Cataloging Rules in Japan and Anglo-American Cataloguing Rules
—— In the Past Century and Present ——

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1. Introduction

 This paper is aimed at observing a picture of bibliography including the library catalog in the 21st century as well as forming an evaluation and an estimation through general observation of the library catalog and cataloging (bibliographic standard) in the 20th century centering on Japan and Western.[1]

The card catalog which had come to play a leading role in catalog in the early 20th century relinquished its position to the computer-based catalog at the end of the same century. In the same way, the printed card (LC card) which made its first appearance in the first year of the 20th century (1901) left the stage, leaving its task to MARC and others. After some 10 years from LC card and MARC, UNIMARC was brought into existence. Such an internationalization phenomena started at the very beginning of the 20th century in the field of cataloging rules (Anglo-American Cataloguing Rules, etc.), which led to the establishment of the international principles (ICCP) in 1960's. In addition, "cataloging" rules were expanded into "bibliographic" standards (ISBDs). Also, in order to cope with multimedia, formulation of regulations and standards of various media was advanced. There is an increasing demand for discussing the standard for data exchange on a metadata basis (Dublin core, etc.). This kind of innovation is based upon such technological developments as the radical advancement of apparatuses (computer system) and the tendency toward multimedia. We also have to note that it was made possible owing to the modernization policies and strengthened organizations. A great progress was made toward centralized cataloging (copy cataloging) and cooperated cataloging, aiming at standardizing and utilizing (sharing) data and information. Bibliographic utilities (OCLC, NACSIS, etc.) were created to facilitate the progress, whose basic ideologies are resource

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sharing and universal bibliographic control.

However, it would be wrong to believe that the past century has seen the progress of catalog and cataloging, or rather they should have seen the decline of them. I have already pointed out such a phenomenon in my paper "The aspects of technical processing under centralized and shared cataloging era"[2] citing a speech in 1994 (the previous year of the materialization of the Dublin core) by Arnold Hirshon delivered in a city in Ohio where Dublin is located. Examining all these above, I would like to observe the near future of library catalog and bibliographic information.

It will come to a conclusion that catalog (and cataloging rules) will keep on functioning as a pivotal element not only in the basic aspect, library service, but also in the field of scholarly information, bibliographic control.

The above mentioned is the summery of this paper.

The definitions of key words and their meanings in this paper are as follows.

Catalog: The record of documents kept in libraries and others.　A kind of bibliography. Components for systemizing material.

Cataloging: The methodology to make catalog.　Cataloging rules are the stipulated rules using cataloging as a rule. A kind of bibliographic standard.

Bibliography: The minimum information or record for a document to exist and　be recognized.　Components for bibliographic control.

Bibliographic utility: Public enterprise to offer bibliographic information

Bibliographic control: Operation to systemize and organize the record to facilitate retrieval

2. Cataloging as an information technology

The basic and main purpose for using library is to acquire information.　The catalog offers a library service by providing its users with the information as to whether the material exists, whether it is kept in the library and where it is located in the library.　For this objective, library catalog was far more developed and standardized as a technique than any other field, functioning as a core of librarianship until the beginning of the 20th century.

Pierce Butler noted as follows in the early 1930s.[3]

> The librarian makes use of a certain technical process that is peculiarly his own.　This
> is the special method of bibliography.　Through the　course of reading generations a

system has been evolved for recording in brief form some of the more essential characteristics of any book. The usefulness of the technical conventions involved is not to be questioned.

Library science itself was formed based on cataloging and the technique related to it around 100 years ago, which incident is closely connected to today.

Concerning the catalog-centered technique of librarians, Masatoshi Shibukawa (Keio Univ. Library) states as follows: [4]

1) A technique to know about people who search for messages: user study (use study).

2) A technique to know about material: bibliography.

3) A technique to construct message sources: bibliographic control.

Regarding "bibliographic control" mentioned above, Akira Nemoto (Tokyo Univ.) noticed the word in the original text of its system (quoting an L. C. librarian, Paul Vanderbilt 1948.)[5] The term "bibliographic control" was confirmed by M.Egan and J. H. Shera (A.L.A.) in 1949.[6]

Bibliographic control is a mechanism used to retrieve certain information related to a specific work out of the whole recorded information most efficiently and economically.

Masatoshi Shibukawa,[7] quoting A. H. Bookstain[8] and others, summarized the idea of bibliographic control as follows:

Bibliographic control is a means and methodology to organize all the books in the whole world in order to control them with a view to utilizing them .

In addition, he stresses, quoting E. Svenonius and T. Besterman as follows:[9]

Cataloging is a bibliographic control technique and a controlling technique, which is the central issue in the librarianship today.

As a result, he concludes that research of cataloging in each era shows that cataloging proves to be the core of library administration system. He also observes that it admits of no dispute that the central issue for librarians to tackle today is the bibliographic control.

Catalog entered upon the 20th century as the central issue, based on the accumulation of technologies and theories up to the end of the 19th century. However, with change of the times, the librarians' concern was drifted not to "catalog" itself or the bibliographic technology characteristic of the library catalog, but to such issues as direct service, library administration, bibliographic control and universal bibliographic control. This phenomenon can also be applied to "cataloging rules".

3．Evaluation of "catalog" in the library

3.1 The first half of the 20th century: the period of card catalog ～

centering around the United States of America

Catalog was an indispensable tool for a library at dawn of the modern library age. It was appreciated not only as a physical means for stack management, but also as an essential tool for reference of an open access material, for instance.

Its theory had been virtually completed in "Dictionary Catalog Regulations (1876)" by C.A.Cutter. In its second version (1889), card catalog was regarded as proper cataloging media. Since then, card catalog was in full flourish for about a century.[10]

During the last quarter of the 19th century, many a public librarian had a primary interest in its technical problems, trying to complete a bibliographic control over the increasing collection and to develop a standard method.

Verna L. Pungitore states as follows:[11]

> During the last quarter of the nineteenth century, when public librarians were attempting to gain bibliographic control of their growing collections and to develop standardized methods, much of their attention was centered on technical concerns (some lines omitted). [and]
>
> By the first decade of the twentieth century, many of their technical problems had been solved, and their preoccupation with "organizational" matters lessened.

With respect to making a catalog, it became less necessary for each library to make its own catalog entry owing to the distribution of printed cards of Library of Congress (1901) and the stabilization of National Union Catalog. (Although it was only after 1956 that the printed catalog of NUC was distributed) Nevertheless, the card catalog was more prevailing in America than in Europe and the filing code for catalog entry was gradually regulated. It is believed that the completion of union catalog in England was in 1930's. Yet it was fully completed by BNB (established in 1950) lead by Lionel McColvin and others.[12]

From the 1910's to 1940's, revisory operation of cataloging rules was at a standstill in the West (also in Japan), after which period, the two rules below were officially issued at the end of that period, in 1949:

ALA: Cataloging Rules for Author and Title Entries. (mainly used for heading)

LC Descriptive Cataloging Rules (used for description)

These two standard rules, used at the same time, suggested that the heading section and the

description section were regulated by respective rules (the former by ALA rules whereas the latter by LC rules), which fact had an external influence upon later systems, where the rules and standards for descriptions were set separately from headings (as ISBDs).

It could be said that the thriving period of card catalog came to an end in 1970's; LC froze the card catalog in 1981.

3. 2 Circumstances in Japan

National library of Japan, originating in Meiji Era (1872) as Shojakukan, was established as the Imperial Library in 1906. It was built as a magnificent structure imitating the great European libraries and strove for collecting classics with its administration focused upon cataloging and classification. This process also influenced prefectural libraries and was inherited in the Meiji era through to the first half of 20th Century. Various activities of Japanese libraries were deployed under the leadership of the U.S.A., especially from the time of the defeat in the World War II(1945) up to the enactment of the library law in 1950. This "leadership" which was assumed over all the phases of the libraries can be integrated into three aspects as follows:

A Scheme establishment of the library law (the National Diet Library Law, the Library
    Law, etc.)

B Reform of the library policy.

    Democratization of the library Association (JLA)

    Presentation of the library activity model

    Support for the library activity

    Suggestion for the technical service policy, production of the technical service tool

C Library education, foundation of the library school and guidance in it.

The directions of the guidance didn't seem to be consistent. In the library school, for instance, profound cataloging system such as dictionary catalog was taught. On the other hand, in the guidance with respect to technical services in the library, they were required to have the catalog simplified.

After the library law was formed in 1950, the focus of the library activity was placed on "service" (before then, the focus was set in administration).

"Nippon Cataloging Rules" (hereafter NCR) was first compiled by the League of Young Librarians in 1942. Its official edition by Japan Library Association was edited as NCR 1952 edition in 1953 under the guidance of the USA Library Mission. These rules were applied only to Japanese and Chinese books, whereas ALA Cataloging Rules (1949) were used for Western Material.

In 1963, JLA issued a book "Public library management in small-to-medium cities", (hereafter called as "the report") which revived the public library movement in Japan.[13] However, his paper inclined to shift the job of catalogers to direct service, asserting that the efforts for cataloging were the most useless ones. This inclination partially caused catalog to be in a bad condition later. That is, the libraries having learned from "the report" geared toward simplification of technical processes. This shows a clear example of an influence that the library movement had over catalog. This simplification proceeded far beyond the line defined by NCR-1952 edition and brought about "super brief catalog", brief catalog with no rules, in 1970's, when public libraries took an enormous leap forward. Shinsho Haida (Osaka City Library) characterized this as "a chaotic age" of catalog.[14] Thereafter entering the age of computer-based catalog and network catalog through OPAC, the catalog entry lacking data in the chaotic age made it extremely difficult for catalogs to be networked; nevertheless, they managed to make "catalog" itself in universities and public libraries.[15] On the other hand, the circumstance of catalog in school libraries was in disaster even around 1990 according to "The school library white paper".[16]

	school with catalog	school without catalog
elementary school	5.4%	75.0%
junior high school	19.2%	57.5%
high school	46.3%	52.5%

4. Library Cataloging Rules

I hereat roughly retrace the history of cataloging rules in the 20th century, which will be a quite "brief" one because complete description of the history of cataloging rules is a heavy subject to deal with as M.W.Grose & M.B.Line mentioned below.[17]

> The history of cataloging rules has yet to be written. (omission). More important, librarians have from time to time gathered together to work out codes which would serve as guides to catalogers and, by helping to standardize catalogues, move towards uniformity. (omission)

4. 1 Cataloging rules and function of catalog

In the history of catalog in the 20th century, there were various controversies on catalog and

cataloging; respected in one age and neglected in another, strongly international cataloging rules and domestic condition, discussion regarding cataloging media and others. Some of those remarks were projected onto cataloging rules and resulted in some revised rules, that is to say, leading views and assertions in respective age were incorporated into regulations. The purpose of catalog which Charles A. Cutter designated in the late 19th century remained the same in the 20th century.[18]

① It helps to seek out the book of a specific author, title and subject.

② It helps to know the book of a specific author, the book of a specific subject and the document of a specific kind held in a library.

③ It helps the library users to know the version (bibliographically) and characteristic (literary, topically) of a book in choosing one.

Dictionary catalog took root at the end of the 19th century in America, under "the dictionary cataloging rules" (based on the author main entry system) established by C.A.Cutter using the definitions above as a foundation.[19]

Libraries developed much closer relationship with catalogue than that in any other field (catalog or bibliographic record), creating its own field as "library catalog". Regarding library catalog, its physical standard (regulations) was compiled at the job site and standardized nationwide and then worldwide, exceeding bibliography and others that are forerunners in the field of bibliographic record. This was because material information plays an important role in the library which is in charge of possession and provision of library material.

4. 2 Standardization and internationalization of cataloging rules

The library society already had some standardized cataloging criteria just before the 20th century. The cataloging rules were drawn out and formed by both the American Library Association in 1881 and the British Library Association in 1883 respectively; each of them was standardized by the nation and combined in 1908.

All those procedures led to the formation of Britain and America amalgamated cataloging rules (Cataloging Rules for Author and Title Entry). Also the Prussian library alphabetical cataloging rules were formed in 1899. These standardized cataloging rules common within a sphere are followed by those common worldwide.

In 1961, the International Cataloging Principles (Paris Principles) were formed at the International Conference on Cataloging Principals (ICCP) held by the International Federation of Library Associations and Institutions. (IFLA, formed in 1927). This was an agreement on "the principles for selection and styles of headings and entry words", with which the cataloging

rules of each country were required to comply. As a concrete example, the grammatical filing used for the title catalog was changed to natural filing and "cooperate heading" was added to the heading group in the alphabetical cataloging rules of the Prussian library. As a result, the following cataloging rules were formed.

As well known, the Anglo-American Cataloging Rules [the first edition]: [AACR (1)] was published in 1967. The 6th chapter of it (description) was revised in 1974 with the establishment of the first standard version of ISBD (M) (mentioned later). In 1978, AACR2 was issued, in which the descriptive section was provided ahead of the heading section. Its revision was issued in 1988 and furthermore amendments were added in 1993. It is now under the process of revision centering on the electronic resources. The cataloging rules of Prussian were compiled and published as Regeln fur Alphabetische Katalogisierung in 1977.[20]

4. 3 Transition of Nippon Cataloging Rules (NCR)

The standard cataloging rules in Japan don't have such a long history. There were no official standard cataloging rules, though there were rules formed by Tokyo Shojakukan (formerly "Shojakukan" established as the first national library of Japan in 1872) and the schemes proposed by The Japan Library Association at the dawn of the library in Japan. NCR as the Japanese standard cataloging rules, was first compiled as "Nippon Catalog Rules" by the League of Young Librarians in 1942, but it was not official. It was officially published as "Nippon Cataloging Rules" in 1953 (1952 edition). Thereafter Japan Library Association compiled 1965 edition, preparatory version for the new edition (1977), 1987 edition, the revised edition of the 1987 edition (1994 version) and the 2nd revised edition of it (2001 version). The following is the summary of each edition.[21]

> A) Nippon Catalog Rules (NCR) 1942 edition
>
> Editing: the League of Young Librarians
>
> Entry system: main entry system
>
> Cataloging system: dictionary catalog (compound catalog)
>
> Target media: (mainly) books
>
> Target material: western material, Japanese material
>
> Principle for entry level: complete entry
>
> Cataloging standard basis: Anglo-American Rules 1908.

The proposed cataloging rules based on the author main entry were the point of perpetual dispute around 1935 (year 10 of Showa Era) with the advocates for the Japanese traditional title entry system.

These western cataloging rules were projected and established in the emergency situation, the World War Ⅱ. It is not known why this cataloging rules were to be projected at that time. Even though these cataloging rules were established by a private research sector, it is considered to be the first standard cataloging rules in Japan. This is because this NCR 1942 version became the basis for the followings.

B) Nippon Cataloging Rules (NCR) 1952 edition

Editing: Japan library association

Entry system: main entry system

Cataloging system: dictionary catalog (compound catalog)

Target media: books

Target material: (mainly) Japanese material

Principle for entry level: complete entry

Level of clause: simplified

Cataloging standard basis: American library association author /title cataloging rules, the second version 1949 LC descriptive cataloging rules 1949

C) Nippon Cataloging Rules (NCR) 1965 edition

Editing: Japan library association

Entry system: main entry system

Target media: books, serials

Cataloging system: dictionary catalog (compound catalog)

Target material: Western material, Japanese materials

Principle for entry level: complete entry

Level of clause: profound level

Cataloging standard basis: Paris principles (ICCP)

D) Nippon Cataloging Rules (NCR) the preparatory version for the new edition[1977 edition]

Editing: Japan library association

Entry system: Non-main entry system; Descriptive unit card system

Target media: books, serials, other material, image material, audio material (in preparation)

Cataloging system: divided catalog

Target material: Japanese material (in the main)

Principle for entry level: physical unit of description

Level of clause: abridged level

Cataloging standard: Description-Independent System, "Library cataloging rules" (Nippon Association of Librarianship), Japan/ MARC (the original plan)

It is not shown in the version that these cataloging rules were "copied". Japan/MARC was still at the planning stage and remained as a cataloging standard for computer editing system of Japanese book catalog in the National Diet Library. This explains the consistency in the cataloging style between NCR (the preparatory version for the new edition) and Japan/MARC that started distribution in 1981. However, without mentioning this "hidden fact", a close relation with ICCP (1961) and ISBDs is stated there, which are remotely related to the international standard.[22),23)]

As I shall mention later, this version of NCR is directly connected with "orientation toward simplified catalog" in line with the public library movement in Japan. Thus, these were, in fact, the rules with stress laid on domestic situations, deviated from International Standard Bibliographic Description. They were, however, based on "Description-Independent System", principles of "library cataloging rules" (Nippon Association of Librarianship) and non-main entry system (separation of heading from description). These points were taken over into succeeding versions.[24)]

　E) Nippon Cataloging Rules (NCR) 1987 edition

　　Editing: Japan Library Association

　　Entry system: non-main entry system; descriptive unit system

　　Target media: books, braille material, cartographic material, score, audio material, image material, graphic material[in preparation], machine readable data file, three dimensional craftwork, substance[in preparation], non-journal(including document, manuscript, etc.)[in preparation], reproduction, microform, serial[25)]

　　Cataloging system: divided catalog

　　Target material: western material, Japanese material

　　Principle for entry level: bibliographic level (bibliographic unit) [26)]

　　Cataloging standard: ISBDs, AACR2. However, the reference to NACSIS which they were in lined with was not made. It was not until they were established that NACSIS got out into the world.[27)]

　　Level of clause: profound level

Certain alternate phenomena could be observed in the stream above.[28)] Seen from the point of target material, they can be organized as follows.[29)]

1942 edition······western, and Japanese material

1952 edition······Japanese material (in chief)

1965 edition······western, and Japanese material

Preparatory version for the new edition (1977)······Japanese material

1987 edition······western, and Japanese material

As a whole, emphasis is placed either on the domestic situation or on the international standard alternately, strongly influenced by the library policy of the respective age.

1942 edition: emphasis on the international standardization, profound heading regulations.

1952 edition: emphasis on the domestic situation, descriptive regulations became an independent chapter, simplified version also included.

1965 edition: emphasis on the international standardization, special emphasis on heading regulations.

The preparatory version for the new edition (the 1977 edition): emphasis on the domestic situation, detailed descriptive regulations, also simplified version included.

1987 edition: emphasis on the international standardization, detailed descriptive regulations, simplified version also included.

1994 version: Revised edition of 1987 edition.

2001 version: 2nd revised edition of 1987 edition.

F) Nippon Cataloging Rules (NCR) 1987 revised edition (1994 version)

The revised version at present is the 1987 edition which was published in August 1994. The features of this edition are as follows.[30]

a) Based on the divided catalog

b) Descriptive unit system, one of the non-main entry systems

c) Regulate the description of the bibliographic unit (based on the basic bibliographic unit)

d) ISBD punctuation method adopted

e) Deal with all kinds of material media: books, manuscripts, cartographic material, score, audio material, image material graphic material, computer file, museum material, braille material, microform, serial

f) Applicable to western material as well as Japanese material

Target media for cataloging have diversified beyond "books" and other related material (magazines, newspapers, etc.) with the electronic material increasing rapidly.[31] The ninth

chapter of NCR (electronic material) was revised on the 20th of August in 2000 and issued by Japan Library Association on the same day.[32]

5. Environmental development of the bibliographic control: the electronic era

The 20th century saw the diversification of the media. Although a library still holds books as main material, it is common knowledge today that material other than books should no longer be considered as sub-material. In addition, libraries nowadays consider it their mission to exchange material and information internationally and also with other various fields. Thus, International Federation of Library Associations and Institutions (IFLA) started to actively introduce and promote "bibliographic control" and "universal bibliographic control".[33]

Bibliographic control is defined as "bibliographical control" in Harrod's librarians' glossary 8th edition" (1995) compiled by Ray Prytherch.[34]

> The creation, development, organization, management and exploitation of records prepared firstly to describe items held in libraries or on databases, and secondary to facilitate user access to such items).

In the 9th edition (2000), the term "bibliographic control" as a reference disappeared from the glossary. .

Universal bibliographic control can be explained as follows, citing Shojiro Maruyama.[35]

> UBC has been promoted by IFLA since 1973. In 1974, IFLA International Office for UBC was founded inside the reference section of the British Library, where they have been in full activity. (omission) Aiming at the completion of universal bibliography through international cooperation, respective national organization in charge of bibliographic formation of each country takes full responsibility for controlling and grasping the bibliographic information of all the national publications, which is notified internationally in the universally approved reciprocal exchange standard form. It will also spare many libraries from making duplicate bibliographic records of the same publication. For this aim, bibliographers of each country are to draw up complete and accurate bibliographic record of new books without delay, which they notify and exchange both nationally and internationally in the form conforming ISBD and UNIMARC for future use.

5. 1 Generation of media

Media has generations. Followings are the explanations by Bin Umino, Kyo Kageura and Shin'ichi Toda. "The history of bibliographic control could be marked by three generations, each having its own publication style of the primary information of the targeted media and the catalog information used to retrieve the primary information." [36]

The first generation is the era when both the primary information and catalog information are published on stock style media. Needless to say, printed media played a major role among all kinds of stock style media. Also new stock media such as microform, magnetic tape, magnetic disk and laser disk came to be used for record starting the 20th century. Here appeared COM, MARC and bibliographic database.

The second generation is the era when the primary information is published on stock style media while the catalog information on network media. (omission) Since 1960's, the catalog information of books and magazines that was massively stored in a computer memory bank has become available through a network. Here appeared the online information retrieval system, bibliographic utility.

The third generation is the era when both the primary information and the catalog information are published on network media, which is the picture of bibliographic control in the near future.

The electronic media use for catalog making lies between the first generation and the second. This part plays an important role in the field of library catalog.

5. 2 Toward computerization

It was the printing card that relieved the trouble of catalog entry. However a card catalog does not reduce the burden of filing, maintenance and management of it. M. W. Grose and M. B. Line described the difficulty of managing a card catalog as "care of white elephants".[37] E. J. Hunter issued a general statement on computer catalog "Computerized Cataloguing" in 1985. Toshiyuki Aoki who translated this into Japanese gave it a Japanese title of, "Intelligent library: disappearing card catalogue." [38] Even in 1978, years before Hunter, F. W. Lancaster published, "Toward paperless information systems" focusing upon information retrieval. Shunsuke Uemura, the translator of the book gave it a Japanese title of, "Paperless information systems" (1984). In this manner, both translators tried to inform Japanese people of the incoming electronic age through these subtitles (other title information).

Would it be a computer catalog that takes place of a disappearing card catalog? People were thinking of "mechanizing" the catalog long before "computerizing" one. If we interpret

"mechanization" as "machine readable catalog" (MARC), mechanization directly leads to a computer catalog, but mechanization had been pursued long before computer. It is shown in highly advanced card duplication function and HSPC, etc. The age is progressing, "From the age of mechanization, Toward the age of electronics". (Title of the special issue of "Gendai no Toshokan, Library today" 33 (4): 1995. 12)

Starting early 1960's, the Library Committee (LC) conducted experiments with the machine readable catalog (MARC I) with the cooperation of Stanford University of which they started distribution to general libraries from 1969 as MARC II. MARC II format became an ISO standard in 1973 and MARC started to be designed in each country copied after MARC II. LC/MARC changed its name to US/MARC in 1983 showing the country name, same as that of other countries. There being slight differences among MARC's of each country, IFLA (UBC office) drew out UNIMARC for uniformity in 1977. As it was incompatible with UNISIST Reference Manual, a universal format for abstract and index, Unesco drew out CCF (Common Communication Format), which can be commonly used by both.[39] Though this was drawn out based on a bibliographic level and is useful for catalog technique, it hasn't come up to a level of practical use yet. US MARC was changed to MARC21 combined with Canada MARC in 1999.[39]

Japan had worked on the machine readable catalog since 1960's and Japan/MARC came to function officially, distributed to libraries (by JLA). In addition. its CD-ROM version, J/BISC started to be distributed in 1988. A private MARC (NIPPAN, TRC, OPL etc.) exists with it.

Hereunder is the study of public libraries, taking as a reference "Kinds of catalog provided to users" from the catalog survey conducted by JLA in 1997.[40]

Below was the result in plural answers (total 3095): OPAC (40.5%), card catalog (24%), direct print out by computer (21.5%), printed catalog (9%) and others (3.7%) . Out of all the libraries responded (2144 libraries), 58.4% (1253 libraries) had introduced OPAC. Result of the last survey (1989) showed that card catalog accounted for 75.1% and OPAC 22.7%, with which we can confirm the growth of OPAC in the last 8 years. This is probably because the technical operation had been thoroughly handled on consignment.

In the university libraries, on the other hand, both OPAC and the card catalog are introduced at the same ratio; OPAC in 788 libraries and the card catalog in 761 libraries. This is not because university libraries cling to the card catalog but because they save it for old books. This can be derived from the result that the ratio of university libraries having introduced OPAC is 76.4% (the number of university libraries with OPAC, 788, divided by the total number of responding university libraries, 1031) and exceeds that of public libraries with OPAC.

Universities are generally in a position where they could easily join NII (former NACSIS) and therefore introduced OPAC earlier and with more complete descriptive contents than other libraries.

5. 3 Toward the cataloging rules applicable to computers

A chapter of "Machine readable data file" (9th chapter) was added to AACR2 (1978). NCR 1987 edition introduced the chapter after AACR2 (1978), which chapter was again changed to "Computer file" in the revised edition of NCR1987 (1994) after AACR2R (1988). These as well as ISBD (CF) in 1990 were made in preparation for electronic material, yet they were not sufficient enough to cope with the situation, so ISBD (ER): 1997 was added to ISBD. The revision of "Anglo-American Cataloguing Rules" was making progress in line with this,[41] and the same work was done to the 9th chapter of the second revised edition of NCR 1987 (2001 version) as "Electronic materials".[42]

5. 4 Metadata and Dublin core

It is Metadata that is the most focused on concerning a revision of cataloging rules these days. What is "metadata" ? I hereat define the word on reference to the statement of Bin Umino, Kyo Kageura and Shin'ichi Toda.[43]

> Metadata is the data that describes attributions of the information in order to organize the information in the field of bibliographic control. It is "data about data" as it literally shows. Generally included in it are a discriminative name, a physical description, a summary, a subject, a location of information and others, which are usually described in a standardized form. In a narrow sense, however, it is a data that describes network information resources. With an increase of scholarly information that is exchanged through computers and better recognition of necessities for bibliographic control of the information, Metadata became a general term to indicate the data that describes network information resources.

Metadata is drawing interests from many fields related to network information resources. Library is one of them. In Japan, "Science and technique of information" (published by INFOSTA) had started to carry quite a few articles related to this since the middle of 1990's, which led to "the special issue, Metadata" in the early 1999.[44]

How has the word been interpreted in the library society ? It shall be reviewed on reference to what S.Vellucci states:[45]

Although the word "metadata" was first recognized in the documents in 1960's, it was not until 1980's that the word came to be used quite frequently in the documents related to DBMS

(Database management systems), where it was used in order to describe the information which dealt with properties in database. This word was used together with other library terms as "bibliographic data" or "cataloging data" that are used for the same kind of information. The library interest used these terms for resources both electronic and non-electronic systems, which usage didn't change even in the age when MARC played a main role. After some time, however, cataloging came to be operated by network systems and the usage of this word was changed in the course of arguments on the revision of MARC and AACR2R. Metadata came to be regarded and understood as a word that indicates data in a wider range of media and work field. Metadata can also be interpreted as "data for data", "data for everything" and "components of data". The definition of the word has not been established yet.

It was not until Dublin core was introduced in March, 1995 that the Japanese libraries started to show interests in Metadata. Haruki Nagata, present chairman of JLA Cataloging Committee, has written treatises and books in this field and been attempting to introduce Metadata to NCR. Through his activities, he is talking about "future of the library catalog", which focus is the union catalog in OPAC and Dublin core.[46],[47] With a view to concluding this paper, a future picture of catalog and cataloging rules shall be briefly observed here.[48]

6. "Future" of catalog and cataloging rules: conclusion

Catalog is closely connected with "location because it is "the information on holdings". How are the prospects for the future of "catalog" and cataloging rules"?

6. 1 Decline of catalog making?

Catalog was once made individually in each library and is now in the age of concentrated cataloging and cooperated cataloging. Bibliographic utility is increasingly in use. There is OCLC for international use and NACSIS (established in April, 1986 by National Center for Science Information System) for the domestic, in Japan. With regards to catalog making, NACSIS-CAT is playing the role of cooperated catalog and union catalog. After having offered various kinds of services such as NACSIS-ILL and contents list bulletins, NACSIS was reorganized as National Institute of Informatics, NII in April, 2000.[49]

In order to make database, 75% of university libraries use NACIS-CAT and 50% of the public libraries use private MARC ("TRC MARC", Toshokan Ryutsu Center's MARC, etc.), whereas about 65% of both libraries (multiple answers) make their own.[50] These results obviously

contradict the remarks of A. Hirshon that librarians have nothing to do with catalog making. Catalog network in public libraries is now connecting the whole nation level and the whole prefecture as well as the individual libraries, which is aiming at sharing resources (for cooperative use).[51] It shows the usefulness of catalog and convince us the exact opposite of the theory that catalog is totally useless.[52]

Shuko Kato, who edited "Nippon Subject Headings"(NSH, 1930; the first subject headings list in Japan) once predicted the decline fo catalog in, "Destiny of the subject catalog".[53] Sakae Yamashita, chairman of the "Basic Subject Heading"(BSH) the first edition (1956) and its revision (1971) confuted the decline of catalog in his thesis, "Better fortune of the subject heading".[54] Catalog as well as subject catalog will never cease to exist or rather its role will be even more important.

6. 2 Decline of cataloging rules?

Yasumasa Oda published a thesis "The destiny of cataloging rules" in 1985, in which he foretold the disappearance of cataloging rules.[55] His remarks made the situation look more serious because he had been chairman of JLA cataloging Committee (1970-the end of 1971) which prepared the preparatory version of NCR new edition (1977), and was also director of the Mechanization Room of the National Diet Library [of Japan]. He also had a profound knowledge of Japan/MARC. He pointed out the limitations of cataloging rules using manual system to cope with information resources in the age of multimedia.

Masaru Harada contradicted Yasumasa Oda insisting that a certain role of cataloging rules be approved even in the age of computer catalog.[56] Expecting catalog of each library to belong to an international or national bibliographic information system and admitting the limitations of the present computers, he observes that cataloging rules will survive with significance in a sense that an entry system of a bibliographic record unit will last instead of a system advocated by Yasumasa Oda combining bibliographic elements. Taking the same position as Harada, I hereat appeal the necessity to reconfirm the bibliographic unit theory.[57]

6. 3 Decline of the catalog research ?

There is another kind of "theory of decline", insisting that "catalog research" itself is meaningless.[58] They say that catalog research should not be done by the present academics but by the bibliography making organization (National Diet Library, etc.) It is the same theory on catalog research denial as that of A.Hirshon.[59] I believe, however, that the manuals, such as cataloging rules, ought to be argued in public because they are used in general libraries. Also "researching" could not be interfered by anything.

Hajime Furukawa states as follows in his study on the movement of "Anglo-American Cataloging Rules" (AACR), regarding electronic material.[60]

> Thus the AACR2 system which seemed to have consolidated its position since 1978 is about to experience a drastic change. I am under the strong impression these days that cataloging has no bounds.

Sakae Yamashita then proposed "The subject index for a classed catalog" (chain index) although there has not yet been its successive research in Japan.[61] It is one of the excellent products that the fourth edition of BSH (1999) with the addition of the thesaurus technique was accomplished under such circumstances.[62] It is regrettable, though, that there are few researches on the thesaurus in the library society. It is also the case with "collocation".[63]

6. 4 Revival of "catalog" in the new era: the age of multimedia and bibliographic control.

The future of the library and catalog shall be constituted coexisting with the electronic world in the world of bibliographic control. Bibliographic information of the library shall be available by way of various means, such as network, internet and database.[64]

Detailed retrieval shall be done using the information of table of contents on the full text database making use of the so-called "electric library". "Table of contents", the information originally contained in the target information, can be placed in the course of retrieval procedure to produce new catalog information.[65]

Toshio Taniguchi,[66] one of the leading figures in the field of catalog information research, imagined "The electronic library in 30 years" in 1998, which shows the same direction as "Ariadone" which he based his book on, issued by Makoto Nagao (the president of Kyoto University), Masaru Harada, Tetsuya Ishikawa and others.[67]

> At least, it is predictable that the worldwide network shall be filled with digital information to overflowing (omission). The electronic library in 30 years shall be brought to such perfection as information can be accessed without any difficulty, by making the best use of the present and future techniques.

W. Crawford and M. Gorman state in "Future libraries; beyond the wall" published in 1995 as follows:[68]

> ......through the use of Z39. 05, library users will be able to extend online catalogue searches to secondary and union catalogues and on the national databases.

Toshio Taniguchi, however, warns as follows:[69]

> "Unlike the present library which maintains good consistency and is neutrally managed, the virtual space on the internet is halfway, irresponsible and its service can be

unexpectedly interrupted -- that is, it is the chaos itself, the same as the real world or can be a mere reflection of reality because it is virtual. In the first place, we can never grasp the location of things in the world.

Thus, Taniguchi is skeptical about dreaming of "Computer Utopia" in the 21st century. In order to acquire and secure real and certain information instead of chaos of information in a virtual world, bibliography and catalog will play a yet more significant role and be on the way to better use along with the continuance of the library.

F. Birdsal states, "Toward the new century" as below;[70]

Librarians should not adopt an abstract, idealist concept, of the library, as represented by the electronic library, over a materialistic concept as represented by the library as place, as a philosophical foundation for librarianship.

E.J. Hunter, then wrote about "the future" of catalog in 1985 as follows:[71]

One will therefore be able to access the library catalogue from the comfort of one's own fireside. Such access will be non-stop 24 hour access, seven days a week, and will relate not only to the local library catalogue but to indexes of other collections of information and also to the information itself.

The tree major problems of the information transfer process are;

1 Discovering what information exists.

2 Discovering where this information may be obtained.

3 Obtaining the information.

It is essential to secure these above. They are the principal points required of the information service providers, the librarians and especially the catalogers regardless of the times, the form of information and the conveyed items. They tend to be neglected in the stream of "information age" and we need to pay great attention to them all the more.

The primary object of bibliographic control of each library is to guarantee the right of library users by providing material and information centering around books to people making use of a library. Catalog is to keep on supporting its fundamental function for years to come.

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Cataloging Rules in Japan and Anglo-American Cataloguing Rules
—— In the Past Century and Present ——

Tsutomu SHIHOTA

This paper is aimed at observing a outline of bibliography, including the library catalog in the 21st century as well as forming an evaluation and an estimation through general observation of the library catalog and cataloging (bibliographic standard) in the 20th century centering on Japan and Western.

The card catalog which had come to play a leading role in catalog in the early 20th century relinquished its position to the computer-based catalog (MAchine Readable Catalog: MARC) at the end of the same century. These

Are US MARC, JAPAN MARC, UNIMARC (Universal MARC) and others.

Also, in order to cope with multimedia, formulation of regulations and standards of various media was advanced. There is an increasing demand for discussing the standard for data exchange on a metadata basis (Dublin core, etc.). This kind of innovation is based upon such technological developments as the radical advancement of apparatuses (computer system) and the tendency toward multimedia. We also have to note that it was made possible owing to the modernization policies and strengthened organizations. A great progress was made toward centralized cataloging (copy cataloging) and cooperated cataloging, aiming at standardizing and utilizing (sharing) data and information. Bibliographic utilities (OCLC in USA, NACSIS in Japan & etc.) were created to facilitate the progress, whose basic ideologies are resource sharing and universal bibliographic control.

However, it would be wrong to believe that the past century has seen the progress of catalog and cataloging, or rather they should have seen the decline of them. I would like to observe the near future of library catalog and bibliographic information. It will come to a conclusion that catalog (and cataloging rules) will keep on functioning as a pivotal element not only in the basic aspect, library service, but also in the field of scholarly information, bibliographic control.