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Reflection article

Technique and Nursing Care: Between Dehumanization and Technification*

La técnica y el cuidado de enfermería: entre deshumanización y tecnificación

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Abstract: The objective of this article is to critically analyze the idea of the dehumanization of nursing care due to the increasing technologization and technicalization. To examine this idea, it proposes a philosophical analysis of the concepts of technique, technology, nursing care, and dehumanization, establishing three thematic axes: the dehumanization of care, care, and technique as an ontological conception of the human. It is based on philosophical references regarding technique, especially the fable of Hyginus in the work of Heidegger, who offers an interpretation that seeks to integrate technique and care as part of a symbiotic ontology. In conclusion, it is highlighted that technique and care are not opposite concepts: on the contrary, both are constitutive of the human nature and, therefore, blaming technique and technology exclusively for dehumanization is certainly contradictory.

Keywords: healthcare, nursing philosophy, philosophy of technique, humanization of care.

Resumen: el presente artículo tiene como objetivo analizar críticamente la idea de la deshumanización del cuidado de enfermería debido a la creciente tecnologización y tecnificación. Para examinar esta afirmación se propone un análisis filosófico de los conceptos de técnica, tecnología, cuidado de enfermería y deshumanización, estableciendo tres ejes temáticos: la deshumanización del cuidado, el cuidado y la técnica como concepción ontológica de lo humano. Se parte de referentes filosóficos de la técnica, en especial, la fábula de Higinio en la obra de Heidegger, quien ofrece una interpretación que busca integrar la técnica y el cuidado como parte de una ontología simbiótica. Como conclusión se destaca que la técnica y el cuidado no son conceptos opuestos: por el contrario, ambos son constitutivos de la naturaleza humana, por lo tanto, culpar exclusivamente a la técnica y a la tecnología de la deshumanización resulta ciertamente contradictorio.

Palabras clave: cuidado de la salud, filosofía de enfermería, filosofía de la técnica, humanización del cuidado.

INTRODUCTION

The dehumanization of healthcare and health services has emerged as a major challenge in recent years. In response, some authors, such as Elío-Calvo (2016), advocate the humanization of healthcare through an anthropocentric humanistic approach. This approach attempts to elevate human values, attitudes, and practices related to the vocation of service and the consideration of patients as suffering beings seeking relief. The authors further posit that the technification and technologization of healthcare are among the causes of dehumanization in the field. García Uribe (2021b) argues that the *humanization of healthcare* may be an imprecise concept because it fails to acknowledge human traits such as selfishness, greed, or apathy. Consequently, the term *dehumanization of healthcare* does not seem to be an adequate semantic opposite.

The advent of the COVID-19 pandemic has led to an exponential increase in the use of technology-mediated health services, commonly referred to as telehealth (Omboni et al., 2022). It is anticipated that, with the advancement of artificial intelligence, the scope and applicability of telehealth will expand (Pailaha, 2023). Nevertheless, one of the concerns that persists with the increasing technological integration of healthcare is the potential loss of warmth, compassion, and, in general, communication between healthcare professionals and patients. As García Uribe and Zapata Muriel (2022) assert, a technologized environment annuls the critical capacity, clouds the view, mutes the voice, and drains the emotions of both the caregiver and the one who seeks to be cared for (p. 23).

The thesis that we intend to support in this manuscript is that healthcare would not be possible without technique and, in contemporary times, it would not be rational to forego technology. Therefore, technique and technology are necessary for healthcare, yet they are not sufficient. Moreover, technique is inherent to care and care per se is a technical gesture. In fact, *technocare* could be defined today as an attitude and action of the human beings who care for others. Based on this conceptual background of technique and care, the dehumanization of care could be seen as a contradiction, rooted in instrumentalist or alienating visions of technology.

Thus, this manuscript is configured as a philosophical reflection on the dehumanization of nursing care in a context of increasing technification. For its construction, a descriptive qualitative approach is adopted within the framework of documentary research. Consequently, an analysis of the key concepts that underpin the study, including technique, technology, nursing care, and dehumanization, is first proposed. Subsequently, Heidegger's interpretation of the Hyginus' fable is analyzed to understand the relationship between technique and care from an ontological perspective. This analysis allows the establishment of a connection between the mythical dimension and the current reality of nursing care in the context of technification.

Based on the conceptual analysis and the hermeneutic interpretation, this manuscript questions the notion of dehumanization of care as an inevitable consequence of technification. Instead, it proposes an alternative vision that highlights the possibility of a symbiotic ontology between technique and care, where both elements complement and enrich each other.

In the preparation of this manuscript, numerous bibliographical sources were consulted, including books, scientific papers, and other documents relevant to the research topic. Materials related to Heidegger, philosophy of technique, and nursing epistemology were particularly significant. It should be noted that this study is based on philosophical reflection rather than empirical research, so neither quantitative nor qualitative data are presented. Nevertheless, the rigorous conceptual analysis, hermeneutic interpretation, and argumentative construction make a substantial contribution to the ongoing debate on the dehumanization of nursing care in the age of technification.

ON THE DEHUMANIZATION OF CARE

Some precedents of the so-called dehumanization of healthcare include the mechanistic approach (which breaks down the whole into parts to facilitate the study of isolated elements while ignoring the systematicity of the biological, psychological, and social dimensions), biological reductionism (which reduces the health–disease process to the biological sphere), the division of labor, the subspecialization of medicine, neoliberal economics, and technoscience (Elío-Calvo, 2016). It is necessary to provide some conceptual clarifications, particularly with regard to the ways technique, technology, and contemporary technoscience permeate healthcare processes. From a naturalistic–anthropocentric perspective in which humanization is highly valued, it is challenging to reconsider the value of technique and technology in the healthcare field. This difficulty arises from an egocentric tendency to assume that humans are inherently good, thereby establishing a defensive stance against techniques, as if technical objects were not an integral part of human reality.

These conceptions are related to three critical assessments of the philosophy of technique:

The first is the argument of the hierarchical order of existence between the natural and the artificial, with the natural being ontologically superior to the artificial. In this sense, "natural" healthcare is perceived to have a higher ontological status than care mediated by artifacts. The second assessment refers to the axiological neutrality of technique. In this view, artifacts are conceived as mere tools at the service of humans, while technique is regarded as an instrument of power and domination, i.e., as a political form, mechanism, strategy, or device to uphold existing power structures. Finally, the third assessment, from the perspective of critical social theory, asserts that artifacts, mechanization, and machines, especially modern ones, are not only inherently political but also serve as instruments for maintaining and defending certain structures of power and domination over nature and human beings. The function of the philosophy of technique, therefore, is to denounce this state of affairs (Monterroza Ríos et al., 2015, p. 270).

Nevertheless, it is important to acknowledge that, since the dawn of medicine, technique has been critical. The discovery of fire in the Neolithic period enabled human communities to significantly enhance and expand their food supply. Moreover, the practice of burial and the establishment of agricultural settlements during that same period notably modified morbidity and mortality rates, with certain diseases becoming more prevalent while others declined.

It can therefore be argued that technique has played a pivotal role in the health–disease process and in the consolidation of medicine as a practice (Gracia, 2004).

In nursing science, numerous conceptual frameworks have addressed care and the role of nurses in it. For example, the health–disease concept introduced by Florence Nightingale—who is considered a pioneering figure in the establishment of modern nursing as both a discipline and a profession—is particularly enlightening. Nightingale defined illness as the way nature rids itself of effects or conditions that have interfered with health. Moreover, she explained that health was not merely a state of well-being but also encompassed the capacity to effectively use all of one's energy, as well as one's technical (empirical, artistic) and emotional abilities (Young et al., 2011, p. 807). It can thus be said that nursing emerged with Nightingale in a complex geopolitical environment, characterized by the Crimean War. Furthermore, it is worth highlighting that one of the distinguishing features of this nurse was her utilization of systematic, methodical, and reasoned observations, supported by statistical tests, to demonstrate the critical role of hygiene and environmental factors in the health–disease process and within healthcare institutions (Peres et al., 2021).

Another illustrative case is that of Callista Roy, a nurse who developed a comprehensive epistemological framework for nursing care using the adaptation model. This model is based on the postulates of Bertalanffy's general systems theory and Helson's adaptation theory (Díaz de Flores et al., 2002). This reference to adaptive psychology is particularly important because it recognizes the existence of internal and external stimuli that elicit negative or positive responses. Adaptation, therefore, can be classified as a positive response to stimuli (Raile Alligood & Marriner Tommey, 2011). From this perspective, care as a form of adaptation involves adjusting circumstances or individuals to modulate their responses to various stimuli. Accordingly, Roy proposes that care, and therefore nursing professionals, should facilitate adaptation, defined as the process and outcome by which people with thoughts and feelings, individually or in groups, use conscious awareness and choice to create human and environmental integration (Díaz de Flores et al., 2002, p. 20).

From the nursing disciplinary framework, numerous examples illustrate the role of technique in its instrumental and sociopolitical forms. Particularly, Nightingale employed statistical methods to demonstrate the correlation between the environment and the health–disease process (Kopf, 1916). Roy's theoretical model, on the other hand, suggests that the adaptation of individuals to internal and external stimuli is crucial for health, with nursing's role being to facilitate that adaptation (Erol Ursavaş et al., 2014). Additionally, the nursing disciplinary framework has critically examined the role of technique in care, as evidenced by theoretical developments in emancipatory and sociopolitical patterns of knowledge that provide a critical and proactive perspective on technical care (Campos Sivalli et al., 2014).

Recognizing that nursing care has given a practical and epistemic sense to the technical dimension does not imply ignoring the challenges faced. These challenges include the erosion of nursing professionals' rationality, the fragmentation of care time (Siles González & Solano Ruiz, 2007), the removal of ethics and human sciences from nursing curricula, and the overvaluation of certain technical rationalities (Rojas Reyes et al., 2019). Indeed, nursing, as a dual and symbiotic practice, is a technical but also an aesthetic, ethical, and personal act

with emancipatory potential and imbued with essential values such as compassion, humility, and solidarity (Osorio Castaño, 2016). Therefore, it does not follow that the dehumanization of care is a consequence of technique. Care as a human act is inherently technical, with compassion at its core. Thus, the concept of dehumanizing care may be fundamentally flawed (García Uribe, 2021c).

To be more precise in the discourse, terms such as a *decline in the quality of care*, *neglect of care*, and *crisis of values among healthcare professionals* could be employed. These phenomena are multifactorial and can be attributed to numerous factors that include nurses' harsh working conditions (del Valle Solórzano, 2021), low economic recognition (Hendricks & Baume, 1997), historical epistemic injustices, lack of moral recognition, gender bias (Garcia, 2022), and conceptual and ethical problems related to care in a replacement-oriented world.

Examples from professional experience, ranging from triage in emergency services to fields of action in community settings, can illustrate these points. In the case of triage, the nursing staff carries out a rapid, concise, and problem-oriented assessment to prioritize and classify the severity of patients and optimize the use of available resources. For such assessment, scales such as NEWS2 (Pimentel et al., 2019), protocols specific to each hospital institution, as well as algorithms and applications are often used (Kamler et al., 2023). The decision to utilize these tools does not necessarily undermine nursing care, but it does raise three important issues. First, reliance on protocols, scales, and algorithms for decision-making may erode professional autonomy. Second, the intrinsic subjectivity of the act of care may be overshadowed, resulting in a superimposition of technique over other patterns of knowledge. Finally, the application of these tools implies certain values, such as utility and efficiency, which are not universally applicable.

Moreover, it is not reasonable to consider the human being without acknowledging the role of technique. Following García Uribe (2021a), technique is the strategy that humans use to survive by adapting the environment to themselves, whereas animals adapt to the environment. It is technique that makes us human. From a similar perspective, Monterroza Ríos et al. (2015) posit that we are human because we live in a world of culture. We are living beings who have established their place in the world through the mediation of an environment filled with symbols and artifacts framed in various natural habitats. We call this world "culture" and it is made up of disparate yet distinctive elements that constitute our identity, including techniques, languages, knowledge, beliefs, and norms (p. 271).

Recognizing contemporary technique and technology as inherent to human existence does not imply abandoning the critical perspective. In fact, it is essential to continually refine the mechanisms for both external and internal evaluation of technology, especially considering their short- and medium-term consequences. According to Quintanilla (1998), there is a vast array of possibilities to be considered, and there is also a lack of consensus regarding the most appropriate point of reference for determining the social consequences of a technological development. In a similar vein, the author states that the influence that any technological advance exerts on the configuration of society, traditions, and daily life is inevitable and

undeniable. Historically, the introduction of new technologies has brought about both subtle and profound changes in the way humans interact, work, and relate to each other.

Could this way of adapting the environment for survival and satisfaction of needs be considered a form of care? Or could technique, as enabler and constituent of culture, facilitate and constitute healthcare?

CARE AND TECHNIQUE AS ONTOLOGY OF THE HUMAN

An ontological reading of care in Heidegger, through Hyginus' fable, has significantly influenced nursing by describing the essentiality of care in the configuration of the human (García Uribe, 2021a; Siles González & Solano Ruiz, 2007). This same fable has also been employed in other disciplinary fields to redefine care as a broad conceptual category that transcends human health. For instance, Boff (2002) advocates environmental and Earth care. However, these exegeses often deify care and overlook the possibility of syncretism between technique and care in the essence of what is human. Hyginus' fable begins thus:

> Once when 'Care[1]' was crossing a river, she saw some clay; she thoughtfully took up a piece and began to shape it. While she was meditating on what she had made, Jupiter came by. 'Care' asked him to give it spirit, and this he gladly granted. But when she wanted her name to be bestowed upon it, he forbade this, and demanded that it be given his name instead. While 'Care' and Jupiter were disputing, Earth arose and desired that her own name be conferred on the creature, since she had furnished it with part of her body. They asked Saturn to be their arbiter, and he made the following decision, which seemed a just one: 'Since you, Jupiter, have given its spirit, you shall receive that spirit at its death; and since you, Earth, have given its body, you shall receive its body. But since 'Care' first shaped this creature, she shall possess it as long as it lives. And because there is now a dispute among you as to its name, let it be called '*homo*', for it is made out of *humus* (earth). (Heidegger, 1962, p. 198)

The Heideggerian interpretation emphasizes that care is not merely a potentiality of the human, the original condition of all that is and of "that to which human Dasein belongs for 'its lifetime'. [Instead, care also] emerges in connection with the familiar way of taking man as compounded of body (earth) and spirit" (Heidegger, 1962, p. 199). In the view of this same philosopher, care can be understood to have two distinct meanings. The first is that of eagerness and anxiety, while the second is that of dedication and of being in one's good nature, of being a project, of taking care of one's condition of thrown being.

Building on Heidegger's proposal, Boff (2012) offers an ecological interpretation of the same fable in which Care is the generator and the shaper of the human being (*cura prima finxit*). Care takes responsibility for them throughout their life, providing them with sustenance and care. Thus, human being is the fruit of an act of care that is maintained and prolonged

[1] To understand the etymological and phenomenological relationship between *Cura* and *Care*, see Siles González and Solano Ruiz (2007).

in time and space (*quamdiu vixerit*), at all times and in all circumstances, "as long as the human being lives" (p. 36).

Care, therefore, is not an occasional action but a continuous and dedicated process that persists alongside the individual throughout their lifetime. Care encompasses more than just physical aspects; it involves sustaining and nurturing the growth and realization of human potential in its entirety. Boff also proposes care as a principle of precaution and prevention, as a loving gesture and a protective activity towards the common home. It is precisely this conception of care as a gesture, as a continuous act of gestation, as the very realization of the human which has prompted a reinterpretation of the myth described in *Being and Time* (Heidegger, 1962).

While walking along the river, Care observes and carefully examines the place. This initial form of care could be analogous to what is referred to in nursing as assessment. As defined by the Ministerio de Salud Pública y Bienestar Social[2] (2013), assessment is a planned, systematic, continuous, and deliberate process of gathering and interpreting information to determine the health status of individuals and the response to it. The assessment process involves, from the outset, making important decisions: what information is relevant, what areas are within its competence, what should be the focus of the intervention. These decisions are undoubtedly influenced by nurses' knowledge, skills, conceptualizations, beliefs, and values (p. 42).

From another perspective, the ontogeny of the genus *Homo* was constituted by two fundamental aspects: the development of a specialized physio-anatomy (bipedal posture, pincer grip, and functional and anatomical development of the frontal lobe) and the adoption of technical selection as a mechanism for the acquisition of complexity (Bermúdez de Castro, 2010). Thus, hominization facilitated humanization as a social and cultural process. That is, humanity emerged when a group of primates began to use their limbs to make tools, to such an extent that artificiality became natural, making the creation and habitual use of objects a daily occurrence (Carbonell & Sala, 2000). This presents two seemingly opposing arguments about the human: one that prioritizes technical and instrumental skills, and other that favors social and relational skills.

In the context of nursing, caring requires assessing the patient and their environment. For this purpose, semiotechnics—or maneuvers of exploration and physical examination, such as inspection, palpation, auscultation, and percussion—are utilized. However, to effectively perform this assessment, it is essential to establish a helpful or therapeutic relationship with the patient, through values such as compassion, respect, and empathy (Muñoz Devesa et al., 2014). This symbiosis between values and techniques constitutes the foundation of nursing practice. In this same vein, some authors posit that it is not shared genes but common ideals and values, and their binding force, that produce love and make us capable of sacrificing our lives for others (Instituto Relacional, 2017).

In Heidegger's myth, Care is depicted as meditating, reflecting on her observations. This contemplation evokes something within her that moves her to perform a technical act and mold

[2] Ministry of Public Health and Social Welfare of Paraguay.

clay with her hands to become the efficient cause of the human. She acts as an intermediary between the eternity of gods and the material finitude of human beings. Another fundamental aspect in this passage is the dispute for the name, the naming, the linguistic baptism as an ontological part of the human, within which technique also resides. Language and the forging of the human through care may be, in Heidegger's terms, a mode of "unhiding".

Technique, according to Heidegger (2021), makes present; it is a way of producing and unveiling the truth. However, the German philosopher reveres the technique of the ancients while criticizing contemporary technique. For him, technique, like care, cannot be devoid of *logos*. In the text that bears the same name, he refers to it as *legen* (lay), that is, letting something be placed before and close. It means that what is unveiled and placed before is important and of concern. That is precisely what we care for: that which is unveiled that is close to us and matters to us. Nevertheless, both unveiling and caring require technique (De Gennaro, 2001).

Assessing, in the sense of observing, perceiving, and interacting with the environment, is a biological phenomenon. We are constantly and inevitably assessing. In the context of nursing, it is worth asking: if caring requires assessment, and assessment requires the use of physical examination techniques, could it then be said that without technique there is no care?

In this regard, Carper (1978) proposed the patterns of knowing in nursing care from an epistemological standpoint and building upon an analysis of the conceptual and syntactic structure of nursing knowledge. Carper's framework integrates ethical (moral knowledge), aesthetic (nursing art), empirical (nursing science), and personal (personal knowledge) patterns. From this perspective, it is evident that there are close relationships between the technical and relational dimensions inherent to nursing care. Ignoring this symbiosis between the technical, empirical, artistic, relational, and ethical aspects is to overlook care itself as both a concept and a phenomenon.

Patient experience is a key factor in evaluating the quality of nursing care and heavily relies on nurses' ability to communicate, inform, provide timely support, and extend care beyond routine procedures (Rafii et al., 2021). This involves appropriate gestures and postures, precise words, timely silences, physical contact, and even deviations from guidelines, manuals, and protocols (García Uribe, 2020). Sometimes, objective knowledge and the instrumental or procedural view of care are not sufficient. Another type of *techne* is required, one that encompasses practical knowledge and refers in a unitary way to doing and acting, to knowing how to do and knowing how to act, to considering the context, the situation, the contingency, and the finitude. It is precisely this capacity for adaptation that characterizes human beings.

According to Montoya Suárez (2008), this implies that there is no contradiction between the natural (nature) and the artificial. What we call "artificial" is nothing more than the conscious prolongation (development) of the natural and, to a certain extent, the realm of the *artificial* is *natural* to humans, as it is what distinguishes us from other animals (p. 299).

This is only a glimpse of the phenomenon in the context of nursing. An alternative perspective can be delineated in terms of the hominization and humanization of the human being in

relation to technique and care. As explained by Byock (2012), a broken femur that healed would be one of the vestiges of a group of primates that cared for each other, and through these bonds of care, links were forged that made the first communities and settlements possible. Similarly, Sáez (2019) suggests that compassion and care are critical to the processes of hominization. This can be biologically explained by the physiological immaturity at birth that favors an existential interdependence. Moreover, technique has been described as one of the earliest signs of humanity. Authors such as Harari (2014) argue that archaeological finds of tools are evidence of hominid communities. From this historical and evolutionary perspective, it appears that care and technique are constitutive elements of the process of hominization.

The concept of humanization is more complex, especially because there is no clear consensus on the term. The verb *humanize* refers to the process of making or converting something into human, civilizing it. From its root *humus*, which refers to the earth, it has a somewhat contrary meaning to that of a divine being. Similar references can be identified in the Hebrew *Adam* (man), *Adamah* (earth) (Online Etymology Dictionary, 2022). From this point of view, an initial hermeneutic approach to the verb *humanize* could be made as an action that alludes to conferring human characteristics to something. These characteristics are, in an earthly sense, different from those of deities, suggesting the possibility of imperfections. However, in the fields of health, education, and war, the term *humanize* is typically used in a romantic sense or from a humanistic angle that seems to disregard human imperfections, including selfishness, anger, greed, and avarice.

Conceiving the human as embodying both *Eros* and *Thanatos* could offer a new conceptualization of the term. However, even if we persist in the idea that healthcare and nursing care can be humanized by enhancing the so-called soft skills, the assertion that technique and technology are the main obstacles to humanization and the first steps towards dehumanization makes no sense. In this regard, three arguments related to contemporary technological conceptions could be put forward (Monterroza Ríos et al., 2015):

1. From an instrumental perspective, it can be argued that it is the use of technology that has ethical implications and that technology itself is neutral.
2. Technology is currently embedded in economic and political macro-processes, in a biotechnoscientific model that has led to a form of rationality characteristic of this era, to a subordination of values and knowledge.
3. Technique, understood as a practical set of actions guided and directed by specific objectives, represents the human capacity to intentionally and reflectively modify aspects of reality. In this same line, a systemic view of technology, considering it from Luhmann's and Bertalanffy's standpoints, encompasses physical components (machines, tools, equipment), organized processes and systems (protocols and rules), and social and cultural components (attitudes, values, norms, standards).

Do human beings really lose their essence as thinking, relational, and inherently flawed subjects because of their interaction with artifacts and technology? Or, on the contrary, are we, as humans, so malleable, that we transform and are transformed by artifacts and technical actions like the clay in the myth?

TECHNIQUE AND TECHNOLOGY AS A POSSIBILITY FOR CARE

In a technical world, it is imperative that care and technique complement each other. Regardless of how technical the world becomes—and even if we can speak of technopersons today—humans beings are creatures who care and need to be cared for (Echeverría & Almendros, 2020). A possibilist view of technique and care offers an alternative to technological determinism, acknowledging the ontological symbiosis between technique and care at the dawn of humanity, without assuming technology as the primary cause of neglect and quality issues in care. This perspective allows the problem to be understood as a multifactorial issue. It is therefore necessary to recognize technique as a form of care that encompasses language, therapeutic relationships (Watson, 2012), subjective behaviors, and empirical procedures. As a result, care transforms not only the individual being cared for but also the caregiver.

Technological progress has substantially improved living conditions. Particularly, Elias (1998) posits that it has given way to a *better life*. The author notes that, previously, water for washing and cooking had to be brought into the house from an external source, which entailed a ten-minute walk. Then, water was piped and brought into the house, which improved living conditions and reduced the time of hard labor (p. 455).

In the field of nursing care, the history of various artifacts and tools could also be traced. An illustrative example is that of syringes, which have been constructed from feathers, barrel bellows, reusable glass and plastic, and even catheters and pumps equipped with sensors. Syringes represent a conceptual development in healthcare, as they introduced concepts such as injectable, injection, intravenous, intramuscular, and even a specific field of knowledge, namely injectology (Lépine & Voinot, 2010). Although the collective imagination often associates nurses with the administration of injections, their practice extends beyond this task. Nurses may also engage in research, education, advanced practice, community work, among other activities focused on care as both a concept and a practice.

As a practice, it is impossible to conceive of nursing as non-technical. Even traditional forms of care involve specific techniques, including the preparation of concoctions and the recital of prayers by shamans or the application of strokes and massages by *doulas*[3]. It might even be argued that nursing interventions, such as silent accompaniment or presence[4] (sitting with a patient in silence, merely being present and listening), constitute a technique as long as they involve conscious and intentional actions. All of this implies the utilization of a technical and technological arsenal for care.

From another perspective, care employs language, physical contact, observation, and listening. In nursing, narrative, literary, and artistic methodologies are widely recognized as therapeutic and cathartic tools. Authors such as Watson and Peplau (as cited in Raile Alligood & Marriner

[3] A person, usually a nurse, who helps pregnant women and accompanies them during pregnancy, childbirth, postpartum, and newborn care.
[4] Classified with code 5340 (Bulecheck et al., 2013).

Tommey, 2011) have explored the use of metaphors, tales, and poetry to communicate, transmit, and clarify care. In fact, some linguistic currents describe language as a natural and evolutionary collective technology that has enabled effective communication in increasingly complex social structures (Mesthrie & Bradley, 2018). Thus, in human evolution and ontology, and in the ethical, artistic, empirical, and personal dimensions of nursing, it is impossible to escape from technique as both a possibility and a necessity for care.

This relationship between care and technique is dialogical. Just as care is per se a technical gesture, technique, from a possibilist point of view, implies care—a special way of relating to the world. Care is thus essential for making technology a possibility that is coherent with life itself. Technology, in turn, expands our space of possibilities. As explained by Broncano (2007), our world is a world of possibilities. Our memory is constituted by what has been and by what could not be, by what has been actualized and by unrealized possibilities that have left its mark on our personal or collective memory. Each technological innovation, however slight and minimal, establishes a bifurcation in the possible trajectories (p. 105).

It is, however, necessary to recognize and leverage these possibilities. Precisely at this juncture, care, as rationality and relational emotionality, takes on a superlative value: It is the element that makes it technically feasible what is possible today and what will seem impossible tomorrow.

The advent of artificial intelligence and its increasing implementation in healthcare settings and nursing care (Pailaha, 2023; Seibert et al., 2021) demands further studies to analyze the experiences of nurses and patients in relation to the technification of care. Furthermore, it is crucial to encourage interdisciplinary debate among philosophers, technologists, healthcare professionals, and users of healthcare services to build a more holistic and complex view of the relationship between technique, technology, and human care.

CONCLUSION

Care and technique are neither opposites nor contradictory concepts; they are both intrinsic to the human condition. It is therefore contradictory to speak of dehumanization of humans and care as a result of technique and technology—a perspective particularly popular in nursing science. The idea that the technification of nursing care inevitably leads to dehumanization is a simplistic and reductionist view that fails to capture the complexity of the relationship between these two elements. Consequently, a possibilistic approach to technology and a conceptualization of care and technique are necessary to acknowledge that both Eros and Thanatos converge in the human nature.

Technology makes care possible, and care enables more equitable and responsible technical action and technological production. Technique and technology should not be regarded as threats to quality care but as ontological constituents of it and, in this sense, they configure a horizon of possibilities for care. Likewise, innovation itself does not lead to a loss of sensitivity; on the contrary, sensitivity fosters innovation. Considering this, a reinterpretation of the myth

of care to acknowledge technique as part of human ontology can be crucial; not to deify it after the death of God but to allow care to shape the clay under the divine chronometer's gaze and temporal judgment. Because care is the possibility of existence, even of technical and technological existence.

CONFLICTS OF INTEREST

The authors declare that they have no financial, professional, or personal conflicts of interest that may inappropriately influence the results achieved or the interpretations proposed.

AUTHORSHIP CONTRIBUTION

All authors contributed to the conceptual development of ideas, the design of concepts, the insights gained, and the drafting and final version of this article.

REFERENCES

Bermúdez de Castro, J. M. (2010). *La evolución del talento de Atapuerca a Silicon Valley*. Debate.

Boff, L. (2002). *El cuidado esencial. Ética de lo humano, compasión por la Tierra*. Editorial Trotta.

Boff, L. (2012). *El cuidado necesario*. Editorial Trotta.

Broncano, F. (2007). Diseños técnicos y capacidades prácticas. Una perspectiva modal en filosofía de la tecnología. *Eidos,* (6), 78-121. https://rcientificas.uninorte.edu.co/index.php/eidos/article/view/1490

Bulecheck, G. M., Butcher, H. K., Dochterman, J. M., & Wagner, C. M. (2013). *Clasificación de intervenciones de enfermería (NIC)* (6.ª Ed.). Elsevier España.

Byock, I. (2012). *The Best Care Possible. A Physician's Quest to Transform Care Through the End of Life.* Thorndike Press.

Campos Sivalli, C. M., Silva Buffette, B. R., Forlin, D. C., Trapé, C. A., & Lopes Oliveira, I. D. (2014). Emancipatory practices of nurses in primary health care: The home visit as an instrument of health needs assessment. *Revista da Escola de Enfermagem da USP*, *48*(spe), 116-121. https://doi.org/10.1590/S0080-623420140000600017

Carbonell, E., & Sala, R. (2000). *Planeta humano*. Ediciones Península.

Carper, B. A. (1978). Fundamental Patterns of Knowing in Nursing. *Advances in Nursing Science, 1*(1), 13-24. https://doi.org/10.1097/00012272-197810000-00004

De Gennaro, I. (2001). *Logos—Heidegger liest Heraklit*. Duncker & Humblot.

del Valle Solórzano, K. S. (2021). La sobrecarga laboral del personal de enfermería que influye en la atención a pacientes. *Revista San Gregorio*, (47), 168-183. https://revista.sangregorio.edu.ec/index.php/REVISTASANGREGORIO/article/view/1966

Díaz de Flores, L., Durán de Villalobos, M. M., Gallego de Pardo, P., Gómez Daza, B., Gómez de Obando, E., González de Acuña, Y., Gutiérrez de Giraldo, M. del C., Hernández Posada, Á., Londoño Maya, J. C., Moreno Fergusson, M. E., Pérez Giraldo, B., Rodríguez Carranza, C., Rozo de Arévalo, C., Umaña de Lozano, C., Valbuena, S., Vargas Márquez, R., & Venegas Bustos, B. C. (2002). Análisis de los conceptos del modelo de adaptación de Callista Roy. *Aquichan*, *2*(1), 19-23. https://aquichan.unisabana.edu.co/index.php/aquichan/article/view/18

Echeverría, J., & Almendros, L. S. (2020). *Tecnopersonas. Como las tecnologías nos transforman* (2.ª ed.). TREA.

Elias, N. (1998). *La civillización de los padres y otros ensayos*. Norma.

Elío-Calvo, D. (2016). La deshumanización de la medicina. *Cuadernos Hospital de Clínicas*, *57*(3), 82-89. http://www.scielo.org.bo/scielo.php?script=sci_arttext&pid=S1652-67762016000300013

Erol Ursavaş, F., Karayurt, Ö., & İşeri, Ö. (2014). Nursing Approach Based on Roy Adaptation Model in a Patient Undergoing Breast Conserving Surgery for Breast Cancer. *The Journal of Breast Health*, *10*(3), 134-140. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5351537/

Garcia, J. C. (2022). Burnout as a social pathology in nursing professionals: An analysis based on the theory of recognition. *Revista Brasileira de Medicina do Trabalho*, *20*(3), 505-512. https://doi.org/10.47626/1679-4435-2022-771

García Uribe, J. C. (2020). Cuidar del cuidado: Ética de la compasión, más allá de la protocolización del cuidado de enfermería. *Cultura de los Cuidados,* (57), 52-60. https://doi.org/10.14198/cuid.2020.57.05

García Uribe, J. C. (2021a). Cuidar en la era tecnocientífica: De la finitud al superhombre. *Cultura de los Cuidados*, (59), 50-59. https://doi.org/10.14198/cuid.2021.59.07

García Uribe, J. C. (2021b). La deconstrucción de la humanización: hacia la dignificación del cuidado de la salud. *Cultura de los Cuidados*, (60), 19-32. https://culturacuidados.ua.es/article/view/2021-n60-La-deconstrucci%C3%B3n-de-la-humanizaci%C3%B3n-hacia-la-dignifi

García Uribe, J. C. (2021c). Trascender la humanización del cuidado: El reto de la enfermería del siglo XXI. *CES Enfermería*, *2*(1), 1-3. https://revistas.ces.edu.co/index.php/enfermeria/article/view/6259

García Uribe, J. C., & Zapata Muriel, F. A. (2022). Covid-19, cuidar entre mascarillas, pantallas y un espacio-tiempo peligrosamente contagioso: una lectura fenomenológica. *Cultura de los Cuidados*, (64), 19-31. https://doi.org/10.14198/cuid.2022.64.03

Gracia, D. (2004). *Como arqueros al blanco. Estudios de Bioética*. TRIACASTELA.

Harari, Y. N. (2014). *Sapiens: De animales a dioses. Breve historia de la humanidad*. DEBATE.

Heidegger, M. (1962). *Being and Time*. Blackwell Publishers.

Heidegger, M. (2021). *La pregunta por la técnica*. Herder.

Hendricks, J., & Baume, P. (1997). The pricing of nursing care. *Journal of Advanced Nursing*, *25*(3), 454-462. https://doi.org/10.1046/j.1365-2648.1997.1997025454.x

Instituto Relacional. (2017). *Juntos, la clave de nuestro éxito evolutivo. Conversaciones con Ignacio Martínez Mendizábal.* https://www.institutorelacional.org/wp-content/uploads/Juntos-la-clave-de-nuestro-exito-evolutivo-librito-ilovepdf-compressed.pdf

Kamler, J. J., Taube, S., Koch, E. J., Lauria, M. J., Kue, R. C., & Rush, S. C. (2023). Effectiveness of and Adherence to Triage Algorithms During Prehospital Response to Mass Casualty Incidents. *Journal of Special Operations Medicine*, *23*(1), 59-66. https://doi.org/10.55460/73Y0-FSLB

Kopf, E. W. (1916). Florence Nightingale as Statistician. *American Statistical Association*, *15*(116), 388-404. https://doi.org/10.2307/2965763

Lépine, P., & Voinot, J. (2010). Une brève histoire de la seringue. *Histoire des Sciences médicales, 44*(1), 49-53. https://www.biusante.parisdescartes.fr/sfhm/hsm/HSMx2010x044x001/HSMx2010x044x001x0049.pdf

Mesthrie, R., & Bradley, D. (2018). *The dynamics of language: Plenary and focus lectures from the 20th International Congress of Linguists, Cape Town, July 2018*. UCT Press.

Ministerio de Salud Pública y Bienestar Social. (2013). Proceso de Atención de Enfermería (PAE). *Revista de salud pública del Paraguay*, *3*(1), 41-48. https://docs.bvsalud.org/biblioref/2018/11/964686/41-48.pdf

Monterroza Ríos, Á., Escobar, J. M., & Mejía Escobar, J. A. (2015). Por una revaloración de la filosofía de la técnica. Un argumento a favor del rol cultural de la técnica. *Revista CTS*, *10*(30), 265-275. https://dialnet.unirioja.es/servlet/articulo?codigo=5735562

Montoya Suárez, O. (2008). De la téchne griega a la técnica occidental moderna. *Scientia et Technica*, *2*(39), 298-303. https://revistas.utp.edu.co/index.php/revistaciencia/article/view/3235

Muñoz Devesa, A., Morales Moreno, I., Bermejo Higuera, J. C., & Galán González Serna, J. M. (2014). La Relación de ayuda en Enfermería. *Index de Enfermería*, *23*(4), 229-233. https://doi.org/10.4321/S1132-12962014000300008

Omboni, S., Padwal, R. S., Alessa, T., Benczúr, B., Green, B. B., Hubbard, I., Kario, K., Khan, N. A., Konradi, A., Logan, A. G., Lu, Y., Mars, M., McManus, R. J., Melville, S., Neumann, C. L., Parati, G., Renna, N. F., Ryvlin, P., Saner, H., … Wang, J. (2022). The worldwide impact of telemedicine during COVID-19: Current evidence and recommendations for the future. *Connected Health And Telemedicine*, *1*(1), 7-35. https://doi.org/10.20517/ch.2021.03

Online Etymology Dictionary. (2022, 07 de septiembre). *Humanize.* https://www.etymonline.com/word/humanize

Osorio Castaño, J. H. (2016). Patrón de conocimiento socio-político en enfermería: Reflexiones conceptuales. *Revista Cuidarte*, *7*(2), 1352-1357. https://doi.org/10.15649/cuidarte.v7i2.319

Pailaha, A. D. (2023). The Impact and Issues of Artificial Intelligence in Nursing Science and Healthcare Settings. *SAGE Open Nursing*, *9*, 1-4. https://doi.org/10.1177/23779608231196847

Peres, M. A. D. A., Aperibense, P. G. G. D. S., Dios-Aguado, M. D. L. M. D., Gómez-Cantarino, S., & Queirós, P. J. P. (2021). The Florence Nightingale's nursing theoretical model: A transmission of knowledge. *Revista Gaúcha de Enfermagem*, *42*(spe), 1-7. https://doi.org/10.1590/1983-1447.2021.20200228

Pimentel, M. A. F., Redfern, O. C., Gerry, S., Collins, G. S., Malycha, J., Prytherch, D., Schmidt, P. E., Smith, G. B., & Watkinson, P. J. (2019). A comparison of the ability of the National Early Warning Score and the National Early Warning Score 2 to identify

patients at risk of in-hospital mortality: A multi-centre database study. *Resuscitation*, *134*, 147-156. https://doi.org/10.1016/j.resuscitation.2018.09.026

Quintanilla, M. Á. (1998). Técnica y cultura. *Teorema*, *17*(3), 49-69.

Rafii, F., Nikbakht Nasrabadi, A., & Javaheri Tehrani, F. (2021). The omission of some patterns of knowing in clinical care: A qualitative study. *Iranian Journal of Nursing and Midwifery Research*, *26*(6), 508-514. https://journals.lww.com/jnmr/fulltext/2021/26060/the_omission_of_some_patterns_of_knowing_in.6.aspx

Raile Alligood, M., & Marriner Tommey, A. (2011). *Modelos y teorías en enfermería* (6.ª ed.). Elsevier.

Rojas Reyes, J., Rivera Álvarez, L. N., & Medina Moya, J. L. (2019). Los currículos en enfermería y el desarrollo de las Competencias interpersonales: El caso de Colombia. *Index de Enfermería*, *28*(4), 223-227. https://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1132-12962019000300013&lng=es&nrm=iso&tlng=es

Sáez, R. (2019). *Evolución humana: Prehistoria y origen de la compasión*. Almuzara.

Seibert, K., Domhoff, D., Bruch, D., Schulte-Althoff, M., Fürstenau, D., Biessmann, F., & Wolf-Ostermann, K. (2021). Application Scenarios for Artificial Intelligence in Nursing Care: Rapid Review. *Journal of Medical Internet Research*, *23*(11), 1-32. https://doi.org/10.2196/26522

Siles González, J., & Solano Ruiz, M. del C. (2007). El origen fenomenológico del "cuidado" y la importancia del concepto de tiempo en la historia de la enfermería. *Cultura de los Cuidados Revista de Enfermería y Humanidades*, (21), 19-27. https://doi.org/10.14198/cuid.2007.21.04

Watson, J. (2012). *Human Caring Science: A Theory of Nursing* (2.ª Ed). Jones & Bartlett Learning.

Young, P., Hortis De Smith, V., Chambi, M. C., & Finn, B. C. (2011). Florence Nightingale (1820-1910), a 101 años de su fallecimiento. *Revista médica de Chile*, *139*(6), 807-813. https://doi.org/10.4067/S0034-98872011000600017