Equivalence in Tillett’s Bibliographic Relationships Taxonomy: A Revision

Abstract: This paper analyzes the equivalence relationship as presented by Barbara B. Tillett in her taxonomy of bibliographic relationships. Tillett’s definition of equivalence comprised of two parts, first, that equivalence holds between exact copies of bibliographic items or documents, and second, that it may hold between an original item and a reproduction, if the intellectual content and authorship are preserved. It is proposed that this definition is too restrictive, excluding relationships among items that may, based on contexts of use, act as equivalent. Further, it is suggested that a taxonomy of bibliographic relationships be constructed as holding between document representations as opposed to documents themselves. A revised definition of equivalence is offered in which equivalence relationships may hold among document representations in which one or more document properties described in the representations are shared. One advantage of this revision is that it subsumes Tillett’s shared characteristic relationship, simplifying the taxonomy.

1. Introduction

Barbara B. Tillett’s taxonomy of bibliographic relationships uniquely addresses a long standing concern of the cataloging community, namely the identification and use of relationships among items identified in library catalogs. Tillett states that one of the major purposes motivating her development of the taxonomy is its subsequent capability to “act as a rationale to guide in the creation and use of the catalog” (Tillett, 1987, p. 23). We suggest that, given the increase in document types and contexts of use, the purpose be extended beyond library catalogs to include a wide variety systems of knowledge organization. We further propose a shift in emphasis moving away from the identification of fixed or stable relationships that exist among documents independently of their use and toward a view of relationships that recognizes their variability given the changing nature of uses, users, and contexts. In light of this extension of purpose and emphasis, we differ with Tillett on the strategic roles played by relationships types in the design and use of such systems. We suggest a revision of Tillett’s taxonomy to accommodate an expansion of purpose and emphasis that will meet the needs of today’s users, including users of the library catalog. This paper will concentrate on the redefinition of one of Tillett’s relationship types in order to exemplify the rationale and strategy for revision. The relationship type offered as the basis for discussion is that of equivalence.

2. Tillett’s Bibliographic Relationships Taxonomy

In the introduction to her dissertation, Bibliographic relationships: Toward a conceptual structure of bibliographic information used in cataloging (1987), Tillett states her intention as follows:
to provide the groundwork for understanding the *conceptual structure* of the ideal library catalog in terms of bibliographic relationships (p. xx).

She then provides a definition of *conceptual structure* as a framework, comprised of the following three parts:

1. what should be included in the catalog;
2. the elements necessary to describe these items; and finally
3. the links or relationships among the items (p. 6).

Tillett’s research addresses only the last of these three parts. Specifically she intends to “operationally [identify] and [categorize] bibliographic relationships in a taxonomy” (p. xx). The bibliographic relationships identified and categorized in the taxonomy are:

1. *equivalence relationships*, which hold between exact copies of the same manifestation of a work or between an original item and its reproductions, as long as the intellectual and artistic content and authorship are preserved...
2. *derivative relationships* ... which hold between a bibliographic item and a modification based on that item ...
3. *descriptive relationships*, which hold between a bibliographic item or work and a description, criticism, evaluation, or review of that work ...
4. *whole-part (or part-whole) relationships* ... which hold between a component part of a bibliographic item or work and its whole ...
5. *accompanying relationships*, which hold between a bibliographic item and the bibliographic item it accompanies ...
6. *sequential relationships* ... which hold between bibliographic items that continue or precede one another ...
7. *shared characteristic relationships*, which hold between a bibliographic item and other bibliographic items that are not otherwise related but coincidentally have a common author, title, or other characteristic used as an access point in a catalog ... (Tillett, 1991, p. 156).

Although Tillett develops her taxonomy through an analytical and empirical study of cataloging records and codes, the definition of the conceptual structure focuses on the *items described* in cataloging records and linked by the relationships identified in those records rather than the *representations or records of the items* thus described and linked. Tillett herself, in a discussion of her methodology for identifying types of bibliographic relationships, states that her taxonomic categories are derived from both the definitions of types of physical items found in glossaries and inferences made from her reading of cataloging rules. In other words, although Tillett’s taxonomy ultimately categorizes bibliographic relationships based upon an analysis of their *representation* in cataloging records, the categories themselves are derived from definitions of types of physical items gleaned from cataloging codes and glossaries.

In Tillett’s view, the relationship types resulting from the grouping of items can subsequently function as *pathways* linking related items based on the bibliographic characteristics incorporated into cataloging records and shared by items in those categories. In addition to functioning as road signs, the links themselves display to the user the availability of related items. The taxonomy of bibliographic relationships thus aids in permanently stabilizing relationship types with reference to those items solely representative of each type.

The purpose of our proposed revision Tillett’s equivalence relationship is to identify sets of properties or attributes brought forward in document representations
that exemplify relationships and can be re-grouped and re-used to create equivalent groupings of document representations dependent upon varying material contexts of the use of the documents themselves. Multiple uses of documents result in the need for developing criteria of their substitutability. Thus, rather than using the equivalence relationship to conventionally link identical items, providing users pathways among related documents, we redefine equivalence to accommodate the notion of substitutable representations of the same document altered by the context of its use. Our proposed revision of Tillett’s equivalence relationship is designed to address the unfixed and impermanent identity of a document as articulated by its use.

Central to our proposed revision of Tillett’s taxonomy of relationship types is the idea of substitutability. Basically, substitutability is a condition of document usage; the properties shared by these documents are relative to that use. For example, there are times when one edition is as good as another; times when we need to be alerted to various editions to suit our purposes; and, times when only one particular edition will meet our needs. It is our contention that any optimally functional knowledge organization system, including the library catalog, must be capable of accommodating users’ specifications of those properties identified as significant in their determination of substitutability. The redefinition of the equivalence relationship is a step toward the creation of responsive, user-centric, and context-sensitive knowledge organization systems.

3. Tillett’s Equivalence Relationship

As noted above, Tillett defines the equivalence relationship as follows: “Equivalence relationships are those that hold 1) between exact copies of the same manifestation of a work, or 2) between an original work and reproductions of it, as long as intellectual content and authorship are preserved” (Tillett, 1987, p. 27). No explicit criteria are stated for determining when the proviso holds between an original work and its reproduction. The implication is that the decision must be made repeatedly in any given number of circumstances. In other words, the ground for determining this particular type of equivalence is situational. Equivalence relationships, then, according to this second proviso, hold in various contexts of decision-making, rather than between documents that are potentially duplicate with regard to the preservation of intellectual and artistic content. In 2001, Tillett acknowledges that “the idea of equivalence is tricky, because it is a subjective determination whether entities are indeed equivalent or not, depending on what the user considers to be the ‘same’” (Tillett, 2001, 24). However, she does not, based on this acknowledgement, revise her definition of equivalence.

4. Equivalence Relationship Revised

Our proposed revision of Tillett’s taxonomy of relationship types suggests that equivalence be determined syntagmatically; that is, that it be defined relative to the use of documents. In addition, we propose that the distinction between item, or document, and representation of that item or document, be clarified and articulated. Not all attributes of a document are equally significant in every context of use. Further, not all are identified in a representation of that document. Given this, we propose a model of equivalence relationships that allows for the selective
distribution of attributes based on (a) contextual states of substitutability between documents and (b) the presence of those attributes in a document representation.

One of our motivations for redefining the equivalence relationship stems from a consideration of the collocating objective of the library catalog as conceived by Seymour Lubetzky and of the current activity surrounding the publication of a conceptual model of bibliographic entities in IFLA’s Functional Requirements for Bibliographic Records (IFLA, 1998). Lubetzky stated that the collocating objective of the library catalog required the catalog “to relate and display together the editions which a library has of a given work and the works which it has of a given author” (Lubetzky, 1960, ix). We suggest that one of the means of “relating and displaying together” editions of a work and works by an author in a library catalog or information system is to treat them as equivalence sets and group representations describing those editions and works based on the identification of shared properties that exist in the cataloging records.

In Functional Requirements for Bibliographic Records (FRBR), an entity-relationship model of the bibliographic universe is proposed to “provide a ... shared understanding of what it is that the bibliographic record aims to provide information about” (IFLA, 1998, p. 2). FRBR posits four bibliographic entities:

1. **work** (“a distinct intellectual or artistic creation”),
2. **expression** (“the intellectual or artistic realization of a work”),
3. **manifestation** (the physical embodiment of an expression of a work”), and
4. **item** (“a single exemplar of a manifestation”).

In the FRBR model, each of these entities is associated with particular attributes that would be described in cataloging records. For example, a cataloging record for *The Haunted Pool*, Frank Hunter Potter’s translation of George Sand’s *La Mare au Diable* published by Shameless Hussy Press in 1976 would include attributes for the work, expression, and manifestation entities, as follows:

1. **work**: George Sand (author name attribute); *La Mare au Diable* (work title attribute)
2. **expression**: Frank Hunter Potter (translator name attribute); *The Haunted Pool* (expression title attribute)
3. **manifestation**: Shameless Hussy Press (publisher name attribute); 1976 (publication date attribute).

Because the model is hierarchical, work attributes are inherited by expressions; work and expression attributes are inherited by manifestations; and work, expression, and manifestation attributes are inherited by items. We suggest that if equivalence is defined to hold among document representations sharing a selection of properties or attributes, then the records associated with particular works or expressions could be regarded as sharing an equivalence relationship based on the properties they have in common. Thus, all of the records that share the author name “George Sand” and the work title “*La Mare au Diable*” could be considered equivalent in a particular context of use, and could be displayed together as a unit or set in an information system. Using the FRBR model, a group of records sharing expression attributes could also be displayed together to identify the members of an expression set.

This view of equivalence varies from the Tillett view in that the membership of an equivalence set may change depending on variant contexts of use. Those contexts of use may be identified by the cataloging community, as is the case with the FRBR model, or they may be identified by individual users. Thus, an
expanded view of the equivalence relationship based on shared properties or attributes is amenable to alternative uses of document representations.

A redefinition of equivalence based on shared properties would not only accommodate predominant viewpoints such as those articulated by Lubetzky and FRBR, but would accommodate viewpoints articulated less frequently that may hold in non-typical user contexts. For instance, in some contexts, for some users, an item that is related to another work may be considered to be equivalent to the work itself. One example of this may be a context in which a movie version of a textual work would be considered to be equivalent to, or substitutable for, the textual work itself.

Based on a view of equivalence as a syntagmatic relationship to be called out by the specification of shared properties identified in document representations, we propose the following definition of equivalence relationships shown in knowledge organization systems:

Equivalence relationships hold among documents representations in which one or more document properties described in the representations are shared.

This redefinition of equivalence relationships makes clear the fact that equivalence relationships hold and are made possible in document representations. The shift from documents to document representations is a useful one given the nature of documents and the nature of document representation. It sometimes happens that documents do not state the properties that they embody that would identify them as equivalent to other documents. For example, a document that is a translation of another document may not state the title of the document of which it is a translation. In this case, a critical property that could be used in establishing equivalence is missing. In the library cataloging environment, that property is supplied in the cataloging record if it is obtainable. Thus, document representations sometimes have more power in establishing equivalence relationships than the documents themselves.

Another advantage of the redefinition proposed here is that equivalence relationships may be used to describe entities identified in models of the bibliographic universe proposed elsewhere. For example, the bibliographic entities described in the FRBR model could be easily accommodated, and works and expressions, not as easily accommodated in Tillett’s existing taxonomy, could all be identified using the equivalence relationship.

Redefining equivalence based on shared properties allows us to further simplify Tillett’s relationships taxonomy. In the taxonomy proposed by Tillett, one of the relationship types is shared characteristic. Given a redefinition of equivalence based on shared properties, shared characteristic relationship is no longer necessary, and is subsumed in the equivalence relationship. One advantage of this is that relationships among two different works that do not share a derivative relationship but share a common origin, such as the relationship between the movie Scrooged, based on Charles Dickens’ A Christmas Carol, and the children’s picture book produced by Disney, Mickey’s Christmas Carol, are accommodated by the same relationship that would show the connection between these two works and the original by Dickens.

5. Conclusion
In contrast to the intention of Tillett’s taxonomy of bibliographic relationships to provide for a greater understanding of the conceptual structure of
the catalog, this paper offers, as an alternative, a conception of a taxonomy as a way to strengthen the *theoretical foundation* of a knowledge organization system as articulated in and implemented by its objectives. To do this requires a redefinition of the equivalence relationship identified by Tillett's taxonomy of bibliographic relationships. Specifically, the paper demonstrates the ways in which the proposed redefinition serves to support users in their searches for bibliographic items represented in information systems.

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**References:**


