Philosophy in Bibliographic Classification Systems

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ABSTRACT: The article aims to provide an examination of some different arrangements of the Philosophy domain in bibliographic classification systems. It is difficult to organize the scientific field of Human Sciences, because of the richness of perspectives, and of the different cultural orientations that this broad field of science presents. Furthermore, it is really arduous to organize the scientific field of Philosophy using a traditional classification system. It is hard to accommodate philosophical knowledge—elaborated inside different cultures, in many cases not compatible with each other—in a classification system created by a particular cultural system, because it depends on that specific cultural approach. General principles of bibliographic classification and also differences noticed when these are compared with the principles and laws of logical classification, are discussed. In contrast, the fact that library classifications are influenced by ideologies and political orientations, and that they are substantially arbitrary, is pointed out. In the second part of the study, the *Dewey Decimal Classification* (*DDC*) and the *Bliss Bibliographic Classification* second edition (*BC2*) are analysed, and at last the suggestion of *BC2* to consider philosophical problems and topics in connection with cultural tradition, ethical and religious principles, and also political and social structures, is evaluated.

1. Introduction

It is really hard to classify knowledge in the field of Human Sciences, because of the richness of perspectives and orientations, the variety of schools of thought, doctrines, individual standpoints that every discipline or field of research in Human Sciences can present.

Considering now the system of sciences as a whole, it is worth mentioning the point of view of Jean Piaget, one of the most significant scholars of Epistemology in the 20th century, as well as of Psychology, and deeply concerned with problems of sciences organization.

Piaget significantly underlined that within the system of sciences Human Sciences play a crucial role, since they are the sciences of man who develops the other disciplines. Human Sciences are in a particular epistemological situation, because at the same time they are elaborated by human beings and consider human beings and their activities as an object of study (Piaget 1970). In the case of Human Sciences, the object of study has consciousness, thought and communication capability. Therefore, achievement of objective knowledge and application of experimental method are more difficult, since human beings, in the case of Human Sciences, can as well interpret different phenomena that they are analysing, exercising personal influence on the process. Piaget moved beyond the traditional dualism of strict schemas as Rationalism and Empiricism, and considering epistemological connections that exist among different disciplines, assumed a dialectic perspective and emphasized that among different disciplines there are mutual relations and, in substance, interdependence (Piaget 1967, 1173-1182).

Turning now to indexing and classification of knowledge as means of subject access to information, we can acknowledge that in Human and Social Sciences it does not exist only one way to represent

documents, but different ways to index or also to classify the same document. Researchers would like to find wanted books grouped and classified according to their personal perspectives of analysis and research, and to the scientific orientation on which their searches are based.

It is still harder to organize the scientific field of "Philosophy" using a classification system. In fact, libraries that own literature in philosophical domain often avoid indexing and classifying it realizing semantic access points for document retrieval and, on the contrary, enable the researchers to retrieve needed books consulting specialized bibliographies and then authors or titles searching.

Difficulties arise from the fact that literature concerning interdisciplinary connections among branches of Philosophy is particularly frequent. Furthermore, philosophical knowledge elaborated inside different cultures, in many cases not compatible one another, is hard to accommodate in a classification system created by a particular culture. A classification system, of course, depends on the specific cultural approach, and with great difficulty makes it possible to accommodate concepts and intellectual patterns typical of other different cultures.

This paper concerns fundamental problems of knowledge organization in the philosophical field using classification systems, considers classification from a theoretical point of view, and is not involved in problems of classification as tool for arranging books in library shelves. Before discussing the organization of philosophical domain elaborated in two different library classification systems, *Dewey Decimal Classification* (*DDC*) and *Bliss Bibliographic Classification* 2nd edition (*BC2*), there is a need to present principles on which library classification is founded.

2. Main principles of classification

To classify knowledge means to reduce the complexity of reality using categories, which allow to control it easily, and to group and arrange objects and elements of the reality in order to know them in a straightforward way. A class is a group of objects, phaenomena or concepts, which presents one common characteristic, or a common set of characteristics. To group objects of reality in classes, it is obviously required to recognize that these objects own a characteristic in common. Broader is the "intension," that is the number of characteristics a concept owns, narrower is the "extension," that is the number of individuals those characteristics can be applied to or, according to the terminology used by the Port-Royal Logic (*La Logique ou l'art de penser* 1662), respectively "compréhension" and "étendüe." Intensional logic is mainly the ground for realization of classification systems, based on the acknowledgment of specific properties and features of objects.

It is particularly relevant the distinction we can draw between general principles of bibliographic classification and principles and laws of the logical classification. The latter allows to create only two classes, mutually exclusive, and founds the process of classification on dichotomous division *per genus et differentiam specificam*, that is the division of a genus into species, as it was explained in his commentary on Aristotles' categories, and in particular on the Substance category, by the Neo-Platonist Greek philosopher Porphyry (234c.-305c.) (Porphirius 1887) and later graphically represented by the "tree of Porphyry." Porphyry's work, known through Boetius' Latin translation, was essential to the development of medieval Logic.

Logical classification, to be rigorous, must be realised according to these particular laws:

- The division of a genus must be carried out using only one characteristic at a time, with the aim of creating only two classes mutually exclusive, that is a class of objects that own the characteristic for subdividing the genus on the one hand, and the class of objects that do not own it, on the other hand. Only two classes–A and not A–are created, mutually exclusive, without content overlapping;
- The division must be exhaustive, that is to complete all the possibilities of division without leaving objects out, which can not be part of one of the two classes;
- The division must be done through gradual steps and it must not contain subdivisions that are unrelated to the characteristic of the class in object. It is not possible to take into account characteristics that are not linked to the aim of the realized classification.

It is necessary to acknowledge that library classifications escape from the laws of logical classification. In that case, in fact, it is impossible to use only one characteristic at a time and only one principle of division at a time to the purpose of creating classes mutually exclusive: a class of books dealing with, for instance, Archaeology and on the other hand all books not dealing with Archaeology.

It is well known that this is the reason why bibliographic and library classifications can not assure the creation of groups or classes which have the same meaning for all human beings. To sum up: every library and bibliographic classification system is substantially arbitrary. William Stanley Jevons, one of the most significant logicians in the XIX century, severely criticized classification of books, defining it "a logical absurdity," because richness and development of books contents can not be reduced to a unique perspective (Jevons 1877, 715):

> Classification by subjects would be an exceedingly useful method if it were practicable, but experience shows it to be a logical absurdity. It is a very difficult matter to classify the sciences, so complicated are the relations between them. But with books the complication is vastly greater, since the same book may treat of different sciences, or it may discuss a problem involving many branches of knowledge.

As it was pointed out by Eric De Grolier (1974, 58; 1979), one of the most important scholars of library taxonomy in the XX century, bibliographic classification systems are more influenced by the society which has elaborated them and by political orientations and ideological views, than by the philosophical classification of sciences. In De Grolier's opinion, indeed, bibliographical classifications are an "artefact culturel" and should be analysed also from a sociological point of view.

3. Bibliographic classification systems

In this paper it is assumed that the principal aim of bibliographic classification systems is to consider and organize contents of books in order to create semantic access points in catalogues for document retrieval, instead of performing just the function of arranging books in library shelves and retrieving them from physical location.

Knowledge recorded in books and documents shows a multidimensional structure, which reflects the multiplicity of concepts and meanings. On the contrary, traditional and hierarchical library classification systems, generally speaking, force the multiplicity of meanings and the multidimensionality of thought in a monodimensional structure–a set of classes, divisions and subdivisions–which consists of a unique linear dimension.

Traditional bibliographic classification systems present their structure founded on a rigid and hierarchically established sequence of main classes and sub-classes. The system generally begins with few main classes and develops by subsequent subdivisions, through stages which are following a rigid and linear semantic order that has been already established. The traditional, hierarchical and also decimal classification systems, as *DDC* was till the 17th edition, present a pre-coordinated and enumerative structure, that is, the system lists all the main classes and possible subclasses. The relationships among concepts are already predisposed, all is predictable and there is nearly any possibility of choosing new semantic compound entities.

Till the 17th edition, issued in 1965 (Comaromi 1976) *DDC* was an almost completely enumerative system: all possible topics were showed in the Tables, also very specific and compound topics; the notation was available and the classifier had only to choose the appropriate one; classifier could realize new compound subjects only using Auxiliary Tables and Standard Subdivisions offered by the scheme.

From the 18th edition (1971), following the developments drawn in particular by the Ranganathan's faceted classification system (CC), which allows a complete notational synthesis in order to create subclasses and all needed compound subjects, which the system did not show, *DDC* was changed, at each new edition, toward a partially synthetic system. Notwithstanding the enumerative basic structure, notational synthesis is used in particular in the classes completely revised. In the 21st and 22nd editions, in fact, some classes, divisions and sections offer the opportunity to build *ex novo* class numbers using parts of numbers of other classes, only in cases for which a provision is made in Tables and following the Tables instructions, and using notations by Auxiliary Tables and Standard Subdivisions.

One insidious drawback of *DDC* is the fact that it does not always allow to synthesize notational numbers putting in evidence all aspects of a compound subject. The classifier has to choose among three or four characteristics, which belong to the same section and has to prefer only one aspect and leave in obscurity other aspects of the subject. In some Tables, in fact, *DDC* presents Orders of Preference.

The dissatisfaction toward traditional classification systems was highly expressed by Shiyali Ramamrita Ranganathan, Professor of Mathematics and Physics at Madras University and Librarian since 1924. Although Ranganathan appreciated the possi-

bility of endless expansion offered by decimal systems, he mainly criticized them because they did not allow to accommodate new topics and emerging sciences appropriately.

The theory elaborated by Ranganathan begins with criticism of pre-coordinate indexes, coordinate terms which describe the subject in anticipation, and in particular with criticism of *DDC*. Ranganathan suggested an innovative approach: to coordinate the concepts according to different criteria, different from time to time, and to create composite subjects according to whatever necessity.

The system worked out by Ranganathan–Colon Classification–presents a traditional structure at his first stage, with about eighty disciplines or knowledge fields, "main subjects" according to Ranganathan's terminology, in the 7th edition edited by M.A. Gopinath (Ranganathan 1987), and originally, in the 1st edition in 1933, twenty-five disciplines. Each disciplinary class is subsequently analysed using the facet technique which, from the first formulation provided in the CC, has spread to other classification systems.

According to Ranganathan's terminology, a facet is a set of "isolate ideas," that is a set of simple concepts, or basic concepts, which are determined dividing a discipline considering only one characteristic at a time. A facet groups concepts, expressed by terms, which present the same relationship with the "basic subject" (discipline), that is, every concept is part of the "basic subject," same level member. The "main subject" Architecture, for instance, presents, *inter alia*, the facet Styles, which groups different styles of buildings. "Isolate ideas" in a facet are always elementary concepts, never compound concepts. In the first step of the faceted classification, every discipline is divided into facets, considering only one characteristic at a time. Ranganathan grouped facets in five categories–Personality, Matter, Energy, Space, Time–which present an order of decreasing concreteness. The second step consists of the creation of composite concepts by synthesis of elements, "foci," which belong to different facets, according to particular needs.

A significant advancement in library classification systems development was worked out by Henry E. Bliss, librarian at the College of the City of New York since 1902. Bliss elaborated a system of sciences organization, and also a bibliographic and library classification derived from the former and based on theoretical principles earlier established.

The consistency in the organization of main classes is the principal feature of Bliss' system. The order of classes reflects the principle of gradation by specialities suggested by Auguste Comte (1830-1842) for the sciences organization: special fields must follow fundamental sciences, from which they derive. The system of sciences and special fields was based on what Bliss considered to be the natural and logical order, the "system of the nature," that is reality and its various forms, including human conceptual activities. In Bliss' opinion, interconnected disciplines and established continuity among scientific fields would ensure the realization of an effective encyclopaedia of knowledge, fully functional to scientific research.

Besides, Bliss founded the division of sciences on what he defined the principle of "scientific and educational consensus," that is the scientists agreement on the order and relationships among sciences. This order is reflected in turn on the pedagogical order of fundamental sciences taught in Universities, which guarantees the stability of the system.

Bliss' attention to the "scientific consensus" can be related to the theory of domain analysis recently drawn by Birger Hjørland (2002), who has suggested considering different fields of knowledge as different "discourse communities" within the society. Each community, in fact, has peculiar languages and forms of communication, specific information systems, citing methods and criteria to establish document's relevance; each community pursues its own objectives, uses peculiar intercommunication tools among members, and uses a specialized terminology. Unlike Bliss' orientation, theory of domain analysis takes into account that different knowledge fields can show high level of "scientific consensus" or, on the contrary, different scientific paradigms, which are conflicting. As Hjørland pointed out, to recognize the existence of "scientific communities" seems very similar to Thomas Kuhn's theory of "scientific paradigms" (Kuhn 1962), that is, of scientific patterns considered as dominant, successful and universally accepted during an historical time. The substitution of a scientific paradigm with another constitutes, in Kuhn's view, a scientific revolution.

Bliss Bibliographic Classification (*BC*) began with Philosophy, the disciplinary field concerning the essence of knowledge, and went on with Physics and Biology, toward increasing complexity of sciences concerning the human beings: Anthropology, Psychology, Social sciences, Literature, Art and, finally, Bibliology and Documentation.

Under the leadership of Jack Mills, since 1977 *BC* has been deeply revised according to studies of facet analysis elaborated by the British Classification Re-

search Group, and the revision is still in progress. The Classification Research Group–founded in 1952 and in which participated, among others, Jack Mills, Derek Austin, Ingetraut Dahlberg, Douglas J. Foskett and Eric J Coates, who was also a member of Broad System of Ordering (B.S.O.)–suggested that knowledge could be organized using only two broad categories: Entities and Attributes, without establishing disciplines based classes. Entities were put into order according to the "Theory of integrative levels," elaborated by J.K. Feibleman, which assumes that reality presents a structure of levels, each developing from the previous level, toward more complex entities. The sequence of Entities was as below: A-General systems; B-Phenomena and energy; C-Matter; D-Mineral systems; E-Life support systems; G-Astronomical universe; H-Earth as environment; J/L-Atmosphere; M-Geocentred living systems; N/R-Viruses, plants, animals; S-Man (Mills 1970, 137-138; Foskett 1978).

The *BC* second edition has adopted the main class order of the original *BC* to a great extent, however it has assumed also the "Theory of integrative levels" and the sequence of CRG's Entities as basis for achieving a consistent order of main classes. Each class has been restructured and the revision led to a fully analytic-synthetic structure, based on division into facets and sub-facets (arrays), and uses an established citation order of facets with the aim of achieving predictability. The main device for a fully synthetic notation in *BC2* is the retroactive notation. Notwithstanding *BC2* has received significant attention in the world, and actually constitutes the most detailed faceted general classification system, its use is limited to Great Britain.

To rigorously analyze concepts and terms, *BC2* applies the categories developed by the British Classification Research Group enlarging the Ranganathan's PMEST. The latter five categories were put in decreasing concreteness order, and the first cited facet, Personality, presents most concrete concepts, which are easily received by the mind.

The standard categories used in the revision of *BC* are:

> Entity–its Kind–its Parts–its Materials–its Properties–its Processes–Operations on it–Agents (of the Processes and Operations)–Space–Time–Forms of presentation.

"Entity" is near the "Personality" facet and "Material" is near to "Matter Material" facet in Ranganathan's view.

Facets are subdivided, if it is necessary, in subclasses (arrays) which make possible to retrieve specific subjects without noise, because the concepts enclosed are really mutually exclusive. (Mills 2004, 553-554).

With the aim of realizing compound subjects, *BC2* allows classifiers to combine terms contained in facets or in arrays, according to a defined citation order between facets. Terms will be arranged following the Standard Citation Order, based on the principle of progression from general to special, and according to which the first facet cited should be the one that shows the objective of study, the main interest or the end-product.

It is worth noting that *BC2* presents a number of separate classes 2/9 Generalia, Phenomena, Knowledge, Information science & Technology, which have not yet been published. In the Third Outline, with provisional notation, published in *BC2 Introduction and auxiliary schedules* (Mills & Broughton 1977, 202), classes 2/3 Generalia are dedicated to physical forms of documents and to forms of arrangement and presentations (encyclopaedias, serials), and classes 4/9 have been established with the aim of allowing a multidisciplinary treatment of particular phenomena. Classes 4/9 are concerned with "Universe of knowledge," "Methods of enquiry," "Communication," "Information" and the operations on information, "Data processing," as well as "Recorded knowledge," "Library and Information science" and "Archives and records management." Classes 4/6 are strictly devoted to group Phenomena, divided into "Attributes (e.g. structure, order, symmetry, colour);" "Activities and processes (e.g. organising, planning, change, adaptation);" "Entities (e.g. particles, atoms, molecules, minerals, organisms, communities, institutions, artefacts)": "These phenomena classes are designed to take that literature on a given concept (entity, attribute, process) which treats it from the viewpoint of *several or all disciplines*" (Mills & Broughton 1977, 52, emphasis original).

As Clare Beghtol noted (1998, 5-6), *BC2* offers a quite appropriate accommodation for multidisciplinary works, enabling to use unique notation instead of choosing multiplicity of notational access points to show all different aspects of the subject.

4. "Philosophy" in bibliographic classification systems

Let us turn now our attention to the theoretical arrangement of the field "Philosophy" in two general

classification systems, *DDC* (22nd edition, 2003) and *BC2* (1977). Considering the class 100–Philosophy and Psychology–of *DDC*, the first feature to be noted is the lack of update. This class has never been revised and, in short, it is nearly as devised by Dewey in 1876, with a little difference, however: Dewey left out the division 120 (now Epistemology), displayed Anthropology in division 130 (now Parapsychology & Occultism), and in division 150, instead of Psychology, Mental faculties. The second feature, and following from the above, is the awkward insertion of the class Psychology, which interrupts philosophical divisions. The insertion of Psychology within philosophical divisions appears as an old-fashioned orientation. It would be more appropriate to join psychological studies together with social sciences, or even with Medicine, or to create a class for Psychology and Psychiatry, as in *BC2*. The same could be said for what is concerned with division 130 Parapsychology & Occultism.

One of the most considerable drawbacks of *DDC*, that has been recognized by scholars of bibliographical classification systems, is the particular influence of "western bias." The class Philosophy and Psychology is one of the classes, divisions and sections of *DDC* which feel much more the effects of "western bias," which is evident in particular in classes not yet revised. Class 200–Religion, and its divisions and sections, for instance, was almost fully dedicated to Christianity, its history and sects, and only few sections of the division 290 were concerned with all the other religions. The same happens considering the class 400–Language, and 800–Literature and rhetoric, which offers the majority of the room to western languages and literatures, i.e. English, French, Italian, leaving few sections to all other languages and literary productions. However, we must acknowledge that, in the most recent editions, 21st and 22nd, *DDC* allows to expand the sections dedicated to the non-Christian religion and to the eastern literatures.

Finally, considering the organization of division in philosophical domain, we can note that it is not completely satisfactory. Divisions 110 Metaphysics, 120 Epistemology, causation and humankind, 130 Parapsychology & Occultism, 160 Logic, 170 Ethics, have been established. Each division presents sections aiming to accommodate his subdivisions or topics. As previously underlined, the insertion of both divisions—130 Parapsychology & Occultism and 150 Psychology, is inappropriate. Part of the topics in division 150 is dealing with neurological physiology, processes of sensory perceiving, mental processes, like learning, memory, intelligence, and factors influencing them, as well as gifts and natural abilities and so on, which could have a more effective and satisfactory collocation within sections of the medical domain.

Division 140 groups works on particular western modern schools of thought. Instead, the history of western modern Philosophy, that is, the collection of works of each individual philosopher, or his works dealing with his own general philosophical position, even though he founded a school of thought or a current of philosophical opinion, are classified in the division 190, grouped in sections according to different western countries, and the use of Standard Subdivision is obviously possible. Works about a specific philosophical area or topic will be classified in divisions or sections dealing with that area or topic.

Unlike the divisions mentioned above, the division 180 arranges both western ancient or medieval philosophical schools of thought and eastern philosophy, ancient, medieval and modern. In my opinion, that arrangement produces the effect of an excessively practical division, which also really suffers from the "western bias." In fact, Eastern philosophy appears only on section 181, within division 180 Ancient, medieval & eastern philosophy, which presents the other sections mostly dedicated to schools of thought of ancient classical Greece.

Now, take into account Bliss Bibliographic Classification second edition (*BC2*). The revision and new organization started making up a vocabulary of specific terms used in philosophical domain, and went on applying general principles of facet analysis. Sets of concepts, that is facets, produced dividing the vocabulary by one broad principle of division, has been provided.

Discussing the revision of the field "Philosophy," first of all it could be underlined that editors of *BC2* acknowledged that in the case of class A/AL, Philosophy and Logic, it has been created a not completely homogeneous class, because only subclasses A-AJ concern Philosophy, and class AL, Logic, an independent scientific domain, is considered an autonomous and related class (Bell and Mills 1991, xviii). So, in this paper I am concerned with Philosophy class only.

We can also note that, in case of Philosophy, editors stated that in realization of compound subjects citation order between facets in Philosophy should provide that first-cited facet be the facet representing the ultimate purpose or main object of study of the discipline, that is, the primary facet to consider

should be "Broad tradition." The decision to adopt as first principle of division the "Broad tradition" instead of, for instance, the "Branches of Philosophy," involves a consideration of cultural traditions, of social and political structures, as well as of religious beliefs and ethical rules. Eastern philosophical tradition, in particular, presents peculiar characteristics and is greatly influenced by religion, consequently this broad field needs a peculiar facet structure. These considerations persuaded editors to establish two different broad groups separately: Western Philosophy and Eastern Philosophy.

Facets in Western Philosophy are listed below, and should be cited in that order:

> *Branches of Philosophy* (Branches & fields & subjects of Philosophy, e.g.: AGG *Metaphysics*, AGR *Epistemology*, AHK *Ethics*, AFD *Metaphilosophy*, a branch that has been defined for writings about Philosophy, its scope and nature), which includes all philosophical problems and topics belonging to each philosophical branch or field. Under topics should be classified works written by individual philosophers on these specific topics;
>
> *Historical schools* (History of special periods & places, e.g.: ADB *Ancient Western Philosophy*; ADO *Modern Western Philosophy*), that is schools of thought defined according to an historical point of view, considering the time, the historical period in which they are flourished and, secondly, in which place. Within each place, individual philosophers will be considered (see n. 3 below);
>
> *Individual philosophers*, in fact, is a facet dependent on the previous facet, in which individual philosophers considered as subject of a book or a document, also the founders of a particular school of thought, are arranged. Takes works about general views of philosophers, but also Collected works by individual philosophers, with qualifications from Auxiliary Schedule AA2;
>
> *Viewpoints* (Viewpoints & schools in Western Philosophy, e.g.: ACN *Idealism*; ACJ D *Pragmatism*), a facet that reflects beliefs and models of thought, within which the Branches of Philosophy are examined. It could also include *Historical schools* as an array, but, for the latter, it was decided to create a special facet. *Viewpoints* facet can arrange both works *from* particular viewpoints, and works *about* particular viewpoints, even though the latter is normally used and the former is optional.

Considering now only the arrangement of works *about* particular viewpoints, we can note that *Viewpoints* facet presents in substance three arrays: a) studies about the viewpoint of a religious belief; b) studies about doctrines, standpoints and methods of enquiry e.g., a work about Existentialism; c) studies about the viewpoint derived from an individual philosopher, that is not already included among array b, "Doctrines, standpoints, schools and systems of Western philosophy": e.g. Thomist, but not Kantianism; Common facets of Auxiliary Schedule 1 can be applicated.

We can discuss some features now presenting some examples from two academic libraries of the University of Cambridge (England), that use *BC2*: Sidney Sussex College Library (37.000 volumes, mostly devoted to Literature) and Queen's College Library, whose classmarks are available online at the Newton Catalogue http://collpw-newton.lib.cam.ac.uk/ (accessed February 2, 2008). In the examples below only author-title descriptions and classmarks are quoted from the OPAC, my comments follow.

Works written by an individual philosopher about a specific philosophical topic should be classified under that topic, that is under Facet 1 *Branches of Philosophy*, even though *BC2* recognizes that "the writings of a philosopher constitute something like a system" and it would not be right to isolate some works from the others (Bell & Mills 1991, xxxv):

> ... in Western philosophy the more frequent emphasis on specific philosophical problems ... has led to the rule that a work which focuses on a specific problem is classed under that problem. So Gilbert Ryle's The Concept of mind goes under Mind; ... Plato's Timaeus goes under Cosmogony; Mooer's Principia ethica goes under Ethics, and so on.
>
> - E.g.: Whitehead, Alfred North–*Process and reality: an essay in cosmology*, Cambridge, Cambridge University Press, 1929.
>
> Classmark: AGM (Sidney Sussex College).

Comment: Facet 1, *Branches of Philosophy*: AGM = Cosmology (for metaphysical speculation).

- E.g. Moore, George Edward–*Principia ethica*. Edited and with an introduction by Thomas Baldwin. Cambridge, CUP, 1993.
Classmark: AHK (Queen's College).

Comment: Facet 1, *Branches of Philosophy*: AHK = Ethics

When the work covers a range of philosophical problems, and it is not focused on a specific subject, as in case of a book of selections of works from a philosopher, *BC2* invites to classify under the philosopher himself: Facets 2-3 *Historical schools– Individual philosophers.*

If individual philosophers themselves are the subject of a document, the document should be classified under Facets 2-3 *Historical schools–Individual philosophers*, with opportune qualifications from Auxiliary Schedule AA2 for individual works, if necessary:

- E.g.: Deleuze, Gilles–*Kant's critical philosophy: the doctrine of the faculties*, London, Athlone, 1995 (translation of *La philosophie critique de Kant (Doctrine des facultés)*, Paris, PUF, 1963).
Classmark: ADT KP 8M (Sidney Sussex College)

Comment: A critical study by a philosopher on Kant. *BC2* allows to put in evidence that there is a critical analysis about Kant.

Facet 3 *Individual philosophers*: ADT KP = Kant I.; Auxiliary Schedule AA2: 8M = Critical studies about the philosopher.

Facet 4 *Viewpoints* offers the possibility to represent in compound subjects the viewpoints, doctrines, methods of inquiry about which the work is. Composite subjects can be created using retroactive synthesis to classify a work in which a viewpoint is examinated by another viewpoint: E.g.: a work about "An analysis of Existentialism from the Empiricist viewpoint," ACT LBH (Bell & Mills 1991, 10). Works about the viewpoint of a religious belief should be classified under Facet 4 *Viewpoints* (Array a):

- E.g.: A work about "Jewish view of the Metaphisics of space" should be accommodate in AGQ CCL, where AGQ is from Facet 1, *Branches of Philosophy* (Metaphysics), ACC is from Facet 4 *Viewpoints* (Array a), and L comes from class P. Classmark realised by retroactive synthesis (Bell & Mills 1991, 10).

Works about doctrines, standpoints or methods of inquiry (e.g. Empiricism, Pragmatism) should be classified under *Viewpoints* Facet (Array b):

- E.g.: Rorty, Richard–*Consequences of pragmatism: essays 1972-1980*, Brighton, Harvester, 1982
Classmark ACJ D (Queen's College).

Comment: Facet 4 *Viewpoints* (Array b): ACJ D = Pragmatism

In Facet *Viewpoints* (Array b), among doctrines and standpoints, there are presented also the viewpoints of some philosophers that achieved the status of a complete doctrine (e.g. Platonism, Kantianism). Compound subjects can be realized, for instance, from Facet 1, *Branches of Philosophy* and Facet 4 *Viewpoints* (Array b):

- E.g.: Hintikka, Jaakko–*Logic, language-games and information. Kantian themes in the philosophy of logic*, Oxford, Clarendon Press, 1973.
Classmark: AGW CNQ (Sidney Sussex College).

Comment: A work about the philosophy of logic and language, carried out with an analysis of kantian theories on philosophy of logic and mathematics. The result is a revival of characteristically Kantian themes.

Facet 1, *Branches of Philosophy*: AGW = Philosophy of logic and language; Facet 4, *Viewpoints* (Array b): ACN Q = Kantianism (a viewpoint of a philosopher that achieved the status of a complete doctrine). Classmark realised by retroactive synthesis. *BC2* allows to put in evidence the Kantianist viewpoint; using *DDC* 22th edition, the work would be classified in 160: Logic, without possibility of specification. (cf. Library of Congress: http://catalog.loc.gov/).

Compound subject realized from Facet 2 *Historical schools* and Facet 4 *Viewpoints* (Array b):

- E.g.: Dronke, Peter–*Fabula: explorations into the use of myth in medieval Platonism*, Leiden, E.J.Brill, 1974.
Classmark: ADJ COP (Queen's College).

Comment: A work about medieval Platonism.

> Facet 2 *Historical schools*: ADJ = Medieval Philosophy (450-1450); Facet 4, *Viewpoints* (Array b): ACOP = Platonism. Classmark realised by retroactive synthesis. *BC2* allows to put in evidence the Platonist viewpoint; using *DDC* 22th edition, the work would be classified in 189: Medieval Western Philosophy, without possibility of specification
> (cf. e.g. Library of Congress: http://catalog.loc.gov/; British Library: http://www.bl.uk/catalogues/listings.html).

BC2 allows classifiers to distinguish between works *about* the viewpoint derived from a particular philosopher, considered as a doctrine, which could be represented by notations from Array c, in Facet 4 *Viewpoints*, and works *about* the general views of the philosopher himself, which will be classified under Facets 2-3. In fact, in Facet 4 *Viewpoints* (Array c), the system offers also the possibility of qualification for "works about the viewpoints derived from particular philosophers," who are not already enumerated in the Doctrine array (Facet 4). The examples listed below are informal and for illustrative purposes.

Let us consider a hypothetical work about "Crocian perspectives in French philosophy in the 20th century," which is about the viewpoints associated with, or derived from, the doctrine of the philosopher Benedetto Croce (not a work about Croce's own views). This work could be accommodate in ADV FCD CRO, created by retroactive synthesis and using alphabeting device: Facet 2 *Historical schools*, ADV F = 20th century-French philosophy; Facet 4 *Viewpoints* (Array c) = ACD; three letters from author's name, because Croce is not already enumerated in the Doctrine, Array b.

Another feature of *BC2* on which we should pay our attention and regard with particular interest, is the possibility that classifiers could use "Phase relations" from Common Subject Divisions to create composite classes for representing the fact that a topic is influenced by another, and the comparison of a topic with another topic, in this case also linking terms from different main classes.

A hypothetical work about "Aesthetics in Hegel, in comparison with moral perspectives" could have an entry, created by retroactive synthesis, under ADU KJH P6T PYM, where ADU KJ stands for Hegel G. W. F. from Facet 3 *Individual philosophers*, AHP stands for Aesthetics, from Facet 1, *Branches of Philosophy*, 6T is the "comparison phase relation," and PYM is a notation that comes from the Religion, Occult, Morals & Ethics class.

Eastern philosophy, on the contrary, calls for a different citation order, because of the relevance of different cultural traditions and systems, which does not allow to apply the first-cited facets *Branches of Philosophy* and *Viewpoints*, as it is performed in Western philosophy. In fact, in Eastern philosophy the first facet is considered a compound facet of Place and Religious system, since philosophical thought can be considered a subsystem of religious belief and, moreover, it is strongly connected to the place in which has flourished and developed. As a result, historical schools, characterized by a mix of place and religious belief, are considered the basis of the arrangement. The facet has been created by two combined characteristics of division, as it occurs also in class J Education, and in class P Social welfare (Bell & Mills 1991, xxv).

As explained by Bell & Mills (1991, 27):

> Citation order here differs from that for Western philosophy. This reflects three important differences: Firstly, historical schools are usually regarded as the primary point of departure in the study of the literature. Secondly, the schools are characterized by a combination of religious criteria & place. Thirdly, within a defining religious or moral system the concept of a school is closely related to that of major writers or works in the subject, which then constitute quasi-schools of their own. Associated with this feature is the prominence attaching to the idea of a 'classic' forming the root from which may develop a large interpretative literature in the form of commentaries, 'sutras' (formulae), etc.

Facets in Eastern Philosophy are listed below:

> *Philosophical systems characterized by a combination of religion and place.*
> The connection between religious systems and places, or cultures, is particularly evident in Hindu philosophy, Buddist philosophy and Confucianism.
> The first facet presents four arrays: a) division by broad periods (Ancient, Middle, Modern); b) classical philosophical systems within each philosophical system (e.g. Vedanta, in Hindu

philosophy); c) original historical texts on which a number of commentaries 'sutras' exists (e.g. Vedas, in Hindu philosophy): d) expositions and commentaries developed by singular writers under both a classical system and original texts;

Branches of Philosophy, a facet largely derived from the analogous facet in Western Philosophy. In this case there is the difficulty of equating concepts belonging to doctrines in Eastern Philosophy, to concepts of Western Branches of Philosophy that are largely used to support Branches facet;

Viewpoints & doctrines, which groups in arrays, particularly detailed for Indian philosophy and Chinese philosophy, the presentation of doctrines and methods of study.

An important consideration is concerned with the peculiar nature of philosophical literature published in the Eastern tradition, that is the existence of many commentaries on 'sutras', and also commentaries on these commentaries. In Eastern Philosophy, in fact, the focus is on original texts and commentaries on these, and consequently the schedules put in evidence "Writers" and "Originating works" related to classical philosophical system within each philosophical system. This was actually the reason that convinced editors to consider as primary facet the Broad tradition, and to give "just two large classes at this level (Western and Eastern)" (Bell & Mills 1991, xxii).

5. Conclusion

The main purpose of this study is to review some different arrangements of the philosophical domain in bibiliographic classification systems. From this analysis some considerations can be drawn.

The lack of update in class 100–Philosophy and Psychology makes the use of *DDC* not completely satisfactory. The class suffers in particular from the difficulty of creating compound subjects using Standard Subdivisions, a tool that offers a relatively narrow variety of possibilities for philosophical domain.

On the contrary, the faceted analysis of philosophical domain in *BC2* makes the organization of philosophical knowledge in Western tradition more appropriate. The system offers a great opportunity to represent interdisciplinary connections among branches of Philosophy as well as compound subjects. Another feature that must be considered positively, is the broad variety of "Phase relations" from Common Subject Divisions offered to create composite subjects in any class, at discretion of the classifier. The excellent flexibility and precision of *BC2* allows to create more detailed compound subjects.

Considering that philosophical knowledge elaborated inside a culture is hard to accommodate in a classification system created by a different culture, the suggestion of *BC2* to use as primary division of philosophical domain "Broad traditions" should be regarded with particular interest. *BC2* acknowledges the importance of cultural traditions and social structures. As a result, peculiar characteristics of the Eastern philosophical tradition, greatly influenced by religion, are more appropriately accommodate. The arrangement of Eastern Philosophy appears particularly detailed, focused on the religion-philosophical systems and on their original texts and commentaries.

References

Arnauld, Antoine and Nicole, Pierre. 1662. *La Logique ou l'art de penser: contenant, outre les règles communes, plusieurs observations nouvelles, propres á former le jugement.* Paris: C. Savreux.

Attar, K. E. 2002. The practice of Bliss. *Cataloging & classification quarterly* 34n4: 47-65.

Beghtol, Clare. 1998. Knowledge domains: multidisciplinarity and bibliographic classification systems. *Knowledge organization* 25: 1-12.

Bell, Kenneth and Mills, J. 1991. *Class A/AL philosophy and logic*. In Mills Jack and Broughton Vanda, eds., *Bliss bibliographic classification,* 2nd ed. London: Bowker-Saur.

Biagetti, Maria Teresa. 1981. L'elaborazione delle classificazioni concettuali attraverso i contributi di Piaget e Bliss. *Annali della Scuola Speciale per Archivisti e Bibliotecari dell'Università di Roma* XIX-XX: 44-65.

Bliss, Henry Evelyn. 1929. *The organization of knowledge and the system of the sciences.* New York: Holt.

Bliss, Henry Evelyn. 1940-1953. *A bibliographic classification, extended by auxiliary schedules for composite specification and notation*. New York: Wilson.

Comaromi, John Phillip. 1976. *The eighteen editions of the* Dewey Decimal Classification*.* Albany, NY: Forest Press Division, Lake Placid Education Foundation.

Comte, Auguste. 1830-1842. *Cours de philosophie positive.* 6 vols. Paris: Bachelier.

De Grolier, Eric. 1974. Le système des sciences et l'évolution du savoir. In Wojciechowski, J. A. ed., *Conceptual basis of the classification of knowledge: Proceedings of the Ottawa Conference 1-5 October 1971*. Pullach/München: Verlag Documentation, pp. 20-118.

De Grolier, Eric. 1979. In search of an objective basis for the organization of knowledge. In Neelameghan, A. ed., *Ordering systems for global information networks. Proceedings of the Third International Study Conference on Classification Research. Bombay, January 1975*. Manipal: Manipal Power Press, pp. 64-73.

Dewey Decimal Classification and Relative index, devised by Melvil Dewey. 2003. Edition 22, edited by Joan S. Mitchell [et al.]. Dublin (Ohio): OCLC.

Foskett, Douglas J. 1978. The theory of integrative levels and its relevance to the design of information systems. *Aslib Proceedings* 30: 202-8.

Hjørland, Birger and Albrechtsen, Hanne. 1995. Toward a new horizon in Information Science: Domain-Analysis. *Journal of the American Society for Information Science* 46: 400-25.

Hjørland, Birger. 2002. Domain analysis in information science. Eleven approaches traditional as well as innovative. *Journal of documentation* 58: 422-62.

Hjørland, Birger and Hartel, Jenna guest eds. 2003. Special issue of *Knowledge Organization* on Domain Analysis. *Knowledge organization* 30: 125-245.

Jevons, William Stanley. 1877. *The principles of science: a treatise on logic and scientific method*.2nd ed. London; New York: Macmillan. (1st edition 1874).

Kuhn, Thomas S. 1962. *The structure of scientific revolutions.* Chicago: The University of Chicago Press.

Mills, Jack. 1970. Progress in documentation: library classification. *Journal of documentation* 26: 120-60.

Mills, Jack and Broughton, Vanda eds. 1977. Introduction and auxiliary schedules. In *Bliss bibliographic classification*, 2nd ed. London; Boston: Butterworths.

Mills, Jack and Broughton Vanda eds. 1978- . *Bliss bibliographic classification*, 2nd ed. London; Boston: Butterworths 1977; London: Bowker-Saur. (Last published volume: W - The Arts 2007).

Mills, Jack. 2004. Faceted classification and logical division in information retrieval. *Library trends* 52n3: 541-70.

Piaget, Jean. 1967. Classification des sciences et principaux courants épistémologiques contemporains. In *Logique et connaissance scientifique.* Encyclopédie de la Pléiade. Paris: Gallimard.

Piaget, Jean. 1970. La situation des sciences de l'homme dans le système des sciences. Psychologie. Problèmes généraux de la recherche entredisciplinaire et mécanismes communs. In *Tendances principales de la recherche dans les sciences sociales et humaines. Première partie: sciences sociales*. Paris: Mouton.

Porphyrius. 1887a. *Porphyrii Isagoge et in Aristotelis categorias commentarium.* Consilio et auctoritate Academiae Litterarum Regiae Borussicae. Edidit Adolfus Busse. Berolini: Typis et impensis Georgii Reimer.

Porphyrius. 1887b. *Porphyrii Introductio in Aristotelis categorias a Boethio translata*. In *Commentaria in Aristotelem graeca.* Editum consilio et auctoritate Academiae Litterarum Regiae Borussicae voluminis IV pars I. [...]. Berolini: Typis et impensis Georgii Reimer, pp. 23-51.

Ranganathan, Shiyali Ramamrita. 1967. *Prolegomena to library classification*. 3rd ed. assisted by M.A. Gopinath. London: Asia Publishing House (1st edition, Madras: Madras Library Association; London: Edward Goldston 1937).

Ranganathan, Shiyali Ramamrita. 1987. *Colon classification*. 7th ed. basic and depth version. Revised and edited by M.A. Gopinath. Bangalore: Sarada Ranganathan Endowment for Library Science.