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**Facilitating Interdisciplinary Knowledge Organization
in Bioethics**

A Review of Existing Approaches

Abstract

This paper aims to explore and analyse the landscape of existing knowledge organization systems and approaches, such as thesauri and classification systems, developed to organize and facilitate access to bioethical literature. The primary goal is to understand the methodologies and frameworks used in these systems, highlighting their strengths and limitations in supporting interdisciplinary and transdisciplinary research in bioethics. By examining how these systems categorize and structure bioethical concepts, the review seeks to identify common challenges and propose potential improvements for enhancing the accessibility and comprehensiveness of subject access to bioethical information. The aim of the review is to contribute to the ongoing development of pluriperspectivity and robustness of knowledge organization systems that reflect the evolving discipline of bioethics. The paper is based on a doctoral dissertation of the author.

Keywords

Knowledge organization systems, KOS, bioethics, interdisciplinarity

Introduction

Information and documentation infrastructure remains the backbone of contemporary scientific endeavours in all domains of knowledge. With the advent of the internet and the World Wide Web which revolutionized scientific communication, large electronic literature databases changed the way scientists search for scientific information. Researchers now have instant access to a vast array of scholarly articles, journals, and data sets from around the globe, significantly accelerating the pace of discovery and collaboration. These databases, often equipped with advanced search algorithms and citation indexing, enable scientists to conduct comprehensive literature reviews, stay abreast of the latest developments in their fields, and identify potential gaps in knowledge that require further exploration. As a result, the traditional barriers to information dissemination have been reduced, fostering a more interconnected and dynamic scientific community where interdisciplinary research and innovation can thrive.

The content of these databases is carefully managed by employing the practices and principles of knowledge organization which provides systematic methods to categorize, index, and retrieve scientific information effectively. Taxonomies, ontologies, and controlled vocabularies are employed to structure large volumes of data, ensuring that relevant information can be easily located and utilized by researchers. Application of such knowledge organization systems are crucial in navigating the vast and ever-expanding body of scientific literature, enabling researchers to pinpoint specific studies, track

the evolution of research topics, and connect related works across disciplines. By promoting interoperability and enhancing the precision of information retrieval, knowledge organization underpins the efficiency and effectiveness of contemporary scientific research, allowing scientists to build upon existing knowledge and push the boundaries of scientific discovery. According to the influential definition by Birger Hjørland,¹ knowledge organization, in a narrower sense, “is concerned with the nature and quality of [...] knowledge organizing processes (KOP) as well as the knowledge organizing systems (KOS) used to organize documents, document representations, works and concepts”. In a broader sense, a knowledge organization deals with “the social division of mental labor, i.e. the organization of universities and other institutions for research and higher education, the structure of disciplines and professions, the social organization of media, the production and dissemination of ‘knowledge’ etc.”.²

This paper³ aims to explore and analyze the landscape of existing knowledge organization systems and approaches, such as thesauri and classification systems, developed to organize and facilitate access to bioethical literature. The primary goal is to understand the methodologies and frameworks used in these systems, highlighting their strengths and limitations in supporting interdisciplinary and transdisciplinary research in bioethics. By examining how these systems categorize and structure bioethical concepts, the review seeks to identify common challenges in enhancing the accessibility and comprehensiveness of subject access to bioethical information. The aim of the review is to contribute to the ongoing development of pluriperspectivity and the robustness of knowledge organization systems that reflect the evolving discipline of bioethics.

Historically, there has been a high level of coordination among ethical and bioethical institutions worldwide, leading to various initiatives that provide documentation support on both national and international levels. These initiatives emerged due to the substantial volume and impact of research in the fields of ethics and bioethics, reflecting their relevance across different aspects of life. Primarily driven by the importance of ethical considerations in medicine, these efforts resulted in the establishment of extensive bilateral and multilateral cooperations. To date, these cooperations continue to support the information needs of those seeking relevant sources in the fields of ethics and bioethics. While some of the efforts to provide information and documentary support in the wide field of ethics will be mentioned and considered, this review will primarily focus on the characteristics of knowledge organization in the field of bioethics.

Why is Bioethics Interesting to KO?

A sufficient incentive for considering the ways of organizing knowledge in the field of ethics could generally be the already prevalent lay opinion that it is one of those knowledge domains which are plagued by exceptional ambiguity. However, this chapter will explain fundamental information about bioethics as a field, and then about the specific conceptualization of integrative bioethics, which redefines the field of bioethics as an area of pronounced interdisciplinary and transdisciplinary character, making it of significant interest for the field of knowledge organization. In order to explain the origins of this interest, before bioethics is introduced, we must also consider the current character of the academic debate in the field of knowledge organization.

Such a counterposition of these two concepts will allow us to discern the key problem areas of information and documentation support provision in bioethics. This effort will be aided by a short description of prominent knowledge organization systems in the field.

On KO

Knowledge organization, as a discipline of librarianship and information sciences, has a long scientific-research and professional tradition. In the past 25 years, a number of authors⁴ have emerged who, within the advocacy of multidisciplinary, interdisciplinary, and transdisciplinary approaches, discuss the problem of the disciplinary foundation of knowledge organization. The disciplinary foundation in knowledge organization is evident in the very structures of widely spread knowledge organization systems, such as the Universal Decimal Classification. Numerous authors in the field criticize such a basis for knowledge organization for its one-dimensionality, i.e., mono-perspectivism.

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Birger Hjørland, “What is knowledge organization (KO)?”, *Knowledge Organization* 35 (2008) 2–3, pp. 86–101, doi: <https://doi.org/10.5771/0943-7444-2008-2-3-86>.

2

Ibid., p. 86.

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The paper is based on a published doctoral dissertation of the author titled *Viewpoint Warrant in Transdisciplinary Knowledge Organization [Jamstvo perspektive u transdisciplinarnoj organizaciji znanja]* which was defended at the Faculty of Humanities and Social Sciences, University of Zagreb, on 8 November 2021.

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Birger Hjørland, Hanne Albrechtsen, “Toward a new horizon in information science. Domain-analysis”, *Journal of the American Society for Information Science* 46 (1995) 6, pp. 400–425, doi: [https://doi.org/10.1002/\(SICI\)1097-4571\(199507\)46:6<400::AID-ASIJ2>3.0.CO;2-Y](https://doi.org/10.1002/(SICI)1097-4571(199507)46:6<400::AID-ASIJ2>3.0.CO;2-Y); Vanda Broughton, “Facet analytical theory as a basis for a knowledge organization tool in a subject portal”, in: *Challenges in Knowledge Representation and Organization for the 21st Century: Integration of Knowledge across Boundaries. Presented at the Seventh International ISKO Conference, 10–13 July 2002, Granada, Spain, Granada*, Nomos Verlag, Baden-Baden 2002, pp. 135–142; Claudio Gnoli, Mela Bosch, Fulvio Mazzochi, “A new relationship for multidisciplinary knowledge organization systems. Dependence”, in: Blanca Rodríguez Bravo, María Luisa Alvite Díez (eds.), *Actas Del VIII Congreso ISKO-España, León, 18, 19 y 20 de Abril de 2007. Presented at the La interdisciplinariedad y la transdisciplinariedad en la organización del*

conocimiento científico: Interdisciplinarity and transdisciplinarity in the organization of scientific knowledge, Servicio de Publicaciones, León 2007, pp. 399–410; “Leon Manifesto”, 2021. Available at: <http://www.iskoi.org/ilc/leon.php> (accessed on 25 May 2021); Claudio Gnoli, “Ten long-term research questions in knowledge organization”, *Knowledge Organization* 35 (2008) 2–3, pp. 137–149, doi: <https://doi.org/10.5771/0943-7444-2008-2-3-137>; Fiona Cameron, Sarah Mengler. “Complexity, transdisciplinarity and museum collections documentation. Emergent metaphors for a complex world”, *Journal of Material Culture* 14 (2009), pp. 189–218, doi: <https://doi.org/10.1177/1359183509103061>; Antonio García Gutiérrez, “Declassification in knowledge organization. A post-epistemological essay”, *Transinformação* 23 (2011), pp. 5–14, doi: <https://doi.org/10.1590/S0103-37862011000100001>; Michael Kleineberg, “Integrative levels of knowing. An organizing principle for the epistemological dimension”, in: Babik Wiesław (ed.), *Knowledge Organization in the 21st Century: Between Historical Patterns and Future Prospects. Proceedings of the Thirteenth International ISKO Conference (Kraków, Poland, May 19–22, 2014). Advances in Knowledge Organization, No. 1*, Ergon, Würzburg 2014, pp. 80–87; Hanne Albrechtsen, “This is not domain analysis”, *Knowledge Organization* 42 (2015) 8, pp. 557–561, doi: <https://doi.org/10.5771/0943-7444-2015-8-557>; Maria J. López-Huertas, “Domain analysis for interdisciplinary knowledge domains”, *Knowledge Organization* 42 (2015) 8, pp. 570–580, doi: <https://doi.org/10.5771/0943-7444-2015-8-570>; Rick Szostak, Claudio Gnoli, Maria J. López-Huertas, *Interdisciplinary Knowledge Organization*, Springer International Publishing, Cham 2016.

Their alternative considerations are characterized by the evocation of the concept of perspective⁵ and the advocacy of a multi-perspective organization of knowledge. The aforementioned one-dimensionality of existing systems cannot meet contemporary demands for facilitated access to knowledge in interdisciplinary and transdisciplinary projects and research areas.

In the traditional view, which dates back to 1846 and Melvil Dewey's decimal classification (DDC), the task of knowledge organization is to represent the order of nature from the perspective of scientific knowledge, that is, the way in which disciplines, as units of the social organization of science, reveal and describe the structures of reality.⁶ The field of knowledge organization has experienced many significant conceptual contributions, such as faceted classification, analytical-synthetic classification approaches, the information retrieval tradition, user approaches, and bibliometrics.⁷ The landscape of the knowledge organization field and the projects that emerge within it are the result of continued support to information needs in all social contexts where the activity of knowledge organization is relevant and necessary. Knowledge organization is in a stage of reorientation, and it could even be said that there is a paradigm shift from domain-focused approaches to approaches that model relationships between a larger number of knowledge domains. This reorientation is not merely a reflection of some internal dynamics within the field of knowledge organization. The changes in the field mentioned here are a reflection of changes in the global information context, which is becoming saturated with highly complex problems (e.g., global warming, the coronavirus pandemic, hunger, data protection, space exploration, etc.), whose resolution cannot be left to, or achieved within, the frameworks of individual, isolated sciences or the will of selected individuals or specific socio-political interest groups. According to Szostak et al.,⁸ interdisciplinarity becomes necessary and sought after because the solutions of specialized experts for society's complex problems are recognized as insufficient.

On Bioethics

The year 1962 is usually considered the historical moment marking the origin of bioethics, when the first ethics committee was established in the United States.⁹ Its establishment was marked by severe ethical dilemmas about preserving the lives of selected individuals under conditions of limited resources.¹⁰ This so-called 'God Committee' had to decide which patients would be given access to treatment using the then innovative dialysis machine, which could not become available quickly enough to all patients.¹¹ Interestingly, this committee consisted not only of doctors but also of people from other spheres of society. According to Zagorac and Jurić,¹² this led to the introduction of a "new kind of reflection" and a "new medical ethics, later bioethics, opposed to the traditional Hippocratic medical ethics". The term was originally attributed to Van Rensselaer Potter,¹³ and later to Fritz Jahr as a precursor to modern bioethics.¹⁴ Potter's approach to bioethics, known as global bioethics, challenged the anthropocentric and individualistic orientations of medical ethics, expanding the horizon of bioethics to the survival of species (human and non-human living beings) and the planet's ecosystem as a whole in the context of the moral dilemmas produced by scientific and technical progress.¹⁵ According to Zagorac and Jurić,¹⁶ "a shift also occurs on the methodological level, where bioethics surpasses immediate moral reflection, characteristic of the first period in the development of bioethics, and elevates to the level of ethical reflection".

The American bioethicist Sodeke¹⁷ equates integrative bioethics, among other characteristics, with an interdisciplinary approach to bioethics:

“Integrative bioethics is holistic, interdisciplinary, multidisciplinary, and transdisciplinary.”

According to Sodeke,

“Integrative bioethics, [...] engages diverse audiences and disciplines in addressing real life issues, and of which mainstream bioethics and public health ethics are parts, is worth considering. It provides an opportunity for integration of broadly construed bioethics, which can address ethical challenges in individual, community, environmental, and animal health, and identify options that will guide development of policies and laws.”¹⁸

Evocating the guiding principle of the Tuskegee University National Center for Bioethics in Research and Health Care he points out that ethical deliberation alone is not enough for effective moral reasoning.¹⁹

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“Leon Manifesto”; C. Gnoli, “Ten long-term research questions in knowledge organization”; F. Cameron, S. Mengler, “Complexity, transdisciplinarity and museum collections documentation. Emergent metaphors for a complex world”; A. García Gutiérrez, “Declassification in knowledge organization. A post-epistemological essay”; Mauri Kaipainen, Antti Hautamäki, “Epistemic pluralism and multi-perspective knowledge organization. Explorative conceptualization of topical content domains”, *Knowledge Organization* 38 (2011) 6, pp. 503–514, doi: <https://doi.org/10.5771/0943-7444-2011-6-503>; Claudio Gnoli, “Metadata about what? Distinguishing between ontic, epistemic, and documental dimensions in knowledge organization”, *Knowledge Organization* 39 (2012) 4, pp. 268–275, doi: <https://doi.org/10.5771/0943-7444-2012-4-268>; Maria J. López-Huertas, “Reflexions on multidimensional knowledge. Its influence on the foundation of knowledge organization”, *Knowledge Organization* 40 (2013) 6, pp. 400–407, doi: <https://doi.org/10.5771/0943-7444-2013-6-400>; Antonio García Gutiérrez, “Declassifying Knowledge Organization”, *Knowledge Organization* 41 (2014) 5, pp. 393–409, doi: <https://doi.org/10.5771/0943-7444-2014-5-393>; M. Kleineberg, “Integrative levels of knowing. An organizing principle for the epistemological dimension”; M. J. López-Huertas, “Domain analysis for interdisciplinary knowledge domains”; R. Szostak, C. Gnoli, M. J. López-Huertas, *Interdisciplinary knowledge organization*.

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B. Hjørland, H. Albrechtsen, “Toward a new horizon in information science: domain-analysis”.

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Ibid.

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R. Szostak, C. Gnoli, M. J. López-Huertas, *Interdisciplinary knowledge organization*.

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Ivana Zagorac, Hrvoje Jurić, “Bioetika u Hrvatskoj”, *Filozofska istraživanja* 28 (2008) 3, pp. 601–611.

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Ibid.

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Ibid.

12
Ibid., p. 602.

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Ibid.

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Marko Kos, “Od Fritza Jahra do integrativne bioetike. Prikaz razvoja jedne ideje”, *Filozofska istraživanja* 34 (2014) 1–2, pp. 229–240.

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I. Zagorac, H. Jurić, “Bioetika u Hrvatskoj”.

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Ibid., p. 603.

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Stephen O. Sodeke, Wylin D. Wilson, “Integrative Bioethics is a Bridge-Builder Worth Considering to Get Desired Results”, *The American Journal of Bioethics* 17 (2017) 9, pp. 30–32, doi: <https://doi.org/10.1080/15265161.2017.1353174>.

18
Ibid., p. 32.

19
Ibid.

This importance of the distinction between the focus of bioethics on moral versus ethical reflection and the development from new medical ethics to integrative bioethics was highlighted by Čović²⁰ in an article dealing with the conceptual delineations of the terms *morality*, *ethics*, *medical ethics*, *bioethics*, and *integrative bioethics*. These distinctions will be relevant for a critical review of classification in the field of bioethics and will be briefly explained here. Čović²¹ defines morality as “the standards by which [a person] should conduct themselves and judge the correctness of their actions”, and emphasizes that the reflection by which the moral correctness of intention is assessed is called moral reflection. Ethics, in contrast, “has the task of theoretically explaining morality” and Čović²² defines it as the reflection “on morality called ethical reflection”. He distinguishes ethical reflection in a broader sense as “thinking about the moral phenomenon” from the narrower sense as philosophical ethical reflection.²³ He particularly emphasizes that it is legitimate to talk about the pluralism of ethical theories and positions, but that we cannot, conversely, theoretically legitimately talk about the pluralism of moral positions, i.e., moral relativism,²⁴ Finally, he defines medical ethics as a specialized or particular ethics.²⁵

Čović²⁶ establishes these delineations to describe bioethics as an autonomous discipline that did not arise from philosophical or medical ethics but as a field emerging from the new medical situation as described by Zagorac and Jurić.²⁷ Čović believes that the circumstances of the emergence of bioethics showed that

“... orientation in the moral dilemmas brought about by scientific and technical progress should be sought outside science itself, in the interaction of scientific disciplines and extra-scientific, ethical, and cultural perspectives”.²⁸

According to Čović,²⁹ the development of the field of bioethics can be systematically presented in three developmental phases:

- the developmental phase of “new medical ethics”, methodologically defined by immediate moral reflection, i.e., principlism in the narrower context of healthcare and biomedical research;
- the developmental phase of “global bioethics”, the already described stage of scientific interdisciplinarity and ethical pluralism in a broader global-ecological and socio-political context with an expanded focus on life issues;
- the developmental phase of “integrative bioethics”, where the field is defined as a “pluriperspective area in which, through the interaction of diverse perspectives, bases for orientation in questions concerning life or the conditions of its maintenance are created”.³⁰

The context of the Republic of Croatia is relevant for the discussion on interdisciplinarity of bioethics due to the prevalence of authors debating that outlook compared to other countries of the world.³¹ It is relevant to mention that the acceleration of Croatian bioethics development in the 1990s can be attributed, on one hand, to the work of Ivan Šegota and the Department of Social Sciences at the Faculty of Medicine, University of Rijeka, whose contribution was primarily in the development and spread of bioethical education, and on the other hand, to the organization of scientific gatherings specifically focused on bioethical topics within events such as the *Days of Frane Petrić* and later the *Lošinj Days of Bioethics*. An important moment tied to the first mentioned event, considered the beginning of bioethical discussion

in Croatia, is the symposium *Challenges of Bioethics* held in 1998 in Cres. The latter event gradually became an internationally significant occasion and a centre for scientific communication in the field of bioethics in Southeast Europe.³² The community that gathered around these events began then to operate within the social context, shaping critical reflections on the legal and social treatment of different bioethical issues, and became an influential community that included scientists and experts from various disciplines, as well as the interested public and civil associations.³³ Such an approach to bioethics itself and bioethical issues is articulated by Ante Čović as a specific conception of bioethics called *integrative bioethics*.³⁴

Ante Čović³⁵ defines integrative bioethics within the concept of orientational knowledge and the critique of monoperspectivism in the scientific-technical epoch. He opposes the perspectival one-sidedness of scientific-technical civilization with the concept of pluriperspectivism, explaining that it does not signify some kind of relativistic perspectivism. On the contrary, he emphasizes that perspectives on ethical issues should not be viewed as isolated and equivalent ways of looking at a subject but advocates for “a perspectivism that involves interactive, or integrative pluralism of perspectives”, and that only as such “can it justifiably claim to achieve universally valid knowledge”.³⁶ He divides perspectives into scientific, normative, and cultural perspectives, where scientific perspectives include empirical and exact scientific perspectives, normative ones encompass directions and traditions of the philosophical discipline and theology, and cultural ones include those perspectives whose bearers “can be various protagonists of civil life, social movements, political positions and programs, established worldviews, religious institutions and

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Ante Čović, “Pojmovna razgraničenja: moral, etika, medicinska etika, bioetika, integrativna bioetika”, in: Ante Čović, Marija Radonić, (eds.), *Bioetika i dijete. Moralne dileme u pedijatriji*. Hrvatsko društvo za preventivnu i socijalnu pedijatriju, Pergamena, Zagreb 2011, pp. 11–24.

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Ibid., p. 12.

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Ibid., p. 12.

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Ibid., p. 13.

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Ibid.

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Ibid.

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Ibid.

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I. Zagorac, H. Jurić, “Bioetika u Hrvatskoj”.

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A. Čović, “Pojmovna razgraničenja: moral, etika, medicinska etika, bioetika, integrativna bioetika”, p. 18.

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Ibid.

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Ibid., p. 21.

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See the bibliometrical description of the field of integrative bioethics in Denis Kos, *Jamstvo perspektive u transdisciplinarnoj organizaciji znanja* (dissertation), Faculty of Humanities and Social Sciences, University of Zagreb, Zagreb 2021.

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A. Čović, “Pojmovna razgraničenja: moral, etika, medicinska etika, bioetika, integrativna bioetika”.

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Ibid.

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Ibid.

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Ante Čović, “Pluralizam i pluriperspektivizam”, *Filozofska istraživanja* 26 (2006) 1, pp. 7–12.

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Ibid., p. 9.

teachings, moral reflections, artistic achievements and programs, media, public opinion, etc.”³⁷

The roots of such a multi-, inter- and transdisciplinary approach to bioethics appears as a reaction to what is called ‘mainstream’ or Georgetown bioethics and its insufficiencies.³⁸ The term “Georgetown bioethics” is a simplification which aims to describe a particular reductive view on bioethics which became the basis of a scientific establishment promoted by bioethicists affiliated with Georgetown University. This reductivity persists in contributions following, or being reflective of a strict monodisciplinary definition of bioethics explained by Jurić³⁹ as the narrow definition of bioethics as a biomedical ethics. The nature of this contentious relationship between mono- and interdisciplinary views of bioethics has relevance for knowledge organization in the field.

Works that focus on defining bioethics conceptually are especially relevant for discussions about classifying and allowing access to works that follow or contribute to interdisciplinary notions of bioethics and related concepts. According to Jurić,⁴⁰ there is no single definition of bioethics; rather, the field is characterized by a pluralism of interpretations that significantly influence how its intellectual products are framed. Jurić categorizes bioethics’ definitions into several groups based on the authors who support or have supported specific definitions of the field. Here are the key kinds of definitions according to Jurić:

1. “as a discipline that deals with questions of clinical practice, health systems, biological, biomedical, and pharmaceutical research, as well as other issues of human life and health in general”;⁴¹
2. “as an interdisciplinary science of survival whose main goal is to build bridges between the humanities and natural sciences”;⁴²
3. “as a part of philosophical ethics, or more precisely, as a branch of applied ethics”;⁴³
4. as “an open area of encounter and dialogue between different sciences and activities, and various approaches and worldviews, gathering to articulate, discuss, and solve ethical issues related to life, life as a whole, and in every part of that whole, for life in all its forms, levels, phases, and manifestations”.⁴⁴

The first set of definitions is notably anthropocentric, neglecting issues of nature and the environment as a whole, and according to Jurić,⁴⁵ reduces bioethics to new medical ethics and biomedical ethics. The second set of definitions expands the scope of bioethics to global-ecological issues, representing the beginning of a definition that does not limit bioethics to disciplinary interpretations. In contrast, Jurić⁴⁶ explains the inconsistencies of attempts to strictly define bioethics and ultimately offers his own definition, aiming to show that the complexity of bioethics cannot be “understood from the perspective of one science or one area of knowledge”.⁴⁷ Jurić also argues that it is not enough to merely define the topics or the area of bioethics; it is necessary to place it within the framework of the existing system of knowledge and science.⁴⁸ These delineations cannot be ignored when envisioning knowledge organization in bioethics.

Information and Documentation Support in Bioethics

As was noted in the introductory chapter there is a high level of coordination among ethical and bioethical institutions worldwide, leading to the establishment of much needed semantic architecture supporting knowledge retrieval and access to scientific information in those fields. This collaboration is the result of a response to a long-standing information and knowledge organization need to integrate scattered information and documental systems and coordinate access to bioethical literature worldwide. Prior to 2000 the key institution offering somewhat coordinated access to these materials was the Kennedy Institute of Ethics at Georgetown University. However, with the advance and development of large electronic resource databases in medical sciences, a decision was made to integrate the existing system called *BioethicsLine*,⁴⁹ which, under the direction of the U.S. National Library of Medicine, compiled literature on bioethical issues from 1972 to 1999⁵⁰ into MEDLARS (Medical Literature Analysis and Retrieval System), one of the main academic databases in the field of medicine, better known in its online version as MEDLINE.⁵¹

The sentiment in the ethics community about closing the *BioethicsLine* system is perhaps best described in the short debate documented in the *American Journal of Bioethics*. In an article by Joyce Plaza⁵² a bioethicist and former

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Ante Čović, “Integrativna bioetika i pluriperspektivizam”, in: Velimir Valjan (ed.), *Integrativna bioetika i izazovi suvremene civilizacije*, Bioetičko društvo u BiH, Sarajevo 2007, pp. 65–75.

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Iva Rinčić, Stephen O. Sodeke, Amir Muzur, “From integrative bioethics to integrative bioethics. European and American perspectives”, *Journal international de bioéthique et d'éthique des sciences* 27 (2006) 4, pp. 105–117, doi: <https://doi.org/10.3917/jib.274.0105>.

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Hrvoje Jurić, “The Footholds of an Integrative Bioethics in the Work of Van Rensselaer Potter”, *Facta Universitatis* 15 (2017) 2, pp. 127–144, doi: <https://doi.org/10.22190/FULP1702127J>.

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Ibid.

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Ibid., p. 128.

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Ibid., p. 128.

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Ibid., p. 130.

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Ibid., p. 132.

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Ibid.

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Ibid.

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Ibid., p. 132.

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Ibid., p. 131.

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Today, it is accessible through the digital services of Georgetown University called *Ethx-Web: Literature in Bioethics* and was curated until 2009.

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“BioethicsLine”, 2021. Available at: <https://repository.library.georgetown.edu/handle/10822/713699> (accessed on 1 November 2021).

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NCRBL, “Tips on Searching BIOETHICSLINE with Grateful Med 6.0”, 1992. Available at: <https://repository.library.georgetown.edu/bitstream/handle/10822/709397/Tips%20for%20Searching%20Bioethicsline%20with%20Grateful%20Med.pdf?sequence=1&isAllowed=y> (accessed on 18 June 2024).

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Joyce Plaza, “What happened to our free bioethics search service? The terrible and premature death of BIOETHICSLINE”, *The American Journal of Bioethics* 1 (2001) 4, W8.

reference librarian the ‘death’ of the system is mourned arguing it should have remained a distinct database precisely because it reflected the cross-disciplinary nature of the field of bioethics. A follow-up answer was published by Dean E. Cody⁵³ detailing alternatives to *BioethicsLine* naming different systems which will support the bioethics researcher. In the attempt to defend the closure he, however, identifies that researchers in bioethics indeed have a need for cross-disciplinary literature investigations and that bioethicists do indeed search for literature bearing in mind a particular approach i.e. perspective concerning a particular problem, among which he gives examples of a law-based or philosophical approach. Instead of a centralized cross-disciplinary database, he argues that the researcher needs to consider multiple discipline-specific databases which contain literature wherein the problems in focus are debated from the specific and particular perspectives sought by the researchers.

In 2004, Fangerau published an evaluation of the leading abstracting and indexing services for finding European bioethical literature stipulating that such a practice is insufficient as

“... despite the integration of BIOETHICSLINE into MEDLINE and despite the existence of various specialised databases, a medical ethics literature search has to be carried out in several databases in order to reach an adequate collection of literature. Even a comprehensive search in eight electronic bibliographies produces only half of the existing literature.”

Additionally, he concludes that

“... there seems to be a predominance of North American literature in the most popular databases. Thus, a targeted search for European literature or literature from elsewhere in the world is even more difficult and yields even poorer search results than an unfocused search for medical ethical literature.”⁵⁴

Today, the digital services offered at the Kennedy Institute of Ethics can be considered as the most comprehensive gateway to North American bioethical literature.

In the European context, a key project in this context is the so called *Ethicsweb* – an initiative to create a documentation aggregation website and a search engine which connects previous local and national information and documentation initiatives in the field of ethics into a single access point. After the *11th International ISKO Conference* Williamson reviewed the discussion by Currado di Benedetto et al. titled “Semantic Approach to Bioethics in the Ethicsweb Project”, and pointed out their remarks about the four general objectives of the *Ethicsweb* project, namely:

“1) to facilitate access to information on ethics in science using an integrated infrastructure; 2) the development of sophisticated tools, technical and semantic, to establish the infrastructure; 3) the creation of a European Reference Centre for Bioethics; and finally, 4) the development of multilingual tools (thesauri and ontologies) for searching of documents in the bioethics field.”⁵⁵

The project itself aimed to create “an information and documentation system [which would] be interdisciplinary and multidisciplinary”.⁵⁶ In 2005, a project plan devised by the Food and Agricultural Organization was published as a report for the feasibility study for semantic integration of heterogeneous resources in order to envision an infrastructure for knowledge management within the domain of European ethics. In that study they pointed out the problem that current information and documentation systems differed too much in coverage, sub-disciplinary specialization, type and their content.⁵⁷ The researchers were left to their own devices, faced with the need to sift through

large swaths of irrelevant literature in multiple discipline-specific databases before finding relevant outlooks on topics of their interest. The *Ethicsweb* project developed sustainable application profiles for information sharing between ethical institutions and continues to be the main platform for knowledge exchange in fields of ethics and bioethics. It is managed by a consortium of institutions contributing records to the system across Europe. However, since it integrates the *BELIT – Bioethics Literature Database* managed by German Reference Centre for Ethics in the Life Sciences (DRZE), it also encompasses content from *Bioethics Research Library* at Georgetown University, Kennedy Institute of Ethics in North America, thus offering the most comprehensive access globally.

Interdisciplinarity in Subject Access to Bioethical Resources

From the standpoint of interdisciplinary knowledge organization in bioethics, the developed application profiles are quite interesting. The developed application profiles from the *Ethicsweb* project resulted in an European Ethics Application Ontology (EEAO) is a Dublin Core-based root ontology of the *Ethicsweb* system and its function is to express the semantics of metadata descriptors gathered from different contributing databases. As the creators themselves state it “considerably enhances the value of the resources that are described, even without the use of subject keywords to describe their contents”,⁵⁸ because it allows making inferences about the existing metadata beyond the content of the metadata itself. The same thing can be achieved with the metadata related to the subject of resources. Existing controlled vocabularies, namely thesauri, show that significant semantic work has already been done in the field. The EEAO exploits that legacy by incorporation and mapping of these controlled vocabularies in the *Ethicsweb* system. The feasibility study recognizes that in the ethics and bioethics domain both taxonomies and more complex conceptual tools, expressing richer semantics between terms, exist and have been incorporated.⁵⁹ It is then also recognized that in a domain

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Dean E. Cody, “In Focus: Life after BioethicsLine. A Reply to Joyce Plaza”, *The American Journal of Bioethics* 2 (2002) 4, W22.

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Heiner Fangerau, “Finding European bioethical literature. An evaluation of the leading abstracting and indexing services”, *Journal of Medical Ethics* 30 (2004) 3, pp. 299–303, doi: <https://doi.org/10.1136/jme.2003.003269>.

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Nancy J. Williamson, “Paradigms and Conceptual Systems in Knowledge Organization, the Eleventh International ISKO Conference, Rome, 2010”, *Knowledge Organization* 40 (2013) 1, pp. 64–75, doi: <https://doi.org/10.5771/0943-7444-2013-1-64>.

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“What is Ethicsweb?”, 2012. Available at: <http://212.235.239.102/node/121> (accessed on 18 June 2024); Maurella Della Seta, Corrado Di Benedetto, Luisa Leone, Scilla

Pizzarelli, “A joint collaboration among European institutions. The Work Package 4 activity in the semantic area of the Ethicsweb Project”, *Journal of EAHIL* 7 (2011) 1, pp. 8–11.

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Johannes Keizer, Anita Liang, Gauri Salokhe, Margherita Sini, “Towards an infrastructure for knowledge management within European Ethics. Methodologies for semantic integration of heterogeneous resources”, 2005. Available at: <http://eprints.rclis.org/15683/1/Towards%20an%20infrastructure%20for%20knowledge%20management%20within%20European%20Ethics%20-%20Methodologies%20for%20semantic%20integration%20of%20heterogeneous%20resources.pdf> (accessed on 18 June 2024).

58

Ibid., p. 18.

59

Ibid.

“as interdisciplinary as ethics, several vocabularies are likely to exist and to overlap in their coverage of the domain”.⁶⁰ The mapping between those overlapping terminologies is explained in detail, and mentions that approximately 20 terminological resources, i.e. vocabularies exist:

- Bioethics Thesaurus, published by the Kennedy Institute of Ethics
- Euroethics Thesaurus, the multilingual thesaurus in Ethics
- INSERM Thesaurus
- Parts of MeSH, published by the NLM
- Parts of CSA Life Sciences Thesaurus
- Parts of Biosis Controlled Vocabulary
- etc.”⁶¹

From the *Ethicsweb* website it is possible to determine also that indexing practices in European bioethics are also dominantly supported by the Thesaurus Ethics in the Life Sciences (TELS) developed by the German Reference Centre for Ethics in the Biosciences, alongside other variants containing parts of the mentioned systems and other vocabularies suited for discipline-specific needs.

The mapping methods described in the application profile show awareness of the differences in definitional scope of homonymous terms between gathered discipline-specific vocabularies and the need to distinguish the kinds of basic notions about ethical concepts such as whether they are devised from the standpoint of theoretical definition or their application. The purpose of this work is the creation of a core European Ethics Subject Ontology (ESSO). It is, however, unknown what is the current state of this work, as there is very limited information available. These described approaches show the need for interdisciplinary treatment of knowledge organization in fields of ethics and bioethics. However, in the remainder of the paper we will focus on expressing the complexity of this endeavour and attempt to describe the limitations of current achievements.

State of the Ethicsweb Project

Even though the *Ethicsweb* project was an important initiative it seems that its development has stopped. The EU project it arose from finished in 2011 and a short literature search will show that there has been no research focusing on the portal in the last 10 years. The European Ethics Subject Ontology mentioned in the feasibility study is not publicly available. The database works, however it seems aggregation stopped shortly after the end of the project. Furthermore, the literature it covered doesn't seem to go beyond 2011-2012, and the last events from the Event calendar were collected in 2012.⁶²

Nature of Discipline-Specific Systems for Knowledge Organization in Bioethics

Information and documentation support in bioethics is today most readily available through the previously mentioned BELIT search engine and the digital services of the Kennedy Institute of Ethics, coupled with legacy databases and *PubMed*, the titan of access to medical research worldwide. Thus, post-*Ethicsweb* researchers in bioethics have returned to the state of having to search through multiple databases to find their desired content.

Subject access in BELIT and Georgetown systems is managed by the application of two knowledge organization systems which remain the most developed discipline-specific conceptual tools in the field, namely the Bioethics thesaurus of the Kennedy Institute of Ethics and the Thesaurus “Ethics in the Life Sciences” by the German Reference Centre for Ethics in the Biosciences.

Bioethics Thesaurus of the Kennedy Institute of Ethics

The thesaurus is a product of the *BioethicsLine* project, which, under the direction of the U.S. National Library of Medicine, compiled literature on bioethical issues from 1972 to 1999.⁶³ The bioethics thesaurus was created according to current standards for thesaurus construction and can be searched in a document that provides an alphabetical list of 745 preferred and controlled terms. Upon reviewing the detailed and structured data on the revisions of the thesaurus, the last change was recorded in 2012. The same document in table form lists all descriptors and non-descriptors alphabetically, defines hierarchical relationships of terms (broader and narrower terms), related terms, the year of introduction and revision of notes, and includes historical notes and notes on the scope of descriptors. The Kennedy Institute of Ethics Bioethics thesaurus is a broadly and multidisciplinary-oriented system for labelling documents, limited by the literary warrant, i.e., the literature it indexes. The *BioethicsLine* database included in MEDLARS was indexed with the terms from the Bioethical thesaurus. This content then formed the Bioethics Subset in *PubMed* and subject access support was assured by the inclusion of the Bioethics thesaurus into the Medical Subject Headings (MeSH) thesaurus.⁶⁴

*Thesaurus “Ethics in the Life Sciences” by
the German Reference Centre for Ethics in the Biosciences*

The multilingual thesaurus “Ethics in the Life Sciences” by the German Reference Centre for Ethics in the Biosciences⁶⁵ is the only active dictionary found that recognizes the heterogeneity and multidisciplinary nature of the field of bioethics in its definition, and it targets not only the professional community but also the general public. The latest edition was published in 2012.⁶⁶ The dictionary is accompanied by a systematic list of call numbers for organizing books on the shelves of the Institute’s special library. This thesaurus emerged in 1999 from a project of the reference centre aimed at uniting the efforts of German, French, and American reference institutions whose activities are identified within the context of life sciences.⁶⁷ It can be stated with relative certainty that this is the thematically broadest thesaurus, as it goes beyond

60
Ibid., p. 20.

61
Ibid., p. 21–22.

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“What is Ethicsweb?”.

63
“BioethicsLine”.

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NCRBL, “Tips On Searching BIOETHIC-
SLINE With Grateful Med 6.0”.

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DRZE, “Thesaurus Ethics in the Life Sci-
ences”, 2012. Available at: https://www.drze.de/bioethics-thesaurus?set_language=en (ac-
cessed on 18 June 2024).

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Ibid.

67
Ibid.

an anthropocentric approach and a strict focus on medical ethics, covering animal ethics, environmental ethics, agriculture, genetic engineering, and biotechnology.⁶⁸ The editorial team is also working on developing concordances with other reference thesauri in areas that fall within the thematic scope of the thesaurus. The description of the thesaurus explains that the areas of biology, medicine, and genetics are particularly detailed due to their closeness to the thesaurus's focus, while other areas are grouped into a general area relating to science, technology, and research.⁶⁹ The thesaurus is divided into 14 subject areas, and descriptors are chosen based on "bioethical relevance", with the description arguing that "there is no universally applicable principle of selection, [and] the selection of descriptors and their location in the subject area is often based on a compromise between the perspectives and needs of individual disciplines and the practical requirements of users".⁷⁰ It is important to note that the described thesaurus makes clear distinctions between the disciplinary terminology of individual disciplines and uses this as an argument for the multiple inclusion of the same descriptors to show how the same term is used and interpreted within individual disciplines.⁷¹

Lessons for Interdisciplinary Knowledge Organization in Bioethics

Based on the counterposed definitions of knowledge organization and bioethics, as well as the analysis of prominent knowledge organization systems and initiatives in the field, certain needs and lessons can be discerned.

While, on one hand, authors in integrative bioethics are critical of the perspectival one-sidedness and reductive monodisciplinary views on bioethics, on the other hand, authors in knowledge organization critique the dominance of disciplinary perspectives in existing knowledge organization systems. It is clear that knowledge organization systems truly aim to reflect current achievements in fields they are supporting. This criterion is, in fact, their foundational aspect, and it is also debated as the epistemological warrant⁷² of a knowledge organization system. The notion of integrative bioethics claims that a basis of an inter- and transdisciplinary approach to bioethical issues and phenomena is the one which allows the consideration of issues from multiple different perspectives. In contrast to that authors Rick Szostak et al.⁷³ debate whether knowledge organization systems should investigate and reflect the existing level of complexity in the definition of particular phenomena and their dimensions, as well as considering the needs of the users who search resources related to them. Furthermore, Claudio Gnoli has claimed that

"... the new KOS should allow users to shift from one perspective or viewpoint to another, thus reflecting the multidimensional nature of complex thought. In particular, it should allow them to search independently for particular phenomena, for particular theories about phenomena (and about relations between phenomena), and for particular methods of investigation; and, the connections between phenomena, those between phenomena and the theories studying them and those between phenomena and the methods to investigate them can be expressed and managed by analytico-synthetic techniques already developed in faceted classification."⁷⁴

Thus, obligations for knowledge organization in bioethics are becoming clear. Knowledge organization in bioethics does indeed need to be considered with needs in mind arising from the interdisciplinarity of bioethics. Subject knowledge access cannot be reduced to serendipitous information searches, or complex search strategies in diverse disciplinary-based databases of electronic resources. Knowledge organization in bioethics, in fact, should apply the best

of existing knowledge organization methods in order to present knowledge with satisfying complexity which reflects the complexity of those represented knowledge domains.

According to Szostak et al.,⁷⁵ if knowledge organization is considered interdisciplinarily, a universal principle determining the place of concepts should be considered. Analysed thesauri which remain the most recognized discipline-specific tools for knowledge acquisition in bioethics are particularly lacking in that respect. The Thesaurus for ethics in life sciences offers a useful, pragmatic ordering of terms which seems to stem from an exclusively multidisciplinary understanding of the field strictly preserving disciplinary vocabularies to clearly express the boundaries between them. However, even though the thesaurus inherits disciplinary based vocabularies it represents included terms in a way which groups together relevant perspectives on a particular ethical issue, to an extent. It purposefully avoids an alphabetic ordering of concepts common for such systems, as can be seen traditionally applied in the Bioethics thesaurus of the Kennedy Institute. This ordering points to an awareness of the need to analyse bioethical issues with respect to perspective; however, there are examples where this principle is not decisive for ordering of concepts. Such is the example of legal perspectives related to *abortion* which are sorted under the broader concept of *law*, while in the context of *health insurance* legal obligations are subordinated and grouped within the descriptor *health insurance* itself. Such inconsistencies and design decision in knowledge organization practices in bioethics reinforce the reductive Georgetown notion of bioethics. In Szostak et al.⁷⁶ opinion classification theory has shown that a universal principle for determining the place of concepts in a general scheme can be drawn from the theory of integrative levels. Furthermore, Szostak et al.⁷⁷ claim that the inability to connect disciplinarily oriented systems with general knowledge classifications is a key limitation for their application in interdisciplinary and transdisciplinary contexts. Jurić similarly claims that in defining bioethics it is not enough to merely define the topics or the area of bioethics; it is necessary to place it within the framework of the existing system of knowledge and science.⁷⁸ This has repercussions for knowledge organization in bioethics as well. Nesting bioethics considered inter- or transdisciplinarily into a discipline-based system is not adequate.

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Ibid.

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Ibid.

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Ibid.

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Ibid.

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Cf. Mario Barité, “Literary warrant”, *Knowledge Organization* 45 (2018) 6, pp. 517–536, doi: <https://doi.org/10.5771/0943-7444-2018-6-517>.

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R. Szostak, C. Gnoli, M. J. López-Huertas, *Interdisciplinary Knowledge Organization*.

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Claudio Gnoli, “Classifying phenomena Part 1: Dimensions”. *Knowledge Organization* 43 (2016) 6, pp. 403–415, doi: <https://doi.org/10.5771/0943-7444-2016-6-403>.

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R. Szostak, C. Gnoli, M. J. López-Huertas, *Interdisciplinary Knowledge Organization*.

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Ibid.

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Ibid.

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H. Jurić, “The Footholds of an Integrative Bioethics in the Work of Van Rensselaer Potter”, p. 131.

Debate about such attempts in the classification of bioethics can be found in the work of Renata Oštarić,⁷⁹ who considers the classification of documents in the fields of medical ethics, medical deontology, and bioethics within the Universal Decimal Classification (UDC). Her analysis aimed to determine the congruence of the field's definitions with their position in the UDC scheme.⁸⁰ Oštarić⁸¹ begins by equating the analysed fields as sub-disciplines of ethics, specifically applied ethics. She defines bioethics within the context of the first set of definitions mentioned by Jurić,⁸² showing the relevance of Jurić's analysis since she initially does not consider those definitions of bioethics that expand its scope or define it as an interdisciplinary field. However, in the historical development of bioethics, Oštarić relies on the work of Ivan Šegota, who states that bioethics "encompasses not only the medical field but also other areas of life and various fields of science".⁸³ This again emphasizes Jurić's⁸⁴ point about the inconsistencies of defining bioethics as both a stable independent discipline and what, conversely, Szostak et al.⁸⁵ call an interdisciplinary field in their book about interdisciplinary knowledge organization. Oštarić⁸⁶ further explains that different sources treat contentious fields and their relationships differently, causing significant problems for disciplinary classification. Her discussion on classification in bioethics is mainly prompted by changes in subclass 60, which pertains to general issues of applied sciences and biotechnology, now specifying bioethics under 608.1 Ethical aspects. Bioethics. This example also indicates a narrow disciplinary definition of bioethics, linked with technology. Oštarić concludes on the nature of bioethics classification based on practical examples, criticizing them as "simplifying bioethics [...] to various ethical issues in medical science"⁸⁷ and preferring the definition of bioethics as a subset of applied science. Oštarić's work is significant as it highlights entrenched disciplinary patterns and the consequences of disciplinary classification which directly harm the expressiveness and appropriateness of classification in interdisciplinary fields. As a librarian who classifies published bioethical literature she points out to the problem that those involved in work depending on existing terminological demarcations can only adhere to narrow disciplinary definitions of the field as only these are expressed in the UDC. Of course, one could claim that UDC has a significant synthetic potential and that most topics can be expressed through a combination of classes. However, if we consider the treatment of *life*, the key concept in bioethics, one can easily see the abundance of contexts in which such a foundational term is considered both within and outside of bioethical considerations. Even if we synthetically can express some of the complexity encompassing the bioethical interest for the concept of *life*, this complexity exists scattered around the discipline-based general schemes which in practical terms leads to a situation where an interdisciplinary field is being forcefully crammed into monodisciplinary knowledge structures.⁸⁸ Gnoli and Szostak⁸⁹ have argued that a non-disciplinary, phenomenon-based classification may help to resolve this issue offering alternatives such as the Integrative Levels Classification and the Basic Concepts Classification.

The aforementioned complexity stems from the expressed need to consider multiple perspectives on bioethical issues. Dominant knowledge organization systems in bioethics, however, offer limited perspectival information and evade the assurance of faceted subject access. If we consider how many authors in the field point out the need to consider different perspectives one would expect that the notion of perspective would be something these systems are really emphasizing and that they would offer very nuanced and discerning

taxonomies of perspectives. Faceted subject access has long been promoted as the most sophisticated achievement of classification theory.⁹⁰ Following that, the field would benefit from an analysis and faceted representation of the different kinds of authorial perspectives expressed in bioethical resources. In interdisciplinary knowledge organization in the field of bioethics the perspectival information about distinct bioethical resources needs to be the basis of indexing practices and made explicit within a suitable knowledge organization system. Perspectival information cannot remain an afterthought in interdisciplinary knowledge systems design. In other words, the pluriperspectivity of bioethics needs to be reflected in the viewpoint warrant of new knowledge organization systems developed in the field.

Conclusions of researchers such as Fangerau that there is limited coverage of non-American, Southeast and East European bioethical content, also have repercussions for the quality of knowledge organization practices in the field. The international coordination presented in the context of *Ethicsweb* only very partially applies to those parts of the world. Nonetheless, bioethical communities in those parts of the world have rich traditions, as well as collections of academic and non-academic materials which are not described, connected or sometimes even catalogued. Historically, bioethicists have shown that they are very effective in bioethical institutionalization,⁹¹ especially in terms of community outreach.⁹² They are actively creating local community centres,

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Renata Oštarić, “Problem klasifikacije knjižnične građe iz medicinske etike, medicinske deontologije i bioetike unutar sheme univerzalne decimalne klasifikacije”, *Vjesnik bibliotekara Hrvatske* 57 (2014) 1–3, pp. 177–200.

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Ibid.

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Ibid.

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H. Jurić, “The Footholds of an Integrative Bioethics in the Work of Van Rensselaer Potter”.

83

R. Oštarić, “Problem klasifikacije knjižnične građe iz medicinske etike, medicinske deontologije i bioetike unutar sheme univerzalne decimalne klasifikacije”.

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H. Jurić, “The Footholds of an Integrative Bioethics in the Work of Van Rensselaer Potter”.

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R. Szostak, C. Gnoli, M. J. López-Huertas, *Interdisciplinary Knowledge Organization*.

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R. Oštarić, “Problem klasifikacije knjižnične građe iz medicinske etike, medicinske deontologije i bioetike unutar sheme univerzalne decimalne klasifikacije”.

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Ibid., p. 195.

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Cf. Hrvoje Jurić, “The Footholds of an Integrative Bioethics in the Work of Van Rensselaer Potter”.

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E.g. C. Gnoli, “Ten long-term research questions in knowledge organization”; R. Szostak, C. Gnoli, M. J. López-Huertas, *Interdisciplinary Knowledge Organization*.

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E.g. Classification Research Group, “The need for a faceted classification as the basis of all methods of information”, *Library Association Record* 57 (1955) 7, pp. 262–268; V. Broughton, “Facet analytical theory as a basis for a knowledge organization tool in a subject portal”.

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Iva Rinčić, *Europska bioetika. Ideje i institucije*, Pergamena, Zagreb 2011.

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A good example is the series of events known as the *Bioethical Tuesday*, organized by the bioethical research community at the University of Zagreb. An overview is available at: <https://www.bioetika.hr/blog/category/tribine/> (accessed on 18 June 2024).

most often serving as bridges between the academia and the civil sector. In those spaces there are many moments where these communities create very rich content, containing expressions of very particular lived-through outlooks on concrete bioethical issues. That content is research material for a bioethicist, and it can appear in many forms and formats such as video or audio resources, transcripts, collections of legal documentation, content assemblages on bioethical issues, historical accounts, activism related paraphernalia etc., i.e. different kinds of documents which of course need to be retrievable in a way which tells the researcher about the perspectives expressed in them. For example, if in a public discussion on abortion there was a law expert present a legal perspective might have been expressed, whereas often medical experts participate in such events, philosophers, psychologists, but also artists, clergymen, etc..., leading to a recognizable need for the identification of specific perspectives while being able to situate such within larger and more complex accounts of the problem, its contexts, implications, and further on.

Finally, there is an obvious lack of research on information and knowledge organization needs concerning researchers doing inter and transdisciplinary work in bioethics. Wide studies are needed to understand and investigate what inter- and transdisciplinarity is for bioethicists, how do they actually do such research, who are the people doing it, what kinds of approaches to KO would they most benefit from, what kinds of materials do they create and use in research, what do their collections consist of, how they currently access knowledge and resources that they need, to what extent is the current information and documentational support useful to them, and related issues.

Conclusion

In conclusion, the intersection of knowledge organization and bioethics presents unique challenges and opportunities for developing systems that adequately reflect the interdisciplinary and multidimensional nature of bioethical research. The critical examination of existing knowledge organization systems reveals a significant need for these systems to move beyond traditional disciplinary boundaries and embrace a more integrative and perspective-based approach. This includes accommodating the diverse perspectives inherent in bioethical issues and ensuring that classification systems are flexible and nuanced enough to capture the complexity of these perspectives.

Integrative bioethics emphasizes the importance of considering multiple viewpoints, yet current systems often fall short in facilitating this. Researchers like Szostak and Gnoli advocate for a phenomenon-based classification that transcends rigid disciplinary frameworks, which could be found suitable to promote a more holistic understanding of bioethical topics. The inadequacies of current thesauri, which tend to maintain strict disciplinary vocabularies, highlight the necessity for systems that can dynamically link various perspectives and knowledge domains. Effective knowledge organization in bioethics requires systems that support detailed faceted indexing and perspective-based classification. This would not only enhance the accessibility and usability of bioethical resources but also foster a more comprehensive and inclusive representation of global bioethical discourse, addressing the gaps identified in non-American, Southeast, and East European content.

Furthermore, there is a pressing need for empirical research into the specific knowledge organization requirements of bioethicists engaged in

interdisciplinary and transdisciplinary work. Understanding their research practices, resource needs, and the types of materials they produce and utilize will inform the development of more effective and supportive knowledge organization frameworks.

Overall, advancing knowledge organization in bioethics necessitates a commitment to representing diverse perspectives on bioethical issues and phenomena, adopting innovative classification methodologies, and prioritizing the needs of researchers in the field. By doing so, we can create knowledge organization systems that not only reflect the complexity of bioethics but also enhance the field's ability to address the multifaceted ethical issues of our time.

Denis Kos

Podrška interdisciplinarnoj organizaciji znanja u bioetici

Pregled postojećih pristupa

Sažetak

Cilj je ovog članka istražiti i analizirati krajolik postojećih sustava i pristupa organizacije znanja, kao što su tezaursi i klasifikacijski sustavi, razvijeni u svrhu organiziranja i olakšavanja pristupa bioetičkoj literaturi. Primarni je cilj razumjeti metodologije i sheme koje se koriste u tim sustavima, ističući njihove prednosti i ograničenja u podržavanju interdisciplinarnih i transdisciplinarnih istraživanja u bioetici. Ispitivanjem načina na koji ti sustavi kategoriziraju i strukturiraju bioetičke koncepte, u članku se nastoji identificirati zajedničke izazove i predložiti potencijalna poboljšanja kako bi se povećala dostupnost i sveobuhvatnost pristupa bioetičkim informacijama. Cilj je pregleda doprinijeti tekućem razvoju pluriperspektivnosti i robusnosti sustava za organizaciju znanja koji odražavaju razvoj bioetike kao discipline. Rad se temelji na autorovoj doktorskoj disertaciji.

Ključne riječi

sustavi organizacije znanja, integrativna bioetika, interdisciplinarnost

Denis Kos

Unterstützung der interdisziplinären Wissensorganisation in der Bioethik

Ein Überblick bestehender Ansätze

Zusammenfassung

In diesem Beitrag soll die Landschaft bestehender Wissensorganisationssysteme und -ansätze, wie Thesauri und Klassifizierungssysteme, die entwickelt wurden, um den Zugang zu bioethischer Literatur zu organisieren und zu erleichtern, untersucht und analysiert werden. Das Hauptziel besteht darin, die in diesen Systemen verwendeten Methoden und Rahmenvorgaben zu verstehen und ihre Stärken und Grenzen bei der Unterstützung inter- und transdisziplinärer Forschung in der Bioethik aufzuzeigen. Durch die Untersuchung der Art und Weise, wie diese Systeme bioethische Konzepte kategorisieren und strukturieren, sollen gemeinsame Herausforderungen identifiziert und mögliche Verbesserungen vorgeschlagen werden, um die Zugänglichkeit und den Umfang des Zugangs zu bioethischen Informationen zu verbessern. Ziel der Untersuchung ist es, einen Beitrag zur Weiterentwicklung der Pluriperspektivität und Einsatzfähigkeit von Wissensorganisationssystemen zu leisten, die die sich entwickelnde Disziplin der Bioethik widerspiegeln. Der Beitrag basiert auf der Doktordissertation des Autors.

Schlüsselwörter

Wissensorganisationssysteme, Integrative Bioethik, Interdisziplinarität

Denis Kos

**Faciliter le schéma de classification interdisciplinaire
des connaissances en bioéthique**

Aperçu des approches existantes

Résumé

L'objectif de cet article est d'explorer et d'analyser le paysage des systèmes existants d'organisation des connaissances et des approches associées, tels que les thésaurus et les systèmes de classification, développés dans le but d'organiser et de faciliter l'accès à la littérature bioéthique. L'objectif principal est de comprendre les méthodologies et les cadres utilisés dans ces systèmes, en soulignant leurs avantages et leurs limites dans le soutien de la recherche interdisciplinaire et transdisciplinaire en bioéthique. En examinant la manière dont ces systèmes catégorisent et structurent les concepts bioéthiques, l'article cherche à identifier les défis communs et à proposer des améliorations potentielles pour accroître l'accessibilité et l'exhaustivité de l'accès aux informations bioéthiques. L'objectif de cet aperçu est de contribuer au développement continu de la pluriperspectivité et de la robustesse des systèmes d'organisation des connaissances qui reflètent l'évolution de la bioéthique en tant que discipline. Le travail repose sur la thèse de doctorat de l'auteur.

Mots-clés

schéma de classification des connaissances, bioéthique intégrative, interdisciplinarité