

The Bliss Classification Bulletin

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EDITORIAL

Equations and probabilities

This time last year we were pleased to hail the appearance of the new Philosophy class, A/AL, and a review of it appears in this issue of the *Bulletin*.

1992 has seen work on the other half of Class A, AM/AX Mathematics and Statistics, completed at last after much hard labour by all concerned. Production delays have unfortunately meant that actual publication will not now take place until early in 1993, but what has in many ways been the biggest intellectual hurdle in BC2 has been successfully overcome. The outline of the Mathematics class is reproduced in these pages. (Readers may like to compare it with an earlier draft outline which was printed in the *Bulletin*, No.27, 1985). It may appear to be quite a substantial schedule in itself, but the full schedule provides by far the most detailed systematic analysis of the field available anywhere.

Although the full Mathematics schedule is completely synthetic, it has been felt desirable to enumerate a very much larger number of derived compound classes than is our normal practice : it would have been *possible* to print a very brief schedule and leave all the compounding to the classifier, but the nature of the field is such that this would have placed an undue burden on those librarians who do not hold double honours degrees in both mathematics and Blissology.

Examination of the terminology of mathematics reveals a relatively limited number of separate 'simple' concepts. Complexity arises from the fact that not only can each and every one of them qualify every other (the normal facet relationships), but can apparently also act as a specifier denoting *types (species)* of those concepts.

Differentiation, for example, is a distinct processes, but appears as a defining concept in Differential geometry, Differential topology, Differentiable manifolds, and so on. This sounds like a recipe for chaos, but it has been handled by rigorous facet analysis and by the provision of an Auxiliary Schedule (AM1), which is also reproduced in these pages. Its use makes possible the complete range of qualification and specification of any concept, whether already listed in the main schedule or not. It will be interesting to see as time goes by how well BC2 manages to produce appropriate classmarks for complex new topics as yet unconceived and unpublished by mathematicians!

Probability and Statistics are also covered in the Mathematics volume -- distinct areas, yet sharing many concepts with mathematics (or borrowing them from that field as needed).

Work is far advanced on Classes R and S, Politics and Law, and their publication will complete the social sciences; Chris Preddle, in the mean time, is pressing ahead with the preparation of a revision of Class Q, Social welfare, one of the first volumes of BC2 to be issued.

Also noted in these pages is a welcome (re)start on the Fine Arts, and we hope that a wider involvement of members will herald more work on other long awaited classes.

Alas! I see that in the new Philosophy class AGC does not exist at all.

A.G.C.

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BLISS CLASSIFICATION ASSOCIATION

MINUTES of the ANNUAL GENERAL MEETING of the Bliss Classification Association held on Friday, 29 November 1991, at the Department of Health, Hannibal House, London.

Present: Jack Mills (Chair and Editor of BC2)

Jean Aitchison

Ken Bell (Polytechnic of North London)

Jennifer Buchanan (Secretary)

Tony Curwen (Editor, BC Bulletin)

Ed Dua (Joint Library Services, DHSS)

Frank Emmott (Barnardo's)

Roger Hughes (Publicity Officer)

Derek Langridge

Marion MacLeod (Fitzwilliam College, Cambridge; Treasurer)

Colin Neilson (Science Museum)

Christina Panagiotidou (University of London)

Chris Preddle (National Children's Home)

Val Skelton (Bowker-Saur)

Hilda Stoddard

Angela Upton (National Institute for Social Work)

- 1 Apologies for absence were received from Colin Ball and Duncan McKay.
- 2 The minutes of the Annual General Meeting held on 30 November 1990 were approved.
- 3 Matters arising

It was reported that Class J, Education, 1990 revision had been published in December 1990.
- 4 Progress of BC2 : Editor's report
 - 4.1 The Editor introduced his written report, which had been circulated to the meeting. [Appended to these minutes]. Class A/AL Philosophy and Logic was being published that day, and a copy was presented at the meeting. The Editor thanked Bowker-Saur.
 - 4.2 The Editor stated that Class AM/AX Mathematics, Statistics and Probability was very nearly ready for publication and would need very few amendments. Class Q Social Welfare had been revised in draft form up to QH, and Chris Preddle hoped that the class would be ready for publication in 1993. The Editor hoped to deliver Class R Politics to the publisher during 1992. It was hoped that Eric Coates could continue his work on Technology during 1992. Many other classes were close to a publication state.

4.3 From the floor Tony Curwen asked whether the Association received payment for draft schedules sent to interested institutions. The Editor answered that the Association did not charge, and it was suggested from the floor that draft schedules should remain free of charge, but that a contribution to the Association's funds would be welcome. It was agreed that the Committee would discuss a policy on this matter.

5 Treasurer and Membership Secretary's report

5.1 The Treasurer presented the account for 1990/91. [Appended to these minutes].

5.2 The Treasurer reported that no fund raising was taking place at the moment. The Association would concentrate on producing schedules, which were certain to generate income.

6 Hon. Auditor

Ken Best was elected to serve as Hon. Auditor for 1992, and the meeting recorded its thanks to him.

7 Publicity Officer's report

7.1 Roger Hughes reported on the joint BCA/CRG meeting held in February 1991, which had been addressed by Eric de Grolier. A draft copy of a bibliography on BC2 had been delivered to Tony Curwen.

7.2 The Chair thanked Roger for all his work in investigating the feasibility of employing a professional fundraiser.

8 Forthcoming classes

Class AM/AX Mathematics, etc., would be passed to Colin Neilson by the end of December 1991, and referees and proofreaders should have completed their amendments by Spring 1992. Class R Politics and Class S Law would be finalised before the next AGM. Work on Physics and Chemistry was in a very advanced state. The Editor was asking Colin Ball to undertake the Fine Arts class.

9 Committee membership

9.1 Duncan McKay resigned from the Committee.

9.2 Tony Curwen and Christina Panagiotidou were elected to the Committee.

PROGRESS OF BC2 IN1991: EDITOR'S REPORT TO THE AGM

Development of schedules and publication

Class A/AL: Philosophy and Logic. This class was delivered to Bowker-Saur in August. Its refereeing took longer than anticipated, but has resulted in the cleanest (i.e. most error-free) schedule so far produced for BC2. It has also provided valuable experience of the procedure we need to follow to ensure that refereeing in future will be as streamlined as possible, and swifter.

Class AM/AX: Mathematics and Statistics. Proofs of the complete volume, including the A/Z index, for the Editor's final corrections, were produced in October. Final proofs for refereeing should be ready in January 1992, and publication not later than the summer.

Class GR/GY: Applied biology. More editing of Vanda Broughton's mss. drafts was undertaken and a substantial (36 page) outline produced on the micro. (See also below under *Other developments*).

Class J: Education. The 1990 revision of this class was published in December 1990.

Class Q: Social welfare. Chris Preddle has begun work on a revision of the 1977 schedule, and reports good progress.

Class R: Politics and political science. Although they are due to be published separately, Classes R and Class S are so closely bound up that neither can really be finalised without the other being finalised also. But Law will be delivered to Bowker-Saur first, and the main effort has been to complete Class S.

Class S: Law. Finalising this has taken longer than anticipated. One reason has been that the detailed enumeration of primary materials, and making allowances for different legal structures, is not really susceptible to the time-saving orderliness of facet analysis. Another reason has been the notational problem raised in reconciling notation derived from other BC2 classes with the demands of Class S. For example, the large class Commercial and economic law follows closely the structure in Class T, but adapting Class T notation is more time-consuming than starting from scratch. But Class S is now nearly finished and should go to Bowker-Saur soon after Class AM/AX.

Other developments

Progress in the classification generally has been assisted by a number of other activities in 1991.

In February, the BCA Committee had a joint session with the Classification Research Group to hear Eric de Grolier's report on his current work in classification and related fields. An evaluation of BC2 by M. de Grolier had included some criticism of an Anglo-American bias. This led to the writing of a reply (published in the *Bulletin*), and also to the decision to make the presentation and notation of the Law schedule truly international ('universal') so that English and American law feature no more prominently than any other system.

The use of BC2 schedules and drafts as quarries for designers of other classifications and thesauri seems to be gaining ground. This is partly due to the invaluable publicity they receive from Jean Aitchison's excellent papers and books on problems of structured vocabularies. One example of this was a request for copies of schedules relevant to agriculture, biochemistry, etc. from the National Agricultural Library in the USA. The NAL is cooperating with FAO and CAB International (Commonwealth Agricultural Bureaux) in developing a classified structure for two major thesauri - CAB thesaurus and AGROVOC. Copies of several BC2 classes were sent as a result. Another example has been the preparation by Lindy Gill (who installed BC2 at the Tavistock Joint Library, and is now a qualified lawyer) of a national resources classification for use in the oil industry, mining industry, etc. The structure and vocabulary of BC2 proved a very useful basis. Yet another is the possibility, suggested by a paper presented at the International Study Conference on Classification Research (Toronto, 1991) that UDC might be restructured, using the faceted format provided by BC2. It is hoped that a research project to explore the feasibility of this will be set up.

Cooperation of a different kind is reflected in correspondence with libraries abroad. In Japan, Naoki Takubo of the Nara National Museum has completed arrangements to publish sections of the Introduction to BC2 as a guide to modern classification practices. In Moscow, librarians at the Lenin State Library have sought our advice on the classification of philosophy and religion, and have evidently found Class K very useful in classifying social science materials.

Jack Mills

BLISS CLASSIFICATION ASSOCIATION CONSOLIDATED RECEIPTS AND PAYMENTS FOR THE YEAR ENDING 31 JULY 1991

<u>1990</u>	RECEIPTS	<u>1991</u>	<u>1990</u>	PAYMENTS	<u>1991</u>
	Balance brought forward 1 August 1990:		235.90	Committee and AGM expenses	243.35
3052.73	General accounts	1604.67	399.60	Stationery, postage & photocopying	246.25
5351.88	Appeal account	<u>752.73</u>			
		2357.40		2nd edition expenses:	
	Subscriptions:		4940.55	Research assistant	00.00
64.00	Personal	72.00	532.27	Work on unpublished classes	<u>987.93</u>
24.00	School	16.00			
857.99	Other institutions	<u>877.15</u>	965.15	1655.50	Computer equipment & repairs
					00.00
67.29	Royalties on 2nd edition	55.35	15.10	New Appeal expenses	20.99
58.32	Distribution from M & G (Charibond)	91.51	262.90	Other payments	126.45
10.00	Appeal contributions	250.00			
	Interest payments:			Balance in hand at 31 July 1991:	
184.71	Deposit account	136.56	300.54	General current account	138.84
331.40	Appeal account	<u>62.54</u>	199.10	General deposit account	2114.43
			752.73	Appeal account	<u>1065.27</u>
287.00	Other receipts	1000.00			3318.54
<u>19.90</u>	Creditors	25.00			
<u>10309.22</u>		<u>4943.51</u>	<u>10309.22</u>		<u>4943.51</u>

CURRENT ASSETS at 31 July 1991

800.13	Charibond (at cost)	800.13
1604.67	Cash in general accounts	2253.27
752.73	Cash in Appeal account	1065.27
<u>3759.00</u>	Computer equipment (pc:s and printer)	<u>3007.20</u>
	less depreciation @ 20% per annum	
<u>6916.53</u>		<u>7125.87</u>

Marion MacLeod, Hon. Treasurer
6 Gilbert Close, Cambridge, CB4 3HR

I have examined the books, bank statements and other relevant papers of the Bliss Classification Association and find the above statement of accounts to be correct.

K. Best, Hon. Auditor
2 Greendale, Ilminster, Somerset, TA19 0EB
22.11.1991

Bliss, the disciplines and the New Age

by D.W. Langridge

The following article is a revised version of the talk given by Derek Langridge at the 1991 Annual General Meeting

Fundamental principles

The self-proclaimed practical people are usually those who practise the errors of their predecessors. It is sound theory on which the superiority of BC2 rests. The majority of problems and mistakes in classification arise from failure to recognise or to apply fundamental principles. It was Ranganathan's greatest contribution to make explicit so many of these, but there are some important additions to his canon.

First is the absolute distinction between forms of knowledge and phenomena. This has been obscured by the existence of so many '-ologies', compressing forms of knowledge and the phenomena they study into single terms; and by the loose use of 'discipline' for any specialisation, when it is essential to distinguish between the fundamental disciplines (forms of knowledge) and their many subsidiary disciplines. For subject analysis it is therefore necessary to match Ranganathan's fundamental categories (i.e. of phenomena) with an agreed set of fundamental forms of knowledge, both being devices quite independent of any particular classification scheme.

Second, as a corollary of the first principle, subject analysis *must* include both form of knowledge and phenomena studied. (This may be done by a single term, for example, zoology = science of animals). The main criticism of PRECIS was its failure to recognise this. Its legacy may be seen in such recent examples of British Library CIP entries as:

- (1) 'Unconsciousness' for Stan Gooch: *Creatures from inner space*. Apart from being incomplete as an analysis, this entry shows a confusion between the thesis of a book and its summarisation. The thesis here is that various paranormal phenomena are products of the unconscious mind and not objective realities. The summarisation is 'parapsychology' (= psychology of paranormal phenomena).
- (2) 'Life' for D.M.A. Leggett: *The sacred quest*, where the proper analysis is 'philosophy' -- the purpose of life.
- (3) 'Women in Christianity' and 'Women -- Social conditions' for E. & G. Strachan: *Freeing the feminine*. These two subjects do occur in the book, but only in a minor way. It is not about women, but about the feminine principle, specifically about the balance between the masculine and the feminine in contemporary society. This example shows a failure even to practise summarisation correctly: two entries are appropriate only when a work comprises two distinct and separately treated subjects.

[There are some further notes on these three examples at the end - *Editor*]

CIP is a good idea that has been badly executed, and subject analysis is certainly not being effectively done by the British Library. Since writing my book on the subject, I have realised that while the use of classification schemes is within the competence of many people, there are comparatively few who can show an equal competence in subject analysis. The allocation of class numbers can be safely left to the practitioners of the various schemes. Subject analysis, on the other hand, being the most difficult and time-consuming process, is the real candidate for centralisation. In my view, our most urgent need is for a classification institute consisting of expert classifiers whose sole task this is. We are producing the best general classification of all time in BC2, but the best classification is dependent, as any other, on the best subject analysis. This fact leads us to our third important principle: *subject analysis is completely distinct from translation*. Schemes do not provide a suitable guide to subject analysis. For that we need the aforementioned fundamental forms of knowledge and categories of phenomena.

Perhaps the most important principle that Ranganathan made explicit was that concerning the three levels of work in classification: the idea, verbal and notational planes. It obviously referred to classification schemes and thus overlooked the logically prior distinction between purely intellectual matters and bibliographic ones. I am using 'bibliographic' here to cover both the nature of individual documents and the relationships between them. For example, 'form of knowledge' is an intellectual concept, whereas 'main class' is bibliographic; 'subject analysis' is intellectual, but 'translation' of that into the terms of a classification scheme is bibliographic.

Structure of BC2

This fourth principle is essential in understanding the structure of BC2, an understanding that is no less important for effective use of the scheme than for development of the schedules. Along with all the other general schemes, BC2 is known as a discipline scheme, but this is a misnomer: there has never been such a scheme. The name implies that the main classes contain all and nothing but the form of knowledge specified, such as philosophy, science or history. This is very far from the truth. A great deal of philosophy, history and even some science is distributed throughout the scheme, while each of these classes contains 'foreign' elements. For example, Science includes philosophy and history of science among other things. The truth is that main classes are based on the field-of-interest principle, not on forms of knowledge or disciplines. Some classes are particularly heterogeneous. For example, Education contains major contributions from philosophy, history, psychology and sociology. These do not constitute a single discipline of Education: they represent, rather, those writings considered to be of major interest to anyone whose central concern is the activity of education.

So-called 'discipline schemes' are always contrasted with James Duff Brown's *Subject classification*, but in fact BC is closer to Brown than it is to the concept of a discipline scheme. Bliss himself had more to say in favour of Brown than of other predecessors. He was obviously influenced by the *Subject classification*, but considerably modified its extreme treatment. Under the guise of traditional main class names, such as Physics and Chemistry, Brown included science - technology - art sequences, such as Mechanics - Engineering - Architecture, and Acoustics - Music. Bliss limited himself to science - technology collocations. Brown listed phenomena only once, in the discipline of first occurrence (e.g. animals in Zoology), and then subdivided by all other appropriate disciplines. Bliss listed phenomena in more than one class, but he did subdivide quite extensively by other disciplines.

Philosophy and history are used as subdivisions everywhere, as are law, education, administration and communication. Psychology and sociology appear as important subdivisions in Religion and Education. There is even some distribution of sciences as in biophysics, geophysics and physics of music, where physics is subordinate to Biology, Geology and Music respectively.

These distributed disciplines constitute the vast majority of the subject common subdivisions, which thus prove to be another misnomer, tending to conceal the true structure of the scheme. Since many disciplines are distributed there can be no standard citation order as between phenomena and disciplines. Citation order between phenomena applies only within main classes: there is no question of a single citation order for compound subjects across the main classes. It is also impossible to maintain the general-before-special principle when disciplines are distributed. For example, the management of scientific research will appear in Class A, well ahead of general management in Class T. So there is no single principle of order running throughout the scheme. Overriding them all is the idea of *helpful order*.

One distinct bibliographic problem for any scheme is that of the composite work. A composite work cannot be summarised: on the intellectual plane only analyticals are possible. On the bibliographic plane something other than the normal method of summarisation (via form of knowledge and phenomenon) is required: a unifying theme must be sought. There seem to be four possibilities. If the contributions come from one *discipline*, that can be used together with a form specification, as in medical essays or conference proceedings. Other possibilities are *viewpoint*, as, for example, in a work giving a Christian viewpoint of several distinct topics; or *purpose*, as in essays on various topics for a particular group of people. The last possibility, contributions on various aspects of a particular *phenomenon*, has been much discussed and a special generalia class has been provided for them in BC2. I have come to doubt whether this is the best solution. I suspect that there are comparatively few genuine examples of such works and that many apparent examples really belong within one discipline. A small investigation is called for.

A new main class

I have recently been advising the newly-formed Avalon Library at Glastonbury on their classification. In the beginning I was asked down to discuss the suitability of BC2 for the purpose. It soon became clear that with their present lack of resources any detailed classification was out of the question: a system of broad categories was the only possibility. The third outline of BC2 was an obvious candidate, but the library wanted a different kind of plan. The collection includes three major areas of interest: the Arthurian legends, the occult (or esoteric), and the New Age, of which the first does not raise any particular problem. 'Occult' is used to include such diverse subjects as paranormal phenomena, magic, occult 'sciences', earth mysteries and the ancient wisdom. The Avalon Library rejected the idea of segregating them as in Class PX. They wanted an integration of esoteric and exoteric, which raises the general question of the extent to which unorthodox views of any kind should be separated from the orthodox.

The question applies particularly to the library's third major subject, the New Age. We must first ask ourselves what this really amounts to. Is it merely a nineteenth century *fin de siècle* mood? Or an eighteenth century spiritual revival after a period

of rationalism and materialism? Is it merely a number of fads and fashions artificially made to look like a movement, or is it really the beginning of a new era? There are certainly some serious writers who do see a new world view emerging.

The major aspects are:

- (1) New paradigms in science: the new physics is compared to Indian religion by F. Capra and others; the idea of evolution is extended by Teilhard de Chardin; the earth is treated as a living organism in the concept of Gaia, developed by James Lovelock; holistic healing is showing up the limitations of orthodox medicine; and psychology has extended its boundaries in the transpersonal;
- (2) Social concern, as in green politics, conservation, and emphasis on the feminine aspects of life;
- (3) The development of human potential, especially for women;
- (4) Interest in paranormal phenomena; and
- (5) A spiritual revival with special interest in Celtic paganism, Eastern religions, reincarnation, and the ancient wisdom.

For those who do see all of this as adding up to a new world view it would be within the spirit of Bliss to provide an alternative to distribution among the various relevant classes. As it happens, there is an ideal place for the purpose. The general order of main classes is very good, but there is one glaring exception: the contents of Class P should not come in the middle of the social studies. Class Z is the proper place, which should be obligatory and not optional. This would then release P, following History, for development of a New Age classification. It could be the seed of BC3.

There follows an outline to show the sort of plan envisaged for the Avalon Library.

Outline of classification for the Avalon Library, Glastonbury

I NATURE

- 1 The Universe
 - Metaphysics
 - Number: Mathematics; Numerology
 - Physical sciences; Physics and mysticism
 - Astronomy; Space research and travel
 - Space mysteries
- 2 The Earth; Gaia (earth as a single organism)
 - Earth and life sciences
 - Nature writing
 - The Environment; Human geography; Social ecology
 - Earth mysteries: Landscape features, lost continents

II HUMAN AFFAIRS

- 1 Society: Past (Archaeology and history); Present (Social sciences, practices and ethics); Future (Social analysis and prophecy)
- 2 The Individual (Human constitution considered as a whole)
 - Health
 - Psychology; Personal development; Character analysis
 - Astrology
 - Personal experience: Autobiography and biography
- 3 Human products
 - Arts
 - Technology

III MIND AND SPIRIT

- 1 Knowledge: Philosophy (excluding Metaphysics, Aesthetics, Ethics and Political philosophy);
Communication skills: Language, Thinking, etc.
- 2 Esoteric knowledge: Ancient wisdom, Magic, Alchemy, Prophecy and divination, etc.
- 3 Mythology
- 4 Religion: Theology, Spiritual experience, Religions, Oriental religion and philosophy

IV SPECIAL COLLECTION

- 1 Glastonbury
- 2 Arthurian tradition

Notes on the three examples of subject indexing quoted in the article.

Derek Langridge cited the CIP details found in the books themselves. The subject indexing given in the annual volumes of the *British National Bibliography* and the BNB/MARC files was revised, although not entirely satisfactorily. To the obvious dangers of trying to index from publishers' descriptions of their books have been added those arising from pressure to keep changes to the national bibliographic record to the minimum on the one hand and inadequate education and training of indexers on the other.

- (1) PRECIS *Paranormal phenomena* ; LC subject heading *Psychical research* ;
DDC 133 (CIP revised) (B84-06332)
- (2) PRECIS *Life -- Philosophical perspectives* ; LC subject heading *Life* ; DDC
128.5 (CIP confirmed) (B87-22536)
- (3) PRECIS *Feminism -- Christian viewpoints* ; [LC subject heading unknown];
DDC 261.83442 (CIP) (B85-10486)

(The last one is a bit of a mystery : it has completely disappeared from the BNB/MARC file!)

Derek comments: "(1) *Paranormal phenomena* certainly corrects the 'Unconscious' howler, but still leaves out Psychology; (2) is correct, with reservations about 'Perspectives' (LCSH 'Life' is more excusable since what they really practise is multiple non-specific headings); and (3) *Feminism -- Christian viewpoints* is quite wrong".

Solution to Blissword Puzzle No.4

There is no puzzle this year, for various reasons which seem convincing enough to the Compiler (for example, When is someone else going to submit one? and, There will not be a Bulletin this year at all if I wait until I have found time to compile one myself). So, here are the answers to last year's puzzle. 1993 is anyone's guess...

Across

- 1, 10A Sunday boot sales
- 4 see 13A
- 9 Anger
- 10 see 1A
- 11 Auto-cured
- 12 Extel
- 13, 4 Two gentlemen of Verona
- 17 see 1D
- 20 Fungi
- 21 Emigrated
- 23 see 16D
- 24 Petra
- 25 Theology
- 26 see 14D

Down

- 1, 17A Sealants and fumigator
- 2 Negation
- 3 Afric
- 5 From dreamtime
- 6 Easter egg
- 7 Oblate
- 8 Anselm
- 10 Burnt offering
- 14,26A Ennui; dull-sensed
- 15 Statutes
- 16,23A Pride and prejudice
- 18 Off pat
- 19 Inhere
- 22 Rupee

Class A/AL: Philosophy and Logic / Kenneth Bell & J.Mills

London : Bowker-Saur, 1991

Reviewed by John Edkins

The publication of the Philosophy and Logic schedule is a valuable addition to the classes now available in BC2. Although Philosophy as a subject discipline attempts to raise questions of perennial interest, it can change its emphasis and approach surprisingly rapidly and the adaptability afforded by the new faceted structure is to be welcomed.

The major change that is immediately apparent between BC1 and BC2 is the primary division in Philosophy of:-

- AA Philosophy
- General Philosophy
- AB Western Philosophy
- AI Eastern Philosophy

General Philosophy is not intended to be used for any great volume of works; as the scope note says: "For works dealing with both Western and Oriental philosophy ... Use AA for completely general works" (p 7). For reasons I do not understand, General Philosophy appears as a main heading without any notation - are we to use AA6 Y ?

The distinction between Western and Eastern Philosophy is a vast improvement on BC1 (and indeed on LC & Dewey), for now at last the Eastern philosophies are allowed to have histories and conceptual structures of their own. But there is a catch: can the world be divided in this way? Do we really mean, as the scope note quoted in the last paragraph suggests, a distinction between the West and the Orient or are Western and Eastern better categories? The authors have clearly felt uncomfortable about this latter distinction because within the Eastern division we find the further division of "Systems strongly connected to Western philosophy" and "Systems independent of Western philosophy". I wonder whether the Western/Eastern distinction is necessary at all? I suppose it can be argued that there is a literature on Eastern philosophy per se and in any event the schedule order as it now stands -- Western (ie largely Christian), Middle-Eastern and Indian/Chinese -- would survive with or without these two main headings.

The location of Logic presents another problem within the preferred framework created by the Western/Eastern division. The introduction states: "12.58 Logic. Historically this has always been regarded as an integral part of philosophy. But in the past century or more it has assumed a crucial role in mathematics also" (p xxxvii). Fair enough, but there is a case to be made for associating a particular logic with its philosophy, ie Western Logic with Western Philosophy, Eastern Logic with Eastern Philosophy. Class AL is meant for "general logic and logic in the Western tradition" (scope note to AHA, p 24) but AL also has a heading at AL2 X for "Oriental logic, Eastern logic". There is however at least one location for Logic within the Eastern Philosophy section at AIP CHA.

Within Western Philosophy the classical philosophers have always presented a particular problem to classifiers: are their works to be located in philosophy or under Greek and Latin literature? The scope note at AAU in BC1 (abridged edition) offers this recommendation: "The writings of the classical philosophers if in the

original Greek or Latin, would be preferred under Greek or Latin literature, but English translations would be better here [under Ancient Philosophy]. This is the approach adopted by the University of London library (BC1) where only specimen English language sets of the works of Plato and Aristotle are located in the philosophy library. A similar approach is followed here in Aberystwyth (using LC). It doesn't work: philosophy is starved of its original texts, particularly the Loeb classical library, and commentaries end up with very uncertain locations; my impression is that recent classificatory practice is tending to favour location in philosophy over literature for works such as commentaries. There is no right answer to this problem but, unless I have missed it, neither the schedules nor the introduction draw the attention of the classifier to its existence: they should.

Before the classical philosophers in the schedule are the Presocratics. I think it worth mentioning that there is a standard chronological sequence, with its own notation - the Diels-Kranz system - for the individual philosophers of this period. This could be used to great effect as an alternative to the A/Z list at ADD L/X.

Finally a comment on the overall presentation of this schedule. I think I am right in saying that it is probably structurally the most complicated in BC2 to date. There are no less than 35 different "alternatives" on offer yet I have the greatest difficulty in grasping the -- for want of a better term -- 'knock-on' effects of choosing a particular alternative location in the face of the very powerful presence of the printed schedule and its preferred order. There needs to be some sort of mechanism that allows one to explore the shape a schedule might take given the use of alternative locations. I must confess that short of reprinting the schedules in the order of the alternatives it is difficult to see what form such a mechanism should take.

One step along the way would be to regard the index as a means to this end. Would it not be possible to use it to show a category in alternative contexts? For example, take Individual Philosophers, there are several alternative locations for this each one within a different context. At the moment the index makes scant mention of them, but consider this as an entry:-

Individual Philosophers A/Z	
-- General Philosophy (before period & place)	Alt. AA8 A
-- Western Philosophy (before period & place & after viewpoint)	Alt. AB8
-- Western Philosophy (by 'period' -- combination of period, place & viewpoint)	Pre. ADD L/ADW
-- Western Philosophy (without period, place or viewpoint)	Alt. AE

[and similarly for Eastern Philosophy] * Alt. = Alternative ; Pre. = Preferred

So all-in-all a remarkable achievement, particularly the articulation brought about by the Western/Eastern division. But we do need to consider seriously how to make explicit the alternative arrangements on offer.

John R. Edkins, MSc, consultant, is currently a PhD student in the Department of Information and Library Studies, University of Wales, Aberystwyth.

Outline of Mathematics

Outline of Mathematics

 * This is an inverted schedule. Compound classes are generally formed by citing first the component which comes latest in the schedule; e.g. Cohomology (AMK) of finite groups (ASD) goes at ASD AK under groups, not cohomology.
 * Most of the literature falls within the Branches of mathematics (AR/AW) and very little within the general concepts of operations, properties, etc. (AM/AQ). So the main role of the 'preliminary' facets in AM/AQ is to act as qualifying terms in the Branches (e.g. Number theory - Integers - Congruences) or as specifiers, defining types of any given thing (e.g. Number theory - Additive number theory).
 * Terms from almost any facet may act as specifiers (e.g. classical, from Methods facet; additive, from Operations facet; homologous, from Relations facet; finite, from Properties facet). Moreover, they may specify not only types of a Branch (or one of its parts) but also concepts from other facets (e.g. a property defining a relation, as in linear representations).
 * Provision is made for all these eventualities; the notation needed for this is displayed clearly in Auxiliary Schedule AM1 (following the main Schedule).
 * Sometimes, the application of Auxiliary Schedule AM1 is interrupted in order to give a prominent class a shorter classmark. All such occasions are indicated in this outline; but for details of what synthetic classmark is replaced & how the normal synthesis is picked up later, see the full schedules.

AM MATHEMATICS

- . *Common subdivisions*
- AM2 3 . . Study... History... Biography...
- 9B . . *Relations with other subjects*
- A . . . Philosophy of mathematics
- . *Agents*
- M . . Machines... Computers...
- . *Forms of mathematical presentation*
- AM3 A . . Theory... Axioms... Formulae...
- L . . Models ...
- . *Methodologies in mathematics*
- . . . *Philosophical methodologies*
- P . . . Foundations of mathematics,
- Metamathematics
- R Logicism... Formalism...
- T Constructivism & intuitionism...

[Mathematics AM]

- [Methodologies in mathematics]
- . [Philosophical methodologies]
- . . [Foundations of mathematics AM3P]
- . . . [Constructivism & intuitionism... AM3T]

- AM4 . . . Mathematical logic
- AM4 A Deductive logic
- *Special properties*
- AF Effectiveness... Truth functions...
- *Special operations*
- EF Formalization... Axiomatics...
- FV Problem solving... Algorithms...
- GJ Decision procedures...
- H Recursion...
- J Formal structures
- JL Logical calculi
- K Propositions... Statements...
- MS Formal systems
- N Propositional calculus
- O Predicate calculus
- P Proofs, proof theory...
- Q Models, model theory...
- T Inductive logic
- AM5 . . . Set theory
- * For sets as mathematical structures, see ARB.
- *Types*
- AM5 X Axiomatic set theory
- . *Methods in mathematics*
- AM6 2 . . Elementary... Classical... Descriptive...
- 7 . . Heuristic... Algorithmic... Iterative...
- . . *By relation, property, etc*
- H . . . Non-standard... Finite...
- . . *By branch used*
- R . . . Combinatorial... Algebraic...
- W . . . Analytic...
- X Calculus... Differential calculus...
- . *Operations*
- AM7 5 . Testing... Synthesis... Solution...
- C . Classification...
- H . Computation... Addition... Factorization...
- Q . Extraction of roots...
- R . Differentiation... Integration...
- X . Ramification... Extension...
- . *Processes*
- AM8 6 . Approximation... Continuation...
- 8 . Variation... Distribution...
- B . Convergence... Interpolation...
- GE . Perturbation...
- H . Optimization...

AM8J

AP8

Outline of Mathematics

[Mathematics AM]
 [Processes]
 . [Optimization... AM8H]

Relations

AM8 J . Relation in general...
 K . Mappings (broadly)...
 L . Functions
 N9 . . Polynomial functions, Polynomials...
 NDX . . Exponential functions... Potential...
 X . . Functionals... Determinants...
 AM9 3 . Forms...
 . *Arising from operations on structures*
 5 . . Transformations... Derivation...
 E . . Extensions... Conjugates...
 . *Status relations & relations of magnitude*
 HE . . Correspondence... Congruence...
 J . . Equivalence...
 L . . Equations
 ME . . . Differential... Integral...
 * Normal synthesis interrupted; resumes at
 AM9 MJW.
 MJW . . . *Other types of equations*
 MN9 Polynomial equations...
 MNA Linear... Quadratic...
 N . . Inequalities... Inverse... Proportion...
 . *Relations of structure, composition*
 R . . Generalizations... Representations...
 . *Spatial relations, location*
 T . . Packing & covering... Incidence...
 WM . . Immersions... Embedding...
 . *Functional relations, association*
 AMB . . Homomorphisms... Automorphisms...
 AMG . . Holomorphisms... Holonomy...
 AMJ . . Homology... Homotopy...

Properties
 . *Derived from earlier facets*
 . . * When property per se is signified.
 . . * DO NOT use as specifiers - take latter direct from
 . . originating facet (e.g. Classical from Methods,
 . . Divisible from Operations)
 AMN 3D . . Axiomatic... Constructive...
 7D . . Constructibility... Divisibility...
 . *General special*
 AMO . . Abstract... Normal... Simple... Complex...
 AMY . . Rational... Real...
 . *By sign*
 AN4 J . . Positive, Non-positive, Negative...
 . *By value*
 Q . . Absolute value... Conditional...
 . *By dimension*
 AN5 . . Measure... One-dimensional, singular...
 AN8 H . . Higher-dimensional, n-dimensional...

[Mathematics AM]
 [Properties]
 [By dimension]
 . [Higher-dimensional AN8H]

By number of terms
 AN8 V . Monomial, Binomial
 AN9 . Polynomial...
By degree of terms
 ANA . Linear, first order... Non-linear...
 ANC . Quadratic... Higher order...
By number of variables
 AND K . One variable, Binary...
 By degree of variables
 P . Bilinear... Multilinear...
 By nature of variables
 T . Mixed... Complex... Real variables
 By range of applicability
 ANF . Local... P-adic... Universal...
 By level of finiteness
 ANJ . Finite...
 ANK . Infinite... Infinitesimal...
Compositional, etc
 ANL N . Strong... Closed... Smooth... Regular...
 ANO G . Homogeneous...
 J . Symmetric... Ordered... Compact... Free...
 ANT N . Complete... Perfect... Continuous... Dual...
 ANX F . Periodic...
 By performance
 T . Qualitative... Optimal... Maximal... Fuzzy...
 AO2 N . Covariant... Solvable... Summable...
 AO5 . Nilpotent... Idempotent...
 By fundamental laws
 AO7 . Associative... Commutative...
Spatial properties
 AOB . Proximity... Inner... Convex... Biaxial...
 AOG . Asymptotic...
Properties of space
 AOI . Euclidean... Affine... Conformal...
 AOP . Symplectic...
Properties of motion
 AOQ R . Rate... Dynamic... Kinematic...
 Derived from geometric figures
 AOT . Plane... Orthogonal... Parabolic...
 By named mathematician
 Properties derived from later facets
 . . * Note preceding AMN 3D above applies here also.
 AP5 L . Difference... Residual... Scalar...
 AP6 N . Spectral... Sequential...
 AP8 . *Properties by other characteristics*

