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Genealogical warrant: introducing the concept

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Abstract

Since the principle of literary warrant was first formulated in 1911, a number of further warrants have been articulated in the Knowledge Organization literature. A critical appraisal of the historiography of bibliographic classification systems, however, discloses a hitherto untheorized form of warrant: genealogical warrant. This study develops the concept of genealogical warrant through a hermeneutic literature review and historiographical analysis of a lineage of bibliographic classification systems: the Universal Decimal Classification, the Dewey Decimal Classification, and the William Torrey Harris classification for the St. Louis Public School Library. Genealogical warrant is traced back to 1873 and conceptualized as a principle in which the selection of terms and concepts for class definition or the configuration of the syntactic structure of a bibliographic classification system is grounded in – and derived from – a pre-existing system of a cognate type. In essence, the prior system serves as the authoritative rationale for new semantic, syntactic, and notational decisions. Genealogical warrant is positioned as a historicist approach within epistemological theories of classification; within domain analysis, the principle is situated under the approach termed 'production and evaluation of special classifications and thesauri'. Through hermeneutics and historiographical analysis, this study contributes to bibliographic classification theory.

1.0 Introduction

Once construed as an art and a scholarly pastime or philosophical pursuit, classification had secured robust theoretical grounds for its acknowledgement as a science by the late twentieth century (Dahlberg 1976).

Within Knowledge Organization – recognized as an academic and scientific discipline (Andersen and Skouvig 2006; Dahlberg 2006) – the concept of warrant constitutes a foundational tenet of bibliographic classification theory. The provenance of warrant may be traced to 1911, when Edward Wyndham Hulme introduced literary warrant (Martínez-Ávila and Budd 2017). Following this original formulation, various manifestations of warrant have

been propounded. To date, the Knowledge Organization literature has documented 28 distinct warrants (Lima 2022), including scientific/philosophical warrant, logical warrant, phenomenological warrant, autopoietic warrant, and epistemic warrant (Martínez-Ávila and Budd 2017). However, a critical appraisal of the historiography of bibliographic classification systems discloses a hitherto untheorized form of warrant within Knowledge Organization: genealogical warrant.

The conceptualization of genealogical warrant contributes to Knowledge Organization as an analytical approach for studying the intellectual evolution of bibliographic classification systems. It puts historical studies of classificatory thought and classification systems in dialogue with bibliographic classification theory and the domain-analytic paradigm. As a theoretical principle in classification design, it may serve as a rationale for semantic, syntactic, or notational choices.

Our conceptual research aims primarily to introduce the concept of genealogical warrant. The paper is organized as follows: Section 2.0 outlines the methodological approach of the research; Section 3.0 sets forth a succinct review of the concept of warrant in bibliographic classification theory; Section 4.0 formulates the concept of genealogical warrant, briefly sets out the meaning of genealogy, illustrates genealogical warrant through a lineage of bibliographic classification systems, and puts it forward as a theoretical construct; and Section 5.0 discusses the limitations of the study and suggests avenues for future research.

2.0 Research methods

To explore the current state of scholarship on the concept of warrant in Knowledge Organization and to trace the genealogy of bibliographic classification systems, we undertook a hermeneutic literature review.

In contrast to a systematic literature review, the hermeneutic literature review eschews adherence to a strict search protocol, privileging a dialogue with the documents grounded in the hermeneutic circle, in which iteration and interpretation are pivotal. Entry into the hermeneutic circle may begin with a fundamental document on the topic under study – such as a key text recommended by a supervisor to a PhD student – or a small collection of texts gathered over time by the researcher, or a search applying terminology germane to the research topic. The moment to exit the hermeneutic circle comes when the researcher's knowledge of the matter becomes saturated – when new textual sources prove redundant (Boell and Cecez-Kecmanovic 2010).

This method is particularly suited to conceptual elucidation, where the aim is to reconstruct and critically interpret the intellectual history of a concept – or phenomenon – rather than to exhaustively catalogue its usages.

To illustrate genealogical warrant, the genealogy of three cognate bibliographic classification systems – the Universal Decimal Classification, the Dewey Decimal Classification, and the William Torrey Harris classification for the St. Louis Public School

Library – will first be analysed. A second lineage of systems, comprising the Library of Congress Classification and Cutter's Expansive Classification, will then be analysed.

3.0 The concept of warrant

Huvila's (2006) observation that "the concept of 'warrant' has been adopted widely as a practicable concept to denote the intellectual criteria of knowledge organisation" (60) aptly captures the key role of warrant in Knowledge Organization. Huvila (2006) further suggests that "the constituent benefit of using the warrants as a theoretical framework for discussing the premises of knowledge organisation, is the possibility to explicate the existing forcing criteria" (60), which underscores the disclosive potential of warrant. This disclosive feature of the warrant is critical given the warrant's often elusive nature – as Barité (2019) argues, "the warrants constitute the invisible support, the disguised criteria" (647) that underlie choices about which terms and concepts to include in or exclude from a controlled vocabulary; moreover, Bullard (2017) stresses that warrant is an element present in each and every classification design process, "regardless of whether it is named as such" (76). In line with this view is Hansson's (2022) comment that "sometimes the warrant of a particular system is clearly accounted for, sometimes not" (101). The elusive nature of the warrant argued for here stems from the common absence, in published classification systems, of any overt acknowledgement of the warrant, or warrants, in which the schemes are grounded. Such absence thus calls for a more nuanced analysis of the scholarly or archival documentation surrounding the system to uncover its warrant. Another reason contributing to the warrant's elusiveness is that it may be invoked at either a conscious or an unconscious level (Kwaśnik 2010). Kwaśnik (2010) reconciles the conception of warrant as a core concept in Knowledge Organization with its conceptual elusiveness by maintaining that "warrant, as a concept, joins the ranks of relevance as a pivotal notion, open for many interpretations and applications but rich in its ability to capture essential qualities" (107). The interpretative openness of warrant has led to a profusion of forms of warrant in the scholarly literature of our domain.

In recent scholarship, warrant has come to be understood as a record-keeping mechanism (Cheng and Choi 2025); in parallel with this modern understanding, and evincing warrant's multivalent character, a new form has emerged: historical or provenance warrant – not in a bibliographic context, but rather in one connected to museum objects (Turner et al. 2024). Although historical warrant stemmed from a museological context, it might be seen as consonant with Beghtol's (1986) argument that bibliographic or library classifications may be historical artefacts that allow the study of the history of a knowledge domain. As Kwaśnik (2010) elucidates, classification systems can be used as records to study history, with the warrants of those classifications playing the role of historical evidence. The genealogical warrant proposed herein supports the use of warrant to analyse the family history – genealogy – of bibliographic classification systems.

Also germane to the theoretical conceptualization of warrant – and genealogical warrant – is the basic understanding that, when instantiating warrants, those involved in classification design often invoke an institutionalized cognitive authority (Mai 2011; Wilson

1983). When a classification designer – or classificationist – creates a new class, or selects a term or a concept to be represented in the system, the decision is made in an authoritative manner, "not because the professional has first-hand knowledge of the appropriateness of the term or class, but because the professional relies on second-hand knowledge gained from cognitive authorities" (Mai 2011, 118).

In sum, the concept of warrant occupies a central place in the cognitive structure of Knowledge Organization, standing as a prominent principle in bibliographic classification theory; indeed, Hjørland (2008) has counted warrant – as in literary warrant – among the foremost principles within the traditional approach to Knowledge Organization. In subsequent work, Hjørland (2016) subsumes warrant under domain analysis, stating that "to examine the warrant for a classification is of course part of the domain-analytic framework" (477).

Towards the conceptual construction of genealogical warrant, one must bear in mind four key attributes of the concept of warrant as it has been articulated in the literature: (i) warrant often possesses an elusive character, meaning that it is seldom rendered explicit in the descriptive material of bibliographic classification systems; (ii) warrant carries a disclosive capacity, in that its analysis can bring to light the criteria behind classification design that might otherwise lie hidden; (iii) in modern scholarship, warrant has come to be understood as a record-keeping mechanism, and its analysis can thus serve to trace the lineage of bibliographic classifications; and (iv) in the instantiation of warrant, there is often an invocation of institutionalized cognitive authority.

4.0 Genealogical warrant

Across the social sciences and the humanities, the term 'genealogy' gained currency in scholarly discourse through the work of the philosopher and historian of thought Michel Foucault. To forestall confusion, genealogy should be understood herein not in terms of Foucault's formulation, but in the sense of "the study of ancestry and the tracing of a pedigree" (Erlenbusch-Anderson and Nigh 2020, Summary). In an analysis of the conceptual evolution of genealogy, "there is at least one continuity that allows us to speak of *one* concept over time: the genealogy's permanent appeal to the origins ... Turning to origins is the main paradigm of genealogy, the basic subject of its narrative, the key of its methodological use" (Aurell 2024, 291). It is in this sense, of the study of ancestry and the tracing of origins, that genealogy should be understood in the context of genealogical warrant.

Genealogical warrant denotes that a bibliographic classification system – or any kind of controlled vocabulary – is to some extent descended from an antecedent system. Genealogical warrant plays a role not only when a system is being devised or revised – as an authoritative source of terms and concepts or syntactic structure – but also when the system is being evaluated, since, through analysis, it supports the tracing of lineage among a group of systems and the study of their history and influence.

At the end of the nineteenth century, Paul Otlet and Henri La Fontaine set about compiling a bibliography of all titles published since the advent of printing, and they sought a system for its subject organization. Dewey's Decimal Classification, then in its fifth edition, appealed to them, so they came to an agreement with Melvil Dewey and secured his approval to translate the system from English into French. However, Otlet and La Fontaine went beyond translating Dewey's system; they undertook myriad amendments and expansions, which resulted in the publication, from 1905 to 1907, of the *Manuel du Répertoire Bibliographique Universel* (Handbook to the Universal Bibliographic Repertory), the first edition of the Universal Decimal Classification (Broughton 2015; McIlwaine 2017; UDC Consortium n.d.).

The influence of the Dewey Decimal Classification on the genesis of the Universal Decimal Classification is unequivocal, resulting in a parent–child relationship linking the two systems.

Melvil Dewey began devising what became the Dewey Decimal Classification in 1873, while he was a student and librarian at Amherst College, pursuing his endeavour to conceptualize a benchmark for library classification. In the spring of 1873, Dewey read an article published in an 1870 volume of the *Journal of Speculative Philosophy*, in which William Torrey Harris summarized his book classification scheme. Intrigued by what he had read, Dewey wrote a letter to Harris, requesting a copy of his scheme (Leidecker 1945; Wiegand 1998). On this basis, Wiegand (1998) argues "that Dewey largely tapped Harris's structure as the broad blueprint for his own decimal scheme ... is hardly debatable" (182). On these grounds, one can contend that the Dewey Decimal Classification is, to some degree, a descendant of Harris's book classification for the St. Louis Public School Library. Moreover, Broughton (2015) claims that "there have been suggestions that Dewey copied the idea of the decimal notation, perhaps from the scheme in use at the Boston Public Library" (201), which, if proven true, would allow us to add one more branch to the family tree of these systems.

Harris's book classification, in turn, is not rooted in genealogical warrant but in scientific/philosophical warrant, since his scheme is profoundly influenced by Francis Bacon's classification of human knowledge and Hegelian philosophy (Sales 2017).

Figure 1 depicts the genealogical relationships among the three bibliographic classifications addressed herein, illustrating the manifestation of genealogical warrant.

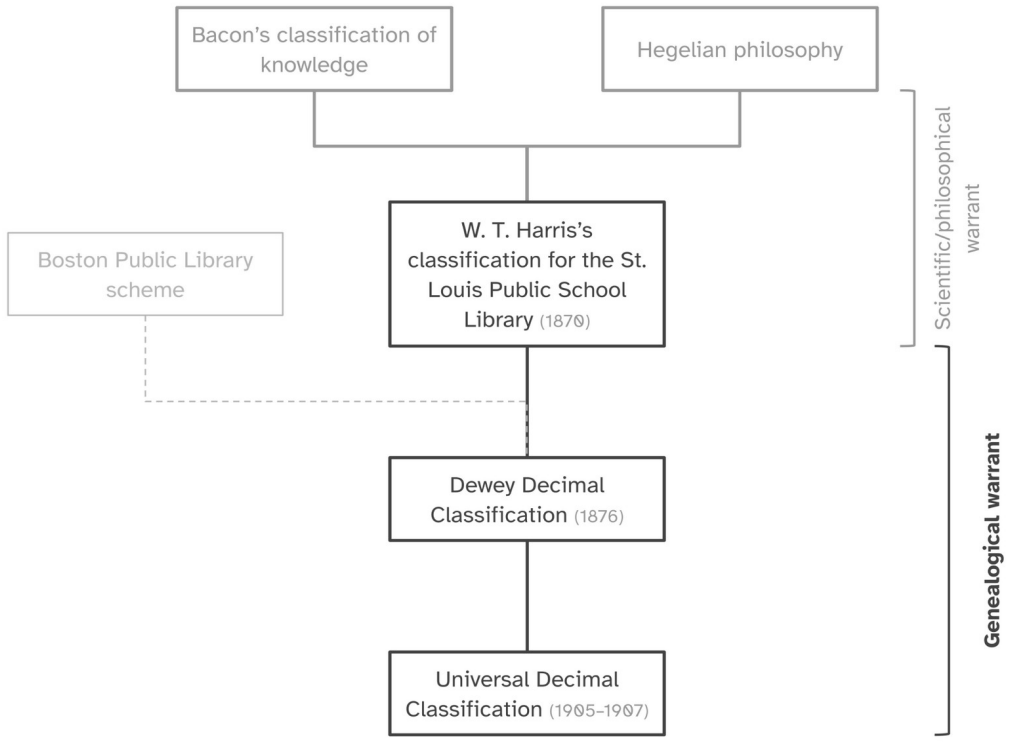

Figure 1. Genealogical relationships among the UDC, DDC, and Harris's classification, illustrating genealogical warrant

A second example of genealogical warrant may be found in the derivational relationship between the Library of Congress Classification and Charles Ammi Cutter's Expansive Classification. As Winke (2004) notes, "the LC [Library of Congress] classification was modeled after EC [Expansive Classification], and EC was used to develop LC's 'Class Z: Bibliography and Library Science,' which served as the outline for the remaining schedules in that system" (123). Moreover, Class N: Fine Arts of the Library of Congress Classification draws not only from the Expansive Classification but also from the Dewey Decimal Classification. Chan (1999) remarks on the strong similarity between Class N and the two systems from which it was developed.

Genealogical warrant, as an untheorized principle, has been in evidence since at least 1873. The analysis herein tracks genealogical warrant back to the Late Modern Period. An analysis focused on the intellectual organization of knowledge in Classical Antiquity, or on the encyclopaedic genre in the Middle Ages, could locate genealogical warrant at another juncture in the history of classificatory thought.

Under genealogical warrant, the selection of terms and concepts for class definition or the configuration of the syntactic structure of a bibliographic classification system is grounded in – and derived from – a pre-existing system of a cognate type. In essence, the prior system serves as the authoritative rationale for new semantic, syntactic, and notational decisions.

Genealogical warrant combines the four key attributes of warrant previously discussed: it is elusive, has a disclosive capacity, functions as a record-keeping mechanism, and invokes an institutionalized cognitive authority. It is elusive because it is often implicit in the design of a new bibliographic classification system, rather than overtly expressed in the descriptive material that accompanies the system; as a result, uncovering it may call for triangulation across multiple sources. It has a disclosive capacity and functions as a record-keeping mechanism insofar as its analysis unveils the ancestry and origins of a lineage of bibliographic classifications. It also invokes an institutionalized cognitive authority by treating earlier systems, often maintained under institutional auspices, as sources of authoritative reasoning for the design or revision of later bibliographic classifications.

To strengthen our introductory conceptualization of genealogical warrant, we draw upon Barité's (2019) mapping of warrants onto Hjørland's (2013) basic epistemological theories of classification (empiricism, rationalism, historicism, and pragmatism). Following this approach, we propose that genealogical warrant may be situated within historicism, since historicism "promotes the organization of knowledge based on chronological, evolutionary and/or contextual studies" (Barité 2019, 650).

Furthermore, we build on Vicente et al. (2025), who discuss mapping warrants onto approaches to domain analysis; we argue that genealogical warrant corresponds to the approach termed 'production and evaluation of special classifications and thesauri' (Hjørland 2017). In the original formulation of this approach to domain analysis, Hjørland (2002) quotes Aitchison (1995, 23): "Class R Politics and Public Administration ... could become a model for future classification systems and thesauri in the field of politics". Aitchison (1995) also observes that the second edition of the Bliss Bibliographic Classification (BC2) had been suggested as a model for the revision of the Universal Decimal Classification, with its restructuring to be grounded in the BC2. In each case, a pre-existing bibliographic classification system is put forward as a basis for the design or revision of another – a pattern that may be construed as a tacit application of genealogical warrant. The placement of the first example within Hjørland's (2002) discussion of the 'production and evaluation of special classifications and thesauri' approach to domain analysis bolsters the claim that genealogical warrant may be situated within this approach.

5.0 Conclusion

Although its tacit use can be traced back to 1873, genealogical warrant has not previously been the subject of systematic theoretical grounding and conceptual construction. This paper sought to address that gap by analysing lineages of bibliographic classification systems to illustrate how genealogical warrant has underpinned their design since the nineteenth century. The research enabled the development of genealogical warrant as a concept and its positioning within the basic epistemological theories of classification and the domain-analytic paradigm.

A caveat attends genealogical warrant, however. Systems that are derived from or modelled on pre-existing systems risk the 'hereditary transmission' of prejudice and bias from ancestor to descendant systems. Therefore, a critical appraisal should always accompany the design or revision of any bibliographic classification system grounded in genealogical warrant, including the study of its interplay with other warrants.

The research is based on secondary sources, rather than on primary sources, which are central to works with a strong historical or historiographical basis. This methodological constraint, however, offers an opportunity for continued research on the topic. To develop and strengthen the analysis, the archival collection 'Melvil Dewey Papers, 1870–1931', held by the Rare Book & Manuscript Library of Columbia University, could be consulted to explore in depth the intellectual and historical relationship between the Dewey Decimal Classification and the Universal Decimal Classification.

This study could be extended to other controlled vocabularies beyond bibliographic classifications, such as subject headings. A possible choice would be the Library of Congress Subject Headings, given that its creation was informed by several lists of subject headings.

Within Information Science scholarship, historical studies have waned in popularity (Järvelin and Vakkari 2022); the literature in Knowledge Organization, however, has sustained historicism as an enduring scholarly approach (Bullard and Turner 2024). This paper offers one such study, albeit at an introductory level, as a contribution to bibliographic classification theory.

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References

Aitchison, Jean. 1995. "Class R: Politics and Public Administration." The Bliss Classification Bulletin, no. 37: 10-24.

Andersen, Jack, and Laura Skouvig. 2006. "Knowledge Organization: A Sociohistorical Analysis and Critique." The Library Quarterly 76: 300-322. https://doi.org/10.1086/511139.

Aurell, Jaume. 2024. What Is a Classic in History? The Making of a Historical Canon. Cambridge: Cambridge University Press. https://doi.org/10.1017/9781009469937.

Barité, Mario. 2019. "Towards a General Conception of Warrants: First Notes." Knowledge Organization 46: 647-55. https://doi.org/10.5771/0943-7444-2019-8-647.

Beghtol, Clare. 1986. "Semantic Validity: Concepts of Warrant in Bibliographic Classification Systems." Library Resources & Technical Services 30: 109-25.

Boell, Sebastian K., and Dubravka Cecez-Kecmanovic. 2010. "Literature Reviews and the Hermeneutic Circle." Australian Academic & Research Libraries 41: 129-44. https://doi.org/10.1080/00048623.2010.10721450.

Broughton, Vanda. 2015. Essential Classification. 2nd ed. London: Facet Publishing. https://doi.org/10.29085/9781783302383.

Bullard, Julia. 2017. "Warrant as a Means to Study Classification System Design." Journal of Documentation 73: 75-90. https://doi.org/10.1108/JD-06-2016-0074.

Bullard, Julia, and Hannah Turner. 2024. "Knowledge Organization and Nation Building." The Canadian Journal of Information and Library Science 47, no. 3: 83-85. https://doi.org/10.5206/cjils-rcsib.v47i3.22444.

Chan, Lois Mai. 1999. A Guide to the Library of Congress Classification. 5th ed. Englewood, CO: Libraries Unlimited.

Cheng, Yi-Yun, and Inkyung Choi. 2025. "From Editorial Records to Structured Provenance Information: Documenting Warrant in Knowledge Organization Systems Using Large Language Models." Knowledge Organization 52, no. 3: 39046. https://doi.org/10.31083/KO39046.

Dahlberg, Ingetraut. 1976. "Classification Theory, Yesterday and Today." International Classification 3: 85-90. https://doi.org/10.5771/0943-7444-1976-2-85.

Dahlberg, Ingetraut. 2006. "Knowledge Organization: A New Science?" Knowledge Organization 33: 11-19. https://doi.org/10.5771/0943-7444-2006-1-11.

Erlenbusch-Anderson, Verena, and Amy Nigh. 2020. "Genealogy." In Oxford Research Encyclopedia of Literature. Oxford: Oxford University Press. https://doi.org/10.1093/acrefore/9780190201098.013.978.

Hansson, Joacim. 2022. "Classification Systems for Jewish Libraries and Bibliographies – Philosophy, Warrants and Relation to Non-Jewish Bibliographic Practice." Journal of Religious & Theological Information 21: 99-121. https://doi.org/10.1080/10477845.2022.2038047.

Hjørland, Birger. 2002. "Domain Analysis in Information Science: Eleven Approaches – Traditional as Well as Innovative." Journal of Documentation 58: 422-62. https://doi.org/10.1108/00220410210431136.

Hjørland, Birger. 2008. “What Is Knowledge Organization (KO)?” Knowledge Organization 35: 86-101. https://doi.org/10.5771/0943-7444-2008-2-3-86.

Hjørland, Birger. 2013. “Theories of Knowledge Organization—Theories of Knowledge.” Knowledge Organization 40: 169-81. https://doi.org/10.5771/0943-7444-2013-3-169.

Hjørland, Birger. 2016. “Knowledge Organization (KO).” Knowledge Organization 43: 475-84. https://doi.org/10.5771/0943-7444-2016-6-475.

Hjørland, Birger. 2017. “Domain Analysis.” Knowledge Organization 44: 436-64. https://doi.org/10.5771/0943-7444-2017-6-436.

Huvila, Isto. 2006. The Ecology of Information Work: A Case Study of Bridging Archaeological Work and Virtual Reality Based Knowledge Organisation. Åbo: Åbo Akademi University Press.

Järvelin, Kalervo, and Pertti Vakkari. 2022. “LIS Research across 50 Years: Content Analysis of Journal Articles.” Journal of Documentation 78, no. 7: 65-88. https://doi.org/10.1108/JD-03-2021-0062.

Kwaśnik, Barbara H. 2010. “Semantic Warrant: A Pivotal Concept for Our Field.” Knowledge Organization 37: 106-10. https://doi.org/10.5771/0943-7444-2010-2-106.

Leidecker, Kurt F. 1945. “The Debt of Melvil Dewey to William Torrey Harris.” The Library Quarterly 15: 139-42. https://doi.org/10.1086/617090.

Lima, Gercina A. 2022. “The Literary Warrant in the Representation of Knowledge.” Advances in Knowledge Representation 2, no. 2: 164-95. https://periodicos.ufmg.br/index.php/advances-kr/article/view/41831.

Mai, Jens-Erik. 2011. “Folksonomies and the New Order: Authority in the Digital Disorder.” Knowledge Organization 38: 114-22. https://doi.org/10.5771/0943-7444-2011-2-114.

Martínez-Ávila, Daniel, and John M. Budd. 2017. “Epistemic Warrant for Categorizational Activities and the Development of Controlled Vocabularies.” Journal of Documentation 73: 700-715. https://doi.org/10.1108/JD-10-2016-0129.

McIlwaine, Ia C. 2017. “Universal Decimal Classification (UDC).” In Encyclopedia of Library and Information Sciences, 4th ed., vol. 7, edited by John D. McDonald and Michael Levine-Clark, 4783-90. Boca Raton, FL: CRC Press.

Sales, Rodrigo de. 2017. “A classificação de livros de William Torrey Harris: influências de Bacon e Hegel nas classificações de biblioteca.” Encontros Bibli: revista eletrônica de biblioteconomia e ciência da informação 22: 188-204. https://doi.org/10.5007/1518-2924.2017v22n50p188.

Turner, Hannah, Nancy Bruegeman, and Peyton Jennifer Moriarty. 2024. “Provenance and Historical Warrants: Histories of Cataloguing at the Museum of Anthropology.” Journal of Documentation 80: 1419-41. https://doi.org/10.1108/JD-02-2024-0037.

UDC Consortium. n.d. “UDC History.” Accessed February 4, 2026. https://udcc.org/index.php/site/page?view=about_history.

Vicente, Paulo, Ana Lúcia Terra, and Jamie Johnston. 2025. “Evaluating Literary and Scholarly Warrants in Bibliographical Classifications: A Methodological Endeavour.” Páginas a&b: arquivos e bibliotecas, no. especial VII WPGCI: 145-62. https://doi.org/10.21747/21836671/pagesp2025a9.

Wiegand, Wayne A. 1998. “The ‘Amherst Method’: The Origins of the Dewey Decimal Classification Scheme.” Libraries & Culture 33: 175-94. https://www.jstor.org/stable/25548614.

Wilson, Patrick. 1983. Second-Hand Knowledge: An Inquiry into Cognitive Authority. Westport, CT: Greenwood Press.

Winke, R. Conrad. 2004. “The Contracting World of Cutter’s Expansive Classification.” Library Resources & Technical Services 48: 122-29. https://doi.org/10.5860/lrts.48n2.122-129.