

Probing into the Reshaping of Value Ranking in Palliative Care by Technological Rationality: An Analysis Based on the Application of AI Technology in the ICU

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Abstract. With the deep integration of technologies into the medical field, technological rationality is profoundly reshaping the practice paradigm in end-of-life care, and the traditional ethical framework is facing severe challenges. Technological rationality is fundamentally altering the practical approaches within palliative care. This shift presents significant difficulties for established ethical frameworks, especially concerning the conflict between algorithmic efficiency and the preservation of human dignity. To navigate these intricate challenges, this paper employs a methodology that integrates philosophical critique with clinical case analysis to examine the alienation of death in the digital era. Initially, the paper clarifies how technological rationality, via a 'triple mechanism', modifies conventional value references in end-of-life care, demonstrating how instrumental logic frequently supersedes value-based rationality. Subsequently, the study underscores the modern dilemmas and ethical crises arising from this transformation, including the reduction of patients to mere data points and the undermining of decision-making autonomy. Ultimately, to address these dilemmas, this paper advocates for a humanistic approach to ethical reconstruction. These actionable proposals are constructed across three dimensions: ontological, aimed at restoring the patient's subjectivity; relational, aimed at rebuilding a transparent decision-making community; and cultural, aimed at integrating localised ethical traditions into technological governance.

Keywords: Technological Rationality, Palliative care, Value Ranking, Bioethics

1. Introduction

As Hans Jonas said, the impact of technology on nature and life requires us to take responsibility for the future. In this highly technological era [1], technology is increasingly intervening in clinical medicine. Examining the value risks and ethical concerns brought about by medical technology innovation and seeking a balance between technological rationality and moral sentiment is a way of taking responsibility for the future of humanity. With the increasing application of AI in the medical field, the influence of humans on the medical process has declined, a phenomenon particularly evident in the ICU (Intensive Care Unit) of clinical medicine. Faced with such medical phenomena, we must be vigilant and reflect: when technology becomes the dominant logic, are the traditional

criteria for judging end-of-life care, such as dignity and subjective emotions, marginalized? This discussion will delve into the path of reshaping the value of end-of-life care through technological rationality, respond to the ethical dilemmas of life in the technological age, and offer insights for the development of human civilization.

2. Practical dilemmas and theoretical lag

2.1. The call of practical dilemmas

With the rapid development of AI, its application in the medical field has gradually shifted from assisting diagnosis to deeply participating in clinical decision-making, which is particularly evident in ICU, the core field for end-of-life intervention. Undeniably, technological advancements have made it possible to realize the ethical demand of "life maintenance first," but the practice of prolonging vital signs through techniques such as mechanical ventilation and renal replacement therapy may deviate from patients' needs for dignity and comfort. In this way, patients may suffer not only physical pain in the final moments of their lives, but also psychological trauma.

Furthermore, this technology-driven clinical logic may lead doctors to rely too heavily on physiological indicator thresholds recommended by AI algorithms, neglecting the subjective experience of patients and the emotional needs of their families, thus deviating from the pursuit and purpose of medicine being "people-centered".

2.2. The impact of theoretical limitations

The ethical conflicts that are constantly emerging in current medical practice essentially reflect the deconstruction of the core values of traditional end-of-life care by technological rationality. This conflict not only undermines the humanistic connotations of end-of-life care, but also poses a serious challenge to the existing medical ethics order, urgently requiring the academic community to conduct in-depth reflection across disciplinary boundaries. However, looking at existing research, most literature still focuses on the theoretical critique of technological alienation at a macro level, often stopping at the practical demands at the value level, and failing to delve into the complex clinical setting, resulting in a significant "vacuum zone" between theoretical research and specific medical practice.

Therefore, this study attempts to break away from abstract macro-level thinking and focus its research on the most concentrated and acute contradictions within the ICU. Through in-depth analysis of real medical cases, this study aims to integrate philosophical reflection, medical ethics, and other multi-dimensional perspectives, seeking a balance between micro-narratives and macro-theory, and striving to provide a systematic solution to real-world medical dilemmas that combines theoretical depth with clinical operability.

3. Assessment of technological rationality and tracing of traditional values

3.1. Philosophical interpretation of technological rationality

Technological rationality is not a rigid concept, but rather a specific way of thinking that has formed in the process of modernization. The most fundamental understanding of it stems from Max Weber's concept of "instrumental rationality": Everything is for the purpose of achieving the goal most efficiently. In this way of thinking, we are used to considering how to obtain results using the most economical means, but we often suspend the moral questioning of the value of the goal itself.

Following this logic, technical rationality inevitably leads to the disenchantment of the world. In order to achieve accurate prediction and control, it tends to break everything down into cold data, turning it into objects that can be analyzed and manipulated, thereby erasing the inherent mystery and subjectivity of things.

However, the connotation of technological rationality is not so simplistic. Ernst Cassirer saw its liberating nature from the perspective of cultural philosophy: technology, as an important representation of human culture, has helped us break through the limits of our physiological capabilities, prompting humanity to transform from a passive recipient of nature to an active transformer, and is a key marker of human culture's shift from dependence to creation[2].

Ultimately, so-called technological rationality is a logic that wants to liberate people while simultaneously trying to control everything through quantification. Only by understanding its instinct to maximize efficiency can we truly understand how medical technology reshapes the boundaries between life and death and the ethical order in the special context of end-of-life care.

3.2. The traditional value genealogy of palliative care

The modern hospice movement officially emerged in the second half of the 20th century. Its core contribution lies in the systematic medical and scientific reconstruction of the tradition of humanistic care. Cicely Saunders, a pioneer in this field, was the first to propose a three-dimensional model of 'holistic suffering': 'body, mind and soul'. On the physical level, she emphasised the need to move beyond the traditional model of 'pain relief on demand', adopting regular analgesic measures to make a pain-free death technically possible. [3] ; Psychologically, she supported using 'life review therapy,' encouraging patients to find new meaning in their lives by telling their personal stories. Spiritually, she used the Christian sacrament of 'reconciliation' to help lessen the existential distress caused by unresolved issues. Saunders' revolutionary assertion, 'Not to prolong life, but to complete it' [4] , redefines the objectives of healthcare. With the advance of globalisation, the exchange of views between countries in the medical field is becoming increasingly close. The field of palliative medicine is constantly expanding and taking root in local contexts, marking a transition from highly isolated institutional care towards more humane community and family-based care; and evolving from standardised medical procedures towards a trend towards individualisation, in perfect harmony with individual dignity and cultural context.

Under this logic, the traditional value ranking model presents a hierarchical structure ranging from individual autonomy to family ethics—firstly, as the subject of palliative care, the patient's own autonomy and dignity possess supremacy. [5] Secondly, regarding the traditional Chinese context, family decision-making is also particularly important, [6] influenced by Confucian culture, most Chinese people will make treatment decisions they believe do not violate moral norms when family members are in a terminal state. Finally, traditional value rankings explicitly place technology in a service-oriented position.

Under the traditional value ranking of end-of-life care, doctors should not only pay attention to the patient's physical condition, but also to the patient's psychological and mental state. They are committed to helping patients to spend the final stages of their lives with dignity by alleviating their suffering and respecting their autonomy. This value system reflects respect for and care for the intrinsic value of human life and is an important manifestation of medical humanities.

4. Manifestations of the reshaping of old ethical paradigms by technological rationality

The traditional paradigm of end-of-life care is a humanistic practice that counters technological alienation. Guided by the theory of "holistic pain", with "patient autonomy and dignity" at its core, and employing "life-like scenarios, multi-faceted collaborative care, and cultural adaptation" as its practical approach. The ultimate goal is to allow the dying to leave this world with dignity, rather than to force them to prolong a life of poor quality through technology. In this paradigm, respect for the patient's subjective experience and the maintenance of human dignity often take precedence. However, the infiltration of technological rationality has gradually restructured this value order through a three-pronged mechanism, making the length of life the primary goal of end-of-life care, deviating from the original intention of allowing life to end with dignity, and causing technological rationality to override humanistic care.

4.1. Instrumental innovation: from "natural death" to "technical survival"

The core of technological rationality lies in prioritizing tool effectiveness. In clinical medicine, this manifests as the use of quantifiable indicators as the core of value judgments, causing the quality of life to be distorted into parameters that can be optimized by technology, rather than the patient's subjective experience.

This blurring of the boundaries between natural life and technology is foreshadowed by Donna Haraway's concept of the "cyborg metaphor" [7]. In the ICU setting, with the widespread use of technologies such as ECMO, end-stage patients are often forced into a semi-mechanical survival state: Heart rate and other data have replaced bodily sensations as the sole criterion for judging vital signs. Death is no longer the end point of natural bodily decline, but merely a procedural node where technological intervention is forced to terminate.

This phenomenon also profoundly confirms Ivan Ilyich's critique of the death of technological alienation [8]. Modern medical technology, by breaking down the end-of-life process into quantifiable physiological indicators, effectively distorts death into a symbol of medical failure. When AI's survival probability predictions supersede patients' life narratives, the emotional significance of saying goodbye to life and the cultural value of natural death in traditional death scenes are completely obscured. At this point, the cyborg form is no longer about technology empowering life, but rather about technology devouring the subjectivity of life.

4.2. Relational reconstruction: the transition of decision-making power from humanistic care to algorithmic systems

With the gradual improvement of technology and talent in the ICU field, the decision-making process for life is now characterized by a combination of multiple forces. The power dynamics among different stakeholders in decision-making are becoming increasingly unbalanced: medical technology systems and professional authorities, leveraging their knowledge advantage, often replace patients and their families as key decision-makers. This has led to a prioritization of the possibility of survival and its technological control, weakening the value trade-offs based on patient wishes.

At the same time, as decision-making power shifts towards algorithmic systems, patients' right to informed consent is also being challenged. In the traditional hospice care paradigm, informed consent is centered on patient-centered collaborative decision-making: doctors need to explain the advantages and disadvantages of the treatment plan in plain language. By combining the patient's

life narrative with the family's ethical demands, a closed loop of fully informed consent and autonomous choice is formed. However, nowadays, algorithms have become the core intermediary for information transmission, and their optimal output often takes quantitative data as the sole dimension. The doctor's role has been distorted from that of a personalized communicator to an interpreter of algorithmic results, making it difficult to fully convey the impact of the treatment plan on the patient's subjective experience. Patients' "informed consent" is limited to the passive reception of data, rather than a deep understanding of life choices. This distortion of informed consent is essentially a result of the transfer of decision-making power leading to a lack of responsible parties.

According to Latour's "Actor-Network-Theory" (ANT) [9], non-human entities (such as algorithms) are not merely passive tools, but rather actors with substantial agency. The projection of this theory into end-of-life decision-making in the ICU manifests as AI systems gradually overstepping the traditional boundaries of assistance by relying on the myth of absolute data objectivity. It has not only seized a powerful voice, but has also been substantially transformed into a hidden decision-making body with moral discretion, thereby severely impacting the humanistic judgments of both doctors and patients based on life experience and value considerations.

The controversy surrounding the use of the IBM Watson system is a typical example. In one case of advanced cancer, despite the patient's explicit refusal of chemotherapy and desire for palliative care, Watson still recommended high-intensity chemotherapy based on survival data. Because the medical team was wary of the algorithm's authority and the legal risks, they ultimately went against the patient's wishes and implemented the AI solution, leading to the patient's painful death.

This clinical dilemma profoundly confirms Hannah Arendt's philosophical critique of "dehumanization of action": technological thinking suppresses people's ability to reveal their uniqueness. When AI acts as a "non-human actor" to lead decision-making, the medical collaboration originally based on mutual trust, empathy, and value negotiation between doctors and patients is distorted into the mechanical execution of algorithmic logic. The patient's primary wishes were simplified into outliers to be corrected, and the family's emotional struggles were considered confounding factors. Ultimately, end-of-life care degenerated from a human-centered ethical practice into a procedural process dominated by technological authority.

4.3. Ethical paradigm transformation: from sacred narrative to computational justice

The traditional ethical paradigm of palliative care is always rooted in reverence for the sacred narrative of life [10]. This sacredness is not an abstract concept at the religious level, but is embedded in end-of-life practices through three concrete dimensions. In the dimension of the sanctity of life, death is seen as the inevitable end point of the natural cycle of human life cycle, and the role of technology is limited to alleviating pain rather than forcibly prolonging life. For example, doctors respect the choice of terminally ill patients to forgo invasive resuscitation, thus preventing technology from becoming a tool in the fight against death. In terms of the uniqueness of individual narratives, the core of end-of-life care is to listen to and fulfill the patient's last wishes [11], so that the life story of each dying person can come to a complete end. In terms of the integrity of mourning culture, end-of-life medical practices reserve ritual space for family farewells to maintain the cultural significance that "death is not a sudden break, but a warm farewell."

However, the permeation of technological rationality is driving a fundamental shift in the ethical paradigm of end-of-life care. At its core is the gradual shift of value standards from "sacred narratives" to "calculated justice". Under this logic, the patient's final survival time is not seen as a natural process of life continuation, but is instead broken down into specific data by the AI system.

This is used to assess whether it is necessary to continue treatment for the patient. However, if the algorithm automatically adjusts the sedative dosage based solely on this data, it may overlook the deeper need of the patient to remain conscious and say goodbye. This violates the patient-centered humanitarian principle [12] of end-of-life care. The essence of this value transfer is the "demystification" of end-of-life ethics by technology. It uses computational logic to dissolve the sanctity of life, replaces the unique narrative of the individual with data standards, and ultimately reduces end-of-life care to a technological practice that prioritizes efficiency.

5. Analysis of theoretical limitations and attempts at ethical reconstruction

Returning from the realistic context to the theoretical perspective, we must not only understand the inherent philosophical dilemmas and negative effects of technological rationality from traditional critical thought but also analyze how the traditional ethical paradigm has disintegrated under the influence of the drawbacks of technological rationality, what dilemmas it encounters in the current era, and finally attempt to propose an ethical reconstruction plan.

5.1. Analysis of technological limitations from the perspective of traditional theory

Philosophical criticism regarding the limitations of technology is not a single perspective but a theoretical cluster formed by different schools approaching from multiple dimensions such as ontology, epistemology, ethics, and cultural criticism. Focusing on the specific context of palliative care, as the proportion of technological input increases, the challenges brought by its limitations are inevitably further amplified.

The critique of technological rationality by the Frankfurt School reveals the dilemmas of alienation inherent in modern society. As Marcuse argued, technological rationality enshrines "calculability" and "efficiency" as ultimate standards, resulting in a one-dimensional society where human values are forcibly instrumentalized. In the realm of palliative care, this trend manifests as what Habermas termed the "colonization of the lifeworld by the system": the focus of medical decision-making shifts from the emotional interaction of listening to patient wishes to a mechanical obedience to data-driven conclusions, creating a fundamental opposition to the multidimensional humanistic values pursued in hospice care.

Heidegger's existential analysis further penetrates the ontological roots of the problem. He posited that the essence of modern technology lies in "Enframing" (Gestell), a challenging mode of revealing that reduces all entities in the world to mere "standing-reserve" [13] (Bestand) available for calculation and manipulation. In algorithm-driven decision-making, the patient as "Dasein," originally rich in narrative, is framed by the technological apparatus as a collection of physiological parameters; technology no longer serves humanity as an auxiliary means but instead demands that human life and even the dying process submit to its computational logic, thereby thoroughly obscuring authentic human existence.

Ivan Illich, from the perspective of cultural critique, pointed out the essence of medical expropriation. Modern medical technology compels us to focus more on eliminating pain than on confronting it, stripping death of its cultural significance through excessive intervention; what should be a ritualistic event of family farewell and life legacy is deconstructed by technology into the cessation of physiological indicators, becoming a tool for the medical system to prove its own efficacy.

5.2. The paradigm dilemma of end-of-life ethics

The penetration of technological rationality into palliative care has triggered a profound transformation of the ethical paradigm, plunging palliative care into a dual squeeze of technological hegemony and humanistic impoverishment.

Max Weber foresaw this tension years ago, noting that in the technological age, the question of "how can we do this as efficiently as possible" (instrumental rationality) [14] often takes precedence over the question of "why do we do this?" (value-oriented rationality). This imbalance has triggered a double crisis in the field of hospice care. First, there's the distortion of objectives. Originally, both doctors and families wanted patients to pass away with dignity. But now, the means have become the end itself. In the ICU, it's common to see intubation and dialysis performed simultaneously just to prolong the patient's life by another week; people no longer ask if it's good for the patient, only whether it's technically feasible. Thus, technical feasibility has forcibly replaced ethical rationality. Second, there's the hollowing out of values. When efficiency and data become the only hard truths, everything that can't be quantified crumbles in cold reports. Ultimately, ethical decisions give way to the system's optimal solution, leaving only an empty set of technical procedures.

Within the framework of technological rationality, ethical values are not only diminished, but the very essence of the dying as "human beings" is fundamentally undermined. Their personal stories, which once included thoughts, feelings, and a sense of history, are now reduced to a purely passive biological state.

This process can be understood in conjunction with Giorgio Agamben's concept of "bare life" [15]. According to this concept, when an individual is deprived of his subjective characteristics—such as political rights and cultural identity—and exists only as a biological life, he is reduced to a "naked life" subject to arbitrary control. In the context of end-of-life care, the mechanism of technological rationality is precisely designed to deprive a person of his wholeness—that is, an individual embedded in social relations and ethical context—so that he loses all social attributes, personal will and future prospects, thereby reducing him to a life form whose sole purpose is to maintain physiological functions.

The dissolution of ethical subjectivity is, in essence, a negation of "humanity as such" by technological rationality. When life is reduced to controllable physiological parameters, the dying person ceases to be the protagonist of their own life story and becomes an object of technological intervention. Their right to self-determination is subservient to standard medical practice; the meaning of their existence is replaced by the length of survival; and their subjective will is completely obscured by medical decisions. This deprivation not only strips individuals of their autonomy in the face of death but also shakes the very foundation of human dignity: that a person is always an end in itself, not merely a means to an end.

5.3. Pathways for the reconstruction of humanistic ethics

Faced with the ethical dilemmas brought about by technological rationality, we are not helpless; the key lies in constructing a new ethical framework that enables us to harness technology rather than become its slave. Therefore, planning a path of humanistic rethinking across the three dimensions of ontology, relationality, and culture to uphold the dignity and significance of end-of-life care in the technological age has significant theoretical value.

One of the most obvious alienations brought about by technological rationality is that it alienates the living, breathing human body into a manipulated physiological object. Therefore, we must carry out an ontological reconstruction, the core of which is to allow patients to return from being "objects

dominated by technology" to "subjects who experience the final chapter of life". The theoretical foundation of this approach draws upon the concept of "holistic pain" proposed by Sanders, mentioned above. At the same time, Merleau-Ponty's phenomenology of the body also provides deeper philosophical support. It emphasizes the revelation of the existence of the world through the perception of the bodily subject.

In terms of practical measures, the following approaches can be explored. First, we should try to implement personalized end-of-life care programs, which would involve mandating a 1-2 hour "technology pause" each day in technology-intensive ICUs. During this period, non-emergency medical procedures will be suspended to create a space for patients and their families to be together without technical interference. Encouraging sensory interaction—such as sharing photos, music, physical contact, or recorded voice messages—helps patients rediscover their emotional well-being. Secondly, limit the scope of application of invasive technologies. Led by the hospital's ethics committee, a "negative list for the use of end-of-life technologies" was developed and strictly enforced. It is clearly stated that in irreversible terminal states, invasive techniques with life-prolonging as the primary goal should be prohibited as routine options, and only palliative measures with analgesia and sedation as the core should be retained. This measure aims to prioritize the patient's physical comfort and personal integrity, and to uphold the basic dignity of the patient at the end of their life.

Furthermore, AI needs to be put in a cage. In the face of increasingly powerful algorithms, it is essential to ensure that the voices and rights of every relevant party behind the "veil of ignorance," especially the most vulnerable patients, are equally respected and considered. Therefore, establishing an "algorithm transparency threshold" and a review mechanism is crucial. The document mandates that AI-powered end-of-life decision-making systems disclose their core parameters to patients and their families, including a value ranking weight table, an ethically reviewed cultural bias coefficient, and the sources of their case training data. At the same time, an ethics committee composed of medical staff, ethicists, patient representatives, and legal experts was established to review the algorithm parameters every quarter. When a patient or their family raises a reasonable objection to the AI-recommended treatment plan, the "human review priority" process is automatically initiated. In this process, the AI solution is only used as reference, and the final decision-making power must belong to the patient or the agent designated in their advance directive.

Finally, any ethical reconstruction that is divorced from its cultural context will inevitably become a castle in the air. In the Chinese context, Confucian culture has profoundly influenced China's medical decision-making model, emphasizing the responsibility and honor of the family as a whole. The design of end-of-life care pathways must actively integrate local cultural traditions centered on the family value and filial piety.

Through the above efforts, namely, the ontological restoration of the embodied subject, the relational establishment of a human-machine contract, and the cultural realization of local adaptation. We are able to outline a roadmap for safeguarding dignity in the end of life in the technological age. This approach is not about rejecting technology, but rather about defining insurmountable ethical boundaries for it, allowing the light of technology to illuminate rather than scorch the final journey of human life.

6. Conclusion

Looking towards the future, the ideal state of palliative care should be the dialectical unity of technological precision and humanistic warmth. Only by persisting in guiding technological rationality with the humanistic spirit and delineating insurmountable ethical boundaries for

algorithms can we ensure that, when facing the ultimate proposition of death, the light of technology serves to illuminate the final dignity of life rather than scorching the warmth of humanity.

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