

RESEARCH ARTICLE

Future warfare and robust healthcare: Entangling technology assessment and nursing science

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Abstract • Nursing plays a decisive role in coping with crises situations. Nursing concepts are therefore particularly relevant in times of war and for warfare. In this article, we argue for an entanglement of technology assessment and nursing and show how they can enrich each other. Technology assessment can learn from nursing by applying principles such as high proficiency, efficient organizational structures, and decentralization to develop robust healthcare technology. Conversely, nursing can learn from technology assessment by adopting methods of influence and policy advice and adapting them to its own needs. Through this entanglement, the two disciplines can jointly lay the foundations for a more robust healthcare system in Germany.

Zukünftige Kriegsführung und robuste Gesundheitsversorgung:
Verflechtung von Technikfolgenabschätzung und Pflegewissenschaft

Zusammenfassung • Bei der Bewältigung von Krisensituationen spielt die Gesundheits- und Krankenpflege eine entscheidende Rolle. Pflegekonzepte sind deshalb in Kriegszeiten und für die Kriegsführung besonders relevant. In diesem Artikel plädieren wir für eine Verflechtung von Technikfolgenabschätzung und Krankenpflege und zeigen auf, wie sie sich gegenseitig bereichern können. Die Technikfolgenabschätzung kann von der Pflege lernen, indem sie Prinzipien wie hohe Fachkompetenz, effiziente Organisationsstrukturen und Dezentralität zur Entwicklung robuster Gesundheitstechnologien anwendet. Umgekehrt kann die Pflege von der Technikfolgenabschätzung lernen, indem sie Methoden der Einflussnahme und Politikberatung übernimmt und an ihre eigenen Bedürfnisse anpasst. Durch diese Verflechtung können beide Disziplinen

gemeinsam die Grundlagen für eine robustere und effektivere Gesundheitsversorgung in Deutschland schaffen.

Keywords • vulnerability, agential realism, nursing, healthcare, robustness

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Introduction

Nursing deals with crises on a disciplinary basis to ensure the provision of healthcare (Gebbie et al. 2022) and needs to consider humans, non-humans, situations, and environments in its concepts more than ever. At the same time, technology assessment (TA) considers policy, politics and societal values.

To achieve robustness¹ in German healthcare under different types of crises, we invite our readers to consider combining TA and nursing science to entangle disciplines and improve professional concepts and practice. We reflect on the following questions: How can nursing science benefit from concepts of TA, and vice versa? We use types of warfare, such as physical and cyberwarfare, as examples; however, our thoughts strive for universal applicability in any crisis. To answer these questions, we use the concepts of agential realist vulnerability, primary nursing, and TA concepts, such as scenario building, investigation of social and disciplinary values, and formats for expert and citizen dialogue and policy advice. First, we explore the relationship between nursing and warfare and then present nursing concepts that

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can be entangled with TA. Finally, we propose concrete examples of this entanglement to promote robustness in healthcare.

The relationship of healthcare, nursing, and warfare

Healthcare is essential for promoting, maintaining, and restoring health, and it plays a crucial role in quality of life. It is a key target within the United Nations' Sustainable Development Goals for global development until 2030 (UN 2023; WHO and UNICEF 2022). In the European Union, healthcare is subject to organizational and technical requirements. This is because it is defined as a critical sector (EU 2022). It is essential for maintaining national security and functioning, economic stability, and public goods.² In Germany, the Federal Office of Civil Protection and Disaster Assistance has promoted strategies for Critical Sector Protection to prevent risks (BBK 2008, 2020). However, it is not just about avoiding risks; it is also about managing and dealing flexibly with challenges in both daily life and crises.

Nursing is a vital part of healthcare. It addresses health promotion, prevention, cure, rehabilitation, and palliation. Nursing focuses on environmental and situational conditions that influence health and illness. Its goal is to provide access to healthcare (White et al. 2025). In Germany, the Social Code Books (Sozialgesetzbuch, SGB) V and XI clearly state that nursing is centered on three key areas: life stages of illness, rehabilitation, and palliation at the end of life. There is a strong emphasis on cure and long-term care.³ In contrast, international contexts recognize the broader role of nurses in preventive and health-promotional measures. Nurses are generally in close contact with patients, their families, and other healthcare professionals. This puts them in a unique position to manage care from an overarching perspective.

Nursing has always been tasked with military readiness, and war has provided nursing with the opportunity to demonstrate its contributions to healthcare to the wider public. War has led to exceptional situations that require informal decision-making and action on battlefields (Tschudin and Schmitz 2003). Florence Nightingale and Mary Seacole are prime examples of nurses who established independent support structures in the Crimean War in 1853 (McDonald 2012). Nightingale's work in war allowed her to observe, document, and analyze the situational and environmental conditions and consequences of war-related logistics on health outcomes (Fee and Garofalo 2010).

Warfare has evolved over time, and nurses must adapt their tasks accordingly. For this paper, we use a model that describes

the transformation of strategies, tactical operations, different aims, and types of arms as generations of warfare. These generations do not replace each other; they overlap (Tsetos 2023): The first to third generations aim to incapacitate soldiers and destroy war equipment physically using various firearms, soldier formations, and other forms of weaponry. Nurses are among the first responders in combat zones, providing medical care and transporting the injured to military hospitals (Fink and Milbrath 2023; D'Antonio 2002). The use of bombs also affects civilians in the interior of the country, who are cared for by nurses. The fourth generation focuses on indirect warfare. It involves influencing democratic states by acting aggressively in cyberspace. This includes election interference and hacking of governmental institutions. This directly impacts civil life, creates uncertainty, and imposes considerable public and psychological pressure on state-level decision-makers. The consequences of these actions could lead to riots and widespread unrest. The fifth generation, also known as non-kinetic warfare, involves conflicts taking place on conventional battlefields and utilizing autonomous systems. It is characterized by the use of psychological warfare tactics, such as social engineering, economic instability, espionage, systematic disinformation, deepfakes, and cybercrime. Notably, these actions are often perpetrated without direct attribution to a specific actor, further complicating the situation. Today, warfare is on the cusp of the next generation, with the expansion of hybrid, unmanned, and AI-dominated weapons and information systems. Experts advocate for expanding skills and tactics for both analog and digital operational readiness (Sauer 2022). The challenges that arise for public life from generation 4 onward are addressed in this paper. It reflects on the possibilities of an entangled understanding of TA and nursing science. Nurses are valuable actors in bridging the gap between technological advancements and maintaining structures in war-affected healthcare. In the following sections, we introduce nursing concepts, such as agential realist vulnerability and primary nursing.

Affecting vulnerability: agential realist perspectives

The concept of vulnerability is useful for assessing the impact of technology on nursing. We take into account both human and non-human actors and utilize the concept of agential realism (Barad 2007), which dissolves dualisms and thereby eliminates the separation between human and non-human entities. This analytical tool allows for the examination of complex phenomena in nursing. Agential realism provides crucial perspectives that enrich the concept of vulnerability and are essential for developing robust healthcare systems.

Agential realism: including technology

Agential realism was developed through the entanglement of various theoretical frameworks. Entanglement is the process of combining theories to enhance and refine them. In the case of

² BSI-Kritis Ordinance (BSI-KritisV), as amended on 22.04.2016 (Federal Law Gazette I p. 958), last amended by Art. 1 Ordinance of 29.11.2023 (Federal Law Gazette I No. 339).

³ Social Code Book V (SGB V), as amended on 20.12.1988 (Federal Law Gazette I p. 2477), last amended by Art. 1 of Act of 25.02.2025 (Federal Law Gazette I No. 64); SGB XI, as amended on 26.05.1994 (Federal Law Gazette I p. 1014), last amended by Art. 4 of Act of 30.05.2024 (Federal Law Gazette I No. 173).

agential realism, Barad (2007) drew upon insights from Nils Bohr's quantum mechanics, which posits that the results of observations are dependent on the apparatus used. Additionally, Foucault's theory, which highlights the enabling and disabling effects of power and discourse, was incorporated. Butler's understanding of the discursive formation of bodies further enhanced these concepts. This integration of theories gave rise to a framework that acknowledges the significance of the apparatus, the influence of discourse on the formation of bodies, and the complex interplay between these factors.

Technology is a constant factor in our environment, so vulnerability needs to be considered with technology as a non-human actor as well.

The term 'intra-action' is the core of agential realism. In contrast to interaction, it states that actors cannot be described apart from a phenomenon but are created intra-actively within it and its properties. The boundaries of actors are understood to be fluid, and the process of gaining knowledge involves avoiding dualisms, such as the dichotomy between human and non-human. The linguistic representation of the phenomenon is challenging because it makes it difficult to communicate about actors without reinforcing their prior definitions: A person becomes a patient by lying in a hospital bed and wearing a surgical gown. At this point, the bed, the person, and the nurse become an interconnected care-dependency phenomenon (Wüller 2023). The bed's functionalities and the properties of the patient and nurse become highly relevant and form a joint phenomenon in a specific situation.

Agential realist vulnerability in nursing science

Vulnerability is a multidisciplinary concept with several meanings depending on its context of use (Fuller and Pincetl 2015). In healthcare, the concept differs as well, as virology, and statistics use the term in relation to relative risks concerning infectious diseases. This approach provides a solid epidemiological foundation for public health, with the clear objective of identifying and safeguarding vulnerable individuals from these threats: During the pandemic, this dominant perspective provided a risk-based justification for prioritizing services (BMG et al. 2021). This is a practical and comprehensible approach, and healthcare professionals often align themselves with these epidemiological-driven assumptions (Läpple 2024).

Anthropology offers another perspective, considering humankind as psycho-physical unity: bodily beings related to and dependent on social networks and interaction. Human vulnerability is not just a weakness; it's also the key to being open to the environment and the prerequisite for thriving and developing (Huth and Thonhauser 2020). However, vulnerability can be heightened or lowered in different situations or life stages (Sellman 2009). In the following, we add agential realism to include matter-re-

lated, situational, and environmental aspects: We demonstrate that humankind is vulnerable to its environment and uncertain situations that are difficult to control. Technology is a constant factor in our environment, so vulnerability needs to be considered with technology as a non-human actor as well. While each actor remains vulnerable to a certain degree, the distribution of vulnerability can change the situation, professionalism, traditional roles, privileges, and reasons for actions, among others. This is a fundamental difference to the epidemiological perspective where an actor whether is vulnerable or not. The concept

of agential realist vulnerability aligns with the generations of warfare, as there is no unilateral strategy of war anymore, but the battlefield expands into civilian spaces: psychologically in producing uncertainty, and virtually by hacking critical sectors and destabilizing healthcare supply (Sauer 2022; Tsetos 2023). Agential realist vulnerability is the ability to be open to unexpected changes while maintaining flexibility in dealing with uncertain situations.

Vulnerability in healthcare is a concern for patients, healthcare professionals, and technology. Its dynamic, situational, and environmental character makes it challenging to predict its distribution and its impact on healthcare, especially in the event of an unexpected physical or cyberattack on healthcare structures. Next, we will show how entanglement of agential realist vulnerability and TA can take place.

Technology assessment meets nursing: constructing robust healthcare

The entanglement of nursing and TA alters both disciplines. This is due to the acknowledgement of technology's shifting vulnerabilities and those of everyone⁴, which are particularly evident during crises. In this chapter, we first describe the contributions of nursing to TA and then outline the contributions of TA to nursing. Nursing contributes knowledge about people's needs and lifeworld, while TA provides concepts and methods of scenario building, investigation of social and disciplinary values, expert and citizen dialogue formats, and policy advice to the entanglement.

First, nursing brings advanced professional concepts to TA, such as agential realist primary nursing. Primary nursing is an organizational model in which nurses are constantly assigned to

⁴ In agential realism, there is no separation of human and non-human actors and the mention of both actors at this point is merely for clarification purposes.

the same patients (Manthey et al. 1970).⁵ This approach adds significant value because primary nurses have a high level of education, decentralized knowledge, and a considerable degree of decision-making authority. They work in interdisciplinary teams and are responsible for care management. Agential realist primary nurses understand all factors influencing a patient's healthcare. In hospitals, they're well-versed in technical issues, such as loose network socket contacts, pending software updates, and Wi-Fi fluctuations in the building. In the community,

structures, such as nursing authority to decide and report, and professional autonomy. As a result, nursing as a discipline is undergoing a transformation. It is achieving and valuing technological knowledge, gaining authority, and advocating for its contribution to robust healthcare. TA concepts also change interactively as the boundaries of disciplines in interaction are established dynamically within the phenomenon. Roles, authority, discourses, and structures must be questioned and coordinated synchronously. Their usual persistence cannot be assumed.

TA concepts, such as etatism and comprehensiveness, can enhance political awareness when nursing is integrated into policy advice.

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they know the environments of people being cared for, their life conditions, and their needs. They anticipate possible problems and actively work with scenarios, switching to different modes of nursing care when situationally required, e.g. in the event of a physical or a cyberattack that impacts people's daily life. Primary nursing is applicable to any crisis, because it takes into account environmental, technological, and situational factors. Its decentralized nature distributes risks, uncertainty, and vulnerability, ensuring that decentralized knowledge remains accessible even if the respective nurse dies in a crisis. This must be taken into account in future scenario development.

Second, TA brings to nursing its concepts and methods of participative technology development, scenario building, investigation of social and disciplinary values, expert and citizen dialogue formats, and policy advice. TA can promote nursing as a relevant discipline for healthcare in Germany on a macro level. TA concepts, such as etatism and comprehensiveness, can enhance political awareness when nursing is integrated into policy advice. On a meso level, TA addresses issues of cooperation with other disciplines, such as tactical medicine or the Federal Agency for Technical Relief, which primarily operate in manifest crises. In contrast, nursing approaches uncertainty and vulnerability in daily life and practice, testing procedures and decentralization to promote robustness. TA's dialogue strategies are key to facilitating exchanges between all disciplines dealing with crises about their interfaces, responsibilities, and boundaries. This helps develop decentralized and responsible modes of action, such as in the event of a physical attack. Technologies are developing at a micro level that are convincing due to their applicability, feasibility, and added value in healthcare. This is happening alongside the concept of "Leitbild assessment" (Grunwald 2009).

Through their entanglement, we find that TA and nursing are altered by improved robust technology development, providing technical, procedural, professional, and strategic knowledge and

The use of technology in nursing is often suboptimal for two primary reasons. First, it does not address the needs of nursing professionals or those of patients (Endter 2018). Entangled TA alters and reflects critically to which extent nursing as an underestimated and still powerless discipline in German healthcare is actually involved in all stages of technology development. Power-related aspects of agential realism invoke this as another point for altering TA approaches: We must ensure that developed technologies are deemed useful and necessary by nurses who use them. Nurses benefit from their knowledge of environmental, structural, and situational factors. The nursing concept of agential realist vulnerability addresses this knowledge. It comprises technological, situational, personal, and environmental factors in healthcare. Technology must function both digitally and analogically. It must address tasks such as managing raw materials, drugs, or waste. It must ensure communication in crises in a discreet manner. It must tag people needing special treatment in an ethical way. Technology must guarantee that the diversity of human needs remains a priority, even during crises, including social and educational needs.

In short, an entanglement of TA and nursing science provides following practical value:

- Germany is prepared for crises with robust healthcare: Crises and modes of warfare are irrelevant. TA scenarios account for intra-active effects and vulnerabilities among the involved actors.
- Teams are established that integrate knowledge of all involved parties (e.g., soldiers, nurses, hospital management, developers, mayors, engineers, . . .). They are powerful agents designed to create robust healthcare, whether for physical or digital attacks.
- Technology for robust healthcare, such as electronic patient records and patient bells, is developed for analog and digital use. It is developed in compliance with ethics and safety standards (Endter 2018; Weber 2016). Nurses are trained and responsible for playing a substantial role in technology development.

⁵ Primary nursing originated in US nursing science and is currently rarely used in German nursing. We propose the concept from a professional perspective, as it contributes to making German nursing crisis-proof.

Conclusions

We have demonstrated the value of combining TA and nursing. Nursing's concepts and methods of TA serve as a vehicle to promote the potential of nursing in policy advice and in dialogue methods. Nursing provides the professional content and competencies necessary to manage care pathways. Both disciplines are entangled and transformed due to agential realist premises. These include intra-action, non-dualist actors, and phenomena with flexible boundaries. Entanglement's mission is to build robust healthcare systems in times of crisis, whether it's a physical attack, a digital attack, a pandemic, or a natural disaster. This entanglement allows us to address and develop flexible scenarios, decentralized knowledge, high proficiency, dynamic boundaries, and adaptive responses to the requirements and conditions of crises.

This entanglement requires investment in the German healthcare system. Nursing must be empowered and commissioned. The relevance of primary nursing as a decentralized, crisis-resilient, and setting-independent organizational model must be developed to address agent-realistic vulnerability in crises. This development is crucial for creating a robust healthcare system that can effectively respond to various types of crises. It requires a commitment to investing in the necessary infrastructure, education, and training.

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References

- Barad, Karen (2007): Meeting the universe halfway. Quantum physics and the entanglement of matter and meaning. Durham, NC: Duke University Press. <https://doi.org/10.2307/j.ctv12101zq>
- BBK – Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (ed.) (2008): Schutz Kritischer Infrastruktur – Risikomanagement im Krankenhaus. Leitfaden zur Identifikation und Reduzierung von Ausfallrisiken in Kritischen Infrastrukturen des Gesundheitswesens. Available online at https://www.bbk.bund.de/SharedDocs/Downloads/DE/Mediathek/Publikationen/PiB/PiB-02-risikoman-krankh.pdf?__blob=publicationFile&v=7, last accessed on 28.10.2025.
- BBK (ed.) (2020): 10 Jahre „KRITIS-Strategie“. Einblicke in die Umsetzung der Nationalen Strategie zum Schutz Kritischer Infrastrukturen. Bonn: Bundesamt für Bevölkerungsschutz und Katastrophenhilfe.
- BMG – Bundesministerium für Gesundheit; Robert Koch-Institut; Paul-Ehrlich-Institut; Bundeszentrale für gesundheitliche Aufklärung (eds.) (2021): Nationale Impfstrategie COVID-19. Strategie zur weiteren Durchführung und Evaluierung der Impfung gegen SARS-CoV-2 in Deutschland – aktualisiert. Available online at https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/C/Coronavirus/Impfstoff/Nationale_Impfstrategie_juni_2021.pdf, last accessed on 03.06.2025.
- D'Antonio, Patricia (2002): Nurses in war. In: *The Lancet* 360 (1), pp. 7–8. [https://doi.org/10.1016/S0140-6736\(02\)11798-3](https://doi.org/10.1016/S0140-6736(02)11798-3)
- Endter, Cordula (2018): How older people matter. Nutzer- und Nutzerinnenbeteiligung in AAL-Projekten. In: Harald Künemund and Uwe Fachinger (eds.): *Alter und Technik. Sozialwissenschaftliche Befunde und Perspektiven*. Wiesbaden: Springer VS, pp. 207–225. https://doi.org/10.1007/978-3-658-21054-0_11
- EU – European Union (2022): Directive (EU) 2022/2555 of the European Parliament and of the council of 14 December 2022 on measures for a high common level of cybersecurity across the union, amending regulation (EU) No 910/2014 and directive (EU) 2018/1972, and repealing directive (EU) 2016/1148. Available online at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02022L2555-20221227>, last accessed on 16.07.2025.
- Fee, Elizabeth; Garofalo, Mary (2010): Florence Nightingale and the Crimean War. In: *American Journal of Public Health* 100 (9), p. 1591. <https://doi.org/10.2105/AJPH.2009.188607>
- Fink, Anne; Milbrath, Gwyneth (2023): A concept analysis of nurses in conflicts after World War II. In: *Journal of Advanced Nursing* 79 (1), pp. 31–47. <https://doi.org/10.1111/jan.15454>
- Fuller, Ashley; Pincetl, Stephanie (2015): Vulnerability studies. A bibliometric review. In: *The Professional Geographer* 67 (3), pp. 319–329. <https://doi.org/10.1080/00330124.2014.970835>
- Gebbie, Kristine; Hutton, Alison; Steward, David (2022): Core competencies in disaster nursing. Competencies for nurses involved in emergency medical teams (Level III). Geneva: International Council of Nurses.
- Grunwald, Armin (2009): Technology assessment. Concepts and methods. In: Dov Gabbay, Anthonie Meijers, Paul Thagard and John Woods (eds.): *Philosophy of Technology and Engineering Sciences. Handbook of the Philosophy of Science*. Amsterdam: Elsevier, pp. 1103–1146. <https://doi.org/10.1016/b978-0-444-51667-1.50044-6>
- Huth, Martin; Thonhauser, Gerhard (2020): Introduction. In: *Philosophy Today* 64 (3), pp. 537–555. <https://doi.org/10.5840/philtoday2020643346>
- Läpple, Miriam (2024): Vulnerabilität in der Pflege und Pflegewissenschaft. Ein Narrative Review über den deutschsprachigen und internationalen Erkenntnisstand. In: *pflegekongress24. Abstractband Poster*. Wien: Medical Update, Marketing & Media, p. 37. Available online at <https://www.pflegenetz.at/wp-content/uploads/2025/01/abstractband-poster-pk24.pdf>, last accessed on 19.02.2026.
- Lecocq, Dan (2024): Drawing from the insights of biology, sustainable healthcare systems should prioritise robustness over optimisation. In: *Nursing philosophy* 25 (4), p. e12510. <https://doi.org/10.1111/nup.12510>
- Manthey, Marie; Ciske, Karen; Robertson, Patricia; Harris, Isabel (1970): Primary nursing. A return to the concept of “my nurse” and “my patient”. In: *Nursing Forum* 9 (1), pp. 65–84. <https://doi.org/10.1111/j.1744-6198.1970.tb00442.x>
- McDonald, Lynn (2012): Florence Nightingale and Mary Seacole. Nursing's bitter rivalry. In: *History Today* 62 (9), pp. 10–16.
- Sauer, Frank (2022): Unbemannte Systeme. Rüstung, Kontrolle und Rüstungskontrolle. In: *Metis Institut für Strategie und Vorausschau* (ed.): *Metis Studie*, 28. Neubiberg: University of the Bundeswehr Munich.
- Sellman, Derek (2009): Vulnerability and nursing. A reply to Havi Carel. In: *Nursing Philosophy* 10 (3), pp. 220–222. <https://doi.org/10.1111/j.1466-769x.2009.00409.x>
- Tschudin, Verena; Schmitz, Christine (2003): The impact of conflict and war on international nursing and ethics. In: *Nursing Ethics* 10 (4), pp. 354–367. <https://doi.org/10.1191/0969733003ne6180a>
- Tsetos, Konstantin (2023): Trends und Entwicklungen hybrider Bedrohungen. In: *Metis Institut für Strategie und Vorausschau* (ed.): *Metis Studie*, 35. Neubiberg: University of the Bundeswehr Munich.

UN – United Nations (ed.) (2023): What is sustainable development? Available online at <https://www.un.org/sustainabledevelopment/blog/2023/08/what-is-sustainable-development/>, last accessed on 15.01.2026.

Weber, Karsten (2016): MEESTAR². Ein erweitertes Modell zur ethischen Evaluierung soziotechnischer Arrangements. In: Robert Weidner (ed.): Zweite Transdisziplinäre Konferenz. Technische Unterstützungssysteme, die die Menschen wirklich wollen. Hamburg: Helmut-Schmidt-Universität, pp. 317–326.

White, Jill; Gunn, Michelle; Chiarella, Mary; Catton, Howard; Steward, David (2025): Renewing the definitions of 'nursing' and 'a nurse'. Final project report. Geneva: International Council of Nurses.

WHO – World Health Organization; UNICEF – United Nations Children's Fund (2022): Primary health care measurement framework and indicators. Monitoring health systems through a primary health care lens. Geneva: World Health Organization.

Wüller, Hanna (2023): Pflege und Technik. Empirische Einblicke in Care-Arbeit aus der Perspektive des Agentiellen Realismus. Bielefeld: transcript. <https://doi.org/10.1515/9783839467114>



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