



Encontros Bibli: revista eletrônica de
biblioteconomia e ciência da informação

E-ISSN: 1518-2924

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Ethics in Knowledge Organization: Two Conferences Point to a New Core in the Domain
Encontros Bibli: revista eletrônica de biblioteconomia e ciência da informação, vol. 20, núm. 1, febrero,
2015, pp. 1-17

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ARTIGO

Recebido em:
20/05/2014

Aceito em:
30/11/2014

Encontros Bibli: revista eletrônica de biblioteconomia e ciência da informação, v. 20, n. esp. 1, p. 1-18, Fev., 2015. ISSN 1518-2924. DOI: 10.5007/1518-2924.2015v20nesp1p1

Ethics in Knowledge Organization: Two Conferences Point to a New Core in the Domain

Ética na Organização do Conhecimento: aplicação em duas conferências para apontar um novo núcleo de Domínio

Richard P. SMIRAGLIA¹

Resumo

Duas conferências, realizadas em 2009 e 2013 sob o título de "Ética na Organização da Informação (EIO)", reuniram profissionais e estudiosos da organização do conhecimento (KO) para discutir a questão da ética na tomada de decisão durante processos de organização do conhecimento. Tradicionalmente, a noção de ética como um componente da organização do conhecimento tem ocupado uma espécie de posição coadjuvante. Conceitos como o de "garantias culturais" vão de encontro a conceitos como o de "garantias literárias", produzindo efeitos danosos em sistemas de organização do conhecimento. Neste artigo, ferramentas para visualização analítica de domínios são aplicadas às duas conferências EIO para demonstrar a importância potencial da ética na Organização do Conhecimento. A análise de palavras co-ocorrentes ajuda a visualizar o núcleo temático nos termos mais frequentemente utilizados: "user", "ethical", "knowledge", "national", "description", e "access". Pode-se perceber claramente uma trajetória multinível que incorpora "ethics" e "user", enquanto a tematicidade inclui todas as abordagens aplicáveis para KO, assim como um claro reconhecimento de identidades culturais nacionais, regionais e sociais. Outra abordagem para análise de domínio é examinar a semântica social (através da análise do registro público do discurso através de padrões de citação). Análises de co-citações de autores demonstra que as pesquisas estão ancoradas nos pressupostos teóricos básicos de KO, mas também trazer ideias de fora do domínio para carregar em os problemas da violência objetiva. a visualização da rede mostra como o trabalho sobre a ética na KO baseia-se nos princípios fundamentais da KO, mas que também buscam ideias externas ao domínio para lidar com problemas de violência objetiva. Os autores que participaram deste pequeno par de conferências estabeleceram um caminho para expandir a compreensão do papel da ética na Organização do Conhecimento.

Palavras-chave: Ética na Organização da Informação. Organização do Conhecimento - Sistemas.



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v. 20, n.esp, 2015
p. 1-18
ISSN 1518-2924

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Abstract

Two conferences called "Ethics in Information Organization (EIO)," held in 2009 and 2013, brought together practitioners and scholars in knowledge organization (KO) to discuss ethical decision-making for the organization of knowledge. Traditionally the notion of ethics as a component of knowledge organization has occupied a sort of background position. Concepts of cultural warrant clash with concepts of literary warrant to produce harmful knowledge organization systems. Here tools of domain analytical visualization are applied to the two EIO conferences to demonstrate the potential intension of ethics for KO. Co-word analysis helps to visualize the thematic core in the most frequently used terms: user, ethical, knowledge, national, description, and access. There clearly is a meta-level trajectory incorporating ethics and the user, while the intension includes all applied approaches to KO as well as strong recognition of national, regional, and social cultural identities. Another approach to domain analysis is to examine the social semantics (by analyzing the public record of discourse through citation patterns). Author co-citation analysis shows work anchored in the basic theoretical premises of KO, but also bringing ideas from outside the domain to bear on the problems of objective violence. A network visualization shows how the work on ethics in KO is based on the core principles of KO, but relies also on evidence from librarianship and philosophical guidance to bring forward the issues surrounding objective violence in KOS. The authors contributing to this small pair of conferences have laid out a pathway for expanding understanding of the role of ethics in KO.

Keywords: Ethics in Information Organization. Knowledge Organization - Systems.

1. ETHICS AS A COMPONENT OF KNOWLEDGE ORGANIZATION

In 2009 a conference called "Ethics in Information Organization (EIO)" broke ground by bringing together practitioners and scholars in knowledge organization (hereafter KO) to discuss and debate the cultural imperatives inherent in ethical decision-making for the organization of knowledge, both applied and theoretical. The call for papers for the 2009 conference, which was disseminated internationally, asked for contributions considering the ethical challenges of knowledge organization (called IO by the organizers). As is typical of introductory conferences, the papers covered the gamut but largely paid homage to Beghtol's notion of cultural warrant—the idea that cultures dictate mores as well as ontologies that must be accounted for in knowledge organization systems (see Beghtol 2005 and 2008). In 2012 a second conference built on the first by extending the discussion, and by generating a body of research sufficient to allow visualization of the emerging themes identifying the intension and extension of EIO as a community of discourse.

In fact, the notion of ethics as a component of knowledge organization occupies a sort of background position, or perhaps it could be termed a substrate. That is,

scholars and practitioners in KO appear to approach the structure of systems for KO (KOS) from an objective standpoint, but often without expressing that objectivity explicitly. The idea that KOS should be free from bias is commonplace, in that sense it forms a substrate, but rarely is the concept of ethical decision-making in either the identification of atomic concepts or the means of naming and ordering them explicitly approached in the literature. Olson has explained the hegemonic power of hierarchy in several papers; a good example is her explanation of the power of exclusivity (1999). Of course, exclusivity is a function of inclusion, but by its very nature it is biased. That which is included, because of its exclusivity, is a definition of that which is excluded. What is missed in KO is the extent to which exclusivity can be equated with oppression. Beghtol wrote two of the most direct syntheses of the ethical constraints of KO (2005 and 2008); she suggests all assignments of inclusion and exclusion should be subjected to conscious disclosure. Hjørland (2008) wrote of deliberate bias, suggesting it is perhaps a naturally occurring phenomenon in the supposedly objective approach to KO in which systems are said to mirror points of view derived by literary warrant. Hjørland suggests that epistemological arguments arising from domain analyses might be useful for determining which points of view are purposeful in given contexts. Mai (2013) criticizes major KOS for bias in decisions of inclusion and exclusion, but fails to take into account the concept of literary warrant. That is, if a system based in literary warrant accurately reflects its warrant, then it is not “biased” inherently. Rather, it is the literature on which it is based that is biased. Beghtol’s appeal to cultural warrant is an attempt to move into pragmatically ethical territory by moving the design of KOS beyond simple literary warrant into the territory of cultural warrant. Ridi (2013) provides a framework for doing so by suggesting specific paths for deconstruction and reconstruction from biased frameworks into bias-free frameworks. These parameters constitute the major threads in the ethics of knowledge organization. Tennis (2013) has proposed what he calls “engaged knowledge organization” in which ethos (a parallel to culture) and ideology work together to reveal what he calls “right action.” He suggests “objective violence” (45) is present in the action of creating knowledge organization systems in which symbolism arising from socio-political culture causes hurt or manipulation. Drawing on Žižek (2008), Tennis (44-45) distinguishes subjective violence (44) “acts of crime, terror, civil unrest, and international conflict”—from objective violence, which can be symbolic or systemic, “embedded and invisible to most

of our observations” arising from the imposition of “symbolic systems of language” or sociopolitical systems. In to these authors remind us that objectivity and literary warrant are not sufficient for ethical knowledge organization, but rather, that engaged deliberation based on epistemological analyses are critical to avoid KOS that do violence, explicitly or implicitly, to user populations.

In this paper I use tools of domain analytical visualization applied to the two EIO conferences to demonstrate the potential intension of ethics for KO. If we take as the extension those concepts in the preceding paragraph derived from the contrast between literary warrant and cultural warrant, then the intension can be viewed in the richness of the papers brought forward at these two conferences.

2. TWO CONFERENCES

EIO 2009 was held at the Milwaukee Public Library under sponsorship from the University of Wisconsin, Milwaukee’s School of Information Studies. A partial volume of proceedings was published as a theme issue of *Cataloging & Classification Quarterly* (Lee 2009). A list of papers presented follows in Table 1.

Author	Title	In Proceedings
Clare Beghtol	Users, the user, a user	
José Augusto Chaves Guimarães	Ethical Values and Problems in Knowledge Organization and Representation: Elements for its Theoretical Categorization	
Janet Swan Hill	According to code	
David Bade	Ethos, Logos, Pathos or Sender, Message, Receiver? A Problematological Rhetoric For Information Technologies	X
Cary S. Daniel	Achieving Obligation in Information Organization: Some Novel Approaches	
KristeneUnsworth	Ethical Concerns of Information Policy and Organization in National Security	X
Julianne Beall	Racially Mixed People, DDC Table 5 Ethnic and National Groups, and MARC 21 Bibliographic Format Field 083	X
Richard Smiraglia	Bibliocentrism, Cultural Warrant, and the Ethics of Resource Description: A Cast Study	X
Gretchen Hoffman	Meeting Users' Needs in Cataloging: What is the Right Thing to Do?	X
Joseph T. Tennis	Precepts for Engaged Knowledge Organization	

Table 1. Papers from EIO1.

The attendees constituted a large group of Canadian and American scholars with some participation by attendees from Brazil. The nine formal papers in Table 1 were

accompanied by keynote presentations by Clare Beghtol and Janet Swan Hill, and the conference was rounded out with a closing panel presentation that engendered a lengthy and complex conversation among attendees. There was general agreement that the concept of ethics in knowledge organization should assume a more prominent role in future research and development.

With that in mind, a second conference was held in 2013. Now titled the “2nd Milwaukee Conference on the Ethics of Information Organization,” the conference was somewhat larger, including keynote presentations, invited short papers, and contributed peer-reviewed full papers. The proceedings were published as a regular issue of the journal *Knowledge Organization* (v. 39, n. 5, 2012). The papers are shown in table 2.

Author	Title	In proceedings
Jens-Erik Mai	Just classifications	
Jill McTavish	Vegetables I don't eat but should: how members of food "thought communities" understand, sort, and label foods	
Tina Gross	Eliminate, abandon, dismantle: cataloging in library consultant reports	X
Daniel Martinez-Avila, Margaret E.I. Kipp, and Hope A. Olson	<i>DDC</i> or <i>BISAC</i> : The changing balance between corporations and public institutions	X
Ann Doyle	Changing the stories we tell: the research ethic of indigenous métissage	
José Augusto Chaves Guimarães, Juan Carlos Fernández-Molina, João Batista Ernesto de Moraes	Ethical aspects in information organization: an analysis of LIS education in the MERCOSUL area	
Patrick Keilty	Sexual boundaries and social disapprobation	X
Dean Seeman	Naming names: the ethics of identification in digital library metadata	X
Jane Zhang	Archival context, digital content, and the ethics of digital archival representation	X
Anne J. Gilliland	Contemplating co-creator rights	X
Philip A. Homan	Library catalog notes for "bad books": ethics vs. responsibilities	X
Jonathan Cope	Librarianship as an intellectual craft	X
Fabio AssisPinho, José Augusto Chaves Guimarães	Male homosexuality in Brazilian indexing languages: some ethical questions	X
Melissa Adler	Disciplining scholarship at the Library of Congress	X
Melodie J. Fox and Austin Reece	Which ethics? Whose morality?: an analysis of the ethical standards for information organization	X
Suellen Oliveira Milani, Fabio AssisPinho	Knowledge representation and orthophemism: a reflection on a concept	X

Joseph T. Tennis	A convenient verisimilitude or oppressive internalization? Characterizing the ethical arguments surrounding hierarchical structures in knowledge organization systems	X
Richard P. Smiraglia	Ethics in information organization	

Table 2. Papers from EIO2.

The opening keynote presentation was given by Jens-Erik Mai, and although no text was produced by him in association with EIO2, the concepts presented bore resemblance to his work cited above. As part of my closing keynote presentation I prepared some domain-analytical visualizations to demonstrate potential coherence of a nascent domain for ethics in knowledge organization. This paper brings those analyses forward in greater detail.

3. VISUALIZING THEMATIC COHERENCE IN THE ETHICS OF KO

Every conference develops a thematic core as the contributing authors try to conform their research to the conference call for papers. In EIO1, the most frequently used keywords (those appearing three or more times) in titles and abstracts appear in Table 3.

KEYWORD	FREQUENCY
<i>INFORMATION</i>	9
<i>ORGANIZATION</i>	8
<i>ETHICAL</i>	5
<i>KNOWLEDGE</i>	5
<i>NATIONAL</i>	5
<i>USER</i>	5
<i>ETHICS</i>	4
<i>PRECEPTS</i>	4
<i>USERS</i>	4
<i>ACCESS</i>	3
<i>BIBLIOGRAPHIC</i>	3
<i>DESCRIPTION</i>	3
<i>METADATA</i>	3
<i>STANDARDS</i>	3
<i>THEORETICAL</i>	3
<i>WEB</i>	3

Table 3. Most frequently used keywords in EIO1.

As a first glimpse of the thematic content the keywords give us a quick sense of direction—we see information organization and knowledge organization, we see users and venues, and we see a number of terms relating to kinds of KOS. One way to

interpret this table is to notice that “national” and “user(s)” are the most commonly used terms of significance. Using WordStat™’s keyword-in-context (KWIC) tool we can see that “national” occurs mostly in the term “national library,” and that “user” and “precept” both are single-word terms. We also see “information providers” and “information technologies,” and “ethical values,” “ethical approach,” and “ethical concern.” WordStat™ also allows the use of a thesaurus to filter multi-word terms. The result of that analysis applied to the same titles and abstracts is shown in Table 4.

KEYWORD	FREQUENCY
ETHIC*	6
KNOWLEDGE_ORGANIZATION	5
ETHICAL_VALUES	2
INFORMATION_ORGANIZATION	2
CULTURAL_WARRANT	1
INFORMATION_ETHICS	1
INFORMATION_POLICY	1
SEMANTIC_WEB	1

Table 4. Most frequently occurring terms in EIO1.

Now we see a slightly different picture. We see “ethic(s)(al)” as the most frequently occurring terms, setting naturally the extension of the conference, and then we see that “knowledge organization” is the only other term that occurs very frequently. The other concepts occur, but do not recur. So this suggests, as is usual for opening conferences of new domains, that there is a broad search for intension as the domain participants try out their points of view.

Using the same approach for EIO2, held four years later, we can generate the keyword list shown in table 5.

KEYWORD	FREQUENCY
<i>ETHICAL</i>	11
<i>ARCHIVAL</i>	7
<i>ETHICS</i>	6
<i>LIBRARY</i>	6
<i>DIGITAL</i>	5
<i>KNOWLEDGE</i>	5
<i>METADATA</i>	5
<i>REPRESENTATION</i>	5
<i>DESCRIPTION</i>	4
<i>INFORMATION</i>	4
<i>ORGANIZATION</i>	4
<i>CATALOGING</i>	3
<i>CLASSIFICATION</i>	3

<i>CONGRESS</i>	3
<i>INDEXING</i>	3
<i>INTELLECTUAL</i>	3
<i>ISSUES</i>	3
<i>LIS</i>	3
<i>PUBLIC</i>	3
<i>SENSE</i>	3
<i>SOCIAL</i>	3
<i>STANDARDS</i>	3

Table 5. Most frequently used keywords in EIO2.

The first thing we notice is that this is a slightly longer list, and also that more terms occur at the top of the distribution. In fact, there are eight terms used five or more times. New terms in this list include digital, archival, and intellectual, suggesting some new directions for granularity in the intension of the domain. KWIC analysis shows us that “archival” is responsible for much of the new terminology, appearing in the terms “digital archival representation” and “archival description” and “archival arrangement.” New terms that occur in EIO2 are “intellectual craft,” “intellectual freedom,” “sense of community,” and “social disapprobation.” These new terms align with the effort to seek sources of objective violence that are linguistic, symbolic or sociopolitical. Table 6 shows the most frequently occurring multi-word terms from EIO2.

KEYWORD	FREQUENCY
ETHIC*	16
INFORMATION_ORGANIZATION	2
KNOWLEDGE_ORGANIZATION	2
METADATA_STANDARDS	2
ETHICAL_VALUES	1
INFORMATION_ETHICS	1

Table 6. Most frequently occurring terms in EIO2.

Interestingly this is a shorter list than before. Cultural warrant and semantic web are no longer occurring, but all the rest are familiar thematic terms. This suggests a continuity at the meta-level of the domain’s intension. In other words, there is thematic coherence between the two conferences with some measured increase in granularity.

Figure 1 shows a comparative visualization of the most-frequently occurring thematic keywords, with EIO2 in the outer ring and EIO1 in the inner ring. This time the distributions are both cut off at four occurrences. The result shows essentially the same core themes in both conferences. The only difference is the heavy use of the words

“information” and “organization” in the first conference (an artifact of the call for papers.)

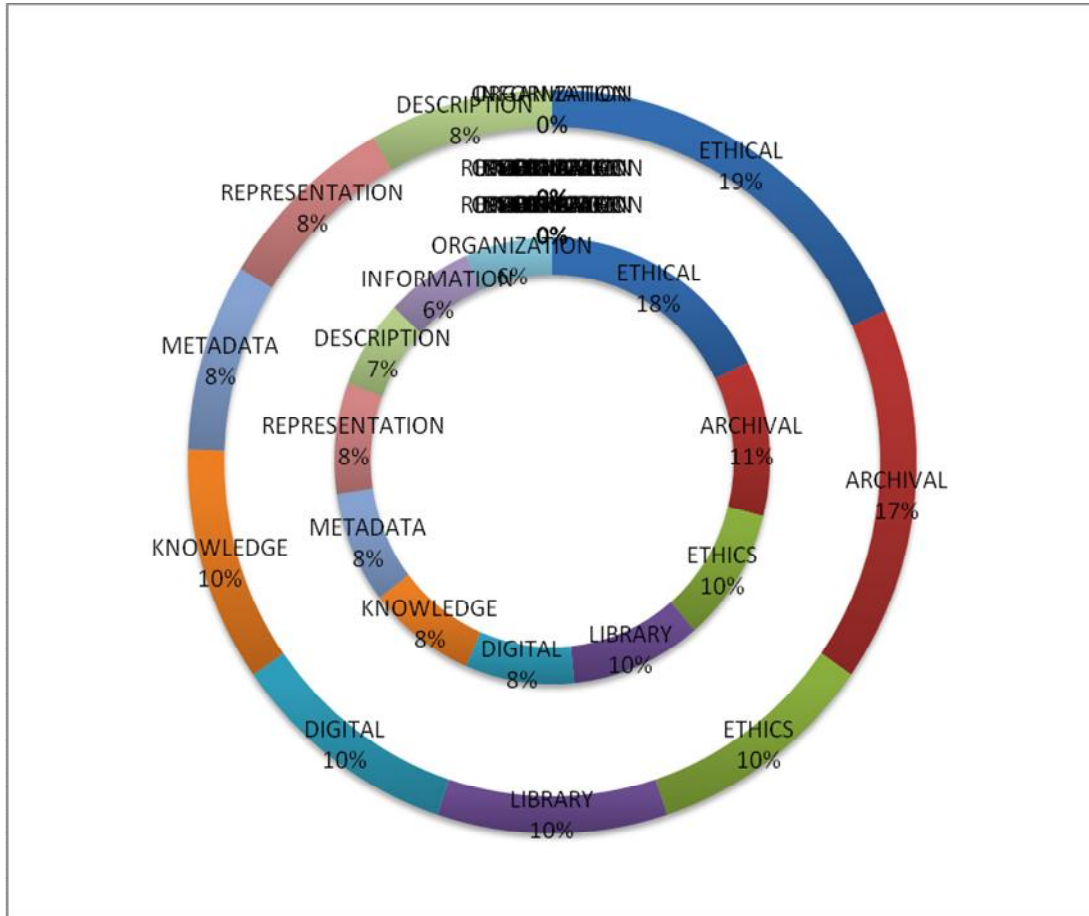


Figure 1. Comparative Term Frequencies (inner ring EIO1, outer ring EIO2)

There clearly is a consistent set of themes across both conferences. The second conference, with more papers, had a more diverse set of keywords, representing a growing, evolving intension for this small, new domain. There is diversity of thought, alongside unity of effort, in establishing ethical standards for KO. There clearly is a meta-level trajectory incorporating ethics and the user, while the intension includes all applied approaches to KO as well as strong recognition of national, regional, and social cultural identities.

To visualize the granularity, the lists of terms not represented above were analyzed using the terms from the long tails (terms appearing once or twice only) from each conference; the terms and their frequencies were entered into Wordle™ software and the visualizations below were created.



Figure 2. Long-tail terms from EI01



Figure 3. Long-tail terms from EI02

There are 145 terms in the long-tail from EI01. There are more than twice as many, 295 terms, in the long-tail from EI02. Of course, the visualization takes the place here of reproducing a table of 440 terms. The semantic differences are quite subtle, but

there seems to be a shift from the essentials of ethics in EIO1 to the details of specific applicability in EIO2. For example, in EIO1 we can see terms such as organization, equitable, obligation, and improvements. But in EIO2, we see terms such as behavior, communities, discourse, ethos, freedom, naming, centering, unethical, religious, sexual, characterizing and inductive, none of which occurred in EIO1. The sum suggests that this small community has an accepted ethical core and has begun to look for heretofore undiscovered points of “objective violence”—symbolic, linguistic, or sociopolitical—taking place due to KOS. In other words, we see growth in the depth of the intension of the domain.

4. VISUALIZING AUTHORS IN THE ETHICS OF KO

Another approach to domain analysis is to examine the social semantics (Smiraglia, 2012) of a group by analyzing the public record of their discourse, which usually can be constituted through citation patterns. A useful beginning in a nascent domain, such as ethics of KO, is to see who the authors in the early conferences are citing. One can see right away from the list of most commonly cited authors what sort of epistemological consensus, if any, exists. Table 7 contains a frequency distribution of the most-cited authors from EIO1.

Hjørland, Birger	4
Foucault, Michel	4
Cutter, Charles A	3
Olson, Hope A	3
Mai, Jens-Erik	3
Harris, Roy	3
Berman, Sanford	3

Table 7. Most-cited authors EIO1.

I chose to cut off the distribution at 3 citations; in the published papers from EIO1 there were 128 references but only 16 authors were cited more than once. This top end of the distribution includes key KO authors, classic references to Cutter, and interesting references to works by philosopher Roy Harris and to renegade librarian Sanford Berman. Table 8 contains a similar frequency distribution of the most-cited authors from EIO2.

Olson, Hope A.	13
Guimarães, José Augusto Chaves	10
OCLC	9
Book Industry Study Group	8
Beghtol, Clare	7
Bellesiles, Michael A	7
American Library Association	6
Hjørland, Birger	5
Bair, Sheila C.	4
Society of American Archivists	4
Tennis, Joseph T.	4
Book Industry Communication	3
Brey, Philip	3
Fister, Barbara	3
Foucault, Michel	3
Keilty, Patrick	3
Pinho, Fabio Assis	3

Table 8. Most cited authors EIO2.

This is a more complex distribution. EIO2 papers had 361 references, of which 45 were to authors cited more than once. Even with a cut-off at 3 citations, we still have a list more than twice as long as the first conference, and in the upper tier of the distribution we see frequencies up to three times as large as before. This is an indicator of the greater granularity in the second conference, but it also is a sign of greater domain confidence in its core. The works that now are most frequently cited are those by key authors of research about ethics in KO. The lower end of the distribution contains citations to authors whose work is innovative in the nascent domain, as well as to key codes of ethics (ALA, SAA, etc.) and to philosopher Michel Foucault.

Author co-citation (when two authors are cited together in the same paper) is a kind of trace evidence of perception by a domain of its thematic core. The co-cited authors represent thematic clusters to the extent that the domain perceives their work to be similar or sequential. In general, clusters surround theoretical space defined by either a common hypothesis or research question; in domains that are more humanistic in inclination, the clusters frequently are defined by a common goal set. We know from earlier analyses (Smiraglia, 2013) that KO is a domain in which there is a constant tension between scientific and humanist approaches, between empiricist and rationalist

epistemologies. The papers on ethical issues clearly fall into the humanist epistemological realm within the KO domain. We can take two approaches to author co-citation analysis to help visualize the perception of the domain. One is to look at the domain externally from indexed published research using Thomson Reuters' Web of Science, and the other is to look at the domain internally from the perspective of the papers contributed to the two conferences. We can begin by combining the two lists of most-cited authors and then removing corporate entities from the list (because they do not represent citations of theoretical or research content. The process of creating a multi-dimensionally-scaled (MDS) plot using IBM-SPSS™ is complex; empty cells or cells with too few co-citations will either stop the process altogether or produce a less-than accurate plot. After removing corporate entities (because they were not authors contributing to the theoretical base) and after removing authors with few or no co-citations, the final list included these core authors: Bair, Beghtol, Berman, Cutter, Foucault, Guimarães, Hjørland, Mai, Olson, Pinho and Tennis.

To analyze external author co-citation we turn to Thomson-Reuters' Web of Science to ascertain co-citation totals for each pair of core authors. These totals are entered into a matrix, which in turn can be used to create an MDS plot for visualizing perception of the clustered authors. This visualization appears in Figure 4. The goodness-of-fit statistics for this model (stress = .01908; R2 = .99901) indicate the plot is a very good fit for the data.

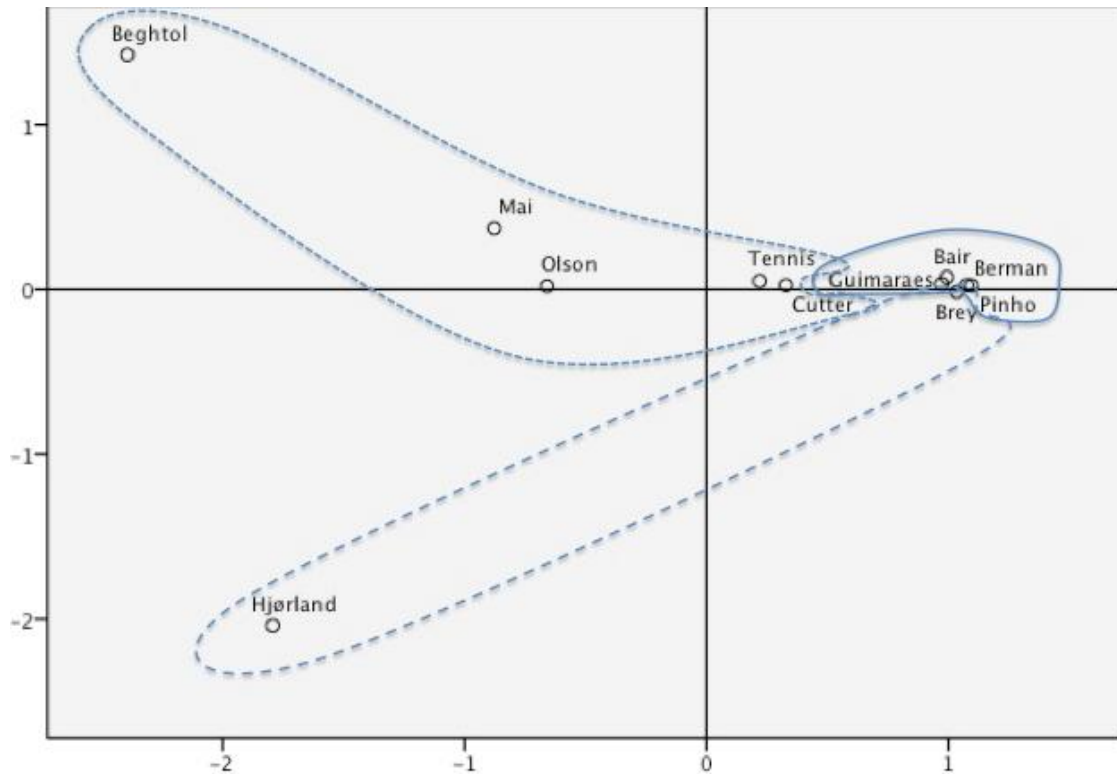


Figure 4. MDS plot of Web of Science author co-citation using core authors from EIO.

It is important to think carefully about what this visualization shows. It is a map of how the KO domain at large views the clustered co-cited authors derived from the papers contributed to EIO1 and 2. That is a very precise, if slightly convoluted, sentence. It means that these authors are not necessarily authors writing about ethics in KO, but rather they are the authors most frequently cited by authors writing about ethics in KO. And we are not looking at a map of how they are viewed by the authors who cited them, but rather, a map of how they are viewed by KO authors in Web of Science in general who have co-cited them. So we see a tightly knit cluster on the right including Bair (who wrote one paper about a code of ethics for cataloging), Berman (who wrote quite a lot about oppressive subject headings), and they are clustered with Guimaraes and Pinho, who are prolific authors in Brazilian KO writing in EIO about terms used in KOS describing concepts related to homosexuality. That cluster on the right represents this small Brazilian research front and its theoretical core. Now, that front is closely allied to the work by Olson and Mai and Tennis, and we see that the cluster including those three is anchored by classic citation to works of Beghtol. The other, slightly odd cluster, is anchored by Hjørland and contains only the works of Brey, who has written about

computer ethics and virtual reality. One interpretation of that tiny pairing is simply that they are seen as different from all of the rest.

To understand this visualization requires metaphorically stepping back from the picture to ponder the larger context. What we see is a core of KO, anchored by Beghtol and Hjørland, keyed directly to the challenging works from outside the domain by Brey, and from a neighboring domain by Bair. But the nascent research front within EIO is emerging from the work of the Brazilians, who are drawing it all together to expose inequalities in terminology used to describe particular oppressed social groups—in this case homosexual men. Or, to simplify it further, we see authors considering ethics in KO anchoring their work in the basic theoretical premises of KO, but also bringing work from outside the domain to bear on the problems of objective violence. It is a potentially new paradigmatic cluster operating within the intension of the KO domain, only now visible from this particularly narrow perspective.

As mentioned earlier, frequently in domain analytical studies it is useful to compare external co-citation, to internal co-citation. To that end, the references in the papers from both EIO conferences were analyzed to create a matrix of author co-citation totals for each pair of authors. The matrix was sparsely populated, which meant there were too few cells and too many null values to generate an MDS plot using IBM-SPSS™. An alternative visualization procedure is to create a network diagram using Gephi 0.8.2. This diagram is shown in Figure 5.

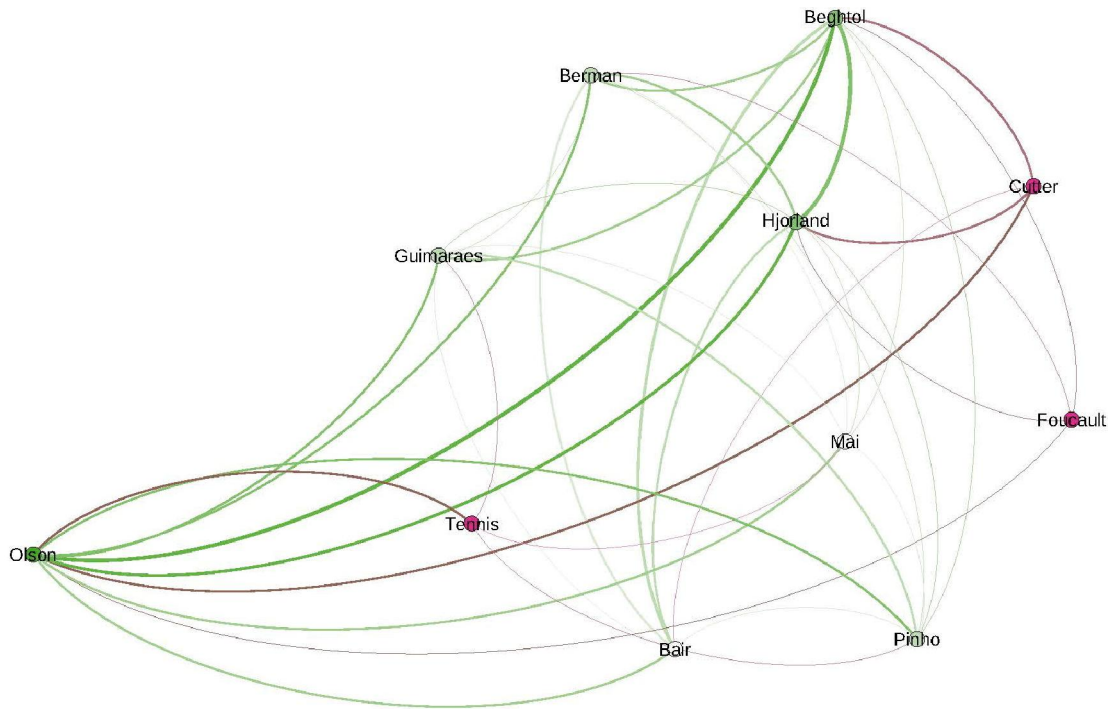


Figure 5. Gephi visualization of core author co-citation within EIO.

This visualization is more directly an illustration of the intellectual bases for this emerging paradigm for ethics within KO. The clear anchor of the group is Olson, to whom everyone else is connected. The active authors in the core—Guimarães, Pinho, Tennis, Mai and Hjørland—rely on intellectual foundations derived from philosophy (Foucault) and from librarianship (Cutter, Berman and Bair). This echoes the emphases observed in Figure 4. Work on ethics in KO is based on the core principles of KO, but relies also on evidence from librarianship and philosophical guidance to bring forward the issues surrounding objective violence, especially symbolic or sociopolitical influences, in KOS. The influence of Olson, from whose work all of EIO seems to have been derived, is clear in this visualization.

5. ETHICS AS A COMPONENT OF KNOWLEDGE ORGANIZATION REDUX

There clearly is a new emergent cluster within KO that has as its focus ethical issues in the development and use of KOS. The two Milwaukee EIO conferences gave this group an opportunity to share points of view and to begin the development of coherent theoretical and epistemic stances. The origin of the work is in empirical observations of biased KOS, but the extension of the domain stretches to embrace the

tension between literary and cultural warrants. In other words, the rationalist human perspectives inculcated in cultural warrant are often at odds with the empiricist structures, often hierarchical, derived from literary warrant. Clearly, what Tennis calls “objective violence” can be the result, in turn causing real or potential harm to current and future users of KOS. Ethics needs to be a key component of KO. The authors contributing to this small pair of conferences have laid out a pathway for expanding understanding of the role of ethics in KO. The work analyzed here is operating at the level of a small cluster within the intension of the KO domain. It is to be hoped that the effort demonstrated here continues fruitfully to lead to the eventual maturation of ethical methods for analyzing and creating KOS.

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