

The contents of three major English-language cartographic journals from Great Britain, Canada, and the United States were analyzed and compared to determine if there are significant differences among them. Results show considerable similarities in the publication of user-oriented research and articles related to automated cartography. The three journals varied considerably in their publication record for historical cartography and several other relatively minor categories. The question of editors' influence on journal content was considered and input sought from representatives of the three journals in the study.

Most cartographers are quite familiar with the three major English-language journals, *Cartographica*, *The Cartographic Journal*, and *Cartography and Geographic Information Systems* (formerly named *The American Cartographer*). These are the primary scholarly cartographic journals published in Canada, Great Britain, and the United States, respectively, and each is linked to a national cartographic organization. The journals have much in common — similar purposes, content, audiences, and contributors — but each is also different in some respects from the other two.

The study reported here was designed to investigate whether there are differences among the three journals in overall content or in the evolution of their content through time. In addition, the data may suggest whether individual editors have been pro-active in shaping their journal's content, above and beyond the prevailing research trends of the time. To provide some additional insights into these issues, I have invited a representative from each journal to comment on the findings of the study.<sup>1</sup> Thus, contributions by Bernard Gutsell from *Cartographica*, David Fairbairn representing *The Cartographic Journal*, and Robert McMaster from *Cartography and Geographic Information Systems* accompany this article.

The following data should be useful to cartographers from a variety of standpoints. First, and most obvious, it informs potential authors as to which journal frequently publishes manuscripts on a specific topic, indicating that the journal welcomes such submissions, has developed a pool of reviewers qualified to evaluate papers on that subject, and, presumably, has a readership interested in the topic. There may even be something about the journal or its sponsoring organization that predisposes it to publish more of one kind of article than another (Hart 1990: 357-8; Orme 1990: 361). Such information may help authors decide where to submit a manuscript or assist researchers in locating material on specific topics. It should be noted, however, that just because articles dealing with a particular subject are published frequently in a journal does not mean that its editor would reject papers on topics that appear more rarely. Indeed, the opposite might be the case: an editor might welcome atypical papers in the interest of providing variety and balance within the journal. In any case, these data should confirm or refute empirically the conjecture that circulates informally among cartographers regarding topical "predilections" among the three publications.

Secondly, cartographers have a vested interest in understanding the status, focus, and general workings of their professional publications. For many members of the organizations affiliated with these journals, the journal, itself, is the most tangible return on their membership fees. Academic cartographers in particular, for whom publishing is required

## A Content Analysis and Comparison of Three Cartographic Journals: 1964-1989

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<sup>1</sup> I wrote to the current editor of each of the three journals and invited them (or some other qualified individual whom they and/or their editorial board wished to select) to provide comments, for publication, on the findings of this study.



*These data should confirm or refute empirically the conjecture that circulates informally among cartographers regarding topical "predilections" among the three publications.*

for tenure, promotion, salary increments, and professional standing, can benefit from learning more about the primary outlets for their scholarly research.

Thirdly, taken together, the data presented here show the major research trends in Anglo-American cartography over the last twenty-five years. Disaggregated by journal, the figures reveal how those trends were reflected differentially in the three publications. While there were substantial similarities, there also were interesting contrasts which set the journals apart from each other through time.

Finally, since publications help to embody a discipline to the "outside" world, "insiders" should be aware of the image conveyed by its publications — not for the purpose of manipulating that image but simply to understand how we may be perceived by others. This overview also provides a more complete picture to cartographers, themselves, of the discipline's research agenda in recent decades.

Relatively little previous work has been done regarding the content of cartographic journals. As part of a much larger study on the discipline of cartography, Wolter (1975) conducted a content analysis of several cartographic publications, including *The Cartographic Journal* (TCJ) and *Cartographica* (known then as *The Canadian Cartographer*). His analyses of these two journals covered the period from 1964 through 1972 and employed the classification system from *Bibliotheca Cartographica*, an international bibliography of cartographic publications. (It has since been renamed *Bibliographia Cartographica*.) Wolter found that the content of TCJ fell primarily into four categories: applied cartography (20 percent), theoretical cartography (20 percent), history of cartography (16 percent), and institutional topics (13 percent). *Cartographica* had devoted 30 percent of its content to historical topics, followed in importance by applied cartography (17 percent) and theoretical cartography (11 percent) (Wolter 1975: 187-191). These data are limited in scope, however, because at the time the two journals had been in existence only nine years and *The American Cartographer* had not yet appeared. In addition, *Bibliotheca Cartographica's* classification categories are quite broad and not particularly sensitive to contemporary research topics such as communication research and automated cartography.

In 1980, Cole, a former editor of *The Cartographic Journal*, reported that based on the entries in the Recent Literature section of his journal, the subject matter of cartography consisted primarily of Design and Communication (25 percent), Automation (18 percent), Historical and Map Collections (17 percent), and Topographic and Remote Sensing (14 percent) (p. 49). However, he attempted no comparisons among journals or across time.

Thus, the following study provides information about three major English-language journals which has not been available heretofore. I hope that this empirical data, along with the commentary provided by representatives of the three journals involved, will contribute toward a better understanding of differences and similarities among the journals.

#### BACKGROUNDS OF THE JOURNALS

*Cartographica* was founded in 1964 by Bernard V. Gutsell of York University, Toronto. The journal originally was called *The Cartographer* but was re-named *The Canadian Cartographer* in 1968. In 1971 a monograph series known as *Cartographica* was added to the regular semi-annual publication schedule. The monographs provided a vehicle for the publication of single major works or sets of papers on a single cartographic theme. In 1977 the Canadian Cartographic Association adopted *The Canadian Cartographer* as its official journal. Major changes occurred for the journal



in 1980: the University of Toronto became its publisher; it converted from a semi-annual to a quarterly publication schedule; the monographs were no longer treated as a separate series but became a regular part of the series; and the name of the consolidated publication, comprising both monographs and regular issues, was changed to *Cartographica*. Most of its articles are written in English, but since Canada is officially a bilingual nation, the publication occasionally carries articles in French.

Although *Cartographica* has undergone several changes in name, publisher, and format over the years, it has had but one editor, Bernard Gutsell, since its inception in 1964. This is quite unusual among scholarly journals, whose editors usually rotate every few years.

*The Cartographic Journal (TCJ)* was founded in 1964, the same year as *Cartographica*. Its sponsoring organization, The British Cartographic Society, developed from an informal cartographic symposium in 1962 at the Universities of Glasgow and Edinburgh. The Society was formally created in 1963 and the first issue of its semiannual journal appeared in June 1964. Unlike the other two journals in this study, *TCJ* has undergone no changes in name or format in its 28 years. It has been guided by five editors, however:

June 1964 – June 1970	<b>J.S. Keates</b> Department of Geography University of Glasgow
December 1970 – December 1973	<b>A.D. Jones</b> Department of Geography University College of Wales, Aberystwyth
June 1974 – December 1977	<b>G.E.D. Cole</b> Department of Land Surveying N. E. London Polytechnic
June 1978 – December 1987	<b>G.R.P. Lawrence</b> Department of Geography University of London, King's College
June 1988 – present	<b>D.J. Fairbairn</b> Department of Surveying University of Newcastle upon Tyne.

The Cartography Division of the American Congress on Surveying and Mapping (ACSM) inaugurated *The American Cartographer (TAC)* in 1974, ten years after *TCJ* and *Cartographica*. In announcing the new journal, the then-president of ACSM, Robert Reckert, stated that it would encompass all of cartography, "... ranging from the topographic to the thematic, from the history of mapmaking to map collecting, from automation to the aesthetic" (1974:4). The journal appeared semiannually at first but expanded to a quarterly schedule in 1986. Three years later the format of the journal was increased from a 17 x 25.4 cm (7" x 10") page size to 21.6 x 28 cm (8.5" x 11"). In 1990 the name of the journal was changed to *Cartography and Geographic Information Systems (CaGIS)*, signaling a broadened scope of publication interests. In a statement accompanying the name change, the editors stated that they welcomed manuscripts dealing with all aspects of cartography and GIS papers that focused on cartographic

and/or conceptual issues (McMaster and Dahlberg 1991). This journal, too, has experienced the normal, periodic rotation of editors:

1974 – 1976	<b>Arthur H. Robinson</b> Department of Geography University of Wisconsin—Madison
1977 – 1982	<b>Judy M. Olson</b> then of the Department of Geography, Boston University Boston, MA
1983 – 1984	<b>Mark S. Monmonier</b> Department of Geography Syracuse University Syracuse, NY
1985 – 1987	<b>A. Jon Kimerling</b> Department of Geography Oregon State University Corvallis, OR
1988 – 1990	<b>Richard E. Dahlberg</b> Department of Geography Northern Illinois University DeKalb, IL
January 1991 – present	<b>Robert B. McMaster</b> Department of Geography University of Minnesota Minneapolis, MN

Each of the three journals is affiliated with a major national cartographic organization — The British Cartographic Society, the Canadian Cartographic Association, or the American Cartographic Association of the American Congress on Surveying and Mapping — and there is considerable overlap in their audiences and the authors who publish in them. While there may be some preference for publishing in the journal of one's own country, authors may also consider other factors when deciding where to submit a manuscript. For example, they may be influenced by their perception of what topics a journal is most receptive to, what the expected "turn-around" time is between submission and publication of manuscripts, the quality of their previous dealings with the journals and/or editors, and, perhaps, even the format of the journal (that is, the larger format of *CaGIS* and *TCJ* may be attractive to authors of articles containing certain kinds of graphics). Thus, although the three journals have much in common, they are also unique entities in a variety of ways. The following study will distinguish them from each other even more clearly.

#### RESEARCH DESIGN

The primary subject of all articles appearing *Cartographica*, *The Cartographic Journal*, and *The American Cartographer* from their inception through 1989 was categorized and recorded. (In the balance of the paper, I will refer to *The American Cartographer* (TAC) by its former name rather than as *Cartography and Geographic Information Systems*, since that was the name of the journal during the period under analysis.) This type of analysis is an



example of the research method known as **content analysis**. Berelson (1952:18) defined content analysis as, "... a research technique for the objective, systematic, and quantitative description of the manifest content of communication". Practically every form of communication can be analyzed in this way to reveal the most salient themes in the message. The unit of analysis can range from the very detailed, such as counting key words within some written or verbal communication, through an intermediate scale, where one might record the central idea of sentences, paragraphs, or chapters, to a broader scale, in which the themes of entire works are noted. The latter approach was used in this study.

Conducting a content analysis is fairly straightforward in most respects. The basic steps include formulating a research hypothesis, identifying the material to be analyzed, devising a sampling method, defining the relevant categories into which content will be grouped, the actual counting and recording of the data, and finally, analyzing the results. Perhaps the most difficult step in the process is defining the categories for the study. According to Budd, et al., (1976: 39) the categories should meet three criteria. They must be: a) exhaustive relative to the study, b) mutually exclusive, and c) formulated so that they answer the questions addressed in the study. Ideally, the categories also should be defined before the actual data-recording procedures begin, but in practice, this goal often proves to be unrealistic. Therefore, Budd, et al. recommend setting a priori definitions so that they can be expanded or extended, if necessary, while still meeting the criteria listed above. (See Krippendorff 1980, and Weber 1985, for further reading on the method of content analysis.)

In order to satisfy the third criterion outlined above — that is, to answer the research question addressed by this study — the categories should differentiate among journals along the major research streams in cartography since the mid-1960's. The categories should also reveal any individual differences that were out of the mainstream. The following is a summary of the categories as they were ultimately defined:

**User-oriented studies.** This category included all articles in which map-use and the map-user are central, such as articles on communication and all experimental studies of perceptual and cognitive aspects of map reading and design. The category did not include papers on map design unless they were based on empirical experiments.

**Analytical studies.** Numerical map analysis in which the author sought to measure, compare, or analyze cartographic data, content, error, methods of representation, etc. An example of a study in this category is MacEachren and Davidson's analysis of sampling and isometric mapping (1987). The map was the focus of these studies; the category did not include analyses of digital systems and components such as data bases.

**Automated cartography.** Any article dealing with the hardware, software, algorithms, data models, information structures, or processes for creating maps and atlases with computers. The class included articles about geographic information systems but excluded papers on remote sensing (which were placed in the Miscellaneous category). The category also excluded certain articles which amounted to progress reports on recent computer activities within an agency, company, or country and did not really advance knowledge in the field. Such articles were categorized as "Institutional."

## CATEGORIES FOR THE STUDY



*In conducting the content analysis, I examined every article which appeared in the three journals from 1964 through 1989 and assigned each to one of twelve categories.*

**Projections.** Any article dealing with the calculation, characteristics, design, or contemporary application of map projections. Articles about the history of a projection were assigned to the following category.

**Historical.** Papers on the history of cartography or historical cartography.

**Education.** Articles about curricula, educational needs, or centers for the education or training of cartographers.

**Production.** Articles dealing with the materials and/or methods of manually constructing or reproducing maps or three-dimensional models.

**Institutional.** Reports of recent activities or current status within a country, agency or organization.

**Maps and atlases.** Encompassed articles which reviewed, discussed, described, or critiqued published maps, map series, and atlases.

**The discipline.** Philosophical papers about the status, future, definitions, etc. of the field of cartography.

**Methods.** A broad category encompassing articles in which the author explains some mapmaking procedure not covered by any other category. An example of an article assigned to this category is "Nested Value-by-Area Cartograms for Symbolizing Land Use and Other Proportions" (Cuff et al. 1984) in which the authors introduce and explain a symbolization method.

**Miscellaneous.** For articles on topics so diverse that they did not merit a category of their own, such as legal issues in cartography, map librarianship, remote sensing, and the like.

In conducting the content analysis, I examined every article (or the English abstract of French articles in *Cartographica*) which appeared in the three journals from 1964 through 1989 (a total of 920 articles) and assigned each to one of the categories defined above. Excluded from the count were various reports from professional meetings or texts of speeches and addresses which are published occasionally in the journals.

A content analysis such as this, where the unit of analysis is a topic or theme, is somewhat more subjective than one involving, say, a simple count of the number of times certain keywords are used. Nevertheless, I believe that the categories were defined clearly enough that the proportion of equivocal classifications was very small. In most cases, there was no question regarding to which category an article belonged; in perhaps 5 percent of the cases it was necessary to make a judgment regarding an article's primary purpose in order to classify it. Although another researcher might have made a few judgments differently, I do not believe that the overall findings of the study would have been affected significantly.

One further explanation of methodology is in order. In addition to their "regular" issues, two of the journals publish special issues devoted to a single topic. These monographs may be authored by a single individual or contain a collection of papers by several authors. In the latter case, there is usually a guest editor who either compiles selected manuscripts from a professional conference or solicits manuscripts on a topic of interest. The number of authors contributing to such issues varies greatly,



from just a handful to twenty or more.

These multi-author special issues presented a problem in content analysis. Should they be counted as one publication on a topic or should each chapter count as an entry? The former approach would seem to underrate the amount of research they represent, but the latter would give too much weight to the number of chapters in the volume. For example, if there were one monograph containing ten papers on automated cartography and another comprising twenty papers on cartographic education, a content analysis would imply that there is twice as much interest in education as in automated cartography. Such a conclusion clearly is not justified, since the number of chapters is also a function of the source of the papers, the guest editor's enterprise and policies, the scope and purpose of the monograph, and the like.

The problem is further complicated by the fact that *TCJ* does not publish monographs at all, and *Cartographica* has published many more of them over a longer period of time than has *TAC*. In comparing the content of the three journals, then, it was necessary to provide somehow for these differing editorial policies and changes in the policies through time. This was done in the following way. Monographs were not compiled in the basic content analysis of the three journals but are shown in the graphic summaries of findings (Figures 1-7). Thus, the reader can see when these special issues were published and what their subjects were.

Also included in the study were the number of book and atlas reviews and the number of pages of "Recent Cartographic Literature" for each volume of the three journals. *TAC* initiated a software review section in 1985 but is the only journal to have done so. While no comparison can be made of the number of software reviews published, the fact that only one journal publishes such reviews may indicate their relative importance among the journals.

Finally, the raw numbers in the study were converted to percentages and generalized using a three year moving average to smooth out minor variations and reveal overall time trends more effectively. (See Hammond and McCullagh 1978:98, for a discussion of moving averages.)

Figure 1 summarizes the percent by subject of all articles published in the three journals between 1974 and 1989<sup>2</sup>. It is evident from this illustration that three research themes — user-oriented studies, automated cartography, and historical cartography — have dominated the literature, in general. More importantly for the purposes of this article, the figure shows that there are considerable differences among the three journals in the proportion of articles published by category. The greatest differences appear in the categories of historical research, projections, and cartographic production.

Figures 2 through 4 represent for each journal the yearly publication rate for its top three categories of articles. Only the three principle topics are shown here because they are of the greatest interest and, for two of the journals, the percentages drop off substantially after the top three, as can be seen in Figure 1.

Two things should be noted about the information in the graphs. First, as discussed earlier, the percentages refer only to articles in regular issues

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## RESULTS

<sup>2</sup> In Figure 1, only the data for the sixteen years in which all three journals existed (1974-1989) were used. To have included figures for the years 1964-1973, before *TAC* began publication, would have affected percentages for research topics that which were more or less prominent in the earlier literature and resulted in misleading comparisons. The Miscellaneous category is not shown in Figure 1 but amounted to between nine and eleven percent for each journal.



Three research themes have dominated the literature. More importantly, there are considerable differences among the three journals in the proportion of articles published by category.

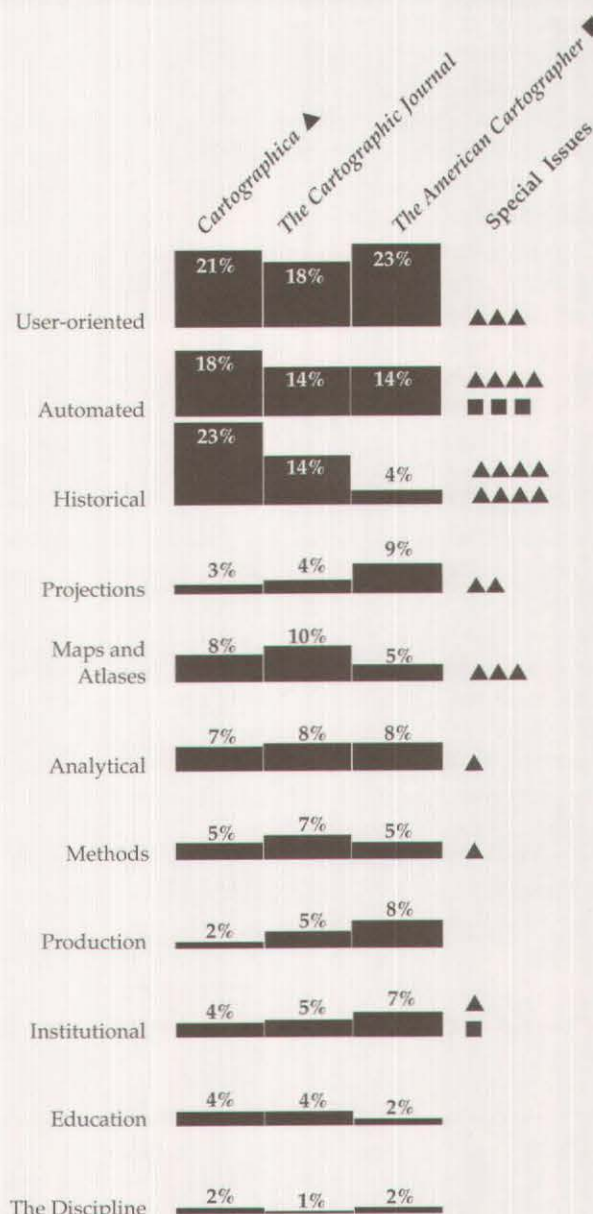


Figure 1: Percent of articles and number of special issues by topic and journals, 1974-1989. The point symbols represent special issues.

of the journal; the publication of a monograph is represented by a point symbol at the year of publication. Second, a change of editor is symbolized by vertical lines within the graphs, making it possible to look for indications that editorial changes resulted in some shift in the content of the journal. Recall, however, that the figures in the graphs are three-year moving averages, not actual annual percentages, so the boundaries between years (editors) are fuzzy. Furthermore, there is always some carry-over between editors, so the first one or two issues under a new editor would have been produced mostly by the outgoing editor. Thus one can search only for general trends within an editor's tenure.

Figure 2 illustrates *Cartographica's* publication record for user-oriented studies, historical research, and automated cartography. These three themes account for 15 percent, 23 percent, and 14 percent, respectively, of the journal's regular articles since 1964. The next largest category is



articles about maps, which has accounted for only 10 percent of the journal's content.

There are fairly obvious temporal trends in the three major research topics published in *Cartographica*. Literature on user-oriented studies increased gradually from 1964 through the mid-1970s, expanded rapidly to a peak of 44 percent in the late 1970s (the raw percentage in 1979 was 62 percent), dropped off just as quickly through the early 1980s, and then began what may be another growth trend. The publication of automated cartography papers prior to 1980 was somewhat variable, but averaged about 10 percent of the total content. Since 1980, however, the proportion of such papers has been more than double that of the preceding 16 years. Historical papers clearly dominated *Cartographica's* content during the first half of its existence — both in regular papers and in monographs. Publication rates then declined somewhat and have dropped even further in the last five years.

Like *Cartographica*, the three most common themes appearing in the pages of *The Cartographic Journal* (TCJ) have been user-oriented studies, automated cartography, and historical cartography (15 percent each since 1964). The overall percentages are similar between the two journals for user studies and automated cartography, but *Cartographica* has published a greater proportion of historical papers (23 percent vs. 15 percent). The temporal patterns in publication share some general similarities but there are differences in certain details of their profiles. (See Figure 3).

Compared to *Cartographica*, TCJ's publication of user-oriented studies began earlier, lasted somewhat longer, but did not reach a corresponding maximum level. Nevertheless, at the peak of communication studies' popularity, such articles accounted for more than a third of all articles in the journal. The proportion of TCJ's articles related to historical topics has fluctuated over the years, but generally increased during the 1960s, declined during the 1970s, and rebounded in the 1980s. As was seen in user-oriented studies, TCJ has devoted a smaller proportion of its pages, overall, to historical research than *Cartographica*. Articles related to automated cartography constituted a much greater percentage of TCJ's content in the first decade of publication than for *Cartographica*. Such articles then waned in both journals (in the late 1970s for *Cartographica* and the early 1980s for TCJ) but expanded substantially in the ensuing years.

*The American Cartographer* (TAC) was launched a decade later than *Cartographica* and TCJ, but its content is similar to theirs in the area of user-oriented studies and automated research (Figure 4). Publication of the former peaked at about one-third of all articles in the late 1970s, then dropped to around 20 percent (a less dramatic decrease than was seen in the other two journals), and rose again in the late 1980s. TAC's publication rate in automated cartography declined sharply in the late 1970s but increased again to about 25 percent of the journal's content. (The percentage is much higher if one considers the special issues published in 1987 and 1988. In 1988, for example, two of the journal's four issues were special issues focussing on automated cartography, and 30 percent of the articles in the remaining two "regular" issues were on the same topic. In reality, then, articles on automated cartography constituted about 80 percent of all papers published that year.)

Beyond the themes of communication studies and automated cartography, there are major differences between TAC and the other journals. Historical topics, which constituted 15 percent and 23 percent, respectively, of TCJ and *Cartographica's* content, made up only 4 percent of TAC's articles. For TAC, the next largest category was projections (9 percent), followed closely by production (8 percent), analytical studies (8 percent),



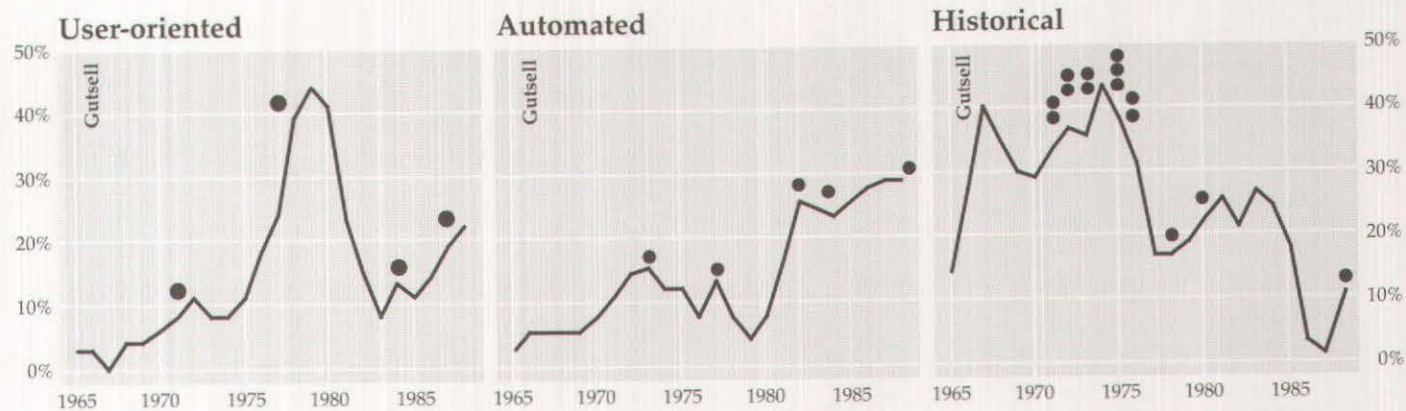
*Cartographica*

Figure 2: Top three content categories for *Cartographica*, 1964-1989; three year moving average of annual percentages.

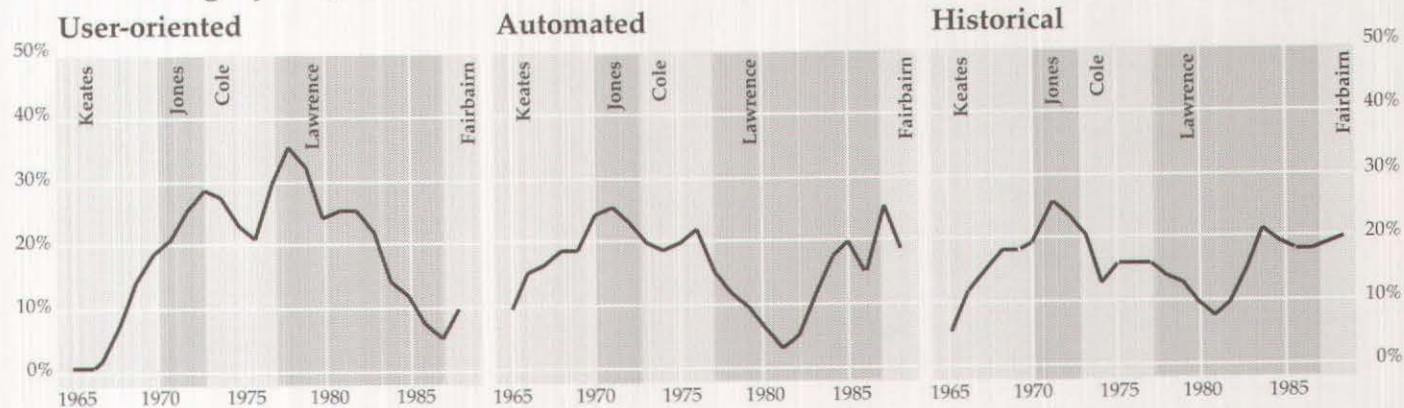
*The Cartographic Journal*

Figure 3: Top three content categories for *The Cartographic Journal*, 1964-1989; three year moving average of annual percentages.

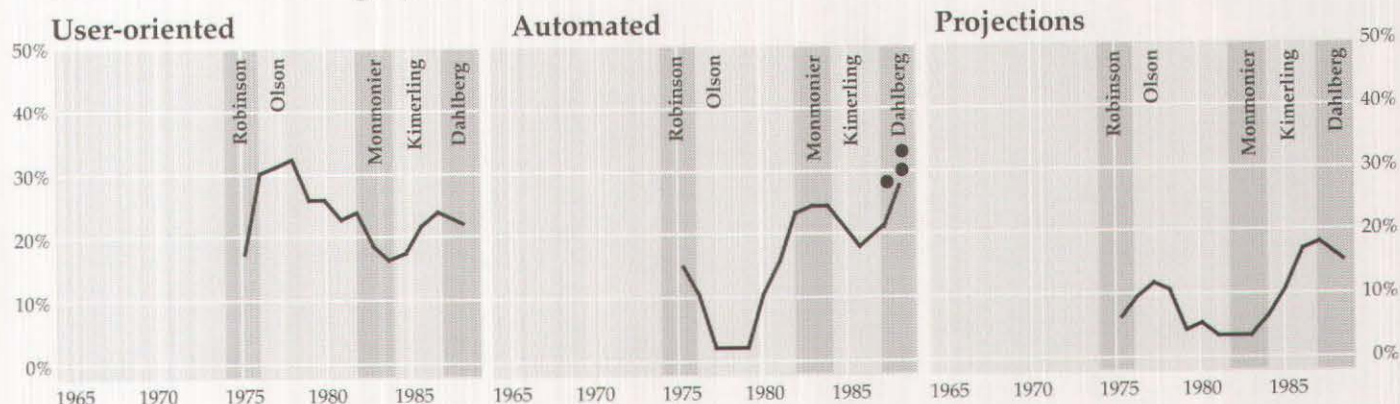
*The American Cartographer*

Figure 4: Top three content categories for *The American Cartographer*, 1974-1989; three year moving average of annual percentages.

● Represents a monograph or special issue.



and institutional articles (7 percent). As Figure 4 shows, the proportion of papers related to projections declined in the late 1970s and early 1980s but increased considerably thereafter. About 80 per cent of these articles were authored or co-authored by just two individuals, Waldo Tobler and John Snyder.

Figure 1 summarized the overall content of the three journals in this study, and Figures 2 through 4 showed the trends through time for each journal's three principle topics. Most of the remaining line graphs which might be shown are of lesser interest, either because they show no discernable temporal trends, represent just a few isolated articles, and/or are not different among journals. However, there are three additional content categories which are noteworthy for various reasons; these are presented in Figures 5 through 7.

Figure 5 shows the number of books and atlases reviewed annually in the journals. The number for *TCJ* has ranged from less than ten to more than twenty, with the lowest figures in its first decade of publication. *Cartographica*, during its first fifteen years of publication, reviewed an average of seven books a year, but the numbers increased significantly after 1980 — coincidentally, perhaps, the same year in which the University of Toronto Press took over publication and the journal grew from a semi-annual to a quarterly publication schedule. The increased number of book reviews cannot be attributed to the expanded publication schedule, however, because in both 1988 and 1989, when only two regular issues of the journal were published, 53 books and atlases were reviewed. (Regular journal sections such as book reviews and recent literature summaries usually are omitted from special issues.) *Cartographica* currently has three editors who handle the reviews of atlases and books.

The number of books reviewed in *TAC* also increased as of about 1983. The journal expanded from a semi-annual to a quarterly publication in 1986, but there appears to be no corresponding increase in the number of books reviewed at that time. Reviews in *TAC* dropped off again in the late 1980s, possibly because two of the journal's four issues in both 1987 and 1988 were monographs. As was pointed out above, however, in a similar situation *Cartographica*'s book and atlas reviews continued to increase.

The number of books and atlases reviewed in a journal may be a function, in part, of the volume of new works available, of course, but this variable should be about the same for all three cartographic journals. Another determining factor affecting the number of books reviewed is the very practical consideration of how many pages are available for reviews after all articles are typeset. The trends seen in Figure 5 are somewhat similar for all three journals until the mid-1980s, when the number of reviews in *Cartographica* rose dramatically.

Figure 6 summarizes the journals' publications of analytical cartography articles through time. The overall proportions are very similar (as seen in Figure 1) but the temporal patterns are quite different. Each journal has had a period of relatively high publication rates for analytical papers, but the peak periods have shifted among journals, moving from the earliest, *Cartographica*, to *TCJ*, to *TAC*. Most recently *TAC* has published about twice the proportion of such articles as the other two journals. It is interesting to consider whether individual editors either encouraged or discouraged (directly or indirectly) the publication of analytical manuscripts. For example, note the increase in the proportion of analytical articles published in *TAC* during and just after Monmonier's editorship and the decline for *TCJ* during Lawrence's editorship.

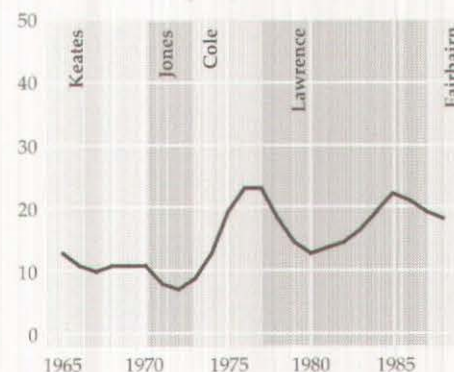
The final figure illustrates what appears to be an excellent example of a

## Book Reviews

### *Cartographica*



### *The Cartographic Journal*



### *The American Cartographer*

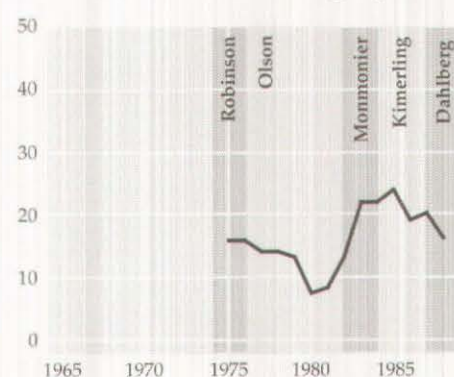


Figure 5: Number of books and atlases reviewed by the three journals: three year moving average.



## Analytical

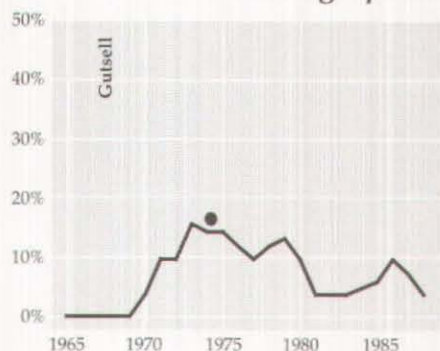
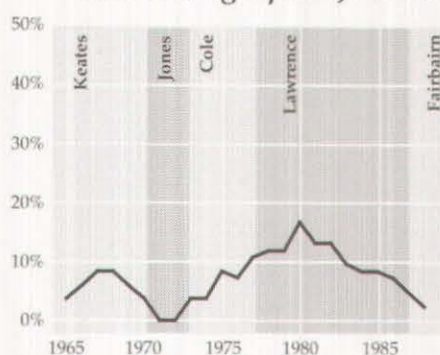
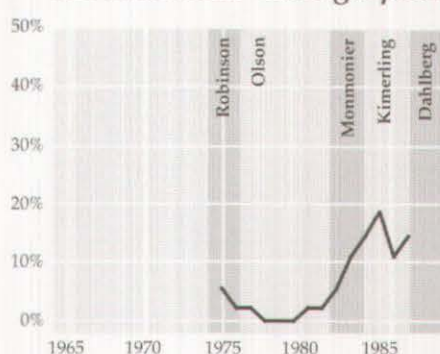
*Cartographica**The Cartographic Journal**The American Cartographer*

Figure 6: Percent of articles on analytical cartography in the three journals; three year moving average of annual percentages.  
● Represents a monograph or special issue.

pro-active editor's influence on the journal content. Papers related to cartographic production made up 8 percent of *TAC*'s content, overall, and, as Figure 7 shows, almost all were published during and just subsequent to Olson's tenure as editor. Production articles made up only 5 percent and 2 percent of the content of *TCJ* and *Cartographica*, respectively, and there is no apparent correlation with any individual editor.

Several conclusions can be drawn from the content analysis summarized here. For both *TCJ* and *TAC*, the top three categories of articles accounted for about 45 percent of their overall content since 1974, when *TAC* began publication; for *Cartographica* the cumulative total was 62 percent. Thus the British and American journals appear to publish a somewhat greater variety of subject matter (based on the categories as defined for this study) than the Canadian.

All three journals had similar patterns of publication for user-oriented research. They differed somewhat in details such as maximum and minimum proportions through time, but the general shapes of the curves were similar for all three. In articles on automated cartography, the three have published about the same proportions, overall, and all experienced a decline in such articles in the late 1970s, followed by a sharp increase. In their first decade of publication, however, *TCJ* carried a much higher proportion than *Cartographica*. The primary distinguishing category among the journals was historical research: *TAC* was set apart from the other two by its sparseness of historical papers, and *Cartographica* far exceeded *TCJ* in publishing such articles, especially when the number of historical monographs are factored in.

*TAC* also was distinguished from the other two journals by its relatively high proportion of map projection articles. The statistics should be interpreted carefully, however, because, as was pointed out earlier, the majority of those articles were authored by just two individuals. Thus, one cannot necessarily conclude solely from this study that there is a higher interest in map projections in the United States than elsewhere.

The previous sentence assumes that the content of these journals reflects the research profiles of their respective countries, but there is no evidence to support or refute such a premise. There is some amount of "cross-publication," of course, but do authors publish primarily in their own national journals? Or do authors from one country tend to send manuscripts abroad more than authors from another country? Questions such as these were not addressed in this study and will require further research to answer. Indeed, the broader topic of interrelationships among cartographic journals is still unexplored and represents a logical extension of the current inquiry. Citation analyses, for example, would reveal one level of association among the journals.

The question of whether an editor influences journal content was raised several times in this paper, without really expecting to find any definite answers. At best, one might have seen some circumstantial evidence, such as the increase in production articles during Olson's editorship of *TAC*. Any influence an editor may exert probably is relatively minor in comparison to the weight of major disciplinary research trends. On the other hand, as noted by Orme (1990), editors can "... show initiative, encourage new ideas, and discourage worn and hackneyed concepts. ..." (p. 361). In my own experience, I have observed that editors can affect journal content in two ways. One is by actively soliciting papers from authors. Solicited papers still must pass the normal review process, but enlisting authors to submit them is the first step toward publication. Editors vary greatly in how aggressively they engage in this activity;



some are much more pro-active than others.

The second means by which editors influence journal content lies in their authority to accept or reject papers. The final decision on whether to publish a manuscript rests with the editor, and if reviews are mixed or borderline, the deciding factor could be how significant she or he thinks the subject matter is. Perhaps the editors' responses that follow this article will provide further insight into this question.

The fact that there are content differences among the three journals is interesting, but it would be even more helpful to understand the bases for those differences. Unfortunately, it is probably not possible to identify and measure all the relevant variables needed to answer such a question, but there is a great deal more that could be learned through additional research. In the meantime, if I had written a manuscript about historical cartography, would I consider sending it to *Cartography and GIS* (formerly *The American Cartographer*), even though the record shows they have published relatively few articles on that subject? Indeed I would. I can assure you that every editor of a cartographic journal welcomes with open arms (and mind) quality papers on any cartographic topic. The keyword is "quality." ☐

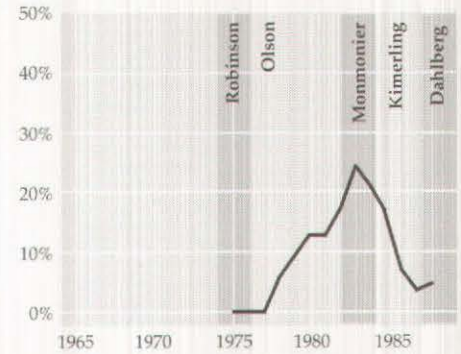


Figure 7: Percent production articles, *The American Cartographer*: three year moving average of annual percentages

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### Una Comparasion y Análisis de el Contenido de Tres Jornales Cartográficos

Extracto

Translation by Juan José Valdés  
National Geographic Society

El contenido de tres influyentes jornales cartográficos Británico, Canadiense, y Norte Americano fueron comparados y analizados para determinar si existen diferencias en sus contenido. Los resultados indican considerable semejanza entre la publicación de artículos sobre la cartografía asistida por el uso de computadoras y en los procedimientos en las investigaciones cartográficas. Los tres jornales variaron considerablemente en la cantidad de artículos sobre la historia de la cartografía y otras menores categorías. La cuestión de la influencia de los editores sobre el contenido de los jornales fue considerado y el comentario de representantes de estas publicaciones fue procurado.

#### COMMENTARIES

Bernard Gutsell  
*Cartographica*

The journal was originally established because the editor needed a creative outlet and believed that cartography needed its own literature. What was lacking was a national organization for cartography. So, perhaps the cart was put before the horse! But did it matter?

In the formative years of the journal emphasis was placed on the publication of history of cartography research and authors were encouraged to submit manuscripts in this subject area. A major factor in this editorial decision was due to encouragement from a potential funding agency to include material that would relate to the social sciences as well as to technology and technique. The first decade of publication was dominated by the grim pursuit of funds to keep the journal afloat. As it was a privately published journal with little support except from its readers, funding was critical. An attempt was made to sell advertising space and this was reasonably successful from 1965 to 1969 when the federal government suddenly lowered the boom after a routine audit of the printer's books. Apparently, advertising was not allowed in publications issued less than quarterly! Curiously, this regulation was governed by a Post Office Act of a bygone era and was still on the books. As a result, advertising disappeared overnight from the pages of the journal.

From the beginning, *Cartographica* was envisaged as an international journal, hence the translation of the abstracts into French, Spanish and German, and the encouragement to non-Canadian authors to submit manuscripts. As soon as it was firmly established, this active solicitation was discontinued and the editor waited hopefully for the arrival of new papers.

The proportion of Canadian to non-Canadian authors in volumes 1 to 16 is just about 50/50. From 1980 to 1989, the percentages changed considerably to 63 percent non-Canadian and 37 percent Canadian. There are any number of possible explanations: the change of title, format, status,



publisher, the effect of increased promotion by the University of Toronto Press, or even the endorsement by the International Cartographic Association in the early 1980s. I'm not sure.

In 1967, it was decided to publish translations of Russian research in order to make this valuable pool of knowledge available to the readership. These translations became possible owing to the enthusiastic collaboration of my colleague, Dr. James Gibson of York University. This work was carried on for more than a decade and was extended into the monograph series as well.

The editor exerted some influence on the publication of design and communication studies when the theme was in vogue. As well as publishing journal papers, two monographs on the subject were organized. Another ongoing area of interest has been the subject of generalization.

A late start was made in automation research even though a monograph on computer cartography was published as early as 1973, and the very first issue of the journal (Volume 2, Number 1, May 1965) included a paper on automation in cartography.

On the question of the journal's review section, it should be noted that for the first 16 years the journal had no review editor. In 1980, when *Cartographica* became quarterly, it was decided to increase the number of reviews partly in response to the number of excellent cartographic works coming off the press and also because the journal could now be extended in size as it was fully funded and in the capable hands of the University of Toronto Press. We appointed three review editors. The results were immediate and have continued due to the enthusiasm and hard work of Michael Coulson (atlases), Edward Dahl (history of cartography) and Janet Mersey (cartographic literature).

As for the reason why there has been only one editor for the whole life of the journal — well, that's a good question. Part of the reason may be because the editor owned the journal for the first 16 years. In the following years, in addition to enjoying the expertise and management skills of the University of Toronto Press, the editor has had the solid support of the Canadian Cartographic Association and a great deal of editorial help. For many years now, Ed Dahl of National Archives has been the editor of the history of cartography component and has organized the brilliant commentaries, often the most intriguing part of the journal. And Mike Coulson of Calgary University, as well as being a review editor, has managed the refereeing process making my work that much easier. As a result of all this, editing *Cartographica* became a way of life — or maybe just a bad habit!

I welcome the opportunity to comment on and further explore the results of Patricia Gilmartin's work. She reveals interesting differences in certain areas of interest among the journals, although I would contend that there is more uniformity than disparity revealed by the study.

It must be pointed out that the period reviewed by Gilmartin finished in 1989, and that I had only been in the editorial chair for one year at that time. The particular comments which follow, therefore, express, to a certain extent, a personal view of the work of many previous colleagues. According to its 'Hints to Authors', *The Cartographic Journal* publishes material covering all aspects of cartography, the science and technology of presenting, communicating and analysing spatial relationships by means of maps and other graphical representations of the earth's surface. This 'definition' was an early attempt by me to ensure that it was understood that a broad scope of submitted material is welcome for submission to the

**David Fairbairn**  
*The Cartographic Journal*



*Journal*. I would contend that editors have little control of either quantity or subject matter of the contributions received. There are peaks and troughs throughout a year in terms of numbers of papers submitted, and the topics of papers sent to *The Cartographic Journal* have varied enormously. It is not for 'topical predilections' to govern which material is published, but its quality. *The Cartographic Journal* has striven, despite these strictures against the whims of topicality, to reflect contemporaneous cartographic activity. That it has done so is a tribute to the authors as much as to the successive editors: it is the former who 'determine the agenda' to a large extent and this editor has certainly never commissioned articles (other than the occasional Shorter Article) on particular topics. This is not to say that I will not in future, and I also reserve the right to consider some material as 'out of date' or not suitable.

The matter of timeliness may be regarded as important, but with a bi-annual publication, there is no 'fast track' along which particularly important papers can go, even if it was felt desirable.

Other material included in *The Cartographic Journal* is also governed by its availability. The books and maps review section is dependent on the supply of complementary copies by publishing houses, and again this is an area where little control can be exercised by the book review editor. All such material received which has some connection with cartography is given a full or short review. Variations in number of publications reviewed (Figure 5 in Gilmartin) reflect factors as diverse as the assiduity of the review editor and the state of the national economy (and, by extension, the publishing business). It is hoped that the striven-for relevance of the *Journal* is successful despite an immediate visual impression which is of immense conservatism in appearance and layout. It is felt that a uniformity of presentation and continuity of style is important. Indeed, I try to ensure that papers are carefully presented in 'the house style' (hence the introduction of the Hints to Authors now printed in every issue), that text is presentable, that references are correctly listed and that diagrams are laid out properly with reference to the written material. This can prove difficult when faced by sloppy authors and by the physical distance (200 miles) separating the editor from the printers (who are more used to colour printing immensely long runs of television magazines).

The lack of finance for colour printing is felt deeply. A journal devoted to a visual means of communication, in which colour plays a vital role, should by right have the facility to reproduce authors' material as they would like. Unfortunately, in depressed economic times, advertisers are understandably reluctant to commit themselves to colour advertising and the opportunities for colour work within *The Journal* do not yet exist, except at authors' expense.

An institutional shortcoming is the lack of an Editorial Board for *The Cartographic Journal*. Control over the *Journal* is exercised by the editor, the Chair of The British Cartographic Society Publications Committee and the book review editor. In essence, they form a hard working editorial board (which has never, in fact, physically met together) and along with a range of referees (introduced by me in 1988) help to ensure the quality of the publication.

In turning to matters more directly relevant to Gilmartin's survey, the content analysis performed by her has produced a useful categorisation of cartographic material. It is interesting to see that, despite wide differences within the categories over time, user-oriented research, automated cartography and historical cartography (except for *Cartography and GIS*) are the overwhelmingly popular topics for all three journals. I would



contend that the first category is represented mainly by academic authors, who, when research grants were somewhat more plentiful in the late 1970s, turned their attention, within the paradigm of theories of cartographic communication, to studies of map users and map use. Hence the peak period for this type of article was from 1975-1980.

Automated cartographic practices, on the other hand, have been expensive and in the past were usually only justified in a production environment. However, technological developments in this area proceeded apace throughout the 1970s. Why, then, were there so few papers on this topic? I suspect that the potential authors of such pieces, in industry and commerce, were reluctant or unable to submit material, and it is only since the rise of inexpensive and readily available automated cartographic systems that the academics have managed to 'get in on the act' and contribute the growing number of papers on the subject. In addition, a more recent reflective approach to the theoretical basis of automated methods has led to more academic input into this area. It should be noted by practitioners in industry and commerce that their contributions are always welcome to editors and readers (provided they are not overt advertising material), as a relief from the material engendered by ivory towered academics.

The contributions by historical cartographers have always impressed me by their scholarship and attention to detail. These authors vary enormously in their background, from dedicated amateurs to eminent public persons. Perhaps it is because it is not my own area of specialisation that I am easily fascinated by these contributions. Luckily, there are good referees who are able to point out strengths and weaknesses considerably more easily than I can!

It is often assumed that editors of scholarly journals are retiring individuals, unable to do anything other than correct the spelling in an otherwise splendid and original piece submitted by some 'bright young thing,' working in rarefied academe. This is not a picture that should be encouraged. It is important for editors to write articles themselves, to do research and to attend conferences; it is important for them to feel the pulse of their subject, to determine its direction, its personalities, its innovations and its failings; it is important for them to be reactive to authors and readers alike, but also to be pro-active, encouraging work, giving advice and seeking material.

Attracting contributions from authors can pose difficulties, even for a journal with a wide remit. It has already been suggested that actual practitioners are hampered by commercial confidentiality, lack of time or a belief that the rest of the cartographic community is uninterested in their work. A further perceived stumbling block is the submission of papers to referees, who can be regarded as ogres, looking at work in a purely negative way. None of these reasons should be regarded as barriers to any contribution to a journal. If a paper is of high quality it will be accepted.

I set up a category of 'Shorter Articles' in *The Cartographic Journal* from 1988. This section is intended for contributions ranging "from conference reports, technical matters and historical notes to reminiscences, interviews and innovations. The term 'shorter article' is intended to reflect the philosophy of the author's approach rather than the length of the contribution." These contributions are not refereed and the turnaround time tends to be shorter than for the main articles.

A further problem in attracting material may be the existence of other journals, publishing material in a similar vein in the same country. For example, in the UK, there are three specialist historical cartography/history of cartography publications regularly issued. *Imago Mundi* is an



international journal with a high reputation for original, scholarly papers from the international community. *The Map Collector* is somewhat more populist, appealing to the amateur historian of cartography as well as the more serious researcher, but with a similarly high standing in its field. *Sheetlines* is a newsletter (of the Charles Close Society — primarily devoted to the study of early OS maps), but this term doesn't do justice to the in-depth articles which appear in it. With competition like this, it is greatly to the credit of *The Cartographic Journal* that it receives historical cartography material at all, let alone the good quality papers it does publish.

Similarly, the UK published *Bulletin of the Society of Cartographers* (SUC Bulletin), could be regarded as a mainstream 'competitor.' Its position vis-a-vis *The Cartographic Journal* is similar to *Cartographic Perspectives'* position in relation to *Cartography and Geographic Information Systems*. The SUC Bulletin is regarded, rightly or wrongly, as a much more practical publication, presenting papers relating to cartographic activity and map production. This inevitably decreases the number of available articles covering practical cartography (methods and production in Gilmartin's taxonomy) submitted to *The Cartographic Journal*.

A final point to make covers an area not considered by Gilmartin: the origin of authors of material published in the three journals. Even a cursory glance through the list of authors for each of the journals reveals a pleasing internationalism in the scope of cartography and origin of papers. It is significant that none of the journals has its country of origin in its title. As English maintains its position as the preferred language of late 20th century science and technology, the journals covered in this survey will inevitably attract papers from all over the world. This obviously increases the size of the pool of papers available and thus improves the quality of the final choice. In addition, this means that authors who have cartographic concerns and priorities different to the editor or outside his experience should be able to publish. Unfortunately, in many cases, particularly when English is the author's second or third language, the quality of writing is such that not even prolonged alteration by the editor can salvage the piece. This is a pity, as *The Cartographic Journal* has a worldwide reputation which it is my intention to maintain. The 'overseas' influence has been such that within recent memory (Volume 24, Number 2, December 1987) there was an issue of *The Cartographic Journal* with not a single British contribution amongst the articles!

I have strayed beyond my task of commenting on the paper by Patricia Gilmartin. However, in raising issues of concern to all editors and expounding on my approach to editing, I hope I have demonstrated that *The Cartographic Journal* is not a unique, one-off publication. There are different emphases for *Cartography and Geographic Systems*, *Cartographica* and *The Cartographic Journal* but the similarities between the journals considered outweigh their differences. I find much to admire in the other publications — the quality of illustration and presentation of *Cartography and Geographic Information Systems*, its software reviews and its special US National Reports to ICA; the quality of writers, such as Brian Harley and Denis Wood, which *Cartographica* manages to attract, its comprehensive book reviews and its special monographs. I am pleased that there is room for all three within the English language cartographic community.



I am pleased, of course, to have the opportunity to respond to Professor Gilmartin's paper, "A Content Analysis and Comparison of Three Cartographic Journals: 1964-1989." The project in general is timely and the results of the analysis are enlightening, particularly the consistency in content amongst the three major journals in cartography. In terms of a response from *The American Cartographer* (TAC), now *Cartography and Geographic Information Systems* (CaGIS), it is others, not I, who should probably respond, since I am less than one year into the editorship term of the journal. Thus the comments I make are based on limited experience as editor, although I have received, read, and studied TAC, and now CaGIS, since 1976.

I would like first to comment on the basic consistency in content which is indicated by Gilmartin's results. The fact that the categories of user-oriented research and automated cartography rank first and second (in most time periods) for all three journals indicates a consistency in the cartographic research activities in both North America and Europe. Although, as Gilmartin carefully notes, it is difficult to ascertain the degree of cross-publication, I am relatively certain that most papers published in *TCJ* are written by Europeans and most authors in TAC and *Cartographica* are based at North American universities (I also think there is a great deal of cross-publication between TAC and *Cartographica*). Thus the research activities on both sides of the Atlantic have been similar and editors quite logically try to publish those papers that are timely. That is why, I imagine, the number of user-oriented research papers has substantially decreased throughout the 1980s. Cartographers became increasingly frustrated with the lack of progress in this area and switched to other research projects. For instance, as a member of the "Kansas school," I have noticed a definite transition of 1970 and early 1980 Kansas Ph.D.s in other directions: computer and analytical studies, atlas production, amongst others. Editors, then, tend to publish what is deemed most significant at the time.

As a second comment, I am not surprised by the lack of historical papers in TAC, nor the significance of projections. There are very few cartography programs in United States universities that offer a formal course, much less formal education, in historical cartography. Certainly one node of activity has been the University of Wisconsin and several Ph.D.s have been produced at Madison. Other programs graduating Ph.D.s with a research emphasis in this area, however, simply do not come to mind. Again, my knowledge may be flawed, but my perception is that both Canada and the United Kingdom provide a much more thorough curriculum in the history of cartography and have a higher percentage of faculty with research interests in the area. Thus the supply of papers is greater than in the United States. The situation with respect to map projections in TAC is also unique. As Gilmartin notes, in the United States Professor Waldo Tobler of the University of California, Santa Barbara and John Snyder of the United States Geological Survey, both gifted, insightful, and prolific scientists, have created an on-going research agenda in the area of map projections and transformations and have provided strong support to TAC, and now CaGIS, with their publications. Not only has there been a consistent supply of high-quality manuscripts, but I think perhaps most editors still consider work in map projections to be at the very core of our discipline.

I would like to make an additional comment on the question of editor bias. Unquestionably, editors maintain preconceived ideas on what research is central, at a given time, to the discipline. The examples Gilmartin provides are poignant: map production papers under Olson's

**Robert B. McMaster**  
*Cartography and  
Geographic Information  
Systems*



editorship and analytical studies under Monmonier's. I am certain that I, also, have certain biases in accepting papers. In the next two or three years I will attempt to diversify *CaGIS* to include both research central to all areas of cartography and conceptual issues in *GIS*. In order to maintain balance between cartography and geographic information systems research published in *CaGIS*, I have already found it necessary to solicit manuscripts in certain areas. For instance, I have become convinced that a strong relationship exists between visualization, cartography, and *GIS*. Thus papers in visualization will have a high priority over the next few years, since such work tends to relate to both aspects of *CaGIS* (cartography and *GIS*). But, as Gilmartin writes in her summary, the critical factor for publication continues to be quality. In this respect, as with other journals, *CaGIS* continues to receive a flow of quality papers. Thus while editors do have biases, in the end the content of the journal is also constrained by the nature and quality of submission.

A last comment involves the special departments of a journal, such as book and software reviews. It is clear to me that the editor does have a significant impact on these and can shrink or expand such departments, either for the short or long term. If, over a given period of time, the journal is backlogged with quality papers, these departments will of course tend to shrink. And (very) lastly, the editor can completely restructure the format of a given issue by publishing a special edition.

I appreciate the opportunity to respond to Gilmartin's paper and add my thoughts on her findings and the editorial process in general. In closing, I would reemphasize her point that, despite certain perceived biases and trends in each of the journals, editors are always open to reviewing and publishing high quality papers on any topic related to the journal.