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Content versus Carrier

by

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1. Introduction

Acting as a surrogate for an actual item or object, the bibliographic record must present as accurate and full a description of the physical, intellectual and/or artistic properties of a work as will facilitate its identification and access by an individual with an information need.¹ The inherent value or usefulness of the bibliographic surrogate resides in its ability to represent each entity (item or object) uniquely, permitting different manifestations or formats of the title to be distinguished one from another. Determining what is appropriately “accurate” and “full” so as to be “useful” has been the challenge for designers of descriptive cataloguing codes, particularly since the proliferation of both published materials, and libraries accessible to a wide range of users or clients, necessitated a systematic and consistent approach to the creation of bibliographic surrogates.

2. Content versus Carrier: Some Issues and Problems

Rule 0.24 of the *Anglo-American Cataloguing Rules*, second edition, 1988 revision (with 1993 amendments) (*AACR2R*) establishes the framework for the descriptive cataloguing endeavour. “It is a cardinal principle of the use of part I that the description of a physical item should be based in the first instance on the chapter dealing with the class of materials to which that item belongs. In short, the starting point for description is the physical form of the item in hand, not the original or any previous form in which the work has been published.” (*AACR2R*, p. 8). Descriptive cataloguing is thus based, in the first instance, on the physical format of the material -- the carrier -- rather than on the intellectual or artistic content of the work. Chief sources of information for various elements of the bibliographic record (title and statement of responsibility area; edition area; area 3 data, where applicable; publication, distribution, etc., area), are format-dependent.

¹ In the words of the *Final Report* of the IFLA Study Group on the Functional Requirements for Bibliographic Records, those who search and use national bibliographies and library catalogues require data to *find* materials, to *identify* and to *select* an entity, and to *obtain* access to the entity described (pp. 8-9).

Part II of the code deals with the choice and form of access points for the item, with rule 20.1 advising that: “The rules in part II apply to works and not to physical manifestations of those works, though the characteristics of an individual item are to be taken into account in some instances” (*AACR2R*, p. 305). The creation of a complete bibliographic record for an item or object will begin with the application of part I, with the choice and form of access points subsequently based on that description and as directed in part II (see *AACR2R*, rule 20.1, p. 305).

As Delsey (1997) and Heaney (1995) have observed, the structure of *AACR2* (and *AACR2R*) is itself problematic in ensuring consistent application of rules 0.24 and 20.1 -- arguably the defining elements of the “content versus carrier” discussion. In his “Object-Oriented Cataloging”, Heaney explains:

Even within *AACR2* there are sleights of hand which disguise the centrality of the issue of description versus access. Theoretically, access points should arise from the description of the physical item, but in some instances they depend upon decisions about the ‘nature’ of a work: for example, the text versus commentary aspect or the original author versus revising author in *AACR2* rule 21.12B. *AACR2* does give guidance which uses the layout of the physical object as a touchstone, but in the end the decision is based on the cataloguer’s conception of what the work ‘really’ is. Another important example is the case where a known author is not named in the work. Here the cataloguer is instructed to give the known author as the main entry and to add a note identifying the person. Adding the note to the record is access determining description. (p. 137)

While the code makes explicit that descriptive cataloguing is physical object-focused, and access points are work-dependent, nonetheless the process involves using the chief source of information for the item-in-hand as a starting point for the choice and form of main and added entries. As Delsey (1997) summarizes:

It is clear that the notion of the work as an entity distinct from any given ‘physical manifestation’ of the work is operative in the rules applying to works for which a single person is responsible, and also in the rules for establishing uniform titles. But as we move into dealing with works of shared and mixed responsibility, there is a clear tendency to skew the concept of the work, to judge who is responsible for the work and whether or not the work is a new work entirely on the basis of what is in effect ‘product labelling’ information derived from the item in hand. In those cases the characteristics of a single ‘physical manifestation’ effectively

displace the notion of the work as an entity or object in its own right. (p. 6 of typescript)

These apparent inconsistencies underscore the problem of drawing clear distinctions, or a definite demarcation between content and carrier in the application of *AACR*.

As new media types have proliferated, in essence to acquire “literary warrant”, the cataloguing codes have evolved to incorporate the particular or unique physical properties of the material. Appropriate rules have been added to existing chapters, or complete chapters have been inserted into the code as a whole. Increasingly, the same work in multiple formats or with parts comprised of different media types have emerged to challenge the concept of the single carrier. Likewise, the evolution of electronic media, including Internet resources which contain multi-media formats (e.g., audio and/or video clips to complement text and graphics) have, in some cases, made the interpretation and application of rule 0.24 less clear, if not problematic.

Why has rule 0.24 proved to be problematic? Because it makes the physicality of a work the focus, and the starting point for the creation of the descriptive portion of the bibliographic record, its application leads to apparent duplication since the same work (title) can appear in many formats, and separate bibliographic records can be created for each item. In some cases determining the “class of materials to which that item belongs” is less than straightforward. For some kits or multimedia manifestations it may be unclear as to which component should be designated the primary medium and the starting point for the descriptive cataloguing, *per se*. Devising guidelines for representing interactive multimedia proved challenging because of the packaging of several distinct media -- videorecordings; sound recordings; computer files; printed text; each with their own separate chapters for descriptive cataloguing in *AACR2R* -- into one work. In that case, the determination of primary medium was sufficiently daunting to raise the question of creating a separate chapter in the code to deal exclusively with interactive multimedia. For the time being, *AACR2R*, Chapter 9, suffices along with a companion manual, *Guidelines for Bibliographic Description of Interactive Multimedia* (1994), to assist with interpretation and application of the rules.

While the cataloguing code is explicit in its directives for handling different manifestations of the same title or work, *application* of those rules has been less than consistent. Deviation from the letter of *AACR* has occurred, for example, with the Library of Congress practice with microforms. Rather than using Chapter 11 -- the class of materials to which the work belongs” -- as the basis for describing works reproduced in microform, the Library of Congress reserves that chapter for materials that have only been published in microform format, applying Chapter 2 for the original text and making a note of the format. While the National Library of Canada follows both the letter and spirit of *AACR2R*, Chapter 11, the wide availability and use of Library of Congress cataloguing copy ensures the proliferation of “non-standard” bibliographic records for many titles published in microform.

Most recently, the explosion of information resources accessible via the Internet, and particularly through the World Wide Web, has called into question the usefulness of the bibliographic record as a whole, and of the application of Chapter 9, more specifically. Should a catalogue record be created for resources that change content or location unpredictably and with some frequency, particularly when those resources exist in a relatively free-wheeling, uncontrolled, and largely uncontrollable arena, such as the Web? Is a bibliographic record with its imperatives for structure and consistency a contradiction in terms relative to the amorphous and ever-changing nature of Internet resources? Is Chapter 9 merely a “shoe horn” rigorously applied to force “boundary-less” digital fragments into a predetermined structure initially devised in the book-centered nineteenth century? Can we appropriately apply the provisions of rule 0.24 to a “carrier” where physicality is an intangible, and not readily definable? The International Standard Bibliographic Description for Electronic Resources (ISBD (ER)), just published, omits a physical description area for remote access electronic resources in recognition of the lack of “physicality”. In short, is descriptive cataloguing attempting to follow fashion with outmoded tools, rather than readily accommodating a logical bibliographic fit?

These are questions which will persist and likely intensify as digital formats, in particular, continue to evolve. More common will become instances where, as with the publication of *City of Bits*, the same work appears in both print and electronic formats simultaneously. The latter, which is accessible via the World Wide Web², and readable with a Web browser that supports a graphical user interface (e.g., Netscape; Explorer; Mosaic), offers the reader all the content of the printed monograph, and more. For example, through the use of hyperlinks, the table of contents which appears “up-front” on the electronic title page links to other content pieces in the document. Providing consistent access to such “in tandem” publications through the application of AACR2R, part II, may prove less challenging than providing descriptive cataloguing for two carriers or manifestations -- one tangible, the other intangible. In these instances, will the descriptions resulting from the application of AACR2R, part I, call into question the equivalency of the work itself as the same bibliographic entity but in different formats?

3. To Change the Code (?): Some Considerations

a) AACR as a Robust Framework

The previous section attempted to highlight some of the issues and problems associated with the application of AACR2R rule 0.24, specifically, and also as it relates to rule 20.1 and the choice and form of access points for the “work”. The work *is* or *represents* the content, or is the *expression* of the content as determined by the author(s) or creator(s) (whether known or anonymous; whether a person or a corporate body), while the item-in-hand, the physical entity, or the “carrier” is the vehicle or vessel for that content. As further elaborated by the IFLA Study Group on the Functional Requirements for Bibliographic

² Available at: <http://www.mitpress.mit.edu/City of Bits>

Records: “The entities defined as *work* (a distinct intellectual or artistic creation) and *expression* (the intellectual or artistic content) reflect intellectual or artistic content. The entities defined as *manifestation* (the physical embodiment of an *expression* of a *work*) and *item* (a single exemplar of a *manifestation*), on the other hand, reflect physical form” (p. 12). The apparent primacy of physical form in the creation of the complete bibliographic record (description *and* access points) has proved sufficiently problematic to support calls for a review and substantial revision of the *Anglo-American Cataloguing Rules*. Are significant changes demanded, or is there a place for an AACR with modest revisions or reinterpretations?

The eight areas of description derived from the International Standard Bibliographic Description (ISBD), provide a simple, yet robust framework for the capture and expression of data pertaining to the item-in-hand. The inclusion of optional additions, while confounding to overall record consistency, and to those who would prefer a more prescriptive code, provide for flexibility of application across a variety of physical formats, and within different cataloguing environments. While one might argue that the eight areas of description have more readily accommodated some new formats (e.g., videorecordings), than others (e.g., electronic resources), overall the framework has proved a good fit. Research (Luk 1996; Kopak and Cherry 1997) has suggested that catalogue users would favour enhancements to elements (such as Table of Contents; summary notes; critical reviews) that provide a better picture of the intellectual content of an item, while downplaying the usefulness of aspects related to physical format (for example, pagination; dimensions; illustrations) (Lundgren and Simpson 1997). Modifications of this magnitude could appropriately and readily be incorporated into the code as it currently exists, but would not address the more fundamental concerns regarding the interpretation and application of AACR.

In spite of whatever concerns may have been identified in the application of AACR2R rule 0.24, there is no getting around the fact that some types of items have distinctive physical characteristics which need to be described in a record to make individual entities and their respective surrogates unique. Certain properties pertain to certain types of materials, properties that can serve as particular identifiers of an item. In some cases, where interpretation or use of an item is dependent on its physicality, it will be important to capture and describe those characteristics. Some material formats may require special equipment, particular software, or certain other specifications. Given the rapid changes in hardware and software technologies, there may be a greater necessity than previously for detail and precision in description. What is required for interpretation and/or use of the item? For example, is readability of electronic resources based on different operating systems, or restricted because of incompatible generations of software, changes in standards, etc.? Is a proprietary hypertext browser required to display particular web sites? This is information which will be essential to catalogue users, and which can be provided using the existing framework of AACR.

b) Same Content, Different Physical Representation

At the same time, there is an increasing call for a descriptive cataloguing structure which “collocates” all physical manifestations of a work within one bibliographic record, effectively putting the work, or the “content” ahead of “carrier” in the creation of the surrogate. Why might this be considered an effective approach? Proponents argue that this brings all manifestations of an item together under the same basic framework, and provides an entry more representative of the “intellectual” nature and content of the work. While providing a description that incorporates different physical formats, the initial approach to creating the record is independent of the carrier. Furthermore, the “convenience of the user” may be better addressed by having all physical manifestations (or versions) of the same intellectual or artistic work attached to one master record. On a more pragmatic level, less disk space is required to store a unit record with multiple physical descriptions, than multiple records for the same title.

A two-tier hierarchical model was advocated as the preferred option among three proposed in the *Multiple Versions Forum Report* (1990) emanating from a meeting held in Airlie, Virginia, in December, 1989. The model proposed an independent bibliographic record for one version of an item at the first level of the hierarchy, with dependent partial records representing equivalent versions of the item described in the level 1 record (USMARC bibliographic record) included in the second level (USMARC holdings record). A complete description of versions included in the second level would be achieved only by combining data from both the first and second level records. The *Report*, while widely discussed in the cataloguing community, was never adopted. It has remained a kind of contrapuntal framework hovering in the background while discourse on the need for changes to the cataloguing code have continued.

While the collocation of multiple versions of the same intellectual work within one record may have some appeal, there are some inherent limitations to the approach, notwithstanding a fundamental shift from carrier to content in the interpretation of AACR. Would the descriptions for each material format be sufficient to uniquely identify an individual item? While not a concern specific to descriptive cataloguing, given the current state of automated systems and bibliographic displays, would the *presentation* of information concerning each physical manifestation of the same intellectual work prove confusing to catalogue users? In cases where there were extensive listings under the same item, would the unique distinctions between and among formats be readily apparent in the display? On a pragmatic level, the limited implementation of the USMARC holdings format was, and continues to, be a barrier to implementing a model, such as the two-tier hierarchical model described above.

c) **AACR in the Broader Context**

Added to the above practical concerns are the present realities of bibliographic databases containing millions of records representing individual works (and several records for the same *manifestation* of an individual title in many cases), the use of the code within various sizes and types of libraries with different collections, the fact that not all libraries and collections are automated, and the current state of electronic resources which are not necessarily widely

distributed nor available. Given that *AACR* is applied in countries around the world, fundamental changes to descriptive cataloguing must take into account potential impact on the international bibliographic community, as well as on the Anglo-American cataloguing cohort. Also important to consider are the relatively recent incorporation of the *AACR* framework into rules for archival description and implications of major revisions to the code for archives and burgeoning databases of archival records. Code revision becomes more problematic when an international bibliographic and/or archival community of catalogue creators and/or users may be impacted.

On a more fundamental level, there is the question of why we are revisiting the “content versus carrier” question at this time? Is there, indeed, a major flaw in the code which is rendering, or has rendered *AACR*, in general, and rule 0.24 as an approach, in particular, substantially impractical, unwieldy, or obsolete? Or is the call for change based primarily on the appearance of formats of materials that confound interpretation of Rule 0.24 or invalidate its application (for example, “physicality” cannot be, and therefore, is not described for Internet resources)? Or is a rethinking of *AACR* founded on automated systems functionality, or limitations that changes to the code would override/overcome? If that is the case, is the tail then wagging the dog? Instead of rethinking our approaches to descriptive cataloguing, why are we not concentrating on enhancing computer-based technologies to better manipulate the vast storehouses of bibliographic information currently available?

Perhaps another kind of question is in order. Given advances in information technology and in computer-based information storage and retrieval systems, and with the evolution of sophisticated tools and methods for displaying information in both stand-alone and extensively networked environments, why are we limiting our vision to current configurations? Are there creative opportunities to combine the best of *AACR* description with cutting-edge information interfaces, displays, and technologies, while also preserving a code that is readily applicable in non-automated environments and across different constituencies? Is it time to think in mutually “inclusive” terms of “content” *and* “carrier”, rather than the mutually exclusive, “content versus carrier”? How might this be accomplished?

4. Deconstructing *AACR* and Reconstructing Cataloguing: A Proposal for a Linked Four-Tier Record Structure

The *Anglo-American Cataloguing Rules* contains a framework for describing, and providing access to, a variety of items or objects. The MARC formats for bibliographic, authority, and holdings records, supply a structure for recording data related to manifestations or versions, works, and discrete items or copies. The technological limitations which may have discouraged the implementation of the two-tier hierarchical model for multiple versions, and most certainly the three-tier hierarchical model rejected at the Multiple Versions Forum in 1989, have been remedied to a large degree by the increasing availability and functional enhancement of, Web-based catalogues supporting both the display of individual records, and the dynamic linking of fields across multiple records, or records across databases.

Given this backdrop, it may be useful to conceive of the code as a kind of metadata “shell”, supplying the data for the MARC format records which could be linked to provide a user with a “holistic”, all-inclusive surrogate, which would not only identify and provide access to an object or item, but which would also assist in the retrieval process. By “deconstructing” part I of AACR2R one can isolate those elements which provide a framework of intellectual/artistic, or “content” information common to any work (title; statement of responsibility; series; generic notes about bibliographic or intellectual content). With the addition of access points (including subject headings derived from standard lists, and perhaps class numbers based on standard classification systems) which represent the work independently of the physical format, a first-tier, “work level” record would be created.

Each of the work-specific access points (title, author(s), series (if associated with the work and not with a particular format), subject headings, and classification numbers) would be linked to their respective authority records, where the linked authority records would constitute the second-tier, “authority level record of the whole record structure. Within the Web-based catalogue, one could click on the access point, connect with the authority record, and extend the search based on variant or additional authority data, as appropriate. The second-tier record reflects on AACR2R insofar as the construction of the personal and corporate author, [uniform] title, and series authority records would continue to be based on the current form of entry guidelines now contained in Chapters 22-26 of the code.

From each of the first-tier work-level records could hang separate descriptions of unique physical properties or of format-specific details (general material designation; edition statement; current area 3 information for designated material types; publication, distribution information; physical description; notes relating to physical format [including responsibility for a particular material type, such as “Credits”]; numbers [standard and other] associated with format type [e.g., ISBN; ISSN; URL; URN; etc.]). This approach would essentially reorder the existing areas of descriptive cataloguing, but allow for a greater separation of the intellectual core of a work from its physical manifestation. In essence, a “Chapter 1” would serve to provide guidelines for identifying and recording intellectual content common to any format with subsequent chapters detailing elements unique to the physicality and use of the item. No one medium would be designated as “primary”, and therefore the basis for the description. “Sources of information” would pertain, as currently, to elements within the *physical* description component of the record. This third-tier “manifestation level” record would also include access points specific to the manifestation-in-hand, and might include information derived from “Credits” or other notes indicating responsibility, variant titles, series unique to the format, etc. As with the first-tier “work-level” record, access points within the third-tier “manifestation-level” record could be linked to second-tier authority records for enhanced identification, search, and retrieval.

The fourth-tier would be an “item-level” record, containing copy-specific information as defined by, though not necessarily limited to, the data structures of the MARC holdings format. This mimics, to some degree, the concept of the “second level” in the proposed two-tier hierarchical

model, and is a replication of the “H” level (holdings level or copy level) of the three-tier hierarchical model proposed for the Multiple Versions Forum. In fact, with the exception of the addition of a linked authority-level (my “second-tier”) record, the linked four-tier record structure proposed in this paper, fully incorporates the three-tier hierarchical model proposed for the Multiple Versions Forum. The four-tier record structure can be “operationalized” utilizing a web-based catalogue, supports dynamic links, and adds a layer of “retrieval” to the identify and access components now supported by *AACR* and its communications companions, MARC record formats.

While changes to the MARC record formats would clearly be required to accommodate a four-tiered record, the process of creating such records and record structure would be readily accommodated in non-automated environments, as currently. “Manifestation-level” and “Item-level” records could be added to “work-level” records, and authority records would continue to be created and maintained as currently in manual environments. Where an institution had the benefit of access to networked information technologies, greater enhancements could be realized. For those with a web-based catalogue, links additional to those described above could be made to the full-text of an electronic resource through a TEI header, or a Universal Resource Locator (URL).³ With a MARC record running in the background, links to remote access sites through field 856 could be made and, with the provision of SGML or HTML tagging, searches of discrete parts of the item facilitated. Given the remarkable depth and richness of the current “carrier” of the bibliographic record, the MARC record format, there exist a wealth of opportunities for innovative and imaginative linkages to enhance bibliographic displays, to facilitate information search and retrieval, and to add considerably to “the convenience of the public” when combined with mark-up language provisions (Standard Generalized Mark-up Language [SGML]; Hypertext Mark-up Language [HTML]; Virtual Reality Mark-up Language [VRML]), with textual and graphical interfaces, and with object-oriented environments, such as those supported in some Internet-accessible applications. There are clearly substantial resource implications associated with the proposal for a four-tier record structure which could deter its implementation. Benefits to users in terms of seamless and item-level (and potentially within-item level) information access and retrieval must surely be included in the “cost-benefit” equation.

As computer-based technologies and computer-supported applications continue to evolve, and as electronic and other “virtual” resources proliferate, the boundaries that separate the physical formats in which information is packaged will become increasingly blurred. Some of the most dramatic developments in bibliographic control occurred in the latter quarter of the nineteenth century. With the pending dawn of the second millennium, it seems an appropriate symmetry to shake the foundations of *AACR*, to rethink the structure and rejig the pieces, and to create a code for the twenty-first century that, while cognizant of twentieth century realities, and respectful of nineteenth century requirements, is sufficiently visionary to accommodate the “fuzzy sets” of information resources.

³ Or to a Universal Resource Name (URN) once this scheme has been formalized.

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