12]. Third, theoretical application research has yielded particularly significant outcomes in cultural communication, specifically divided into three areas: ideological communication (Wang Xianqing, 2014) [13], cross-cultural communication (Wang Ting, 2017) [14], and new media communication (Xiaohui Zhu, 2023)[15].

Hall pointed out that once information is encoded and enters the circulation sphere, its original meaning is no longer fully controlled by the encoder but faces diverse and even conflicting interpretations [10]. Jiao Xuetao (2024) demonstrates that the public's "decoding" awareness is increasingly heightened. Building upon "compromise decoding," they engage in "reverse decoding," actively reconstructing the meaning of texts [16]. This asymmetry between encoding and decoding often leads to the distortion or reconfiguration of the communicator's intent, subsequently triggering collisions between diverse discourses and viewpoints.

Coding-Decoding theory offers strong explanatory power regarding the agency and diversity of public meaning-making, particularly when applied to online comment forms like danmaku, which exhibit strong immediacy, interactivity, and synchronicity. This study will use this theory as a framework, combined with the communicative characteristics of danmaku, to examine the diverse discursive forms presented by users through danmaku on the same video content and the formation mechanisms of their antagonistic interpretations.

2.3. Social Identity Theory

Social Identity Theory was proposed and progressively refined by scholars such as Tajfel and Turne based on the minimal group paradigm. This theory posits that individuals develop identification with their ingroup through social categorization, subsequently forming ingroup preferences and outgroup biases. This mechanism profoundly influences people's cognitive and behavioral patterns within groups.

Academic research on the application of social identity theory has been extensive and in-depth, primarily focusing on the following five domains: First, in organizational behavior, Shen Pingyu et al. (2016) emphasized that social identity theory and self-categorization theory provide core theoretical underpinnings for organizational identity research [17]; Bernadette Moorhead et al. (2025) further proposed the application of social identity within occupational groups, arguing that social identity theory highlights how workers possess multiple social identities [18]. Second, in the realm of social norms and law, Anna-Maria Kanzola et al. (2025) employed social identity theory to explore how concepts like social rules and regulations influence the relationship between human economic and social behaviors and life satisfaction [19]. Third, in the public service domain, Guillem Ripoll et al. (2025) introduced the concept of "Public Service Identity" (PSI) based on social identity theory, positing that PSI's core lies in the depth and salience of identity recognition [20]. Fourth, regarding ethnic and cultural identity, Yang Maoqing et al. (2018) argued that the essence of social integration is the process of identity formation [21]. Fifth, social identification in digital games, Frederik De Grove et al. (2015) applied social identity theory to examine factors driving individuals to attribute gamer identities to themselves or others, finding that gamer identities correlate with stereotypical behaviors rooted in consumer logic [22].

Social identity theory effectively explains individuals' interaction patterns and behavioral tendencies within groups. An individual's self-concept is largely shaped by their various social group identities, and the process of identity construction relies on continuous interaction between individuals and their social groups. This study analyzes the generation and evolution mechanisms of adversarial discourse based on social identity theory, integrating the expressive content of danmaku users across different identity perspectives. Furthermore, while social identity theory originated in social psychology, this research introduces it into the field of journalism and communication studies.

Through an interdisciplinary approach, it expands the theoretical application boundaries, attempting to provide new empirical support and theoretical extensions for the development of this theory within the contexts of new media and public communication.

3. Methodology and procedure

3.1. Methodology

This study systematically analyzes adversarial discourse in the danmaku of the first season of *The Human World* by integrating quantitative sentiment analysis with qualitative theory mining. Sentiment analysis, a vital branch of natural language processing, is widely applied in computational communication studies to identify and extract subjective information from text to determine emotional orientation. This study employs dictionary-based or rule-based sentiment analysis methods, implemented using the SnowNLP library within the Python environment. This tool leverages a Chinese sentiment dictionary and Bayesian probability models to generate sentiment scores between 0 and 1 for each comment, with higher scores indicating more positive sentiment. To enhance classification validity, thresholds are set based on existing research: scores above 0.60 indicate positive sentiment, 0.40 to 0.60 denote neutral sentiment, and scores below 0.40 represent negative sentiment. This approach enables automated sentiment annotation and quantitative representation of large-scale danmaku text. Simultaneously, Stuart Hall's encoding-decoding theory is introduced as a theoretical framework to explain the generation and evolution mechanisms of adversarial discourse. The study manually selected texts with pronounced adversarial characteristics from all danmaku. Based on real-time video contexts, thematic coding was conducted across four dimensions—user perspective, cognitive differences, emotional expression, and video narrative—to identify the conditions under which adversarial discourse emerges. To further explore the dynamic processes of adversarial discourse within community interactions, this study incorporates social identity theory for analysis. The analysis examines the interactions between rational danmaku posters and the general public by selecting comments under typical controversial topics, thereby revealing how antagonistic discourse is amplified, dissolved, or transformed within group communication dynamics.

3.2. Procedure

3.2.1. Data collection

This study examines all danmaku from Season 1 of the documentary series *The Human World* on the Bilibili platform. Data was collected using the compliant web crawling tool “Bilibili danmaku Downloader & ASS Subtitle Generator” browser extension for Microsoft Edge. As of August 26, 2025, a total of 70,730 valid danmaku were obtained. Each danmaku entry contains the time of appearance, time of disappearance, display position, and text content. The danmaku data has undergone anonymization processing and does not involve any user personal privacy.

3.2.2. Data preprocessing

To enhance data quality, the study sequentially performed the following cleaning steps: First, duplicate danmaku were removed. Next, irrelevant characters such as garbled text and special symbols were eliminated. Subsequently, Chinese word segmentation was conducted using the jieba tool in Python. Finally, non-semantic words were filtered out based on Harbin Institute of Technology's stopword list. This process purified textual noise, laying the groundwork for subsequent semantic and sentiment analysis.

3.2.3. Sentiment analysis

This study employs the SnowNLP Chinese natural language processing library to assign sentiment scores to each preprocessed danmaku individually, categorizing them into positive, neutral, or negative based on predetermined thresholds. For each episode's danmaku data, the arithmetic mean of all sentiment scores is first calculated, then the episode's overall sentiment category is determined

according to the aforementioned threshold ranges. Two researchers independently performed thematic coding and contextual interpretation of the danmaku. Coding consistency checks were conducted to ensure analytical reliability. Integrating coding and decoding theory, the study dissected the generative logic of discursive confrontation. Building on social identity theory, an analytical framework was constructed to statistically analyze confrontational danmaku within specific time periods, exploring the evolutionary mechanisms of adversarial discourse.

4. Results

4.1. Sentiment analysis

The study conducted sentiment analysis on all danmaku for the first season of *The Human World* and found that the documentary elicited predominantly positive emotional responses from viewers overall, with all ten episodes scoring above 0.50 on the emotional scale (see Table 1). With the exception of Episode 2, the average emotional scores for all other episodes exceeded 0.60, primarily clustering within the 0.65–0.67 range. Episode 9 recorded the highest average emotional score among the danmaku, reaching 0.72. These quantitative findings indicate that despite the documentary's exploration of weighty themes such as illness, suffering, and mortality, audience emotional responses remained predominantly positive.

Table 1. Average Emotional Scores and Emotional Orientation for Each Episode of Season 1 of *The Human World*.

Episode	Title	Topic	Average Sentiment Score	Emotional Attitude
1	*Life-Saving Acts*	Patient died post-rescue; grieving doctors faced impulsive family reactions.	0.65	Positive
2	*Understanding*	Ambulance emergency teams grapple with the constraints of scarce medical resources.	0.58	Neutral
3	*Reunion*	Postmortem organ donation.	0.66	Positive
4	*Farewell*	Inpatient hospice care.	0.68	Positive
5	*Choice*	Regret-free treatment selection.	0.67	Positive
6	*Trust*	Trust between parents and physicians.	0.66	Positive
7	*Newborn*	Newborns with hearing impairment.	0.66	Positive
8	*Perseverance*	Attitudes toward perseverance amid helplessness.	0.66	Positive
9	*Love*	A pregnant mother with cancer.	0.72	Positive
10	*Get Back to the Beginning*	The stories behind the documentary *The* Human World.	0.62	Positive

The shaping of this affective orientation is intimately tied to the work's narrative tactics, characterization, and medial affordances. *The Human World* employs a de-dramatized aesthetic of authenticity, refraining from glossing over the inherent limitations within medical practices while deliberately framing the subtle glimmers of humanity and existential resilience amidst adversity. Through its documentary realism anchored in lived experiences, the film articulates a nuanced socio-medical topography where regret intersects with hope—subverting the genre convention of pathos-dominated storytelling prevalent in medical documentaries. This discursive maneuver creates interpretative space for viewer-driven sense-making, thereby establishing an affirmative emotional substrate.

Secondly, the film eschews heroic narratives in its character portrayal, instead focusing on the authentic struggles of ordinary patients' families and medical staff. This de-elitist perspective imbues the work with a powerful sense of immersion, allowing audiences to resonate deeply within familiar

scenarios rather than maintain detached sympathy. The genuine emotions and human brilliance revealed by ordinary people confronting extreme circumstances become a vital source for triggering positive audience responses.

Moreover, the virtual simultaneity and interactivity inherent in danmaku amplify individual positive emotions within group interactions. The real-time display environment of danmaku fosters a shared sense of "presence" during viewing. What might otherwise be isolated moments of emotion or admiration gradually coalesce into collective warmth through the repetition and responses within the danmaku. This process partially mitigates negative emotions while enhancing the group effect of positive sentiments.

Finally, on a macro level, the series served to alleviate tensions between doctors and patients while offering emotional solace. When it aired in 2016, Chinese society was engaged in public discourse about strained doctor-patient relationships and the uneven distribution of medical resources. By depicting the complex journey of doctors and patients navigating illness together, the first season of *The Human World* subverted the traditional narrative of a binary opposition between doctors and patients. It encouraged viewers to shift from a critical stance to one of understanding, thereby offering the public a dual outlet for rational insight and emotional solace.

4.2. Analysis of adversarial discourse in danmaku

Antagonistic discourse arises from fundamental conflicts between different subjects over core interests, values, and ethical stances, manifesting as offensive and defensive maneuvers, strategic games, and competitive struggles at the discursive level [23]. Robert Cox defines "adversarial discourse" as alternative discursive practices that challenge dominant discursive forms [24]. Adversarial linguistic mechanisms manifest as opposing communicative intentions and moods expressed through the subjective content of utterances, further amplified within specific contexts [25]. The concept of "adversarial interpretation" originates from Stuart Hall's encoding-decoding theory, wherein audiences deconstruct media messages by opposing dominant ideologies [26]. Building upon Hall's encoding-decoding framework, this study conducts a contestable discourse analysis of the danmaku from the first season of *The Human World*.

Sentiment analysis results indicate that the second episode of the series, "Understanding," achieved an average sentiment score of 0.58. It stands as the only episode in the entire season exhibiting a neutral emotional tendency, forming a distinct emotional "trough." This finding suggests that its danmaku may contain a higher proportion of adversarial discourse. Therefore, this study selects "Understanding," the second episode of the first season of *The Human World*, as a case study to focus on analyzing the formation mechanisms and manifestations of adversarial discourse within it.

This episode centers on emergency medical personnel as its primary subjects, documenting the ambulance team's dispatch process. It records over ten emergency response cases, detailing seven of them to objectively present real-world issues such as doctor-patient communication and medical resource allocation. However, the danmaku did not fully align with the documentary's advocacy for mutual understanding as its dominant discourse. Instead, a distinct adversarial decoding emerged, specifically manifested in the following two segments:

The first instance occurred between 14:05 and 15:30, when the patient's family questioned the response time from the control center's dispatch to the ambulance's arrival at the patient's location. As observed by researchers, the following scenario unfolded: While transporting an elderly asthma patient to the hospital, the family asked the medical staff, "Is there a stipulated timeframe for arrival after dialing 120?" expressing the view that "I've noticed ambulances can sometimes be a bit slow, though you were pretty quick today," and recounting a previous experience where an ambulance was called but took a long time to arrive. They added that they trusted the hospital "would definitely send one if they had an available vehicle," understanding that "there's nothing they can do if they don't have one." Through narration, the documentary frames such issues as an unsolvable dilemma,

ultimately closing the narrative loop with mutual understanding. This approach seeks to convey a positive consensus emerging from communication.

However, the comments showed significant divergence (see Table 2): one group adopted a confrontational stance, accusing the patient's family member of speaking with hidden meanings, being sarcastic, and being difficult to deal with—arguing that his questions implied criticism. Another group attempted to de-escalate the conflict through collaborative interpretation, acknowledging that the family member "was simply asking out of ignorance." A third group viewed such communication as an individualized manifestation of structural issues, arguing that this phenomenon obscured the underlying reality of insufficient medical resources.

Table 2. Representative Decoded Danmaku from Episode 2 "Understanding" Timestamps: 14:05–15:30.

Decoding Type	Bullet screen content
Dominant-Hegemonic Decoding	The family was very kind. Let's try to understand each other. What's the big deal? The family clearly understands. With elderly family members at home, it's hard to avoid multiple calls, and ambulances are allocated by the emergency center. Even doctors get it — you sit there typing away, accusing him of being sarcastic... I'm honestly blown away by your nerve. Both the doctor and the family expressed understanding. Just saying. Everyone wants things to move faster. Truth is perspectives shift depending on where you stand. Doctors work incredibly hard, but when family faces an emergency, momentary panic is understandable.
Negotiated Decoding	The family is just helpless. His concern is to prevent medical disputes, which is understandable. They're merely raising their own questions, why the snide remarks? Sigh, they're clearly reasonable family members. Why are the comments so harsh? The family members are bound to have some concerns. Keyboard warriors should tone it down. No need for malicious speculation. Don't overinterpret things. Can't the family even ask a question? Honestly, someone who calmly asks a couple of questions is a million times better than those who rant and rave with anger. This is just someone trying to strike up a conversation. The tone might be a bit off, but there's no hidden agenda. Buddies in the comments, don't be so sensitive. Their elderly relatives had a stroke and heart attack—these emergencies require immediate 120 dispatches. What's wrong with him urging them to hurry? Isn't it perfectly normal to voice your concerns? Doctor: It's okay.Production Team: It's okay.Viewers: No, it's not.
Oppositional Decoding	There are many reasons why ambulances might be slow. While waiting, family members inevitably start thinking: "Why does it take so long when it's a matter of saving someone's life?" Sarcastic and insinuating. Working in a hospital makes it even worse—this type of family member is genuinely difficult to deal with. If communication breaks down, or if they misunderstand something or get upset, they'll cause trouble. So clever. This family member speaks in veiled hints, full of sarcasm and passive aggression. It's all too common for outsiders to lecture insiders in the medical field.

The second point of contention occurred between 15:41 and 18:40, when the patient's family insisted the ambulance transport the patient to a better-equipped but more distant hospital, violating the principle of transporting patients to the nearest facility. The episode framed this incident as a mutual compromise, yet the comment stream revealed starkly opposing viewpoints: One side, arguing for rational resource allocation, criticized the family for "wasting public resources," even leveling moral accusations like "indirectly causing death." The other side sympathized with the family, emphasizing that "wanting to choose a better hospital is understandable" and pointing out that the fundamental problem lies in the unequal distribution of medical resources. Some viewers expressed resignation toward the system, noting that even compliant actions could face retroactive blame—such as "Let them do whatever they want"—arguing that transporting to the nearest hospital risks "blaming the hospital if treatment turns out unsatisfactory." Beyond this, the documentary's visual language and background sound design subtly amplified the confrontational tone of the comments. Researchers observed scenarios like this: During the ambulance's journey to the hospital, visual narrative tactics cut to close-ups of emergency center data screens. These prominently displayed red warning slogans like "Time is Life, Bell Rings, Action Starts," accompanied by the escalating dynamic metric "Current Calls in Queue." This was layered with the urgent beeping sound as background audio. Together, these elements create an intensely tense atmosphere, pushing some viewers' anger to its peak.

In summary, the formation mechanism of adversarial discourse can be explained from five perspectives. First, differences in social identity lead to divergent and opposing perspectives, with different groups interpreting the same event differently based on their respective positions. Second, asymmetrical power structures prompt the disadvantaged party to adopt adversarial discourse as a tool of resistance. Third, documentaries construct dominant meanings through symbolic coding, but audiences may engage in divergent or even counter-interpretations, triggering conflicts of dissent. Fourth, the anonymity and fragmentation of the new media environment accelerate the formation and dissemination of adversarial discourse. Labeled expressions like "bitter sarcasm" and the "echo chamber" effect further intensify group polarization. Fifth, media narrative language shapes audience perception; cinematography combined with subtitles, sound effects, and other elements evokes emotional responses.

Despite the first season of *The Human World* attempting to illuminate China's healthcare system through micro-narratives and construct an observational space blending humanistic warmth with social critique, the adversarial discourse in the danmaku instead highlighted structural tensions. This shifted the focus from "how to achieve harmony" to "why harmony remains elusive," offering a deeper critical lens for understanding contemporary doctor-patient relationships.

4.3. The dissolution of antagonism

This study also observed the role of rational discourse in mitigating adversarial discourse. This mitigation does not aim to eliminate disagreements entirely but rather employs specific discursive strategies to ease emotional polarization and guide the conversation back onto a rational track, thereby curbing the spread of polarizing tendencies to some extent. Taking the second controversy mentioned earlier (15:41 to 18:40) as an example, rational danmaku primarily achieves the mitigation of adversarial discourse through three channels.

First, deconstructing one-sided narratives with facts and knowledge. This segment focuses on the challenges and resource constraints faced by medical staff, with only brief glimpses of patients—such as an elderly person with a fracture. The video's comments can easily distract viewers from the urgency of the situation, leading to questions like "Why didn't they take a taxi?" and moral judgments against the family. In response, some comments intervened with professional medical knowledge, pointing out that "ambulances are equipped to prevent secondary injuries" and "if the elderly person suffered a femoral head fracture, specialized immobilization is required—a taxi cannot meet these needs." By supplementing facts and explaining professional protocols, these remarks partially

countered misunderstandings stemming from information asymmetry, reframing the discussion from emotional accusations back to factual grounding.

Second, fostering empathy through shared experiences. When comments tended to criticize families for wasting resources, some users established emotional connections by sharing personal stories, such as: “Someone who's ridden in an ambulance answers: Once you're in that ambulance, you feel like half your life is already saved,” and “My grandfather passed away because taking him to the nearest hospital delayed his treatment.” These narratives, rooted in individual experiences, evoke viewers' emotional resonance with patients' plights. They dismantle simplistic binary judgments of right versus wrong, prompting audiences to transcend opposing stances and recognize the complex emotional and ethical dimensions inherent in medical decision-making.

Third, shifting the focus of blame through a structural lens. When criticism is directed at family members personally, some comments pointed out that the core issue lies in systemic challenges, such as “insufficient medical resources” and “extreme scarcity of healthcare resources.” Such remarks elevated the discussion from moral condemnation of individuals to reflection on structural problems, shifting public focus from attacking specific targets to examining institutional causes. This approach reduced the confrontational intensity of the dialogue, creating space for rational negotiation and discussion.

While these three forms of rational dialogue may not entirely eliminate confrontation, they do mitigate the speed and intensity at which adversarial discourse fuels group polarization. By introducing facts, fostering empathy, and offering structural perspectives, rational dialogue provides channels for cognitive recalibration and conflict mitigation in emotional debates. This shifts the decoding process from purely emotional confrontation toward cognitive collaboration. Not only does it help audiences form judgments based on more comprehensive information, but it also demonstrates the potential rational foundation of new media danmaku environments as public discussion spaces. The dissolution of antagonism does not signify the complete resolution of contradictions, but it serves as a crucial starting point for building more rational, open, and inclusive online discourse.

5. Discussion

This study reveals the complex landscape of medical documentary content dissemination on new media platforms through sentiment analysis and interpretive examination of adversarial discourse within the danmaku of the first season of *The Human World*. Findings indicate that while the documentary elicited widespread emotional resonance through authentic storytelling, its danmaku space simultaneously emerged as a significant arena for generating adversarial discourse. This phenomenon reflects both the profound complexity of contemporary healthcare issues and highlights new characteristics of public discourse within the new media environment.

First, the emergence of adversarial discourse stems from audiences' divergent interpretations of documentary content based on their distinct social identities and experiences. Within the anonymity and instant interactivity afforded by new media environments, these interpretive differences manifest not only as individual perceptual biases but also externalize as public verbal confrontations through the format of danmaku. Notably, while such adversarial discourse may exacerbate group polarization, it objectively constructs a public discussion space involving diverse participants. The relatively singular narrative framework of traditional documentaries is disrupted, bringing structural contradictions like healthcare resource allocation into sharp relief. This elevates discussions from individual moral judgments to societal institutional reflection, demonstrating the potential value of new media platforms in advancing public discourse on critical issues.

Second, this study finds that rational discourse plays a crucial mediating role in adversarial environments. This manifests in three ways: first, by introducing expert knowledge to correct cognitive biases stemming from information asymmetry; second, by leveraging empathetic narratives to establish emotional connections across groups; and third, by shifting the focus of discussion from individual responsibility to structural factors. However, it is also important to recognize the

limitations of rational discourse: on one hand, it often faces numerical disadvantage in emotionally charged public spheres and is prone to marginalization; on the other hand, while rational discourse can temporarily ease tensions, it struggles to fundamentally resolve deep-seated structural contradictions. Therefore, how to enhance the visibility and influence of rational discourse through platform mechanism design, thereby fostering a more inclusive discussion environment, represents a direction requiring in-depth exploration in the future.

Finally, this study explores the applicability of Hall's encoding-decoding theory in new media environments. Findings reveal that the decoding process within danmaku environments exhibits dynamic characteristics. Audiences not only decode the original video content but also engage in secondary decoding based on preceding danmaku, forming a nested network of meaning interpretation. This characteristic may amplify the "echo chamber" effect, reinforcing specific viewpoints through self-reinforcement, or it may trigger reverse decoding, sparking the emergence of counter-interpretations. This indicates that in new media environments, traditional linear decoding models must evolve into more interactive frameworks to accurately capture the complex mechanisms of meaning production.

In summary, the dissemination of medical documentaries on new media platforms has transcended mere information transmission, evolving into a public sphere where diverse discourses intertwine and collide. While this process carries risks of group polarization, it also creates possibilities for rational and inclusive public discourse. Therefore, future healthcare communication should not only focus on content production quality but also prioritize fostering environments that promote rational dialogue.

6. Conclusions and prospects

This study employs quantitative sentiment analysis and qualitative theory mining to systematically examine the discourse characteristics of danmaku in the first season of *The Human World* and the social issues they reflect. Sentimental analysis reveals that despite the documentary's focus on weighty themes like illness and mortality, its authentic narratives and humanistic expression predominantly evoke positive emotional responses among viewers. The shared "presence" created by the danmaku enhances viewers' emotional connection and collective resonance, thereby alleviating societal medical anxieties and providing emotional solace to some extent. Furthermore, analysis grounded in Hall's encoding-decoding theory and social identity theory reveals that the formation of adversarial discourse is influenced by multiple factors. The documentary's symbolic encoding strategies, differences in viewers' social identities, and narrative dissemination methods within the new media environment collectively drive the emergence of positional differentiation and meaning contestation within the danmaku space. However, the study finds that rational discourse can, to some extent, mitigate adversarial sentiments through knowledge supplementation, empathetic connection, and structural attribution. This approach delays the formation of group polarization and shifts the discussion focus from individual moral criticism to reflections on social structural issues such as the allocation of medical resources. Furthermore, this study expands the traditional framework of doctor-patient relationship research from a communication studies perspective. As a novel form of public participation, danmaku reconstructs audiences' cognitive pathways regarding medical issues while establishing a four-party interactive communication space involving doctors, patients, media, and citizens. This provides new theoretical perspectives and practical references for understanding public discourse on medical topics within the new media environment.

However, this study still has certain limitations. At the data level, it focuses solely on the platform comments from the first season of *The Human World*. Future research could incorporate content from multiple seasons for comparison, enhancing the generalizability of the conclusions. At the methodological level, the sentiment analysis model's accuracy in identifying complex expressions such as irony and metaphor still has room for improvement. Subsequent studies could combine human annotation with deep learning techniques to optimize classification performance. Theoretically, the

study lacks dynamic tracing of the group polarization formation process. Future research could further reveal the intrinsic pathways of opinion evolution.

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