IN MEMORIAM JACK MILLS

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Editorial : **Jack Mills,** 1918 - 2010

Recollections, legacy and the way forward

IT IS WITH GREAT REGRET that we have to record the death of Jack Mills, chair of the Bliss Classification Association and editor of the Bliss Bibliographic Classification, 2nd edition, on 9th July 2010.

College librarian, teacher, information systems researcher and, for us in particular, colleague, friend and inspirational leader in the unending search for better ways of organising recorded knowledge, Jack has left us an impressive legacy and an equally great challenge both to complete the task to which he devoted the greater part of his life and also make it relevant for the twenty-first century.

The Classification, however, is not the product of a one-man band, and it is right to pause here briefly to acknowledge, as Jack himself would have done, the contribution made by many others, among them collaborators named in the published volumes, members of the Classification Research Group with whom he shared many hours of debate, and not least his old friend Eric Coates.

This issue of the *Bulletin* therefore falls into three parts. First of all, Jack Mills is seen in retrospect, with appreciations, reminiscences and an assessment of his achievement. He was an outstanding researcher and developer in the field of information retrieval and Vanda Broughton, his former student and later his collaborator and co-editor of BC2 for many years, surveys this aspect of his life. Jean Aitchison pays a warm tribute to his generosity and help especially in relation to her own work in developing thesauri in several subject areas. Finally the Hon. Editor recalls being one of Jack Mills's first students in the 1950s.

In the second part, the future of BC2 is considered, with thoughts about not only completing the scheme for existing (and possibly new) users but also involving an increasingly web-oriented community, by making a vast body of material, published, unpublished, and under development, widely accessible. To this end, the Committee is appealing for help and cooperation from all interested people. By way of introduction, there is a list of the BC2 classes for reference, with some editorial comments. The Committee's interim statement of objectives and intent follows. This will be more fully elaborated and debated at the forthcoming Annual General Meeting and afterwards promulgated on the website.

Tamara Lopez's paper, *Putting Bliss on the Web*, speaks of 'remediation'. Forget any associations with unpleasant remedies and remedial exercises: the terminology here is concerned with *media*, print and digital, and her paper sets out what will be involved in transforming BC2 to make it available to a wider range of users and collaborators.

Finally, the dull formal reports, hitherto found at the beginning of the *Bulletin*, have been banished to the back pages.

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At the end of the career outline appended to Vanda Broughton's appreciation of Jack appears the statement *'1985- Retired'* One would never have known it. Certainly he was slowing down latterly, suffering from some ill health and in particular distressed by his increasing deafness, but in truth, Jack Mills finally retired on 9th July this year.
A. G. C.

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Jack Mills at the Bliss Bibliographic Association meeting
Cambridge, 13 September 1995

Jack Mills, 1918-2010: an academic appreciation

JACK MILLS SPENT MORE THAN SIXTY YEARS of his life in the study, teaching, development and promotion of classification and information retrieval, principally as a major figure in the British school of facet analysis which builds on the tradition of S. R. Ranganathan. He was a signatory to the seminal paper "A faceted classification as the basis of all information retrieval", and represents a significant link in the tradition which begins with Ranganathan and H. E. Bliss, and is represented today in research looking for solutions to the semantic web.

His work as a teacher dates back to 1952, and to his appointment as lecturer at the newly formed North Western Polytechnic School of Librarianship. He taught at the University of Maryland from 1966/67, helping to set up the Library School there, and, after returning to London, taught on short courses, and as a visiting lecturer around the world. He is remembered by generations of students as an inspirational lecturer, and one who made cataloguing and classification (too often regarded as dull) a fascinating subject. His 1960 publication *Modern outline of library classification* was the standard textbook for British librarianship students for many years, and translated into several languages.

But he is probably best known to the wider professional community as a scholar and researcher. His interest in classification, his teaching experience, and his early publications, led to an invitation to join the Classification Research Group (CRG), which was formed in 1952 as a result of the 1948 Royal Society Conference on Scientific Information. He was a speaker at the first International Study Conference on Classification for Information Retrieval at Dorking in 1957, and the keynote speaker at the sixth conference at University College London, forty years later.

In 1963/64 he was seconded to be Deputy Director of the Cranfield Project, supporting Cyril Cleverdon in the first major exercise in information retrieval in the United Kingdom. The results of the work at Cranfield had a major influence on British information science, and the documentation from that project continues to be cited in the professional literature today. He was a passionate advocate for classification theory, and also lectured and wrote about the *Bliss Bibliographic Classification*, *the Universal Decimal Classification*, and, most recently, the second edition of *Bliss* which embodies the whole corpus of information retrieval theory developed by the CRG since the 1950s.

When the Library School at the Polytechnic of North London opened in 1968, Jack was the initial choice as head of department, an offer he declined, as he wanted to concentrate on research. He moulded the research department at PNL into one of the most successful UK LIS research groups ever, presiding over such important work as the Intermediate Lexicon, DISISS, the Hillingdon Project, and several classification projects including the creation of schemes for the Royal National Institute for the Deaf, the Wessex Regional Health Authority, and the Library Association.

From the 1960s he was the driving force behind the revision of the *Bliss Bibliographic Classification*, chairing the Bliss Classification Association Committee, and undertaking the greater part of the work of revision as Editor of the new scheme. A great admirer of Bliss's classification, Jack had installed it in the library of the City of London College, a project which brought him into correspondence with H. E. Bliss, and occasioned several publications. While preserving the general structure of the original, the revised edition of the classification (BC2) is to all intents and purposes a new scheme of classification, realising the hopes of the CRG for the development of a new British scheme of classification, which had failed to come to fruition through the work financed by the NATO grant in the 1950s. Although relatively little has been written about BC2, its impact on the field of knowledge organization and retrieval has been immense. The influence of the published volumes of BC2 can be seen in the recent revisions of many other systems of classification, notably the *Dewey Decimal*

Classification and the *Universal Decimal Classification*, whose editions since the 1970s incorporate many features of the fully faceted classification. Facet analysis is not only relevant to traditional classification and knowledge organization systems. The methodology supports the generation of thesauri and subject heading lists, and the creation of structured vocabularies for metadata. Several faceted thesauri were derived from BC2 classes, notable examples being Jean Aitchison's work on the Department of Health Thesaurus, and that at the Royal Institute of International Affairs, built respectively on Classes H and R of the classification. Today facet analytical techniques are to been seen embedded in much commercial retrieval software, in search engines on commercial sites, and in very many research projects both in academic institutions and professional organizations.

In 1998 Jack Mills was acknowledged by the Conference on the History and Heritage of Science Information as a 'pioneer of information science', and was among twenty nominees invited to a dinner in their honour at the Conference in Pittsburgh. In 2003 his contribution to the field was marked by the award of an Honorary Fellowship from the Chartered Institute of Library and Information Professionals (CILIP), and in 2005 he received the Tony Kent Strix award for his contribution to information retrieval.

In a long career, Jack published relatively little by current standards, as did most of his contemporaries in the CRG. But the quality of that small corpus of work is considerable, and in his late eighties he was still making a significant contribution to the scholarly literature. And although BC2 may be perceived primarily as a practical tool, rather than a conceptual work, the statement of principles in the *Introduction* to the scheme is almost alone in documenting the corporate theory of the CRG as it developed from 1950 and throughout the twentieth century, and is one of the few coherent statements of modern classification theory.

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In addition to this critical appreciation, I must add a personal note. The post of Research Fellow to work on the revision of the *Bliss Bibliographic Classification*, was, in 1972, my first professional job, and the beginning of a working association with Jack that was to last almost forty years (and almost to my own retirement). In all that time I never heard Jack say an unpleasant word to, or about, anyone. He was the most straightforward person I've ever encountered, really quite without pretension, and taking everyone at face value. He had formidable energy, and I can remember going with him to CRG meetings in the 1970s, when he ran up the long escalators at Tottenham Court Road Station at high speed, often carrying two bulging bags of papers for the meeting, and leaving me, thirty years younger, trailing behind. He maintained this level of energy well into his eighties. Until quite recently, when he was overtaken by the absurdities of the Internet, which he abhorred, I considered that he taught me everything I knew about classification, and he certainly provided the model of the perfect scholar: rigorous in his thinking, meticulous in detail, passionate for his subject, without ambition or thought of personal advancement, the work being all and the end in itself.

Vanda Broughton
University College London

Jack Mills

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    Introduction and auxiliary schedules. 1977

    Class A/AL Philosophy and logic. [Bell, K*.,* and Mills, J.] 1991

    Class AM/AX Mathematics, statistics and probability. 1993

    Class AY/B General science, physics. 1999

    Class H Anthropology, human biology, health sciences. 1980

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    Class I Psychology and psychiatry. 1978

    Class J Education. 1990 revision by D. J. Foskett and J. Foskett. 1990

    Class K Society . 1984

    Class P Religion, the occult, morals and ethics. 1977

    Class Q Social welfare and criminology. Rev. ed. by C. Preddle. 1994

    Class R Politics and public administration. 1996

    Class S Law. 1996

    Class T Economics, management of economic enterprises. 1987

    Class W The arts [Mills, J. and Ball, C.] 2007

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Jack Mills

Career Outline

1937	Member of Library Association
1938-40	Assistant, Woolwich P. L.
1945	Associate of the Library Association
1947-48	Senior Assistant, Greenwich P. L.
1949-52	Librarian, City of London College
1950	Fellow of the Library Association
1952-	British Bliss Classification Association Committee Member
1952-	Member (later Chair) Classification Research Group
1952-62	Assistant Lecturer, North Western Polytechnic
1960-	Chair of the Bliss Classification Association Committee
1960-1976	Editor, *Bliss Classification Association Bulletin*
1963-64	Deputy Director, Aslib-Cranfield Project
1966-67	Library School, University of Maryland
1968	Lecturer, North Western Polytechnic
1973-84	Reader, School of Librarianship, Polytechnic (later University) of North London
1985-	*Retired*

Jack Mills: an appreciation

I SHALL ALWAYS BE HEAVILY INDEBTED to Jack for all I have gained over the years from his outpouring of work on facet analysis and the design of classification systems. I must have first got to know Jack at meetings of the Classification Research Group (CRG) in the mid 1950s. One of my abiding memories was meeting him and Brian Vickery on Victoria station in 1957 and travelling with them to the Dorking Conference, talking facets energetically all the way. I can recall Jack giving a lucid paper on the analysis of subject fields on the morning session of the first day of the conference. After the conference, I was given support and encouragement by all the members of CRG when I embarked on the development of the *English Electric faceted classification for engineering,* the forerunner of *Thesaurofacet,* completing the first draft in February 1958.

Later, I drew with gratitude on Jack's work on the Second edition of BC2, using it as a source of structure, terms and relationships in many of the thesauri I constructed, including the *UNESCO Thesaurus*, published in 1977, which owed much to several Bliss schedules including Education and Psychology. I had a particularly close working relationship with Jack when I was compiling a thesaurus for the Department of Health (then the DHSS) in the mid-seventies. The Department was using Class Q Social Welfare and Class H Anthropology, Human Biology and Health Sciences at a time when Jack was still developing these schedules. I fed him with terms required by the Department of Health Library and he would send me revisions of the schedules incorporating the new concepts a few days later. I remember well that Jack would arrive at meetings at the Department, unconventionally as ever, on his motor bike, and carrying sheaves of Bliss schedules in the knapsack on his back.

Rather the same pattern occurred when I used Bliss Class T Economics and Enterprise Management, Class R Politics and Public Administration and Class S Law as a main source of structure and terminology for *The Royal Institute of International Affairs Library Thesaurus*, at Chatham House, since at that time in the mid 1980s, Class T Economics and Enterprise Management was not finalized and the other two classes were still in draft form. I can remember Jack sending me in response to my urgent request a schedule on a specific section of International Law that had not been fully covered in the draft of Class S. Jack never hesitated to stop the work he was doing to answer immediately my cries for help.

In more recent years it has been a pleasure to serve on the Bliss Classification Committee and to be in a position to observe at first hand Jack's continuing and total dedication to the completion of the Bliss Classification.

Jean Aitchison
Letchworth

Cat'n'Class, 1952

THAT DAY IN SEPTEMBER, at the beginning of our full-time studies in librarianship, we trekked to our classroom through the institutional cream, green and brown corridors of the North Western Polytechnic's building in Prince of Wales Road, Camden Town. Some of us were quite excited, some were just prepared to take the subject as they found it, and others were filled with foreboding, having been told by previous years' students – indeed, generations of students – that Cat'n'Class was Difficult and Dull, and one needed to Grit One's Teeth and also have to Work Very Hard to scrape a pass in that compulsory section of the Library Association's syllabus.

The classroom itself was no more inspiring than the corridors. Rows of traditional desks faced the traditional teacher's table, behind which a large traditional blackboard occupied most of the wall. The few windows looked out onto a rather depressing North London townscape, so there was no particular advantage in trying to choose desks with a good view. We settled ourselves down and awaited our tutor.

The door burst open behind us, and a dark young man strode in, bearing a large briefcase bulging with papers, which he dumped on the table. Pushing an unruly mass of black hair away from his face he turned to us and grinned. "Good morning!" said he, spilling several of the papers, "Sorry I'm a few minutes late. My name is Jack Mills, and I'll be your tutor in classification and cataloguing this year." After a very few formalities, he launched without further ado briskly and forcefully into the first lesson. "Well, as I'm sure you all know, from very early times the Greek philosophers and others pondered the universe and our world and sought to find patterns in it and also in our ways of thinking. What *is* knowledge? . . . "

He continued enthusiastically in this vein, flattering us that we all knew far more than we did. "Good grief!" we thought, "surely he can't keep going at this pace to the end of the lesson?" We were all totally mistaken: by the end his momentum was quite undiminished, as indeed it was by the end of the week, the term, the year. What we should have asked was "can *we* keep going at this rate?"

Jack had a seemingly bottomless store of good examples to illustrate his points and answer our many questions. This was where the traditional blackboard came into its own. It was still the era of chalk-and-talk. Visual aids were few and far between; there was no overhead projector, and PowerPoint presentations were a dream some decades into the future. Jack wrote his examples on the blackboard in his inimitable scrawl with just the same energy as he used when speaking. They went up at all sorts of angles and in as many colours as the available chalks would permit. Students who sat nearer the front (and sometimes further back) risked being hit by flying pieces of chalk as they broke off under his hand. Examples often filled up spaces left between others; we became adept at disentangling them.

We learned how to apply Dewey, and Library of Congress, and other tools, too, for

these were necessary for the practical cataloguing examination at the end of the

course. But Jack taught us subject analysis, going far beyond the mere mechanical application of these schemes. We learned how to dissect the schemes, look at them analytically and critically, understand their roots and viewpoints, appreciate their strengths and deplore their many weaknesses – especially these last! "Look at this! There's a class here labelled 'Education of women'. That's where you'd expect to find everything about women's education, but in fact it's only part of it, and lots more is subordinated inconsistently to other concepts elsewhere. *It's terrible!*" The newer thinking stemming from Ranganathan and the Classification Research Group underlay everything. (The radical new thinking in cataloguing was only just beginning to emerge at that time). Jack was unquestionably a fine theoretician and research worker, and a great teacher, but he had also been a college librarian, and his keen observations and examples were most often drawn from his own practical experience. Moreover, he had used 'old' Bliss in his college library. Little did we know then where this was to lead.

We lost count of the number of times jokes about 'the dark, satanic Mills' were heard. Did we all survive the course? Nearly all, as far as I remember. For some it was a struggle to keep up, but Jack was extremely patient with help and yet more examples for those who needed them. The majority of us were swept along on the tide of his enthusiasm. It was exhilarating, taxing, very rewarding, and great *fun.*

After a couple of years I studied Advanced Cataloguing and Classification for one part of the Library Association's Final Examinations syllabus, and was fortunate to have Jack once again as my tutor in classification. This time it was an option, not an obligatory part of the course to be taken by all finals students! So it was an even greater privilege to be able to study with him as one of a small group of like-minded colleagues who were there by choice; we grew to know him well.

Perhaps it was not really surprising that I should be lured, about fifteen years later, to follow his example and try to teach cat'n'class myself, this time far from London. He was my inspiration, but I could never equal him. One perk of my new post was the encouragement to become actively involved in professional activities, and joining the BCA was part of that, renewing a contact with Jack which has lasted happily through the years.

Thank you, Jack.

Tony Curwen
Aberystwyth

BC2, 1977 - 2007: an overview

When considering the statement of objectives the BCA Committee is proposing, our readers may find it helpful to have at hand a systematic summary of the published classes. A listing in class order clearly shows the gaps *(in italics)*:

	Introduction & Auxiliary Schedules
2	*Generalia: physical forms and forms of arrangement of documents*
3	*Phenomena: multi- and non-disciplinary viewpoints*
4-9	*Prolegomena: organization and communication of knowledge*
A/AL	Philosophy & Logic
AM/AX	Mathematics, Statistics & Probability
AY/B	General Science & Physics
C	*Chemistry*
D	*Astronomy and space sciences*
DH	*Earth sciences. Geography*
E	*Biological sciences*
F	*Botany*
G	*Zoology*
GR	*Applied biology, Agriculture; Ecology*
H	Anthropology, Human biology & Health sciences
I	Psychology & Psychiatry
J	Education (1978; rev. ed. by D. & J. Foskett 1990)
K	Society
L-O	*Area studies; Geography (alt.); History; Biography*
P	Religion, The occult , Morals and ethics
Q	Social welfare & Criminology (1977; rev. ed. by C. Preddle 1994)
R	Politics & Public administration
S	Law
T	Economics & Management of economic enterprises
U-V	*Technology*
W	The arts (J. Mills & C. Ball)
WP-WR	*Music*
X-Y	*Philology; Linguistics; Literature*

Class C, Chemistry is now complete and should be published soon. Of the remainder, it will be seen that there are five blocks: the anterior numeral (or generalia) classes (2-9) form one of them; Astronomy, the Earth sciences and Biological sciences (D-G) form another; Geography, History, Biography, etc. (L-O) the third; Technology (U/V) the fourth; and Philology (X-Y) the fifth.

In principle, it would have made more sense to have developed and published BC2 following Bliss's sequence of main classes, drawing down concepts from physics and chemistry into the space, earth and biological sciences in turn, and from general biology into human biology and medicine, and so on. It is fair to ask why this was not done from the outset. To some extent it *was* done: quite extensive draft schedules were prepared for the biological sciences, for example, and several other areas, but were not considered ready for publication at the time.

An alternative listing by date of publication is revealing. It shows that the earliest published classes in 1977-78 were developed in areas for which there was funding, for libraries which had a specific need for them, and particularly those which could offer

a test bed for the scheme, for example Class I, Psychology and Psychiatry at the Tavistock Institute.

1977		Introduction and Auxiliary schedules
	P	Religion; the Occult; Morals and ethics
	Q	Social welfare
1978	I	Psychology and psychiatry
	J	Education
1980	H	Anthropology; Human biology; Health sciences
1984	K	Society
1987	T	Economics; Management of economic enterprises
1990	J	Education (Rev. ed. by D. & J. Foskett)
1991	A/AL	Philosophy and logic (K. Bell & J. Mills)
1993	AM/AX	Mathematics, statistics and probability
1994	Q	Social welfare and criminology (Rev. ed. by C. Preddle)
1996	R	Politics and public administration
	S	Law
1999	AY/B	General science; Physics
2007	W	The arts (J. Mills & C. Ball)

It is also instructive to consider the sizes of these volumes. The early ones (apart from the Introduction and Auxiliary schedules) were unquestionably very thin indeed, not just physically, but also in vocabulary and analysis. Education, for example, was a volume of xvii + 21p, and those 21 pages covered both the schedules *and* the index.

Two years later Class H landed on our desks, with 251 closely-printed pages devoted to the schedules alone. However, it would be wrong to make too much of this. The health sciences have an enormous vocabulary of specific terms for complex concepts, and these sought terms must be listed in the schedules, even though the correct places for them could, in theory, be synthesised by an experienced classifier! The same will undoubtedly apply to the forthcoming Chemistry class, if not more so.

Other classes have relatively simpler concepts and much less dynamic vocabularies. For example, Ken Bell's and Jack Mills's class A/AL, Philosophy and logic, charts an area with a fairly simple structure; it is also one without hundreds or thousands of new terms demanding recognition each year. It has just 45 pages of schedules.

It is perhaps worth noting that the two revised classes, J, Education, and Q, Social welfare and criminology, in everyday use in a number of libraries, remained relatively modest in scope, with 33 and 87 pages of schedules respectively.

Nevertheless, over the years the natural desire to create a classification that is consistent, accurate, detailed and complete has resulted in some very large schedules indeed. Very precise in both vocabulary and analysis, these may now far exceed the needs of systematic arrangement on the shelves or in the catalogue of any collection.

However, although the extended intellectual and editorial process entailed has delayed publication, it should not be thought that all this remarkable work has been wasted. It has very great potential value, but in a new and wider context.

It is from this point that we look forward in 2010.
Hon. Editor

THE BLISS CLASSIFICATION ASSOCIATION
(BCA)

Statement of Intent

<u>**General statement of intent September 2010:**</u>

◆   The BCA exists to promote the use of the Bliss Bibliographic Classification, second edition (the Classification), and to continue the work of its revision and maintenance.

◆   The BCA aims to make the Classification fit for purpose in the current information environment, taking into account changes in general requirements for subject organization and search, and ensuring that versions appropriate to electronic access and application are available.

◆   The BCA embraces a policy of open source culture, and aims to make its work freely available to the wider community, and invites the participation of that community in developing the Classification for the future.

◆   The BCA website will be the principal means of disseminating information about the Classification, and the BCA discussion list the vehicle for feedback and comment on the Classification.

Publication media

◆   The BCA will support a range of publication formats for the Classification: it will continue the arrangement with Walter de Gruyter (Saur) to publish the Classification in a print version, but also has a firm commitment to the further development of electronic versions of the Classification.

◆   Both published schedules and drafts will gradually be made available in electronic formats on the BCA website. A longer term objective is the creation of a database to hold the classification data.

Editorial policy

◆   The BCA will continue to create a set of editorial guidelines, to assist editors in the preparation and management of schedules, and to improve consistency in schedule format, and the formulation of class names and captions. This will have the added benefit of ensuring that class names are in a form suitable for automatic generation of the alphabetical index and for thesaurus conversion.

Editorial assistance

◆   The BCA will encourage wider participation in the editorial process, and will invite responses to the material disseminated on the BCA website.

Editorial priorities

◆   The primary business of the BCA is to maintain the Classification for the benefit of its users, and it is now the BCA's objective to complete the Classi-fication as expeditiously as possible. The editors take seriously the need to ensure stability and continuity, but the revision of the Classification along radical lines should have provided a stable structure within which new concepts can be accommodated without the need for further major alterations.

◆   It should also be borne in mind that the Classification is a paradigm for faceted structures, and the practical implementation of a substantial body of informa-tion retrieval theory. As such, it is unique in western library and information science. Facet analysis is widely regarded as the only rational methodology for the analysis of subject domains, and the structuring of terminologies and other classification data. It has been proposed as a meta-theory of information science, and has potential far beyond the physical organization of collections.

◆   It is therefore recommended that:

◆   the BCA encourage the theoretical development of faceted classification as a means of search and retrieval;

◆   the BC terminologies continue to be used as a medium for research and scientific enquiry; and

◆   the terminologies be available to the scientific community as an open source resource for re-use in future advances, such as Semantic web applications.

This provisional statement of intent reflects discussion in the BCA Committee on 17th September 2010. A fuller, more formal version will be presented for debate at the AGM on 22nd October 2010. The revised statement of intent, objectives, method and priorities then adopted as policy will be published openly on the BCA website.

📖   📖   📖   📖   📖

The BCA website: http:// www.blissclassification.org.uk

The BCA discussion list: LIS-BCA@JISCMAIL.AC.UK

Putting Bliss on the Web

BCA Annual Lecture 23 October 2009

Tamara Lopez
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Technological re-development may be necessary to ensure long-term sustainability of the Bliss Bibliographic Classification, 2nd edition (BC2) and its future incarnations. As we learned from Leonard Will in the talk given at the Annual General Meeting in 2008[1], there are numerous interchange and internal storage formats that might be used to represent the conceptual model of BC2 using newer technologies. However, as he demonstrated, the approach to take toward this is not clear: none of the interchange formats natively handles all features of the scheme, and implementing any of the internal representation structures will require a significant commitment of resources.

In this report, I use the concept of 'remediation' to frame discussion about how best to migrate Bliss onto the Web. In the process I consider these questions:

● Who are to be the benefactors of the proposed migration?

● How is BC2 used in its current incarnation, and how is it to be used in the future?

● What features of the classification should be represented in a Web-enabled digital version?

● What aspects of the existing incarnation should be preserved going forward?

An Overview of BC2

BC2 is a collaborative editorial endeavour involving intensive stages of authoring, review, and preparation of schedules for publication. Additional, iterative stages of copy editing, proofreading, and formatting are performed to produce a finished schedule that is as near to perfect as possible. To some extent, the digital technologies currently in use support this work. As can be seen in Figure 1, the main editorial work is represented using a defined structural and semantic mark-up. The software that processes this mark-up has the ability to output camera-ready copy for the publishers, and to perform a number of rule-based validations on the schedules. In addition, the current technologies have been shown to output to multiple publication derivatives using a single input mark-up scheme[2]. This flexibility is also an aid to digital preservation, facilitating automated or partially automated migration between formats.

The outcome of this editorial work produces a classifier's or cataloguer's tool. BC2 is in use in some libraries, and so the published schedules and indexes remain important sources, as do the general and class introductions. Because of its connection to the work of the Classification Research Group (CRG), and the fact that it is a truly

faceted scheme, it also is an important educational and research tool. Library schools teach BC2 in the context of classification theory, and there is a healthy secondary literature explaining aspects of how the scheme works, and of its significance to the development of faceted classification[3].
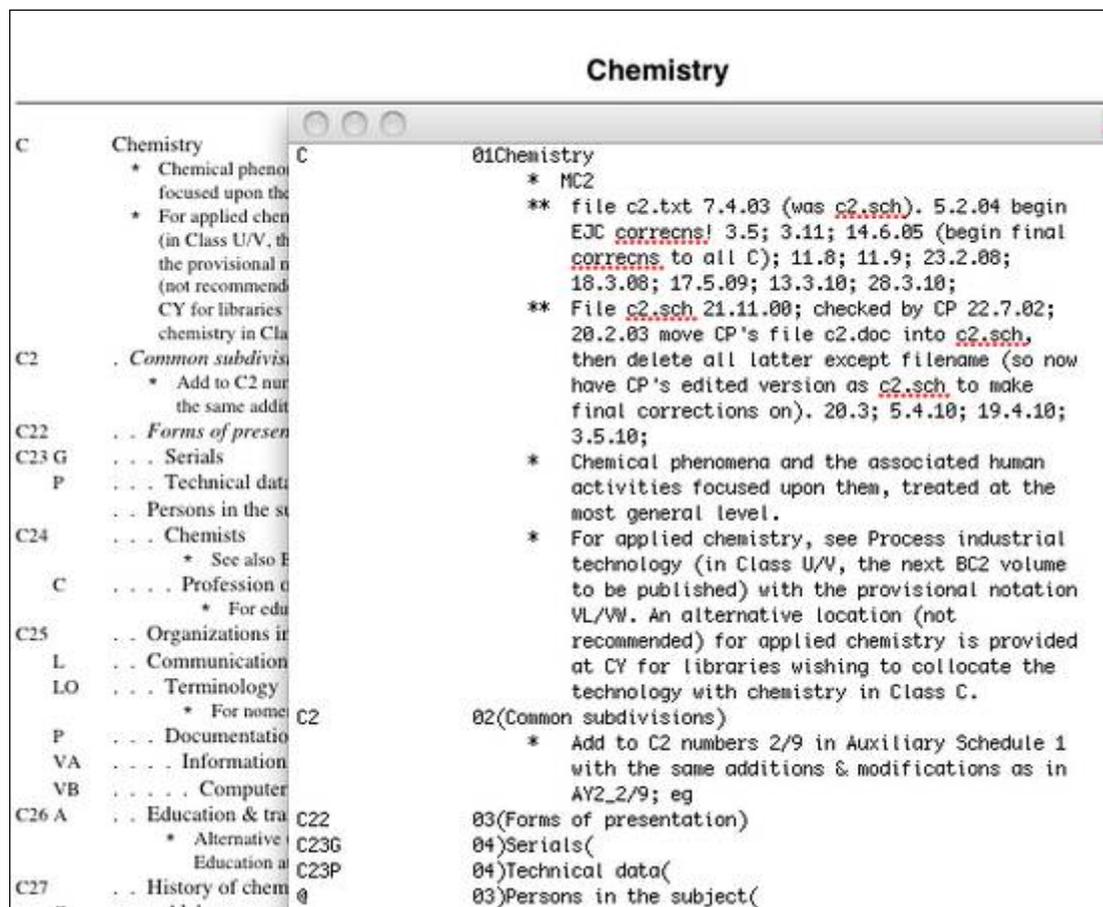
Figure 1: BC2 schedule mark-up (right) and camera-ready copy (left)

Remediation: Its Kinds and Consequences

What does this characterisation suggest about how BC2 should be put on the Web? The digital library researcher Diane Kichuk, in studying the ways in which pre-digital sources are made Web-ready[4] suggests that four types of remediation are present:

● The remediation is the 'real thing' or a clone with a primary focus on the old medium – the 'faithful facsimile'.

● The remediation seeks to improve the old medium by providing better access in the form of sound, images, or the use of hyperlinks.

● The old medium is intentionally refashioned or changed. Notions of the page,

section and chapter may be deconstructed, with access to material provided using searching mechanisms.

● The old medium is absorbed into the new without a trace.

Adapting Bolter and Grusin's notion of digital media 'hybridizing or compounding', Kichuk also sounds three cautionary notes to any organisation contemplating a digital project.

First, once digital, material takes on the qualities of *immediacy* and *hypermediacy*. It becomes transparent, immersive and fragmented, windowed. Readers may find their way to material via links on other sites, site authors may excerpt and re-appropriate materials in unexpected ways, and search engines will index the material and in so doing, de-contextualise it.

Second, organisations should be aware that migration from one medium to another, no matter how faithful, always results in *mutation,* in the creation of a new artefact. For many readers, the new artefact may be the only source of which they are aware, and this new version may come to represent the totality of a long and rich history of development.

Finally, the new artefact may suffer *amputation* of material removed during the remediation accidentally or deliberately. This may be done to meet resource const-raints, come about as a result of subjective decisions, or be due to inherent constraints of the new medium.

Many digital library and humanities projects reflect more than one type of remedi-ation because the groups seeking to digitise sources have a number of goals for representation on the Web and responsibilities toward the material. Similarly, the Bliss Classification Association (BCA) may need to consider a number of technical approaches in order to meet the demands of ongoing editorial work and to improve and expand access to the fruits of this labour. Given the history of BC2, there may be an imperative to digitally or otherwise preserve materials that reflect the project's cultural heritage. This last fact suggests that the implications of any technical change need to be carefully considered, in order to minimize the effects of fragmentation and mutation, and to ensure that any gaps in the remediation are intended and properly conveyed to readers.

Bliss: Technological Approaches and Implications

In the conclusion to his talk, Leonard Will asked "How to move forward?" To a large extent, the way forward will depend on the priorities and goals that the BCA has for its work. Before embarking on any technological endeavour, these priorities must be considered, articulated and agreed to. In the last part of this report four forward-looking, incremental goals are given, along with broad discussion of the technical approaches toward and implications of each.

Goal One: *To improve existing editorial processes, such as by allowing multiple*

editors to work with files, offering better support for versioning and reviewing processes, or by streamlining the print production procedures.

Meeting this goal might involve some changes to the Association's website, but primarily would involve 'behind the scenes' effort. Some changes would be technical, such as the adoption of file management or editorial software, or the use of centralized file storage or web-based communication software. Alteration might also be made in the working practices of the group, for example by re-defining and distributing tasks, by physically locating, collating and archiving relevant paper-based materials, or by developing and refining editorial schedules.

Achieving this goal might also involve migrating the existing mark-up scheme to a model and syntax that more transparently indicate the kinds of information being conveyed to future maintainers. Doing this would make the mark-up self-documenting, which would aid in comprehension for new editors. It would also reduce the need for reliance on separately maintained documentation which would streamline the editorial process. Finally, a migration to newer, digital editing standards, such as XML-based standards, would make it possible for more people to take on editorial tasks.

Goal Two: *To support current users of the schedules and to promote study and research of the scheme.*

Many libraries investigating specialized schemes and library schools may not have access to the full BC2 schedules, or not all of them, even if they know of them. Many researchers don't have access to them either, or to other artefacts from the scheme's development.

One way to improve this situation might be to design and implement services to improve and expand access to the products of the editorial work. Technically, this might include producing publication formats of the schedules that can be delivered over the Web, for example as HTML files or PDF documents. This might be accomplished either by altering the existing software to output new formats, or by writing new software to process the existing mark-up format. Digital facsimiles might be commissioned of the printed schedules and other materials that might be of interest to scholars and students. Source code of the current software might be also be released to the Web to further research about technically manipulating and managing complex knowledge structures.

This work would also require the design and implementation of a newly designed Web site. The new site might allow access to the materials perhaps with the aid of search tools, but should also properly contextualise and relate materials to one another. For example, digital facsimiles should be linked and displayed alongside text-based formats, browsing should support intuitive exploration of classes within the context of the larger scheme, and hyperlinking should be intelligently applied.

Goal Three: *To change how the tool is used by cataloguers, to change the way they work with BC2.*

To meet this goal, one technical approach would be to create a tool to aid in the cataloguing process, the broad requirements of which might be to help the librarian synthesise classmarks, navigate alternatives, and to follow the rules for cataloguing both within the scheme as a whole and more narrowly within the constraints of particular classes.

Technical work would need to include detailed needs assessment to determine how cataloguers currently use the scheme, and where they need help to use it more effectively. The conceptual model of the scheme would have to be modelled into an internal storage format, and the data from the current schedules would have to be migrated into this format. The 'rules' for operating the scheme (for example, where synthesis is allowed, how compound concepts are to be formed and how to properly maintain citation order) would have to be represented in terms the computer can understand. A software system would have to be written that allows indexers to work with the scheme over the Web, and a parallel system would need to be developed to support edits and updates to the scheme.

Goal Four: *To contribute to understanding about how materials on the Web can be automatically classified using the principles of faceted classification generally, and those of BC2 in particular.*

The technical approach here extends the approach given for the third goal, but in addition might develop software to handle the content analysis portions of classification work. Investigation would be required to understand the reasoning process followed by librarians when converting the results of their content analyses into terms that can be applied to the scheme. Software that encapsulates this reasoning process might then be designed and implemented to map the terms from the content analysis to concepts from the scheme, perhaps with provisions to support remote users of the processes. This work might also include the production of an interchange format that is machine processable and machine actionable so that others can unambiguously replicate the behaviour of the classifier on their own servers.

Conclusion

It is clear that there is much that can be done to put Bliss on the Web. Indeed, any of the approaches outlined in this report constitute complete projects in and of themselves. Fortunately, given the scheme's rich history, every effort promises to be worthwhile. The work of putting Bliss onto the Web offers the BCA an opportunity to lavish the care and attention for which librarians are known on our own unique contributions to knowledge.

Notes

1.   Slides from this talk available at:
http://www.blissclassification.org.uk/BlissOnTheWeb.pdf

2.   This work is described in the *Bliss Classification Bulletin*, no. 46, 2004.

For foundations, see: Aitchison, J. A. Classification as a source for a thesaurus: the Bibliographic Classification of HE Bliss as a source of thesaurus terms and structure. *Journal of documentation*, 1986, vol. 42, pp. 160-181.

3.   For syllabi, see: Jacobs, E. (2006). Indiana University School of Library and Information Science L582, Subject Access Systems, Fall 2006, available at:
http://www.slis.indiana.edu/syllabi/fall_2006/L528_Jacob.html

Joudrey, D. (n.d.). Simmons College Graduate School of Library and Information Science LIS 417, Advanced Subject Cataloging and Classification, available at:
http://web.simmons.edu/~joudrey/417/Syllabus.htm

Recent treatments include: Broughton, V. (2004). Essential classification. Facet, 2004. and Gnoli, C: BC2 classes for phenomena: an application of the theory of integrative levels. *Bliss Classification Bulletin*, no. 47, 2005.

4.   Kichuk, D. (2007). Metamorphosis: Remediation in Early English Books Online (EEBO). *Literary and Linguistic Computing*, vol. 22, no. 3. pp. 291-303. As mentioned later, Kichuk draws upon the work of Bolter and Grusin, who are in turn working with McLuhan's media theory.

The Bliss Classification Association

Website: http://www.blissclassification.org.uk

This is our official website. It is, in tune with our policy, open to all whether or not members of the Association or users of BC2 (or even BC1). Its contents, as indicated elsewhere in this Bulletin, are to be progressively enlarged with published, unpublished and draft schedules and other relevant materials.

Discussion list: lis-bca@jiscmail.ac.uk

Our discussion list has been sorely undersubscribed and underused, whereas it should be a first port of call for notes & queries, suggestions, contributions and everything else appropriate to such a list.

Gadflies (especially when bringing constructive ideas) and all others welcome!

*To join, go to:*http://www.jiscmail.ac.uk/LIS-BCA

Please use it!

. . . and if you **don't** receive satisfactory responses, then *complain* strongly: our contact details are in this Bulletin.

Minutes of the Annual General Meeting of the Bliss Classification Association held at 2.15 p.m. on 23 October 2009 in Room SB5, University College London, 188 Tottenham Court Road, London, W1T 7PH.

Present: Vanda Broughton (in the chair) (University College, London)
Adrian Dover (personal member; Adventa Consulting)
Angela Haselton (Hon. Treasurer; Tavistock & Portman NHS Foundation Trust)
David Johnson (Minutes Secretary; St Peter's College, Oxford)
Jeremy Larkin (Action for Children)
Richard Light (Richard Light Consultancy)
Tamara Lopez (Centre for Computing in the Humanities, King's College London)
Jack Mills (Chairman and Hon. Editor of the BCA)
Julie Robinson (personal member)
Elizabeth Russell (personal member)
Leonard Will (Willpower Information).

1. Apologies for absence

Apologies had been received from Eric Coates, Tony Curwen (personal member; Hon. Editor, *Bliss Class:n Bulletin*) and Helen Mackin (Barnardo's).

2. Minutes of the meeting of 24 October 2008

The minutes of the previous meeting were approved as a correct record.

3. Matters arising from the meeting of 24 October 2008

There were no matters arising not covered elsewhere on the agenda.

4. Progress of BC2: Editor's report

4.1   Jack Mills extended his thanks to the members of the Committee, in particular to Angela Haselton, the Hon. Treasurer, Tony Curwen, Hon. Editor of *The Bliss Classification Bulletin*, and Vanda Broughton, Hon. Secretary of the Association. Thanks were also extended to Ken Best, Hon. Auditor and to those who had contributed to the most recent edition of the *Bulletin*. Particular thanks were extended to Jean Aitchison, retiring as a member of the Commit-tee after ten years' service. She had agreed to continue to work on rules for the production of future schedules and this was again most warmly welcomed.

4.2   Work on class C, Chemistry, had been the main task this year. The class was now more or less complete and would be finished by Christmas 2009.

4.3   Jack Mills also noted that the BCA Committee had discussed future publication plans. The committee had agreed that after work had been completed on the Chemistry class, Jack Mills would himself move on to complete the Earth Sciences class. Meanwhile, the Technology class would be finalised by Eric Coates. History, and the Language and Literature classes, would be tackled next.

5.   Finance and membership: Treasurer's report

5.1   The Treasurer, Angela Haselton, reported that the balance which the BCA had in hand on 31st July 2009 was recorded as follows:

Charibond (at cost)	
Deposit Account	
Current Account	
Reserve Account	
Total	

5.2   The Treasurer expressed a hope that recent donations would make it possible to develop a number of projects, especially the delivery of the classi-fication in electronic form.

5.3   The Treasurer noted the fall in income from royalties since the publi-cation of Class W.

5.4   The lack of income from subscriptions shown in the accounts reflected a delay in issuing subscription invoices for 2008-09. The overdue invoices were to be issued shortly.

5.5   Membership of the Association was reported to be more or less static. Very few members were now users of the scheme, and a greater proportion of the membership was drawn from personal members. It was not therefore as possible to rely as heavily on income from subscriptions as had been the case.

5.6   The fall in interest rates had meant that interest payments on the Association's accounts had fallen to more or less zero.

5.7   Angela Haselton noted that she had acted as Treasurer of the Assoc-iation for 16 years and she had now decided that it was time to stand down. She expressed her thanks to Leonard Will who had signified a willingness to take on the position.

 5.8   Vanda Broughton re-emphasised the Association's thanks, already expressed by Jack Mills, for all Angela Haselton's work over the years.

6. Bliss Classification Bulletin

In the absence of the Hon. Editor there was no report on the *Bulletin*. On the Editor's behalf, Jack Mills extended an invitation for more contributors.

7.   Hon. Auditor

7.1   Ken Best was thanked for his work as Hon. Auditor on behalf of the Association. He had signified his willingness to continue in office.

7.2   Ken Best was nominated for re-election as Hon. Auditor for the year 2009-10 by Vanda Broughton, seconded by Angela Haselton, and elected unanimously.

8.   Committee Elections

8.1   Angela Haselton, Tony Curwen, Julie Robinson and Leonard Will had all reached the end of their terms of membership on the Committee. All agreed to stand for re-election and were nominated by Vanda Broughton, seconded by Adrian Dover and elected unanimously.

8.2   Jean Aitchison had stood down as a member of the BCA Committee and hence there was a vacancy.

8.3   Tamara Lopez agreed to stand for election to the BCA Committee. She was proposed by Vanda Broughton, seconded by Julie Robinson and elected unanimously.

9.   Any other business

There was no other business.

The meeting concluded at 2.58 pm.

Bliss Classification Association

Consolidated Receipts and Payments for the Year Ending 31st July 2009

Receipts

2008	Balance brought forward at 1st August	2009
7,488.90	Deposit account	8,413.74
679.03	Current account	513.85
401.93	Reserve account	411.63
	Subscriptions	
0.00	Personal	0.00
720.00	Institutional	0.00
0.00	Royalties on 2nd ed. (K. G. Saur, now Walter de Gruyter)	0.00
38.64	Distribution from M & G (Charibond)	51.52
138.25	Alliance & Leicester share dividend	75.12
600.00	Donations	15,600.00
	Interest payments	
186.59	Deposit (Nationwide) account	70.43
9.70	Reserve account	3.40
10,263.04		**25,139.69**

Payments

2008		2009
548.25	Committee expenses (1)	541.79
213.19	AGM expenses (1)	25.00
86.13	Bulletin expenses (incl. printing, post & packing)	77.86
66.25	Schedule/Website expenses	2,965.00
10.00	Account maintenance charges (NatWest)	120.00
	(1) *less £89.69 cheque paid to University of London not paid in until August 2009*	

Balance in hand at 31st July

2008		2009
8,413.74	General deposit account (Nationwide)	20,431.58
513.85	General current account	653.12
411.63	Reserve account	415.03
		[25,229.38]
10,263.04		**25,139.69**

Current assets at 31st July

2008		2009
776.31	Charibond (at cost)	798.68
513.85	Cash in current account	653.12
411.63	Cash in reserve account	415.03
8,413.74	Cash in deposit (Nationwide) account	20,431.58
10,115.53		**22,298.41**

Auditor's report

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

(sgd) Mr Ken Best (sgd) Ms Angela Haselton
Honorary Auditor **Honorary Treasurer**
30 Cissbury Close 40C Morpeth Road
HORSHAM, RH12 5JT LONDON, E9 7LD

The Bliss Classification Association

an association to develop and promote the
Bliss Bibliographic Classification

Officers and Members of the Committee 2010

> Mr Jack Mills, *Chair and Editor of BC2*
> died 9 July 2010

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Ms Angela Haselton *(Tavistock & Portman NHS Trust Library)*
Dr David Johnson *(St Peter's College, Oxford)*
Mr Jeremy Larkin *(Personal member)*
Ms Tamara Lopez *(Open University)*
Ms Julie Robinson *(Personal member)*
Mrs Elizabeth Russell *(Personal member)*

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Note!!　*Please address all enquiries about subscriptions, missing copies of the Bulletin, etc., to the Hon. Treasurer and Membership Officer.*