FOCUS ON GLOBAL CHANGE

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Increasing carbon dioxide and the greenhouse effect, projections of sea-level rise worldwide, ozone holes, long-term climatic change and global warming regularly receive media attention. Similarly the global change research literature is increasing dramatically as the US government and governments worldwide allocate increasingly larger sums for global change research. In this fast-paced research climate, the Institute for Scientific Information (ISI) brings to market a current-awareness product focused on the information needs of the global change research community. Entitled FOCUS ON: GLOBAL CHANGE, ISI's floppy-disk-based current-awareness service delivers global change references on a biweekly basis. FOCUS ON: GLOBAL CHANGE ambitiously targets a large audience since global change itself is sweeping in scope and multidisciplinary in nature. Global change is a nebulous concept and is fast approaching buzzword status. ISI's definition of global change is worth reviewing in order to understand the intention of FOCUS ON: GLOBAL CHANGE and its target audience.

While the marketing literature for FOCUS ON: GLOBAL CHANGE (FO:GC) provides a basic definition of global change, Eugene Garfield provides a more illuminating discussion in a "Current Comments" editorial ("Focus On: Global Change - a new current-awareness service tracking the health of planet Earth", CURRENT CONTENTS #14, 2 April 1990). Garfield writes that FO:GC "monitors the interactive physical, chemical, biological, social, economic, and political forces that are causing global environmental change". FO:GC's coverage of source items concentrates on "anthropogenic changes in the biosphere", "basic science about interactive atmospheric, oceanographic, geological, and ecological processes", and, "economic, political, and demographic forces that drive global change". Garfield further states that specific items in FO:GC can pertain to "habitat destruction and extinction, climate change, conservation and depletion of non-renewable natural resources, waste and toxics, demography and public health, and environmental economics and politics". From this description, FO:GC aims to offer multidisciplinary information on the global environment in all its interactive complexity. This is sweeping ground and goes far beyond a narrower conception of global change as involving global warming, the greenhouse effect, ozone holes, etc. Since ISI defines global change so broadly, references that appear in FO:GC issues reflect that breadth. Anyone with an interest in the environment even

if they do not deem themselves as working in "global change" would be interested in FO:GC.

COVERAGE

In tracking the global change literature, ISI's database covering meeting proceedings, book chapters, and almost 8000 journals in the sciences, social sciences, arts and humanities is appropriate and also manageable when trying to cover the topic of global change as defined above. FO:GC largely covers the English language journal literature with limited non-English language coverage. The number of references for journals as compared to book chapters & meeting proceedings for the first three FO:GC issues is as follows: 655/245, 854/526, 764/358. ISI goes further in its pursuit of the global change literature by expanding coverage beyond its existing database and adding an additional 30-35 journals, newsletters, and reports pertinent to global change. Examples include CLIMATE ALERT and CDIAC COMMUNICATIONS from the Carbon Dioxide Information Analysis Center. FO:GC is not simply a repackaging of the Current Contents on Diskette sections; its coverage goes beyond ISI's existing product line with no online, diskette, or print equivalent.

In culling its database for references for inclusion in FO:GC, ISI has developed and continues to fine-tune a search profile for retrieval of relevant references. At the time of writing this review, the search profile contained approximately 240 individual terms and 300 phrases. In addition to running this FO:GC search profile daily, ISI includes full coverage of approximately 225 journals deemed essential for global change. Scanning the titles in FO:GC shows the excellence and breadth of ISI's search profile and also reveals some surprises going beyond any conception of global change. Some extreme examples sighted include "Homing and reproductive habits of mallards...", "Nectar secretion pattern of the Dish-Shaped Flower, Cayratia...", and, "Thioethers, mutagens, and D-glucaric acid in urine of operating-room personnel exposed to anesthetics". Since any database searcher would be hard-pressed to construct a global change search as defined above by Garfield, such stray references should come as no surprise. Closer examination of stray references reveal some to be the result of full coverage of environmental journals.

FO:GC should increase its coverage to include global change references found in the US Government Publications Office (GPO) database and the National Technical Information Service (NTIS) database. The GPO database provides coverage of congressional hearings and federal agency reports which should not be ignored as the US government begins to shift into a stronger role with global change funding and research. Many remedies for global change involve regulatory action and congressional hearings would be an important source of information in

tracking the public policy. NTIS provides premier coverage of the US and non-US technical report literature and is an excellent resource for global change literature even when narrowly defined as global warming, climate change, and the greenhouse effect. ISI could easily integrate the major references from these two databases into FO:GC by using a tight definition of global change.

EQUIPMENT & INSTALLATION

FO:GC runs on IBM and compatibles, Apple Macintosh, or NEC 9801. For IBM and compatibles or NEC microcomputers, FO:GC requires a minimum 512K RAM (640K recommended), a hard disk, and at least one 3.5 or 5.25 inch floppy disk drive. Upon subscription, FO:GC arrives with a program disk and a small supply of ISI's Request-A-Print continuous forms. Request-A-Print forms are used to print out reprint request postcards from references pulled from FO:GC issues. FO:GC installs itself automatically into a FOCUS directory on hard disk; the programs consume 250K of disk space. FO:GC comes with a very readable manual with a glossary, index, and stop words and error messages appendices.

ISSUE FUNCTIONS

FO:GC issues arrive biweekly on floppy disk; a variety of disk sizes and formats are available to match individual equipment configuration. After starting FO:GC, the main FO:GC menu (box along top of figure 1) appears offering access to functional submenus. Select the ISSUE option and a pulldown menu displays (figure 1). ISSUE functions include loading a newly received issue onto hard disk, opening up a previously loaded issue in order to browse/search it, delete a back issue from hard disk, looking at acknowledgments for the FO:GC developers (congratulations but totally unnecessary as a menu option), and exiting from the FO:GC program. The exit function would be better located in the main FO:GC menu and not hidden under the ISSUE submenu.

FO:GC is designed as an issue-oriented current-awareness service and should not be regarded as a cumulating bibliographic database with an update service. Each new FO:GC issue arrives in a compressed archive format and is decompressed during the loading process onto the hard disk. Loading an issue takes about 40 seconds on a 10 megahertz 80286 microcomputer with a 40 millisecond disk-access-time hard disk. Each issue resides in its own hard disk subdirectory and is a separate menu selection when opening up an issue with the ISSUE menu. FO:GC functions at an issue level and does not merge all its issues into one master database. To have all of the references in each FO:GC issue in one database would require importing FO:GC references into a separate bibliographic database software (discussed below). The first three FO:GC issues consume 880K disk space. With 26 issues arriving per year, most users probably cannot afford to keep all FO:GC issues on

hard disk indefinitely. In the future, ISI plans to include abstracts which will consume substantially more hard disk space if all issues are kept on hard disk.

BROWSE FUNCTIONS

After opening up a previously loaded FO:GC issue, select the BROWSE option on the main menu and a pulldown menu offers browsing references appearing in an individual FO:GC issue or in specific journals, books, and proceedings. During BROWSE, options display along the bottom of the screen and are selected by typing the highlighted character. References can be browsed and viewed one-by-one in their entirety (figure 2) or scrolled through in one-line author/title listing (figure 3). VIEW (press V key) toggles between the display of complete references or one-line author/title listing. Due to the broad subject coverage of FO:GC and large number of references in each issue, browsing references is best accomplished by scanning the one-line author/title listings rather than paging tediously through each reference one-by-one. Far better would be the ability to browse one-line title listings of the references; usually only the titles are of interest when browsing. If the author's name did not display, then more of the title could appear onscreen for browsing. References appear in order alphabetically by the source field with all references for book chapters and proceedings appearing before journal articles. While browsing, individual or all references can be printed (press P key) or tagged for several destinations. PIC (press I key) tags references for inclusion in a separate "Personal Interest Checklist"; PIC references can be subsequently printed or downloaded to disk. GA (press G key) tags references for inclusion in an order list for ISI's Genuine Article document delivery service. R-A-P (press R key) tags references for subsequent printing on ISI's Request-A-Print forms which are used to request reprints from authors. MARKALL (press M key) tags all references for the PIC, GA, or R-A-P lists.

EXPORT REFERENCES TO DATABASE SOFTWARE

Another BROWSE option is FILE (press F key). FILE tags individual or all references for saving into a disk file. References are saved to disk as an ASCII file in any of four formats: screen image, comma-delimited, Dialog, or Medline. Screen image FO:GC files have references formatted as they appear onscreen in FO:GC (figure 2). The other three reference formats are an excellent selection by ISI and show intelligent planning for subsequent usage of FO:GC information. Microcomputer-literate FO:GC subscribers are highly likely to be using bibliographic database software to manage their own personal databases. Furthermore, any new FO:GC subscriber who is not using a bibliographic database software will immediately start considering the usage of one in order to manage the flood of references arriving with each issue of

FO:GC. FO:GC is an issue-level service that does not cumulate each new issue into one master database; therefore usage of a bibliographic database software is a good match with an FO:GC subscription. Many references in each FO:GC issue will be of little interest to a particular user and successive issues take up more and more hard disk space. Subscribing to FO:GC almost demands concurrent usage of a bibliographic database software in order to shift a smaller set of relevant FO:GC references into a cumulating personal database.

FO:GC references can be readily imported by several IBM and Macintosh bibliographic database software including Pro-Cite (IBM and Macintosh), Reference Manager (IBM and Macintosh), EndNote (Macintosh only but IBM version under development), and Sci-Mate (no longer marketed but widely used). Comma-delimited FO:GC files have references separated by carriage returns and fields separated by commas and enclosed within double quotation marks. Comma-delimited format is a common exchange format for database records and FO:GC references in this format can be imported by Pro-Cite. Pro-Cite usually requires a separately purchased BiblioLink module for importing references into a Pro-Cite database; however BiblioLink is not necessary because Pro-Cite by itself will import FO:GC references in comma-delimited format. Dialog format FO:GC files have references tagged and formatted like Dialog Format 4 records. Sci-Mate can import FO:GC references in this Dialog format. Medline format FO:GC files have references tagged and formatted like records from the National Library of Medicine's MEDLARS system. Sci-Mate, Reference Manager (using its separate Capture import module), and EndNote (using its separate EndLink import module) will import FO:GC references in this Medline format.

FO:GC successfully handles export of journal article references with book/proceeding references presenting some problems. Importing book/proceeding references into bibliographic database software may require some post-import editing. To facilitate post-import editing, FO:GC should be used to separate journal article references and book/proceeding references into separate files. When importing the problematic book/proceeding references into bibliographic database software, they can be closely monitored to ensure bibliographic completeness. For example, when importing Medline format FO:GC files into Reference Manager or EndNote, the title of the book/proceeding and the publisher information is lost. For some reason, the ISI Book Number is substituted for the title of the book/proceeding in the "SO-" field of Medline format FO:GC files. The user has no inkling of the book/proceeding bibliographic citation corresponding to that ISI Book Number! FO:GC cannot be searched by ISI Book Number and most users will not have access to the ISI book number list published in Science Citation Index and Social Science Citation Index. This oversight should be corrected in a future release; mailing out an ISI Book Number list to subscribers should hold them until this problem is corrected.

Most bibliographic CD-ROM publishers can take a lesson from FO:GC's file format options. Many bibliographic CD-ROM vendors have not thought beyond printer output; their references cannot be downloaded in commonly recognized database record formats and cannot be readily imported by bibliographic database software. Due to market chaos, bibliographic database software vendors are then forced to select which of the plethora of CD-ROM reference formats will get programming attention for incorporation into the import function of their software. The result is that only a few of the major bibliographic CD-ROM formats (eg Silver Platter, Compact Cambridge Medline) are currently recognized by bibliographic database software; references from most bibliographic CD-ROM products cannot be used to their full potential. FO:GC does not suffer from being short-sighted.

SEARCH FUNCTIONS

The references in each issue of FO:GC can be searched in addition to browsed. After pulling down a SEARCH menu from the main menu, options are to begin a search session, edit a search profile, or delete a search profile. Search profiles (sessions) can be saved and run against successive issues of FO:GC in order to avoid retyping a recurring search. Search sessions are executed on a search screen (figure 4) wherein search words are typed into numbered lines. A maximum of 75 search lines are allowed with each line limited to 128 characters. Words are searched using logical operators AND, OR, and NOT; phrase searching is implied between adjacent words. Truncation is typed with an asterisk and search words can be nested within parentheses. For each search line, the number of references retrieved display next to the line.

Searches default to the title field of FO:GC references. SEARCH session options display along the bottom of the screen and are selected by pressing the ALT key and the highlighted character. Fields are selected for field-specific searching by pressing ALT-F. FO:GC fields are title, author, address, journal (field name remains "journal" even if item is a book or proceedings), discipline (broad subject disciplines used in arranging journals within printed Current Contents issues, eg aquatic sciences, geography, politics & policy, ecology), document type (eg article, book review, editorial, meeting abstract, review), language, and set number. To view the index or dictionary of words in the current field, press ALT-D; words can be transferred from the dictionary to the search line without having to type them. The first and middle names of authors are initialized.

To combine two or more previous search lines, the current field has to be changed to "set number" and the set numbers combined with logical operators. Set numbers cannot be mixed with words in one search line.

Other SEARCH session options are print, save, or delete the current search session (profile) and execute a previously saved search session (profile).

Function keys have assignments in FO:GC; pressing F5 takes the user directly to viewing references and pressing F9 returns the user to the search session. Unfortunately, the online help screens do not divulge the function key assignments and no function key template is supplied with FO:GC; make your own template to remember the function key assignments. In addition to function key information, FO:GC's online help needs further development in providing advice on how to use and search FO:GC.

ARTICLE FUNCTIONS

To view retrieved search results after a search session, select ARTICLES from the main menu, or, press the F5 function key. The ARTICLES pulldown menu offers the opportunity to view the entire set of search results or view only those references which have been previously tagged for the PIC, GA, or R-A-P files. When viewing references, the options available in BROWSE are active (VIEW, PRINT, PIC, GA, R-A-P, MARKALL, FILE) so that individual or all references can be tagged for printing or disk file destinations.

ORDER FUNCTIONS

After reviewing references and tagging selected references for GA (sending an order to ISI's Genuine Article document delivery service) or R-A-P (requesting reprints from authors using ISI's Request-A-Print forms), select ORDERS from the main menu to generate the printed requests. For those references tagged GA, an order form is printed which includes ISI's Genuine Article address, the requestor's name and return address, and the requestor's Genuine Article account number (if available). The manual states that Genuine Article cannot accept book orders yet FO:GC allows the user to tag book references for Genuine Article orders. Since ISI is marketing a vertically-integrated information service by combining FO:GC with its Genuine Article service, FO:GC should stop the user from tagging book references for Genuine Article ordering. For those references tagged R-A-P (for requesting reprints from authors), reprint requests are printed on ISI's Request-A-Print forms; these forms are available in continuous (matrix printer) or single-sheet (laser printer) stock.

SUMMARY

FOCUS ON: GLOBAL CHANGE is well-positioned and unique in the information marketplace. Global change is a timely issue with much

research and funding attention being focused on it. FO:GC offers coverage of a large number of references from a multidisciplinary range of journals and it is well known that ISI's coverage is timely. ISI's vertical integration of FO:GC with its Genuine Article document delivery service is especially attractive from the user's viewpoint. FO:GC's journal articles can be ordered directly from ISI's Genuine Article document delivery service and FO:GC provides substantial assistance in formatting the order.

FO:GC offers excellent value for the money; an annual subscription costs $345. The first three issues of FO:GC contained 900, 1380, and 1122 references respectively, for an average of 1134 per issue. Extrapolating for one year of biweekly issues, the subscriber would get approximately 29480 references for a little over a penny per reference (no connect time charges, too!). FO:GC supplies a daunting amount of references in each issue; considerable time can be spent browsing all of the references in each issue. For those who do wish to browse each issue, one-line title-only display of references should be an option. Since browsing a large number of references is tedious (even with a one-line title-only display), FO:GC subscribers would be well-advised to develop search profiles to run against each new issue. FO:GC subscribers would also be well-advised to read the FO:GC manual regarding the nuances of constructing a search strategy. The manual is quite instructive regarding searching with truncation, phrases, logical operators, parenthetical nesting of search terms, and author names.

FO:GC is exceptionally well designed regarding the destination of its references. In addition to printer output, FO:GC outputs its references in formats for personal bibliographic database software, reprint requests, and document delivery orders. Due to FO:GC's issue-level design, subscribers are practically forced to consider using FO:GC in conjunction with a personal bibliographic database software. A lot of real estate will be consumed if every issue of FO:GC is kept on hard disk. Since FO:GC issues do not cumulate themselves into one master database, it is desirable to shift FO:GC references into a master database in order to avoid issue-by-issue searching. To shift every reference in each issue into a personal database would require a powerful 80386-level or above microcomputer with a large hard disk due to the quantity of references. With the first three issues averaging 1134 references each, 26 biweekly installments would result in a very large database in one year's time; also, remember that abstracts are planned for inclusion in the future. Since most bibliographic database software have file size limits (eg each Pro-Cite database is limited to 32,000 references), then the user may have to setup one database per year due to file size limitations. A more practical approach would be to shift only the most relevant FO:GC references into a personal database in order to keep the database manageable and efficient.

A laboratory or library could subscribe to FO:GC and build a cumulating global change database on a single-user microcomputer using bibliographic database software. The FO:GC subscription agreement precludes usage on more than one computer at the same time unless additional user fees are paid to ISI. A single-user workstation used by several people does not appear to violate the licensing agreement. After purchase of a bibliographic database software ($250 - $500) and a powerful microcomputer with a large hard disk, biweekly FO:GC updates for the cumulating global change database cost $345 per year. This is a small price to pay for building a master global change or environmental database. Adding to the base of references from imported from FO:GC, global change references from other databases could be imported into the master database. For laboratories or libraries with global change or environmental interests, FO:GC is an attractive way to build a single-user database; additional fees could be paid if multiuser access was needed. For those interested in the environment and already subscribing to Current Contents on Diskette, switching subscription to FO:GC is worth considering.

FO:GC is available from the Institute for Scientific Information, 3501 Market St, Philadelphia PA 19104. Phone: (800)336-4474. Outside US and Canada: (215)386-0100, ext 1483.