To celebrate the Award and the man who inspired it, UKeiG is reproducing in this issue of eLucidate John Burchall's essay from the original Tony Kent Strix Award booklet, republished every year as the roll call of luminaries it celebrates expands. Previous winners are listed here.

The 1980s and the British Library SIR Project

John Burchall

In this [article], I want, in part, to look back some thirty years of information research but mainly to focus on quite a short period of time and on one particular project. This is the story of one project – the SIR project – the Schools Information Retrieval project. It may surprise many people that Tony was involved with a schools project, but he made a unique and important contribution, as I will try to explain. By one of those strange co-incidences, a few days ago I caught a glimpse of one of the other major players in that project – Jean Beck, who at that time (1980-81) was a school librarian of a boys' comprehensive school in West London.

It was her drive and enthusiasm that brought that school as one of the founders within the SIR project. At that time most schools had no computers at all but she was one of a number of people who had seen that they were going be an educational trend of great significance and so she brought a great pioneering spirit into that project. In fact, Jean went on to play a much wider role in bringing in new technology into school libraries and educational material generally, and is currently one of the senior staff on the National Council of Educational Technology. But first I want to put the SIR project in context.

British Library funded research

Modern information and library research goes back some thirty years, if you consider that it began with any seriousness in the work that was done at Cranfield under Cyril Cleverdon. His pioneering work involved the experiments that produced ideas about indexing, relevance and recall, and provided tools for assessing the performance of information retrieval systems. It was certainly that work that alerted a wider audience to the distinct role that research has to play in understanding information, understanding information retrieval and improving information services.

Government funding for such research was then through the Department of Education and Science's Office of Scientific and Technical Information (OSTI), which in 1973 became the

British Library Research and Development Department. There were several strands to this research over the years.

One of these strands was research into information retrieval techniques, the kind of work that Tony and others were undertaking on chemical information into developing techniques that would improve information systems. Such work still continues at Sheffield and City Universities among others, to improve the efficiency and the usability of information retrieval systems, seeking to apply the latest developments in technology to information retrieval. Chemical information services have always been at the leading edge of new developments so Tony's work at Nottingham made a great contribution to the development and understanding of information retrieval services.

The second strand sponsored by the British Library was concerned with the human side of information compared with the more machine-based information production and retrieval. During the 1970s there were many studies of information needs, information provision and how people used information in various disciplines. There were, for example, studies in chemistry, in physics, life sciences, medicine and the humanities. Some of these were large studies, reviewing in broad terms the supply of information in a particular topic or area. In addition there were a number of small studies on how people, whether practitioners or end users, sought and used information. At that time the Centre for Research in User Studies was formed at Sheffield University and became a focus for this aspect of research. The Centre undertook many studies and collected information on how people actually responded to the systems they were provided with, and how they went about hunting for information.

The third strand of research was on the education side. It is one thing to have wonderful systems but people need to know how to use them effectively and that's true both for end users and for information professionals themselves. During the 1970s, university librarians in particular were grappling with the problems of how to teach people to use the information resources that were available, both the traditional printed sources and the incoming on-line services. They felt with the introduction of on-line services there was a greater need to teach students and lecturers how to use the services to obtain the best advantage. Intermediaries are one approach but they cannot always be on hand and anyway some people like to do their own information gathering. So libraries devised various ways of teaching the use of information resources and services. Alongside this, there was concern on how the professional in the information and library world could develop expertise in using information retrieval services. During the 70s there were a lot of projects, in the main small projects, done in various library schools dotted around the country exploring different ways of producing teaching materials and packages to enable students to get to grips with computerised information retrieval. All had some support from the British Library and a wide variety of such packages, simulations and other means of teaching information retrieval were developed.

They were crude by today's standards and I recall that about the time when I went into the Research and Development Department in 1978, we had invested in a Hewlett Packard

machine, a precursor of the PC, which used a tape as the main storage device. I have a feeling that it cost around £2,000 and did very little compared with what one can get for that price today.

Information skills in schools

By the mid 70s we in the British Library felt that the ability to find and use information was not something just for the academics, researcher or industrialists but it was something for everyone. So alongside the efforts to educate university scientists and information professionals, there was a view that everyone needed some ability in information handling, to be developed at an early age. So we began a programme of projects on teaching information skills in schools. This began with some exploratory studies, to see what was happening about teaching library and information skills in schools. For example, was anyone teaching these skills on how to use libraries and how to find information from books and encyclopaedias? We found that generally there was a huge gap plus a reluctance of teachers to enter an area that they understood little about. It was in that context that the SIR project was developed.

The SIR project

It began one afternoon at the end of the 1979 Cranfield Information Retrieval Conference when a small group of conference attendees plus some teachers met to chat over the future on what was starting to happen with the use of computers in schools. Some schools were beginning to get into computers and starting to realise that the computer had a role outside the school computer department. There was also the beginning of computer based educational approaches. That afternoon led on to a longer two-day seminar at the Library and Information Department at Loughborough University. The idea of that was to bring together a much larger number of teachers to show them the sorts of things that were happening in library schools in teaching information retrieval; and at the same time to mix them with some people from the information profession and to demonstrate some of the large-scale bibliographic and IR systems. Tony Kent was one of those who came, not with his Chemical Society hat on but more as a member of the ICSU-AB (International Council of Scientific Unions-Abstracting Board), which was a forum of the large database providers. ICSU-AB had already shown interest in undertaking some educational work in schools, and Tony, for ever looking for something new, saw it as another way forward. And in his inimitable way he enthused over computer teaching tools. The meeting enthusiastically adopted the idea of developing software in order to teach information handling techniques. Tony, never surely one to hold back, offered to write the program for the experiment.

So he became a member of a Working Group set up to specify the software for the SIR project and to test it out within schools. The Working Group started in late 1979. As these things do, it took a bit longer than hoped, as all the problems had not been appreciated. I suspect that Tony got rather impatient with the delays. One feels that in his mind he already knew exactly what he wanted to do and wanted to get on and do it, whereas the other members of the Working Group were aware of the difficulties of selecting schools, encouraging teachers to participate and selecting the most appropriate computers to use

in the project. On one occasion, discussing the timetable and worrying about bringing the tools in to the schools for them to act as guinea pigs, someone asked what would happen if the software doesn't work properly. Tony said (if I recall correctly, with a smile) 'My programs always work'. He was right, his programs always did work properly, right from the start.

By the autumn of 1980 we had developed the software plus a trial database and a set of material so that the trial schools could get going. The idea was simply to create an information retrieval package, which would look like the large commercial on-line systems and would also offer similar experience in information retrieval. It was quite a tall order given the state of computers available for schools at the time. The most popular machine was the Research Machines RML380Z together with the Commodore PET, the BBC machine was also just beginning to emerge. Many schools had no computers; those that did had machines often without disk drives, instead being fitted with tape drives for storage. Capacity was severely limited, 32K sticks in my memory as the minimum requirement in which SIR would operate. Tony wrote the software in a very short space of time, I suspect he had already thought it completely through in his mind.

SIR was a means of illustrating in a practical way the essential principles of information retrieval and dissemination of bibliographical information, and also provided the means of creating files of such information. SIR was not a toy, it was not a game, it was a genuine small information retrieval system which searched databases using standard command language and Boolean logic, provided retrieval via inverted files along with an editing and database creation set of programs. It was a remarkable achievement given the state of the technology at that time. It was miniaturisation on a grand scale, brought down to the bare essentials and yet it worked and gave a feel of what you would do if you were going to go to a major online system.

It was enthusiastically received in the six schools used as a first set of guinea pigs to try out SIR. They wholeheartedly liked it in spite of the program being quite demanding. In order to understand and execute a single term search the user had to assimilate some 26 concepts, and commands, things that children and teachers had never come across before, things like database structures, record fields, commands like FIND, SHOW, PRINT, OR, AND. It was a great teaching aid for all these concepts. Nevertheless it appealed to all ages. Initially we thought that it would appeal mainly to 6th formers, but in many schools the 6th formers were the least enthusiastic. It was often students lower down in the age range who latched on to the program and showed considerable ability in grasping these concepts and using them. In spite of often only having one machine in the whole school that did not give them much chance of hands-on experience, many did begin to understand what the system could offer and to use it effectively.

The impact of SIR

SIR was a great success and went on to be marketed by Research Machines Ltd and was rewritten for the BBC micro. At that time schools were desperate for good software to use

on the computers they were beginning to acquire. SIR offered something that was immediately useable, that people could latch onto and to which children responded. It achieved what it set out to achieve. So much was owed to the fact that Tony could design programs, write them and they worked. There was considerable interest from other countries. It was even financially successful as the British Library received a royalty from the sales of the program and recouped a fair amount of the development money.

SIR helped to get good information practice into schools and the school curriculum; it helped school librarians and school resource managers redefine their role and indicated that they had a central part to play in the IT area. It led on to the use of other techniques such as CD-ROMs, specially designed networks for schools and latterly onto Internet use in schools. The fact that the SIR project had gone into schools and was in the educational mainstream meant that people were beginning to be alerted to the importance of information and the value of retrieval by computer. I would like also to think that it helped in the democratisation of information and knowledge so that it becomes available to everyone. And that everyone will have the necessary skills to find and use information effectively. There is still a long way to go, but I believe that SIR and Tony's key contribution to that project has helped in achieving that goal.