
2025 International Conference on Economics, Management and Education Technology (ICEMET 2025)

Article

Research on the Construction of Moral Boundaries and Ethical Norms of AI Nursing in an Aging Society

Kevin Meng ^{1,*}

¹ RDFZ Xishan School, Beijing, China

* Correspondence: Kevin Meng, RDFZ Xishan School, Beijing, China

Abstract: With the acceleration of global population aging, artificial intelligence (AI) nursing has become an important approach to addressing the rapidly growing demand for care services. However, the ethical risks and moral uncertainties associated with AI-assisted care require systematic clarification and normative guidance. This study investigates the construction of moral boundaries and ethical norms for AI nursing in an aging society. Drawing on the ethics of care, technology ethics, and responsibility ethics, it analyzes the mechanisms through which ethical risks emerge in AI nursing, including algorithmic bias, opaque decision-making, data privacy vulnerabilities, and the potential erosion of genuine human care under the dominance of technical rationality. The paper argues that traditional nursing ethics, centered on human caregivers, faces challenges of subject generalization, role ambiguity, and unclear standards when AI systems participate in care practices. On this basis, the research demonstrates the necessity of integrating AI ethics into nursing ethics to promote a paradigm shift toward human-machine collaboration. It proposes the construction of a multidimensional nursing framework that embeds ethical review throughout the life cycle of AI nursing technologies, emphasizes algorithm interpretability and accountability, and safeguards the dignity, autonomy, and rights of older adults. The study aims to provide theoretical support and practical guidance for the healthy development of AI nursing, promote the deep integration of technological empowerment and humanistic care, and achieve both quality improvement and ethical balance in nursing services in an aging society.

Keywords: aging; artificial intelligence; nursing; ethics; care; governance

1. Introduction

The accelerated evolution of global population aging and the rapid advancement of artificial intelligence (AI) are significantly reshaping the traditional nursing model. AI nursing has emerged as a pivotal solution to address the increasing medical demands of an aging society, offering notable advantages in optimizing efficiency and allocating resources. However, the integration of AI into nursing practices has also sparked debates regarding ethical ambiguities, unclear attribution of responsibilities, and the potential erosion of humanistic care [1, 2]. The traditional ethical framework for nursing struggles to provide adequate explanations and guidance in the face of these technological disruptions. Consequently, there is an urgent need to establish a normative system that harmonizes technological innovation with ethical principles. This paper explores the mechanisms underlying the formation of ethical dilemmas in AI nursing within the context of an aging population, drawing upon the frameworks of care ethics, technology ethics, and responsibility ethics. It further examines the governance challenges posed by these dilemmas and outlines pathways for transforming the conventional nursing ethics model. By proposing a novel ethical standard system centered on human-machine collaboration and incorporating interpretable algorithms, this research aims to offer

Received: 03 February 2026

Revised: 27 March 2026

Accepted: 08 April 2026

Published: 11 April 2026



Copyright: © 2026 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

theoretical insights and practical strategies for the sustainable development of AI nursing [1]. The study advocates for a balanced integration of technological empowerment and humanistic care, ensuring that nursing services and ethical considerations are effectively aligned in an aging society.

2. Related Concepts and Theoretical Foundation

2.1. Definition of Core Concepts

2.1.1. AI Nursing

AI nursing refers to an innovative model that integrates advanced AI technologies, including machine learning, natural language processing, computer vision, and the Internet of Things, to simulate, enhance, or support human caregiving activities throughout the nursing process. The primary objective of this approach is to achieve high levels of precision, efficiency, and personalization in nursing services by leveraging intelligent perception, comprehensive data analysis, and decision-making assistance. Specific applications of AI nursing encompass areas such as health monitoring, daily life support, emotional well-being, and clinical decision-making, including AI-assisted diagnosis and the formulation of nursing plans. Importantly, AI nursing is not intended to replace human nurses but rather to foster a collaborative "human-machine" partnership [2]. This collaboration allows nurses to avoid repetitive and physically demanding tasks, enabling them to concentrate on responsibilities that require communication, emotional connection, and critical value judgments. Such advancements are particularly significant in addressing the challenges posed by an aging population, ultimately enhancing the overall quality of nursing care [2, 3].

2.1.2. Aging Society

An aging society refers to a demographic structure characterized by a rising proportion of elderly individuals, resulting from a decrease in the proportion of younger people and an increase in the proportion of older adults relative to the total population. Internationally, this is often defined by those over 60 years old accounting for 10% of the total population or those over 65 years old making up 7%. Beyond being a demographic term, an aging society represents a broader socio-economic and cultural phenomenon. It is associated with challenges such as a reduced labor force, a significant rise in expenses related to elderly care and healthcare, shifts in family structures, and evolving demands for improved quality of life among older individuals [4]. These dynamics place considerable strain on traditional, human-dependent caregiving systems, underscoring the urgent need for technological advancements. This situation also provides a practical foundation for exploring the ethical dimensions of integrating artificial intelligence into nursing and caregiving practices, aiming to address the complex needs of an aging population effectively.

2.1.3. Moral Boundaries

Moral boundaries refer to the ethical standards and principles that individuals should adhere to in their thoughts, words, and actions to protect personal dignity, rights, interests, and overall well-being within specific social or professional contexts. These boundaries define what is considered "right" and "wrong" and serve as a critical "warning line" to prevent behaviors that may violate established norms or cause harm. In the realm of AI nursing, moral boundaries are not rigid or static; rather, they represent a dynamic and multidimensional framework. This framework encompasses areas such as the responsible application of technology, safeguarding personal privacy, ensuring ethical human-computer interactions, and clearly defining accountability [5]. By adhering to these moral boundaries, the scope of AI technology in medical care can be legally, appropriately, and reasonably clarified. The ultimate goal is to ensure that technological advancements consistently prioritize the fundamental interests of humanity, preserving individual value and dignity while fostering progress.

2.2. Theoretical Foundation

2.2.1. Ethics of Care

Ethics of care is a theory that emphasizes the importance of interpersonal relationships, specific contexts, emotions, and moral orientations [6, 7]. It critiques the traditional reliance on abstract norms and universal principles of justice, instead positioning care as a fundamental moral value. This perspective asserts that morality is deeply rooted in the tangible interdependence among individuals, highlighting the significance of empathy, a sense of responsibility, and timely responsiveness to the needs of others [4, 8]. In the context of AI nursing, the ethics of care serves as a foundational framework for evaluating the degree to which technology aligns with human-centric values. Several critical questions arise: Can AI systems genuinely understand and address the emotional needs of elderly individuals? Will algorithmic decision-making processes overlook personal experiences and preferences? Furthermore, how can the "human-machine collaboration" model enhance empathy and compassion within nursing practices? These inquiries underscore the necessity of integrating ethical considerations into the development and application of AI technologies in caregiving environments.

This study employs the ethics of care as a guiding principle to establish an ethical framework that prioritizes human-centered values and embodies a profound sense of humanistic care. By focusing on the relational and emotional dimensions of caregiving, this approach seeks to ensure that technological advancements in AI are not only functional but also deeply attuned to the nuanced needs of individuals. The framework aims to bridge the gap between technological efficiency and the essential human qualities of empathy and compassion [9]. This alignment is critical for fostering trust and ensuring that AI systems contribute meaningfully to the well-being of those they are designed to assist, particularly in sensitive contexts such as elder care. By embedding these principles into the core of AI development, the study aspires to promote a more inclusive and ethically sound approach to innovation in the field of nursing.

2.2.2. Technology Ethics

Technology ethics examines the moral relationships and value conflicts between technology, humans, society, and the natural environment. Its core purpose is to provide a thorough ethical evaluation and regulation of the design, research, development, application, and impact of technology. This field emphasizes the value-laden nature of technology, arguing that it is not merely a neutral tool but one whose internal logic and structure influence human behavior and decision-making. In the context of artificial intelligence (AI) care, technology ethics addresses critical issues such as algorithmic bias, data privacy, security vulnerabilities, and the potential erosion of human autonomy [10]. During the conceptualization phase of technological development, principles such as Value Sensitive Design are incorporated, alongside ethical reviews, risk assessments, and public engagement, to ensure that AI technologies evolve in alignment with societal interests. By offering a systematic framework for identifying and mitigating potential risks, technology ethics serves as a foundation for establishing ethical standards and promoting the principle of "technology for good," ensuring that advancements in AI nursing contribute positively to society.

2.2.3. Responsibility Ethics

The German philosopher Hans Jonas introduced the concept of responsibility ethics, emphasizing the need for human behavior to account for its long-term impact on the future, nature, and all forms of life. In the context of technological advancements, this ethical framework underscores the obligation to ensure that actions align with the preservation of human life and the environment. Applied to AI nursing, responsibility ethics holds significant practical importance by urging developers, medical institutions, and users to take accountability for the immediate and long-term effects of AI technologies. This includes proactively identifying and mitigating systemic risks, such as the potential

to deepen social inequalities or reinforce digital divides. Responsibility ethics advocates for a proactive approach, transitioning from reactive measures to preventive strategies. It also emphasizes the establishment of robust mechanisms for assigning accountability and ensuring traceability throughout the entire lifecycle of AI technologies. By adhering to these principles, the development and application of artificial intelligence in nursing can be guided toward sustainable and equitable outcomes, fostering trust and minimizing unintended consequences.

3. The Ethical Risk Generation Mechanism and Governance Dilemma of AI Nursing in an Aging Society

3.1. The Technical Black Box in Algorithmic Decision-Making

The emergence of a technical black box is primarily due to the intricate and opaque operational mechanisms inherent in advanced AI models, such as deep neural networks. In the context of AI-driven medical care, algorithms often generate recommendations for diagnoses, treatment plans, or risk assessments based on extensive and reliable datasets. However, the decision-making processes behind these outputs are frequently incomprehensible to humans, including healthcare professionals and patients. This lack of transparency gives rise to two significant ethical challenges. Firstly, the issue of unclear responsibility attribution arises. When errors in AI decision-making lead to harm, it becomes challenging to definitively assign accountability to developers, data providers, or medical institutions, creating a "responsibility gap." Secondly, the opacity obstructs the establishment of trust. Elderly patients and their families may exhibit skepticism and resistance toward AI systems, further complicating their integration into healthcare. From a governance perspective, existing legal and regulatory frameworks struggle to address the complexities of the black box phenomenon. While making algorithms fully transparent could enhance safety, it risks compromising performance and revealing proprietary business information. This creates a delicate balancing act between fostering innovation and ensuring ethical and operational safeguards in AI applications for elderly care.

3.2. Data-Driven Privacy Monitoring

The efficient operation of AI nursing systems for elderly individuals relies heavily on the continuous collection of vast amounts of personal data, encompassing physiological metrics, behavioral patterns, voice interactions, and even visual data from their living environments. This extensive data collection raises concerns about potential "covert surveillance," which poses significant ethical challenges. The core issue lies in the expansive scope of data acquisition required to enable precise predictions and personalized services, which inadvertently compromises the privacy of older adults through technological means. This situation heightens the risks of data breaches, misuse, or exploitation for commercial purposes, thereby undermining the fundamental rights and dignity of elderly individuals. They may experience constant pressure from being perpetually monitored and assessed. Furthermore, obtaining "informed consent" becomes increasingly challenging due to the cognitive decline often associated with aging. Compounding this issue is the fact that advancements in data collection and processing frequently outpace the development of technical and legal safeguards for data security and privacy protection, leaving the privacy rights of older adults exposed to vulnerabilities [11].

3.3. The Lack of Humanistic Care

The lack of humanistic care is deeply rooted in the dominance of technical rationality, which drives AI nursing to prioritize measurable factors such as efficiency, accuracy, and standardization. This focus often comes at the expense of emotional communication, empathy, and respect for individual needs. The fundamental issue lies in the nature of AI as a system that relies on reasoning and data computation [4, 12]. While AI can mimic

certain behaviors, such as issuing reminders or delivering polite greetings, it lacks genuine caring intentions and the capacity for emotional experience. This limitation becomes particularly evident when algorithms are optimized to streamline processes and facilitate data sharing, transforming nursing from a profession rich in warmth and personal connection into one characterized by cold, mechanical interactions. Older individuals, who frequently experience complex emotional states, present a significant challenge for machines, which struggle to accurately identify and respond to feelings such as loneliness, anxiety, and fear. The core governance issue is that humanistic care is inherently difficult to quantify and integrate into algorithmic frameworks. Consequently, the primary challenge in the development of AI nursing lies in ensuring that the pursuit of technical efficiency does not strip nursing of its essential warmth, thereby preventing older adults from experiencing a sense of "technical loneliness" in their care.

4. Failure and Paradigm Shift of Traditional Nursing Ethics in the Face of AI Nursing

4.1. The Generalization of Nursing Subject and the Ambiguity of Responsibility Attribution

The foundation of nursing ethics lies in defining the ontological relationship between "nurse-patient," where nurses, equipped with professional qualifications and guided by moral principles, serve as the primary agents responsible for ensuring patients' well-being [13, 14]. However, the integration of artificial intelligence into nursing practices disrupts this traditional framework, leading to a generalization of the care ontology and a dilution of responsibility attribution. Artificial intelligence systems, such as nursing robots and decision-support software, increasingly assume roles akin to caregivers by performing tasks like monitoring, issuing warnings, and providing auxiliary support. This evolution expands the nursing ontology from solely human nurses to a composite system encompassing humans, machines, data, and algorithms. When errors occur within these systems, whether in decision-making or through unintended consequences, the traditional chain of responsibility becomes fragmented. Responsibility is often dispersed among developers, manufacturers, medical institutions, and nurses, creating significant challenges in accountability. The "technical black box" effect further exacerbates this issue, as the opacity of AI decision-making processes discourages individuals or entities from accepting responsibility, resulting in a "responsibility vacuum." This situation highlights the inadequacy of traditional human-centered accountability mechanisms in addressing the complexities introduced by AI. Consequently, there is an urgent need to establish a new system for distributing responsibility that aligns with the evolving dynamics of AI-integrated nursing practices.

4.2. Fuzzy Ethical Standards and Technical Barriers

Traditional nursing ethics provides a structured framework of principles, including autonomy, beneficence, nonmaleficence, and justice, which serve as clear moral guidelines for nurses' professional conduct. However, the integration of artificial intelligence into nursing practices introduces complexities that challenge the applicability of these established norms. For instance, ensuring that the principle of autonomy remains genuinely exercised by older individuals becomes increasingly difficult when algorithmic influences are involved. Furthermore, technical barriers significantly hinder moral implementation [15, 16]. Nurses, as primary agents of ethical practice, often lack the technical expertise to comprehend algorithmic mechanisms, assess data anomalies, or identify systemic risks. This limitation restricts their ability to effectively monitor and intervene in AI-driven decision-making processes. The combination of unclear ethical standards and insufficient technical knowledge creates gaps in addressing practical challenges within AI nursing. Consequently, there is an urgent need to revise and modernize ethical frameworks to align with the evolving technological landscape, ensuring that moral principles remain relevant and actionable in this new context.

5. The Normative System of New Nursing Ethics Oriented by AI Ethics

5.1. Establish Multiple Subjects

To address the challenges posed by the generalization of nursing ontology and the ambiguity of responsibility, it is essential to construct a comprehensive framework of "human-machine collaboration." This framework should clearly delineate the roles, authorities, and scope of cooperation among nurses, AI systems, development institutions, and medical institutions. Human nurses must be recognized as the primary agents of moral responsibility in nursing and the central executors of practical tasks [17]. Their responsibilities include supervising AI operations, assessing the ethical implications of decisions, addressing patients' complex emotional needs, and bearing moral accountability for nursing-related decision-making. AI systems, on the other hand, should be strictly defined as auxiliary tools, with their authority confined to tasks such as data monitoring, information integration, and planning schemes. They must not be permitted to replace human judgment in making value-based decisions. Furthermore, it is imperative to establish a robust inter-departmental responsibility traceability mechanism. This mechanism should encompass the accountability of developers in algorithm design and the oversight responsibilities of medical institutions in AI application. Through hierarchical design, this approach aims to create a complete responsibility chain and foster a new nursing model that integrates ethical considerations at every level.

5.2. The Full-Cycle Nursing Process Embedded in AI Ethical Review

Integrating AI ethical review into the entire life cycle of the nursing process is crucial for proactively addressing ethical risks and ensuring effective management throughout all stages. This comprehensive approach encompasses every phase, from data collection and algorithm development to product testing, clinical application, and subsequent evaluation. During the data collection phase, rigorous privacy protection assessments and informed consent reviews are essential to guarantee that data sources are both lawful and standardized. In the algorithm development stage, employing "value sensitivity design" facilitates fairness testing and ensures ethical alignment. Prior to clinical application, independent ethics committees should conduct thorough evaluations to assess safety, effectiveness, and broader societal implications. Once the AI system is formally implemented, establishing an ethical monitoring and feedback mechanism is recommended [18]. This system should actively involve nurses and patients' families in identifying and reflecting on ethical concerns while conducting regular evaluations of the AI system's performance. By embedding ethical review into every stage of the process, this dynamic and continuous practice ensures that AI-driven nursing solutions consistently operate within a robust ethical framework, fostering trust and accountability in healthcare applications.

5.3. Improve the Ethical Standards Based on Algorithmic Interpretability

To address the "technical black box," it is imperative to develop a comprehensive framework that integrates multidimensional ethical standards, with algorithmic interpretability serving as the cornerstone. This framework mandates that AI systems provide clear and comprehensible explanations for their decision-making processes. Such explanations must be transparent, relevant, and traceable, enabling medical staff and patients to understand the foundational basis of the decisions made [13]. Furthermore, multi-level evaluation indicators should be established to ensure ethical compliance. Firstly, the principle of justice necessitates that algorithms operate without bias against gender, race, or vulnerable groups, including the elderly. Secondly, the principle of autonomy underscores the importance of AI functioning as an assistive tool rather than a controlling entity, thereby safeguarding the rights and independence of older individuals. Thirdly, the principle of safety demands the establishment of explicit boundaries to protect both physical and psychological well-being. Lastly, while the principle of care may be challenging to quantify, it can be indirectly assessed through metrics such as user satisfaction and emotional engagement. In summary, these ethical principles offer

practical and actionable guidelines for the design, deployment, and oversight of AI systems in nursing contexts.

6. Conclusion and Prospect

This paper analyzes the ethical dilemma that AI nursing faces in the context of population aging and seeks to build a new ethical standards system. This research highlights that AI nursing has demonstrated significant value in addressing the multifaceted challenges posed by an aging population, including improving care efficiency and accessibility. However, the opacity of algorithms and concerns over illegal privacy monitoring present critical obstacles, rendering the traditional nursing ethics framework increasingly inadequate. To address these challenges and foster paradigm innovation, we proposed a novel framework of nursing ethics centered on AI ethics. This framework emphasizes continuous evolution by establishing the multi-subject status of "human-machine collaboration," embedding a comprehensive whole-life-cycle ethics evaluation mechanism, and refining multi-level criteria to enhance algorithm transparency and accountability. By integrating these elements, the proposed framework aims to bridge the gap between technological advancements and ethical governance, ensuring that AI nursing aligns with the principles of dignity, autonomy, and care.

The ethical governance of AI nursing presents numerous challenges, particularly as emerging technologies such as brain-computer interfaces (BCIs) and emotional intelligence (EI) further blur the boundaries of ethical responsibility. Future research should prioritize several key areas: first, the development of methodologies to quantify and operationalize ethical standards, facilitating the transition from theoretical frameworks to practical applications. Second, interdisciplinary collaboration must be deepened to co-develop nursing technologies that inherently embody moral principles, ensuring that ethical considerations are embedded from the outset. Third, it is essential to provide targeted AI ethical literacy training for nursing professionals, equipping them with the skills to navigate complex ethical dilemmas in human-machine collaboration. These efforts aim to strike an optimal balance between technological innovation and humanistic care, ensuring that AI nursing not only enhances the quality of life for elderly individuals but also safeguards their personal dignity. By fostering a harmonious integration of advanced technology and ethical principles, this approach aspires to contribute to the development of a more compassionate and intelligent aging society, where technological progress serves as a means to uphold and enhance human values.

References

1. C. Y. Chang, H. J. Jen, and W. S. Su, "Trends in artificial intelligence in nursing: Impacts on nursing management," *Journal of Nursing Management*, vol. 30, no. 8, pp. 3644–3653, 2022.
2. M. Freudendal-Pedersen, "Ethics and responsibilities," in *The Routledge handbook of mobilities*, Routledge, pp. 143–153, 2014.
3. K. Seibert, D. Domhoff, D. Bruch, M. Schulte-Althoff, D. Fürstenau, F. Biessmann, and K. Wolf-Ostermann, "Application scenarios for artificial intelligence in nursing care: rapid review," *Journal of Medical Internet Research*, vol. 23, no. 11, p. e26522, 2021.
4. N. Maestas, K. J. Mullen, and D. Powell, "The effect of population aging on economic growth, the labor force, and productivity," *American Economic Journal: Macroeconomics*, vol. 15, no. 2, pp. 306–332, 2023.
5. F. Stokes and A. Palmer, "Artificial intelligence and robotics in nursing: ethics of caring as a guide to dividing tasks between AI and humans," *Nursing Philosophy*, vol. 21, no. 4, p. e12306, 2020.
6. G. Chaudhary, "Unveiling the black box: Bringing algorithmic transparency to AI," *Masaryk University Journal of Law and Technology*, vol. 18, no. 1, pp. 93–122, 2024.
7. V. Gallistl, M. U. L. Bandy, C. Berridge, A. Grigorovich, J. Jarke, I. Mannheim, and A. Peine, "Addressing the black box of AI—a model and research agenda on the co-constitution of aging and artificial intelligence," *The Gerontologist*, vol. 64, no. 6, p. gnae039, 2024.
8. A. Zhavoronkov, P. Mamoshina, Q. Vanhaelen, M. Scheibye-Knudsen, A. Moskalev, and A. Aliper, "Artificial intelligence for aging and longevity research: Recent advances and perspectives," *Ageing Research Reviews*, vol. 49, pp. 49–66, 2019.
9. C. H. Chu, S. Donato-Woodger, S. S. Khan, R. Nyrupe, K. Leslie, A. Lyn, and A. Grenier, "Age-related bias and artificial intelligence: a scoping review," *Humanities and Social Sciences Communications*, vol. 10, no. 1, p. 510, 2023.

10. P. Abadir, E. Oh, R. Chellappa, N. Choudhry, G. Demiris, D. Ganesan, and J. D. Walston, "Artificial Intelligence and Technology Collaboratories: Innovating aging research and Alzheimer's care," *Alzheimer's & Dementia*, vol. 20, no. 4, pp. 3074–3079, 2024.
11. R. L. Fritz and G. Dermody, "A nurse-driven method for developing artificial intelligence in 'smart' homes for aging-in-place," *Nursing Outlook*, vol. 67, no. 2, pp. 140–153, 2019.
12. S. Park, E. Ahn, T. H. Ahn, S. Ahn, S. Park, E. Kwon, and Y. Yang, "Artificial intelligence and aging in place: A scoping review of current applications and future directions," *The Gerontologist*, vol. 65, no. 6, p. gnaf130, 2025.
13. A. Zhavoronkov and P. Mamoshina, "Deep aging clocks: the emergence of AI-based biomarkers of aging and longevity," *Trends in Pharmacological Sciences*, vol. 40, no. 8, pp. 546–549, 2019.
14. C. C. Lee, J. Yan, and F. Wang, "Impact of population aging on food security in the context of artificial intelligence: Evidence from China," *Technological Forecasting and Social Change*, vol. 199, p. 123062, 2024.
15. L. McDaniel, I. Essien, S. Lefcourt, E. Zelleke, A. Sinha, R. Chellappa, and P. M. Abadir, "Aging with artificial intelligence: how technology enhances older adults' health and independence," *The Journals of Gerontology, Series A: Biological Sciences and Medical Sciences*, vol. 80, no. 7, p. glaf086, 2025.
16. A. H. Sapci and H. A. Sapci, "Innovative assisted living tools, remote monitoring technologies, artificial intelligence-driven solutions, and robotic systems for aging societies: systematic review," *JMIR Aging*, vol. 2, no. 2, p. e15429, 2019.
17. S. J. Czaja and M. Ceruso, "The promise of artificial intelligence in supporting an aging population," *Journal of Cognitive Engineering and Decision Making*, vol. 16, no. 4, pp. 182–193, 2022.
18. S. Cho, S. Eom, D. Kim, T. H. Kim, J. S. Uhm, H. N. Pak, and B. Joung, "Artificial intelligence–derived electrocardiographic aging and risk of atrial fibrillation: a multi-national study," *European Heart Journal*, vol. 46, no. 9, pp. 839–852, 2025.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of Publisher and/or the editor(s). Publisher and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.