Works as Signs, Symbols, and Canons: The Epistemology of the Work

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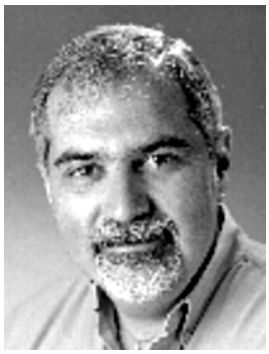

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ABSTRACT: Works are key entities in the universe of recorded knowledge. Works are those deliberate creations (known variously as opera, oeuvres, Werke, etc.) that constitute individual sets of created conceptions that stand as the formal records of knowledge. In the information retrieval domain, the work as opposed to the document, has only recently received focused attention. In this paper, the definition of the work as an entity for information retrieval is examined. A taxonomic definition (that is, a definition built around a taxonomy) is presented. An epistemological perspective aids in understanding the components of the taxonomic definition. Works, thus defined as entities for information retrieval, are seen to constitute sets of varying instantiations of abstract creations. These variant instantiations must be explicitly identified in future systems for documentary information retrieval. An expanded perception of works, such as that presented in this paper, helps us understand the variety of ways in which mechanisms for their control and retrieval might better be shaped in future.

1. Introduction

Works (e.g., musical works, literary works, works of art, etc.) are key entities in the universe of recorded knowledge. Most recorded knowledge survives through authored (or otherwise created) entities. Works are those deliberate creations (known variously as opera, oeuvres, Werke, etc.) that constitute individual sets of created conceptions that stand as the formal records of knowledge. Documents are here defined as the packages that contain and may deliver one or more creative, communicative conceptions. Both the package (the document), and its content (which might be a work) are joined variously to form documentary entities, which in turn are key entities for information retrieval.

The content of documents, in a generic sense, may be text or some other representation of knowledge. Certainly documents exist (such as archival records) that contain recorded knowledge that would not be considered to constitute works. The distinction we draw here is that drawn in the realm of descriptive cataloging, where documents are represented by literal transcription of text from them, but the works they present are represented by concisely constructed authoritative headings. At the most basic level a work is a set of ideas created and set into a document using text, with the intention of being communicated to a receiver. A work may have many texts, and may appear in many documents and even in many documentary forms. Ultimately, searches for a given work rely on the hope of subsequent selection of instantiation in

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one of several documentary formats. Put more simply, in most cases it is the work that is sought first. Once a gathering of instantiations of the work has been identified, a searcher makes a subsequent selection among the documentary formats available.

In the information retrieval domain, the work as opposed to the document, has only recently received focused attention (Smiraglia 2001). Efforts to define works as information retrieval entities and to document their occurrence empirically are quite recent. In fact, systems for bibliographic information retrieval (such as catalogs and indexes) have been designed with the document as the key entity, and works have been dismissed as too abstract or difficult to define empirically to take a role in information retrieval. Recent work, summarized in Richard P Smiraglia (2001), points to the primacy of works for bibliographic information retrieval, and to the importance of works as concepts for all text-based information storage and retrieval systems.

Francisco Javier Garcia Marco and Miguel Angel Esteban Navarro (1993) suggested that epistemological analysis of the paradigms of knowledge would be essential for the design and implementation of cognitive strategies to guide documentary analysis. Such is the case with the understanding of the work component of the documentary entity. Marco and Navarro also assert the usefulness of taxonomy as a key element of the epistemological analysis of paradigms. Works have been variously defined in a variety of disciplines, not the least of which are linguistics, musicology, and literary criticism. In every discipline, works are considered to be essential vehicles for communication of knowledge across temporal and cultural boundaries.

In this paper I will examine the definition of the work as an entity for information retrieval. A taxonomic definition (that is, a definition built around a taxonomy) is presented. An epistemological perspective, including empirical evidence, aids in understanding the components of the taxonomic definition. Works, thus defined as entities for information retrieval, are seen to constitute sets of varying instantiations of abstract creations. These variant instantiations must be explicitly identified in future systems for documentary information retrieval.

My purpose in this paper is to disseminate new understanding of the cultural roles of works, and thereby to assert their importance as key to the dissemination of knowledge, and also, therefore, to the organization of knowledge. Another goal of this paper is to demonstrate the application of the tools of epistemology to the problem of the comprehension of works as entities for information retrieval. I suggest no specific system, either for storage or retrieval, but rather a conceptual model that can guide further analysis.

2. Documentary Entities: A Review

A documentary entity is a unique instance of knowledge (e.g., a thesis, a sculpture, a research report). Each documentary entity has physical and intellectual properties. According to Gregory H. Leazer and Smiraglia (1999), a containment relationship exists between these two properties. That is, the physical property (the physical document) is the package for the intellectual (the work). The explicit linkage of relationships among documentary entities is critical for document-based information retrieval (such as catalogs and indexes). Empirical research techniques have illuminated the technical problems of bringing the objective of collocating works, as opposed to documents, into primary position. Barbara Tillett (1987) sought to classify and quantify the entire range of bibliographic relationships--relationships that exist among documentary entities. Smiraglia (1992) investigated the derivative relationship, which holds among all versions of a work, refining its definition to include several different categories of derivation. These categories are:

- simultaneous derivations
- successive derivations
- translations
- amplifications
- extractions
- adaptations, and
- performances.

Leazer (1993 and 1994) described a conceptual schema for the explicit control of works in catalogs, taking into account both Tillet and Smiraglia's taxonomies of relationship types. Leazer and Smiraglia studied the presence of derivative relationships in the OCLC WorldCat (Smiraglia and Leazer 1995 and 1999, Leazer and Smiraglia 1996 and 1999) affirming the taxonomy of derivative relationship types. Martha M. Yee (1993) examined problems of relationships among moving image materials, including the substantial problems of associating bibliographic records for varying instantiations of films. Sherry L. Vellucci

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(1997) examined musical works and found that the categories of work-relationships that Tillett and Smiraglia had suggested were present, and in large numbers.

A 1998 report by a study group of The International Federation of Library Associations and Institutions (IFLA) was devoted to outlining functional requirements for bibliographic records. Representing the products of intellectual or artistic endeavor, the report suggested a group of documentary entities *works, expressions, manifestations,* and *items.* A work was described as a distinct intellectual or artistic creation, an expression as the intellectual or artistic realization of a work. The entities work and expression reflected intellectual or artistic content. A manifestation embodied an expression of a work, which was in turn embodied by an item. The entities *manifestation* and *item*, then, reflected physical form. The report noted that a work might be realized through one or more expressions, which might be embodied in one or more manifestations, which in turn might be exemplified in one or more items (IFLA 1998, 12-13). That is (in this schema), a *work* begins life as a set of impressions in the mind of its creator. Once the creator has mulled over these impressions sufficiently to formulate an ordered presentation, then they may take on the characteristics of *expression*. Once expressed, the likelihood of capture (that is, setting into a specific set of semantic and ideational strings) is high and the now ordered set becomes a concrete *manifestation* of the work, which may in turn be embodied in one or more *items*. For example, the present article began as a set of notions in the my consciousness—these comprise the *work*. There have been several drafts, varying in their scope and detail—these are *expressions*. The present text that you are reading is the *manifestation* of this work, which is embodied in the particular copy of the journal that you are reading (an *item*), which is similar to but yet different from any other copy.

David H. Thomas and Smiraglia (1998) examined the concept of the "musical work" in the catalog. They concluded that musical works can be conceptualized in the manner of a surname for a family, around which cluster all manifestations known by that concept-name in horizontal, but explicitly described, relations.

In all of this research, the work has been identified as a key object for retrieval. That is, much searching is based on searches for works. However, because document-based information retrieval systems (such as catalogs) have been designed to store surrogates for the physical documents, efficient retrieval of works has been compromised. The research described here has served to compile an effective record of the existence of networks of variant instantiations of works, which can be distinguished from their physical, documentary, containers. Works, then, are demonstrated as effective entities for information storage and retrieval. That is, catalogs and other tools can be structured to allow searches for works to take place alongside (or instead of) searches for documents.

3. Works as Vehicles for Communication

Works contain representations of recorded knowledge. Works are created deliberately to represent the thoughts, data, syntheses, knowledge, art and artifice of their creators. Works, then, serve as vehicles to communicate one or more of these aspects of new knowledge to potential consumers (readers, scholars, etc.). Consumers of works may and often do use them to inform their own new works, which likewise serve as vehicles to communicate knowledge across time and space to new consumers. In this manner, we can observe the social role of works. Therein we see works as vehicles that transport ideas along a human continuum, contributing to the advancement of human knowledge in specific ways and to the advancement of the human social condition in more general ways.

Ferdinand de Saussure's approach to linguistics demonstrated methods for determining the general laws that are at work in all languages (1959, 6). Saussure concluded that the primary means by which we may learn about languages is through the study of recorded writings. Written texts, therefore--or instantiations of *works*--constitute the bulk of the evidence of even contemporary language. Saussure described a system of the study of the life of signs in a society, which he named *semiology* (1959, 16). In Saussure's system, a *sign* is represented as the pair *signified* and *signifier*. A sign "unites a concept and a sound image" (1959, 66). The signified is the concept under conveyance; the signifier is the sound-image used to convey the concept (1959, 67). The signified and the signifier are inextricably linked in the sign, which has two essential characteristics: *arbitrariness* and *linearity* (1959, 67, 70). By arbitrary he meant that there is no natural link between the signified and the signifier, which is demonstrated by the very existence of different lan-

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guages. Linearity captures the nature of signifiers, the sound-images that represent concepts, which are linear utterances that take place in time and thus have measurable dimension. Language, therefore, has a natural ambiguity, which Saussure demonstrated with two properties: *immutability* and *mutability*. Signifiers are fixed in the linguistic communities that use them, and therefore have the property of immutability (1959, 71). But over time signifiers (and ultimately signs) change--mutate--and therefore linguistic signs are mutable.

Charles Sanders Peirce and his school of semiotics also shed light on the mutability of signs and the probability of their varying perception across chronological and cultural barriers. Peirce goes well beyond Saussure by presenting a theory of semiotics that is free of linguistic conventions. In Peirce's semiotics, signs are cultural entities. At a very elemental level Peirce asserted the function of what he called 'symbols,' or general signs, which have become associated with their meanings by usage ([1894] 1998, 5). The meaning of a symbol is not fixed, but rather is a function of its perception. Roland Barthes also described reception mutability, suggesting that consumers of works were not concerned so much with the integrity of a text as with their own experience of it (1975, 11). For example, an individual work might be consulted for information, it might be used for recreation, or it might form the basis of a scholar's discourse. Barthes suggests that in essence a text is as though it were *tissue* (1975, 64).

Smiraglia (2001b) has defined a *musical work* is an intellectual sonic conception. Because musical works fundamentally are meant to be heard, physical instantiations are not of primary importance in the exchange between creator and consumer. Rather, they are media through which musical ideas captured at one end of a continuum may be reproduced so that they may be absorbed at the other. Defining a musical work as a sonic conception allows us to bridge the difficulty that arises between works that are *composed* and those that are improvised or otherwise realized primarily through performance. In information retrieval, it is critical to make a distinction between the physical artifactual document, on the one hand, and its musical content, on the other.

Because a musical work must first exist in time to be apprehended by an audience, the more accurate instantiation of a musical work truly is likely its performance. D.W. Krummel (1988) argues that music is an entity that occurs in time, not on paper. Each performance is a "re-creation" of the work. For Carl Dahlhaus (1983), the musical work actually inheres in the receiving audience. Krummel (1970) summarized the historical use of musical documents, which serve as evidence of musical works that have existed and perhaps been performed in the past. In his view, a musical work is existentially viewed as an abstract concept in time rather than a particular physical entity in space. Physical instantiations (i.e, scores, performances, and recordings) represent instances of the work, none of which can be equated fully with the work itself. Jean-Jacques Nattiez (1990) described a semiology of music that comprehends musical *works* as multi-dimensional because their realization is in sound. Lydia Goehr (1992) pointed to the human's natural tendency to take musical works for granted, enjoying their reception but without any clear understanding of the complexity of their origin or existence.

Nattiez and Goehr approach the concept of mutability of works, comprehending works that might have no concrete tokens--as literary works have words on paper--but which find their realization in sonic performances, each of which is uniquely created and uniquely perceived. Roman Ingarden (1986) approached the central problem of the nature of a musical work by considering that the work represents a congruence between the composer and the listener. Thomas Turino (1999) asserts a Peircian semiotic theory of music in which components of musical units (that is, works) such as pitch, scale, tempo, etc. function as components of signs. Most recently Stephen Davies (2001) distinguishes among musical works, their instances, and their notations. Davies' lengthy text provides a detailed analysis of philosophers' theories of the ontology of musical works. Concerned with the means by which any given sonic incident might be considered to be a representation of a work, he asserts a six-part ontology of musical works that progresses from improvisation, through musical works for performance, to musical works not intended for performance.

Mark Poster (1990) initiated the concept that history had entered a mode of information in which cultural history is demarcated by variations in the structure of symbolic exchange. Every society makes elemental use of symbolic exchange, particularly among populations that surpass the ability to retain and disseminate all knowledge according to oral tradition. In literate society, works are required to facilitate the preservation and propagation of the culture through

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formal symbolic exchange. Julia Kristeva (1984) has developed an extensive theory of semiotics that incorporates the motility of what she calls "texts" (works in our vocabulary) in society. We tread on thin ice to incorporate Kristeva's semiotics into the comprehension of works as entities for information retrieval. But we do find in her work confirmation of the mutability of works across cultures and over time. We also find in her semiotics a comprehension of the importance of reception to the social role of works.

Works then, can be seen as analogous to signs that are inescapably mutable over time. The texts of works are signifiers that are clearly immutable when first fixed, but which have other properties that are themselves very mutable indeed. Gérard Genette (1997) has even posited a theory of "paratexts"--essentially preliminaries, accompanying material and even advertising blurbs, that all point to the success of a given work, and which themselves mutate over time as a function of the reception history of the particular work to which they attend.

Works are vehicles of culture, entities that arise from a particular cultural perspective. As such they are vehicles with certain cultural obligations--among them dissemination and propagation of the culture from which they spring. This analogy has been demonstrated graphically by Smiraglia (2001) and is reproduced here in Figure 1.

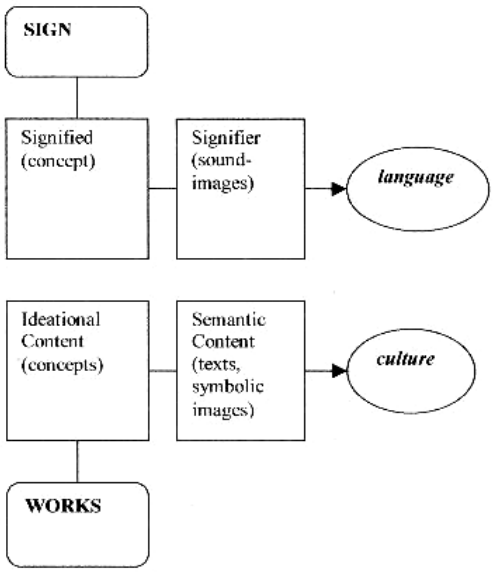

Figure 1. Works are Analogous to Signs

4. Works as Elements of Canon

Each work is in some way a part of a larger body of related work. These bodies of work derive meaning from their function in culture as well as from their relations with other works and other bodies of work. Individual works derive meaning as well from their relations to those who will be their human receptors. These core bodies of work, sometimes referred to as canons, function to preserve and disseminate the parameters of a culture by inculcating cultural values through the information conveyed as a whole and in each of the works that comprise them.

Relations that are observed among works in a canon are thought to be conventional rather than natural. That is, they are functions of their roles in the culture from which they spring rather than determined by any inherent characteristics. Ultimately, the work is seen as Barthes's *tissue*--an impermanence to be savored by its receptors, volatile according to its perception arising from the divergent purposes for which it might be consulted.

Paul Eggert (1994) described a phenomenological view of works of art. He suggested that works are ongoing entities that incorporate across their chronological existence all of the reactions of those who encounter them. Echoing the comments of Eggert and Poster, Theo van Leeuwen (1998) suggested a systemic-functional semiotics of music in which music is seen as an abstract representation of social organization, concerned with meta-level cultural interactions that find their expression in music functioning as signs.

Works function as vehicles by which culture is continually communicated. Works have no unchanging existential anchor, no single perfect exemplar. Rather they derive much of their meaning from their reception and continuous reinterpretation in evolving cultures. Works follow the same pattern as Saussure's linguistic signs, mutating across time through the collaboration of the cultures that embrace them. Works are shaped by their audiences, and they reflect the functional requirements of those who will use them. Therefore, works are artifacts of the cultures from which they arise.

5. An Example: *Oliver Twist*

For instance, we can take the example of a well-known work, Dicken's *Oliver Twist*. An important part of Dicken's oeuvre, this popular work has taken

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on cultural meaning. Quite aside from its original existence as a literary work, the character of Oliver Twist has come to be associated in the literary public's imagination with both the heinousness of another generation when the poor were forced into workhouses, and of the eternal concepts of abandonment and survival. *Oliver Twist* has been adapted, translated, made over into a stage play, a musical and a motion picture. Enduring images from all of these mix together in the cultural consciousness to provide an iconic representation of salvation from oppression. Like Barthes's *tissue*, *Oliver Twist* is a simple story that has become transparent, deriving meaning from those who encounter it, in whatever instantiation. Like Kristeva's motile text, *Oliver Twist* continually signifies. Like Gennette's *paratext*, the accompanying cacaphony of images, sounds, and publicity-blurbs that surround the work continually point to the essential story. *Oliver Twist* is a work; and that work is has cultural meaning, mutating as Eggert suggests according to the dictates of its receiving communities.

Dickens, Charles, Oliver Twist; or, The parish J. Duncombe & 1838
Dickens, Charles, Oliver Twist; or, The parish J. Turney, Jr. 1838
Dickens, Charles, Oliver Twist, or the parish b 1838
...
Dickens, Charles, Oliver Twist Chapman and Ha 1850
Dickens, Charles, Oliver Twist / Getz, Buck, 1853
Dickens, Charles, Oliver Twist / T.B. Peterson, 1854
...
Dickens, Charles, Oliver Twist. Hearst's Inter 1868
Dickens, Charles, Oliver Twist The Mershon Co 1868
Dickens, Charles, Oliver Twist / Hurd and Hough 1869
Dickens, Charles, Oliver Twist. Chapman & Hall 1870
...
Dickens, Charles, Oliver Twist a serio-comic bu Samuel French, 1864
Dickens, Charles, Oliver Twist : a serio-comic John Dicks, 1879
...
Dickens, Charles, Oliver Twist / Oxford Univers 2000 U
Dickens, Charles, Oliver Twist / Longman, 2000 U
Dickens, Charles, Oliver Twist / Dorling Kinder 2000 D
Dickens, Charles, Oliver Twist / Modern Library 2001 D
...
Dickens, Charles, Oliver! Columbia Pictu 1968
Dickens, Charles, Oliver! RCA/Columbia P 1985
Dickens, Charles, Oliver! Columbia Trist 1987
Dickens, Charles, Oliver and the artful Dodger Worldvision Ho 1985
Dickens, Charles, Oliver and the artful Dodger Hanna-Barbera 1989
...
Dickens, Charles, Oliver Twist Decca, 1960
Dickens, Charles, Oliver Twist. Columbia, 1960
Dickens, Charles, Oliver Twist Golden Records 1962 D
Dickens, Charles, Oliver Twist Books on Tape, 1977
Dickens, Charles, Oliver Twist Listen For Ple 1977
...
Dickens, Charles, Oliver! / Hollis Music, 1960
Dickens, Charles, Oliver! / Lakeview Music 1960

Figure 2. Oliver Twist

A search of the OCLC Online Computer Library Center's WorldCat reveals 1139 responses to a request for Dicken's work beginning "Oliver." (Note, translated titles were not sought, so the actual universe of instantiations of this work must be much larger.) In Figure 2 we see an array of descriptions of physical instantiations of this work (an incomplete list, compiled based on our search, but sufficiently demonstrative of the mutability of this work). As is often the case, this array consists of traditional name-title citations, qualified by publisher and date. Note there is little differentiation among the citations that can indicate any sort of variation among the instantiations they represent. Still, we can observe continued reception and therefore mutation of the work over time as editions progress from 1838 to 2000. We can also observe derivation of the work, as it passes from novel to stage play to musical to motion picture to sound recording to musical score to book on tape and on and on. Note too, that the musical adaptations are more properly the work of Lionel Bart, than of Dickens, but this display, which is typical of online bibliographic retrieval displays, does not make that relationship apparent.

To solve the identification problem, librarians have recently superimposed an ordering device called a uniform title. Inserted in square brackets between the author's name and the transcription of the title from the physical instantiation, the uniform title consists of a bibliographically significant title for the work, based on its original as given by the author. To this may be added identifiers (for instance, language of translation) to assist with both differentiation and order in a file consisting of all of the composer's works. Taken altogether the name-uniform title citation provides the means for an alphabetico-classified ordering of an author's works in an information retrieval venue.

The purpose of this example is to demonstrate both the centrality of the identity of a work for information retrieval, and the importance of an epistemological understanding of it as an entity for information retrieval. The uniform title not only identifies the present physical instantiation, but it also places it well amidst other physical instantiations, themselves representative of a variety of instantiations. From the uniform title we learn the title of the original work, and from its placement among other citations, we learn the fact that this edition represents somehow a mutation of the original. Seen in array, as in Figure 3, the alphabetical identifiers serve a classificatory role, arranging and displaying for differentiation the available instantiations of the work.

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Dickens, Charles, 1812-1870.

[Oliver Twist]
[Oliver Twist. Chinese]
[Oliver Twist. Dutch]
[Oliver Twist. French]
[Oliver Twist. German]
[Oliver Twist. Hebrew]
[Oliver Twist. Japanese]
[Oliver Twist. Spanish]
[Oliver Twist. Ukrainian]
...
Bart, Lionel.
[Oliver! Selections]

Figure 3. Instantiations Arranged by Uniform Title

We also see in this example a simple representation of the need for a complex definition of the work as an entity for information retrieval. Works constitute complex sets of varying instantiations, all derived from a common progenitor. Information retrieval systems need to go well beyond the simple identification of the progenitor work. As we see demonstrated in this example, a useful information retrieval system needs to have the capability to differentiate among the varying instantiations, in order to allow searchers to make the best possible choice among alternatives.

6. Epistemology, Knowledge Organization, Information Retrieval

Epistemology is the division of philosophy that investigates the nature and origin of knowledge. Roberto Poli (1996) contrasted the tools of ontology and epistemology for knowledge organization, suggesting that where ontology represents the "objective" side of reality, epistemology represents the "subjective" side. Ontology ("being") provides a general objective framework within which knowledge may be organized, but epistemology ("knowing") allows for the perception of the knowledge and its subjective role. Hope A. Olson (1996) used an epistemic approach to comprehend Dewey's classification, asserting a single knowable reality reflected in the topography of recorded knowledge. Archie L. Dick (1999) described epistemological positions in library and information science. He suggested that experience (empiricism) provides the material of knowledge, and reason (rationalism) adds the principles for its ordering. Rationalism and empiricism supply the basic platform for epistemological positions.

Birger Hjørland (1998) asserts a basic epistemological approach to fundamental problems of information retrieval, particularly to the analysis of the contents of documentary entities. He begins from a basic metaphysical stance, stating that ontology and metaphysics describe what exists (basic kinds, properties, etc.), whereas epistemology is about knowledge and ways in which we come to know. Hjørland lists four basic epistemological stances:

- Empiricism: derived from observation and experience;
- Rationalism: derived from the employment of reason;
- Historicism: derived from cultural hermeneutics; and,
- Pragmatism: derived from the consideration of goals and their consequences.

Hjørland describes a domain-analytic approach to subject analysis, recognizing that any given document may have different meanings and potential uses to different groups of users. Hjørland and Hanne Albrechtsen (1999) delineate recent trends in classification research, demonstrating the utility of Hjørland's epistemological framework for deriving categories.

Marco and Navarro (1993) described contributions of the cognitive sciences and epistemology to a theory of classification. They suggest that (p. 128):

> The study of epistemology is, therefore, essential for the design and implementation of better cognitive strategies for guiding the process of documentary analysis, particularly for indexing and abstracting scientific documents. The ordering and classifying of information contained in documents will be improved, thus allowing their effective retrieval only, if it is possible to dis-
> cover the conceptual framework (terms, concepts, categories, propositions, hypotheses, theories, patterns, and paradigms) or their authors from the discursive elements of texts (words, sentences and paragraphs).

Epistemology, then, is concerned with the theory of the nature of knowledge.

Why then undertake to describe the epistemology of the work? Marco and Navarro and Hjørland together give us the answer. Information science, and its most elegant branch, knowledge organization, have

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been too long enamored of the rationalistic and pragmatist approaches. That is to say, too few of our conceptual arrays are based on either empirical knowledge of what exists in the universe of information entities (on the one hand), or on essential understanding of the cultural importance, historic origins, or social roles, of the entities we pretend to systematize. Knowledge organization, as Hjørland (1998) and Hjørland and Albrechtsen (1999) suggests, must proceed from more finely developed epistemological positions, and these are the empiricist and historicist points of view. Jens-Erik Mai (1999) has also pointed out the necessity for knowledge organization to regard the epistemological basis of how knowledge is generated and realized.

If we are to attempt to inform our cognitive structures with epistemological perspectives from the historicist point of view, then this is the value of semiotic analysis of our entities. And this is the value of our semiotic analysis of works, which reveals the cultural aspects and positions of works as knowledge entities. Empiricism is decidedly also needed. In the study of works as entities for information retrieval, Smiraglia, Leazer, Yee, and Vellucci have contributed the beginnings of empirical understanding of the mutability and derivation of works, and of the resulting instantiations that must be tended to as entities for information retrieval. Only when we truly understand from an empirical perspective what we have observed from a historicist perspective--only then--can we begin to truly rationally and pragmatically derive appropriate constructs for systems for information retrieval. In this case, once we understand that works do play a social role, and that that role results in an accumulation of artifacts with variable paratextual forms of presentation, then can we begin to design systems for the deliberate storage and retrieval of metadata that will be useful for retrieving works.

The potential uses of epistemology for documentary analysis, then, are many; a few have been attempted. Whereas ontology may be relied upon to frame the organization of knowledge, epistemology provides us with key perceptual information about the objects of knowledge organization. Each perspective can contribute to understanding; collectively a balanced perspective can be achieved. To begin, empiricism can lead us to taxonomies of knowledge entities. Rationalism can demonstrate the cultural role of, and impact on, knowledge entities.

Works are key carriers of knowledge, representing not simply raw data or facts, but deliberately-constructed packages of both rational and empirical evidence of human knowledge, designed to serve a communicative role across time and cultures. The organization of works for information retrieval along topical and disciplinary lines has been the key task of knowledge organization, specifically of classification. But works, too--especially those with canonical importance, have been organized using inadequate alphabetico-classified orders.

7. A Taxonomic Definition of the Work

Smiraglia (2001) suggests the parameters of a theory of the work. Smiraglia (2000) incorporated the tools of epistemology to comprehend works by incorporating those theoretical parameters in the context of a taxonomic definition, which is repeated here.

A work is a signifying, concrete set of ideational conceptions that finds realization through semantic or symbolic expression. That is, a work embraces a set of ideas that constitute both the conceptual (signified) and image (signifier) components of a sign. A work functions in society in the same manner that a sign functions in language. Works, like signs, demonstrate the characteristics of arbitrariness (the absence of a natural link between the signified and the signifier) and linearity (signifiers unfold sequentially over time). Therefore, works are subject to the natural ambiguity of signs, having both the properties of immutability (the fixed nature of a signifier in a given community) and mutability (change over time in their perception and use).

Further, a work has the characteristics of a Peircean symbol, reflecting both the physical connections of indications and the imitative ideational likenesses. Like works, Peircean symbols incorporate words or phrases that have become associated with their meanings by usage.

If a work enters a canon then its signifying texts may derive and mutate. Derivations may take one or more forms: 1) simultaneous editions; 2) successive editions; 3) amplifications; or, 4) extractions. Musical works, according to Vellucci, may also derive in two additional ways through musical presentation or notational transcription. In these categories the work derives culturally over time, but ideational and semantic content do not change.

Mutations may take one or more forms as well: 1) translations; 2) adaptations; or 3) performances. In these categories the ideational and semantic content

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have mutated to some degree. The relations among the exemplars of a work constitute a network of related entities that has been described variously as a bibliographic family (Smiraglia 1992) or a textual identity network (Leazer and Furner 1999).

Using Hjørland's epistemological framework we can comprehend the origins of the components of this taxonomic definition. Empirically derived components are those that have been demonstrated quantitatively in the research by Smiraglia, Smiraglia and Leazer, and Vellucci. Through these studies we have quantitative evidence that works are signifying sets of ideational conceptions that take realization through semantic or symbolic expression. The characteristics of arbitrariness and linearity are clearly demonstrated by the quantification of derivations and mutations of works. Evidence of canonicity is demonstrated by the increased rate of derivation and mutation observed among works that have become part of the academic canon.

Rationalism allows us to perceive the cultural roles of works, which function in society in the same manner that signs function in language. We see through the application of rationalism that works are communicative vehicles that have the characteristics of Peircean symbols, reflecting both the physical connections of indications and the imitative ideational likenesses. Pragmatism gives us the perspective that the array of instantiations of works for information retrieval must incorporate mechanisms to differentiate among the demonstrated derivations and mutations of a given work. Works, particularly musical works, that gain popularity take on cultural perspective, and from that point the rate of derivation and mutation and thus of the creation of varying physical and sonic instantiations increases. Finally, historicism provides the nominal anchor for a set of instantiations of a work. That is, the citation for the original work (such as the very useful uniform title), derived through bibliographical research, stands as the central point for linkage of instantiations in an information retrieval system.

Thus our epistemological perspective yields a logic for the construction of information retrieval mechanisms. The nominal anchor for the accumulated artifacts or their representations is the historically-derived citation for the original ideational set, occasionally altered as a result of the natural evolutionary action over time. Rationalism provides the principles for apprehending and ordering the entire construct. Entities are derived empirically; their cultural role is described pragmatically. Derivation, mutation, and the rate thereof are empirically verifiable, pragmatic, collaborative socio-cultural constructs.

8. Conclusion

Works form a key entity for information retrieval. Semiotic analysis suggests a variety of cultural and social roles for works. Works, defined as entities for information retrieval, are seen to constitute sets of varying instantiations of abstract creations. Variability over time, demonstrated empirically, is an innate aspect of the set of all instantiations of a work, leading to complexity in the information retrieval domain.

Works have been well comprehended as documentary entities. Understanding the social roles of works expands the boundaries of their definition. Epistemological frameworks can help us understand the sociocultural origins of concepts of the work. Taxonomic definition contributes to the epistemological perception of works as specific entities of recorded knowledge. An historically-generated nominal anchor for a work can be used to collect the entire array of instantiations.

Elsewhere, Leazer (1993) has suggested the design of a document-based retrieval system (i.e., a catalog) that would distinguish between works and documents. Such a system would allow for the explicit retrieval of either according to appropriate inherent characteristics (citations for works; titles, or document numbers, for example, for documents). Linkage between these nodes would allow searchers to move easily from the search among instantiations of a work to the list of available documentary representations (for instance), or vice versa. In several papers, Allyson Carlyle (1996, 1997, 1999, and 2001) has explored the ordering of author and work records for retrieval in online catalogs, suggesting means by which complex displays might better be ordered to assist users. An expanded perception of works, such as that presented in this paper, helps us understand the variety of ways in which mechanisms for their control and retrieval might better be shaped in future. The conceptual model presented here can serve as the basis for further analysis of the nature of works, seeking to further document their epistemological roles, using both empirical (quantitative) analysis of collections of works, and historical and qualitative analysis of the social function of their varying instantiations. Collectively, such research would serve to expand the boundaries

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of understanding of all documentary entities, particularly as society moves into an increasingly virtual environment.

9. References

Barthes, Roland. 1975. *The pleasure of the text*; trans. by Richard Miller with a note on the text by Richard Howard. New York: Noonday Press.

Carlyle, Allyson. 1996. Ordering author and work records: An evaluation of collocation in online catalog displays. *Journal of the American Society for Information Science* 47: 538-54.

Carlyle, Allyson. 1997. Fulfilling the second objective in the online catalog: Schemes for organizing author and work records into usable displays. *Library resources & technical services* 41: 79-100.

Carlyle, Allyson. 1999. User categorisation of works: Toward improved organisation of online catalogue displays. *Journal of documentation* 55: 184-208.

Carlyle, Allyson. 2001. Developing organized information displays for voluminous works: A study of user clustering behavior. *Information processing & management* 37: 677-699.

Dahlhaus, Carl. 1983. *Foundations of music history*, trans. J.B. Robinson. Cambridge; New York: Cambridge University Press.

Davies, Stephen. 2001. *Musical works and performances: A philosophical exploration*. Oxford: Clarendon Press.

Dick, Archie L.. 1999. Epistemological positions and library and information science. *Library quarterly* 69: 305-23.

Eggert, Paul. 1994. Editing paintings/conserving literature: The nature of the 'work.' In *Studies in Bibliography* v.47 ed. by David L. Vander Meulen, pp. 65-78. Charlottesville, Pub. for The Bibliographical Society of the University of Virginia by The University Press of Virginia.

Genette, Gérard. 1997. *Paratexts: Thresholds of interpretation*, trans. By Jane E. Lewin, foreword by Richard Macksey. Cambridge: Cambridge Univ. Press (Originally *Seuils,* Editions du Seuil, 1987).

Goehr, Lydia. *The Imaginary museum of musical works: an essay in the philosophy of music*. Oxford: Clarendon, 1992.

Hamman, Michael. 1999. From symbol to semiotic: Representation, signification, and the composition of music interaction. *Journal of new music research* 28: 90-104.

Hjørland, Birger. 1998. Theory and metatheory of information science: a new interpretation. *Journal of documentation* 54: 606-21.

Hjørland, Birger and Hanne Albrechtsen. 1999. An analysis of some trends in classification research. *Knowledge organization* 26: 131-9.]

Ingarden, Roman. 1986. *The work of music and the problem of its identity*, trans. Adam Czerniawski. Berkeley, Calif.: Univ. of Calif. Pr.

International Federation of Library Associations, Study Group on the Functional Requirements for Bibliographic Records. 1998. *Functional requirements for bibliographic records*. München: K.G. Saur..

Kristeva, Julia. 1984. *Revolution in poetic language*, translated by Margaret Waller; with an introduction by Leon S. Roudiez. New York: Columbia University Press. (Original ed.: *La révolution du language poétique*. Paris: Seuil, 1974.)

Krummel, D.W. 1988. *The memory of sound: Observations on the history of music on paper*. Washington, D.C.: Library of Congress.

Krummel, D.W. 1970. "Music as Vibrations and as Flyspecks," *Wisconsin Academy of Sciences, Arts & Letters* 58.

Leazer, Gregory Hart. 1993. A conceptual plan for the description and control of bibliographic works. DLS diss., Columbia Univ.

Leazer, Gregory H. 1994. A conceptual schema for the control of bibliographic works. In *Navigating the networks: Proceedings of the ASIS mid-year meeting 1994*, ed. by D. L. Andersen, T. J. Galvin and M. D. Giguere. Medford, NJ: Learned Information, Inc., pp. 115-35.

Leazer, Gregory H. and Jonathan Furner. 1999. Topological indices of textual identity networks. *Proceedings of the 62nd annual meeting of the American Society for Information Science*, ed. Larry Woods. Medford, NJ: Information Today, pp. 345-58.

Leazer, Gregory H. and Richard P. Smiraglia. 1996. Toward the bibliographic control of works: Derivative bibliographic relationships in an online union catalog. In *Digital libraries '96: 1st ACM International Conference on Digital Libraries, March 20-23, 1996, Bethesda, Maryland*. Assn. for Computing Machinery.

Leazer, Gregory H. and Richard P. Smiraglia. 1999. Bibliographic families in the library catalog: A qualitative analysis and grounded theory. *Library resources & technical services* 43:191-212.

https://doi.org/10.5771/0943-7444-2001-4-192 https://www.inlibra.com/de/page/agb - Open Access - (cc) BY

Mai, Jens-Erik. 1999. A postmodern theory of knowledge organization. *Proceedings of the 62nd annual meeting of the American Society for Information Science*, ed. Larry Woods. Medford, NJ: Information Today, 1999, pp. 547-56.

Marco, Francisco Javier Garcia and Miguel Angel Esteban Navarro. 1993. On some contributions of the cognitive sciences and epistemology to a theory of classification. *Knowledge organization* 20: 126-32.

Nattiez, Jean-Jacques. 1990. *Music and discourse: Toward a semiology of music*, trans. by Carolyn Abbate. Princeton, N.J.: Princeton Univ. Pr.

Olson, Hope A.. 1996. Dewey thinks therefore he is: The epistemic stance of Dewey and DDC. *ISKO 5*, 302-3.

Peirce, Charles Sanders. [1894] 1998. *The essential Peirce: selected philosophical writings*. Vol. 2 (1893-1913), ed. by the Peirce Edition Project, Nathan Houser [et al.], p. 4-10, "What is a sign?" Bloomington: Indiana Univ. Pr.

Poli, Roberto. 1996. Ontology for knowledge organization. *ISKO 5*, 313-19.

Poster, Mark. 1990. *The mode of information: Poststructuralism and social context*. Univ. of Chicago Pr.

Saussure, Ferdinand de. 1959. *Course in general linguistics*. Ed. by Charles Bally and Albert Sechehaye; in collaboration with Albert Riedlinger; trans., with an introd. and notes by Wade Baskin. New York: McGraw-Hill.

Smiraglia, Richard P. 1992. Authority control and the extent of derivative bibliographic relationships. Ph.D. diss., University of Chicago.

Smiraglia, Richard P. 2000. "Words and works; Signs, symbols and canons: The epistemology of the work." In *Dynamisn and stability in knowledge organization: Proceedings of the Sixth International ISKO Conference, 10-13 July 2000, Toronto, Canada*, ed. Clare Beghtol, Lynn C. Howarth, Nancy J. Williamson. Advances in knowledge organization v. 7. Würzburg: Ergon Verlag, pp. 295-300.

Smiraglia, Richard P. 2001. *The nature of "The work."* Lanham, Md.: Scarecrow Press.

Smiraglia, Richard P. 2001b. Musical works as information retrieval entities: Epistemological perspectives. Submitted to International Symposium on Music Information Retrieval 2001.

Smiraglia, Richard P. and Gregory H. Leazer. 1995. Toward the bibliographic control of works: Derivative bibliographic relationships in the online union catalog. *OCLC annual review of research 1995* Dublin, OH: OCLC Online Computer Library Center, Inc..

Smiraglia, Richard P. and Gregory H. Leazer. 1999. Derivative bibliographic relationships: The work relationship in a global bibliographic database. *Journal of the American Society for Information Science* 50:493-504.

Talbot, Michael, ed. 2000. *The musical work: Reality or invention?* Liverpool Music Symposium 1. Liverpool: Liverpool University Press.

Thomas, David H. and Richard P. Smiraglia. 1998. Beyond the score. *Notes: The quarterly journal of the Music Library Association* 54:649-66.

Tillett, Barbara Ann Barnett. 1987. Bibliographic relationships: Toward a conceptual structure of bibliographic information used in cataloging. Ph.D. dissertation, University of California, Los Angeles.

Turino, Thomas. 1999. Signs of imagination, identity, and experience: A Peircian semiotic theory for music. *Ethnomusicology* 43: 221-55.

van Leeuwen, Theo. 1998. Music and ideology: Notes toward a sociosemiotics of mass media music. *Popular music and society* 22n4: 25-54.

Vellucci, Sherry L. 1997. *Bibliographic relationships in music catalogs*. Lanham, Md.: Scarecrow Press.

Yee, Martha M. 1993. Moving image works and manifestations. PhD. diss. University of California, Los Angeles.

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