## 7. Future developments

There are a number of ways in which the prototype compiler would have to be improved in order to be generally useful.

(i) *Dictionary filters.* The compiler should be able to operate on a subset of the dictionary. If with each word in the dictionary were stored its frequency of use in English (see for example Kucera and Francis, 1967), then subsets of the dictionary could be selected according to frequency. Although the difficulty of a puzzle depends to a large extent on the clues, a puzzle which has very rare words in its solution might be considered difficult per se. At Christmas it would be desirable to create puzzles containing words associated with that season. To create this and similar thematic subsets would probably require inverted indexes of some sort.

The subsets could be implemented by passing the dictionary through a 'filter' which creates a bit list for each partition. Such a bit list could easily be incorporated into the word selection process thus ensuring that only words in the subset were included in the filled diagram.

(ii) *Slot linking.* It is not uncommon in published puzzles for a number of slots (rarely more than three) to be linked so that the answer to a single clue is entered in more than one slot. Implementation of this feature would require changes to the slot table (probably the addition of a 'link' field), to the dictionary (explicit storing of the subdivision of a phrase) and to the algorithm (a check that the subdivision of a particular phrase is suitable).

(iii) *Clue generation.* It is likely that the compiler could be extended to generate clues of the form found frequently in American puzzles—definitional with a number of alternative answers. The automatic generation of the type of clue found most often in British crosswords—cryptic but with a single answer—does not appear to be feasible. Definitional clues could be selected from a data base or thesaurus.

An interesting form of clue is a quotation from a play or book in which the omitted word is the answer. Access to a concordance would allow our compiler to generate clues of this form.

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# Calls for registration: The Computer Journal Seminars

The British Computer Society, through *The Computer Journal*, is this year sponsoring two conferences, both to be held during the week of 13–17 July at Jesus College, Cambridge.

### First British National Conference on Databases

13, 14 JULY 1981

Following the success of the *International Conference on Databases* (ICOD-1) at Aberdeen, it was agreed to organise a second international conference (ICOD-2) in 1983 (September 20–23), with a British national series of conferences (BNCOD) held annually in between. The BNCOD series is meant to focus primarily on British research work, although overseas papers are also welcome. This conference (BNCOD-1) is being organised jointly by the Aberdeen University Computing Science Department, The British Computer Society and Middlesex Polytechnic. *The conference proceedings will be published.*

The objective of the conference is to encourage database research in Britain by bringing together the researchers and other interested parties. Research papers have been invited on all aspects of databases with the following areas mentioned specifically: Data modelling; Database design, Restructure and reorganisation; Performance optimisation; Data dictionaries and design tools; Privacy, integrity, consistency and recovery; End user facilities; Database machines; Distributed databases.

Although the final programme will not be decided until mid-May 1981, sufficient material has been received already to ensure a significant conference. The formal proceedings will begin mid-morning on Monday 13 July. The full conference fee, including accommodation for the night of Monday 13 July and all meals, will be £45 for BCS members, £60 for non-members, and £25 for full-time students.

### Information Systems Teachers Conference

14–17 JULY 1981

This is the third national conference bringing together the teachers of information systems from higher and further education and from the training departments of commercial and industrial companies.

The theme of this year's conference is of particular relevance to all decision-makers, whether planning the content of courses or determining recruitment policy. It is 'Is higher education teaching what industry needs in the 1980s and, if not, what should be taught?'. The speakers from industry are Frank Hooper, David Butler and Ewart Willey. All are prominent members of the British Computer Society. They are supported by a similar number of leading academics. Dr Rhodes Boyson has agreed to attend and will present the views of the Department of Education and Science on the teaching of information systems in the 1980s.

The proceedings of the conference will be printed and made available to delegates. A summary of the conclusions will appear as a paper in *The Computer Journal.* The full conference fee, including accommodation for the nights of 14–16 July and all meals, will be £100 for BCS members, £115 for non-members and £60 for full-time students.

### Registration

For both conferences bookings are now open. The BCS member rate will also apply to staff of a recognised academic institution. A surcharge of £10 will be made for late entries (BNCOD—after 31 May 1981; ISTC after 13 June 1981). Special price rail travel will be available. For details of this, further details of the conference and booking form, please contact the conference organiser: P. Hammersley, Middlesex Polytechnic, Bounds Green Road, London N11 2NQ (01-368 1299, ext. 248).