

**Home Computing's Halcyon Days:
Discourse Frames in Computer Magazines in the Mid-1980s**

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Abstract

As home computers became a growing presence in middle- and upper-class American households in the 1980s, many journalists were given the task of helping consumers make sense and find practical uses for these systems in a home and family environment. Out of this new and somewhat beguiling content challenge for the media emerged a number of monthly magazines covering a variety of topics related to the new home computer marketplace. This article examines the content of such magazines through two research questions. The first looks at prevalent topics in computer magazine articles in presenting discursive frames about home computing to readers. The second considers how the content provided consumer insight to both actual and potential uses of home computers. Looking at articles published from 1984–1985 in three large-circulation general computer magazines, the study finds three discursive frameworks—advisory, instructive, and social/cultural—routinely present within both the topics and the content of the magazines.

Keywords: Computers, personal technology, 1980s, discursive framing, computer magazines, software, publishing, magazine archives.

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The early years of personal computing featured a product and usage landscape quite different from the Microsoft Windows/Macintosh OS dichotomy that has dominated for the past 25 years. In contrast, the 1980s featured a variety of home computing systems and operational platforms. Emerging out of its infancy in the mid-to-late 1970s as a largely hobbyist-centered endeavor, personal computing pushed its way into home life. This change was created by the development of user-friendly systems that, while still costly in some cases, hit retail computer stores and even department stores at a price more within reach of many middle-class income families.¹ Some systems came out of the box with a programming language—usually some form of BASIC (Beginners All-Symbolic Instruction Code)—either built-in via an internal chip or packaged with the system on a 5 1/4-inch diskette, ready for any manner of application to be written and executed on the system's hardware. Potential uses within the average family aside however, the concept of home computing seemed in need of some level of translation to the potential buyer through publications other than the very technical newsletters that flourished in the industry's early years. The presence of multiple brands of computers, hardware configurations, and operating systems, created by companies battling one another for a sustaining share of this new consumer market, arguably made the need for media-led guidance even greater.

As this new and rapidly expanding personal computing market took shape in the early 1980s, the press kept its eye on developments and soon regular articles began to appear in major daily newspapers and general interest magazines chronicling the rise of this new technology and what it possibly meant for average households in the United States.² At the same time, the field of personal computer newsletters—initially small circulation publications aimed at hobbyists—grew rapidly in the late 1970s and evolved into a more professionally printed and mass marketed form: computer magazines. Often published monthly, these periodicals provided a more detailed and directed look at home computer systems, possible and practical uses, and software programs being released to the general marketplace via retail outlets or mail-order distributors.³

The magazines positioned themselves as product guides, sometimes providing very technical details of new or announced home computer systems, software reviews, and purchasing strategies for peripheral devices like printers and modems. However, these publications also served as a mass media outlet for emerging discourse about the personal computer industry as it continued to shift, evolve, and take shape throughout the 1980s.⁴ Graphical user interfaces (GUIs) for personal computers were several years away from achieving mainstream adoption and the usefulness of most systems relied on users being willing to learn at least rudimentary programming skills.⁵ Within this context, computer magazines arguably provided frameworks through their articles to bring home computers from the shore of theory and possibilities to the inland of actualized productive uses in the home, be it for business tasks, education, or games and entertainment.

This type of discursive framing of a new medium from a previously established medium was not unprecedented. The development of the telegraph in the mid 19th Century drew both praise and skepticism from newspapers throughout the Western world. Some

writers and editors hailed the telegraph's revolutionary nature in opening access to information of the day, while others bemoaned the new medium's penchant for shifting journalism away from intellectualism and opinion and toward standardization and the mundane. Likewise, the arrival of commercial radio broadcasting in the 1920s brought with it published discourse on the pros and cons of networks, advertiser-sponsored (and largely advertiser-created) programs, and censorship issues.⁶ In a similar manner, early computer magazines introduced discursive frames of a medium (computer technology) that, although it had been in existence for several decades, was something brand new from the standpoint of the general consumer market.

With that in mind, this paper presents a discourse analysis of articles from three of the more widely distributed general home computing magazines of the decade—*Byte*, *Compute!*, and *Family Computing*—during a two-year period from 1984-1985. In examining the discourse shaped by these magazines, we may glean a clearer picture of their overall influence upon the place and purpose of home computing systems in the minds of consumers during a time when that subject remained very speculative in some aspects. Additionally, a discourse analysis can show how journalists, themselves coming to terms with much of the emerging technology at that time, translated what they knew or had learned about the systems to themes and topics that could be easily understood by readers who may or may not have had previous interaction with a computer system. The analysis may also be useful in looking back at how publications determined the most effective strategies for covering a new technology as it pertained to consumers. Additionally, the analysis can present historical bases for developing similar media discourse strategies for future technological changes on the consumer front.

Literature Review

New technology and discourse frames

By developing frames through which a presentation of information and discourse about the growing consumer marketplace for home computers and related products could be presented to readers, computer magazines subsequently engendered perceptions of home computers, software, and other products that could be used by readers to make purchase decisions, usage decisions, and even consider broader implications of computer technology. Framing, as defined by Robert Entman,⁷ is “the process of culling a few elements of perceived reality and assembling a narrative that highlights connections among them to promote a particular interpretation.” Related to this is the concept of priming, which is how media frames work to shape, and possibly change, audiences' interpretations and preferences.⁸

This study examines the discourse about the home computer market as presented through the frames constructed by general audience computer magazines. A discourse analysis is based on the details of speech or writing that are deemed relevant in the context,

and that are relevant to the arguments the analysis is attempting to make. In this case, the analysis focuses on the content of articles from selected computer magazines in the mid-1980s, all in an effort to examine how these magazines and the discursive frames they presented helped to shape readers' perceptions of a growing, changing, and, at that time, crowded home computer market with older systems continuing to be supported alongside newly introduced systems. Discourse analysis thus assists in examining how the media influences "ways in which people picture or construe aspects of the world in their heads."⁹

Previous scholarship examining discursive frames within computer magazines during this era appears sparse. One such study focused on uses of microcomputers in Australia during the 1980s and included articles from several magazine publications in that region, such as *Online: The Microbee Owner's Journal*, *The Australian Commodore Review*, and *The Australian Apple Review*. The author examines the concepts of "use" and "usefulness" as it applied to then-new technology, arguing that "early microcomputers were a technology in search of a use"¹⁰ and that the general public harbored doubts about uses of microcomputers in the home. One discursive frame study of computer magazines from a broader time period (1974-1997) employed a quantitative analysis of 83 features stories and 244 advertisements from among 14 magazine titles, with four case studies from among those to examine specific textual devices. The findings from the case studies suggested that familiar definitions and textual devices were used by publishers in the hope of attracting readers to purchase products that could be advertised in the same publications.¹¹ Looking at digital archives of many computer magazines during this time, one can find a considerable amount of advertising—and, by association, advertising revenue for the magazines—for computer systems, software, and related products, and conclude that a marketing relationship between computer magazine publishers and computer hardware and software companies fed public discourse about the early home computing scene. Walt Crawford summarizes the computer magazine scene in the 1980s, noting:

The magazines—there were *dozens* of them in the 1980s, including multiple titles dedicated to brands such as Commodore, Atari, TI (Texas Instruments), and, of course, Apple—fed the growing business of personal computing. In turn, fledgling and established companies fed the magazines, some of which grew heavy with ads for brand-new products and "products" that never actually shipped.¹²

However, enough products did see the light of day to make home computing more than a fad and keep a number of computer magazines profitable for a time. The gradual integration of microcomputer usage in the home led to Leslie Haddon constructing a meta-analysis of domestication research as it applied to in-home computing and media consumption.¹³ It could be argued that the content produced within a booming computer magazine market in the 1980s contributed to frames of domestication of home computers and microcomputers manufactured during that era. Other scholarship has focused on the development and evolution of computer magazine content as a reaction to new product introductions. Walt Crawford, analyzing changes in the format of *PC Magazine*, mentions that the publication began its lifespan just six months after the introduction of the first IBM

PC in 1981.¹⁴ Its in-depth articles and product reviews, along with sumptuous advertising, led to the magazine switching to a semimonthly publishing schedule by 1984, which it continued for the next 22 years.

Changing markets and changing media

For the potential home computer-buying public in the mid-1980s, the world continued to change rapidly. Shrinking sizes for electronic transistors and shrinking costs for circuits and microchips a few years earlier helped usher the dawning of a true, mass consumer marketplace for personal computers. The print media's response to these developments was to present the new consumer-accessible technology within frames that helped readers come to terms with possible uses of home computers,¹⁵ all while print media, in general, simultaneously saw an increased presence in advertising by personal computer-related businesses.

Thus, while the fledgling home computer industry tried to sort itself out during the 1980s, print media, including computer magazines, offered a type of support to the consumer trying to make sense of it all. Citing a 2001 study, Karin Harrasser states that the computer can be conceptualized as a discursive object, with translations of social and technical facts taking place within, among other communicative channels, computer magazines.¹⁶ Other content developments were created in response to a lack of immediate understanding by many consumers as to what a home computer could do in practical terms. There existed no parallel with previous "new" technologies that extended functions of the human body, like the telephone did for hearing and television did for seeing. Instead, computers assisted with mental tasks such as writing and filing.¹⁷ Print media during the 1980s also helped to normalize specific tasks for home computers as well as change public perception of the machines. Graeme Kirkpatrick, using a theoretical framework from Pierre Bourdieu, analyzed video gaming magazines of this time period to see how the print medium laid the groundwork for computer gaming to become a distinctive cultural practice apart from other home computing tasks.¹⁸ A visual content analysis of computer magazine advertisements during the mid-1980s suggested that the magazines fostered a shift in public perception of computers from the highly militaristic or scientific aura of earlier mainframe systems to that of a more personal, intimate, and empowering tool.¹⁹

Examining a discourse of past time presents challenges because, as Harrasser notes, "As usual, when writing about the past there is no way to find out how 'it really was then.'"²⁰ However, there are points of discourse analysis that can be applied to publications of the past, in this case, computer magazines, because they collectively represent a subgenre of general consumer magazines. These "niche magazines" represent marketing strategies for publishers trying to attract readers with specialized lifestyles or interests.²¹ As such, consideration should be given to the medium's power and influence over its audience, something Donald Matheson explained in stating, "While the discourse of a consumer magazine is shared in the sense of being something that its journalists can be confident that their readers will recognize, and therefore something they can deploy in the magazine, there is also considerable power bound up with its use."²² Reader recognition of the discourse,

then, infers a type of “expertise” to the publication, which is then empowered by readers with the ability to shape perceptions of products (like home computers or computer software) and how they may benefit the consumer. “Consumer magazines provide one of the most important ‘expert knowledges’ through which this selfhood as a consumer durable is worked through, reflected upon, perfected.”

Although the advertising content of computer magazines during the 1980s is outside the scope of this study, with so many new products and both new and established publications ready to distribute articles (and ads) about the products to consumers, computer magazines naturally functioned as shopping guides and thereby provided discourse on what products would be available and what the home computer user could expect to do with the product. However, as Crawford alludes, that discourse of “coming products” sometimes led to a dead end and disappointment.²³

What came to be known as “vaporware”—computer hardware or software that was advertised but never released to market—had reached problematic heights in the mid-1980s. Gail Pool and Michael Comendul cited a *Byte* magazine article in 1984 calling for better ethical standards for computer magazines. That article appeared as a response to accusations from readers that *Byte* allowed manufacturers to write their own product reviews for the magazine—a charge *Byte*'s editors admitted as true. This skewed collaboration between magazines and their advertisers for product review content likely muddied the waters for home computer magazine readers. “If companies seek to use magazines for their own marketing plans, magazines, often with an eye on future ads, frequently appear to cooperate.”²⁴

As a result, consumers of home computers and related products found themselves simultaneously dependent, to some degree, on computer magazines and yet forced to question the honesty or reliability of some articles, particularly product reviews or “buyer’s guide” articles. This discursive quandary may have seemed particularly applicable to the numerous computer system-specific magazines that flourished in the early days of home computing:

Magazines dedicated to a single computer, such as the Macintosh, are intended for people who already own one, and for the magazine to knock the machine, or to negatively review most of the software developed for it, is to tell the reader he made an expensive mistake—hardly a way to increase circulation.²⁵

When microcomputers appeared in the late 1970s and early 1980s, their marketers were faced with the task of fitting their product into the popular myth in such a way that adoption would be encouraged rather than rejected.

This latter point is also addressed by Brian Cogan in referencing numerous social critics’ position that the media tend to be ignorant of or consciously downplay limitations or possible drawbacks to new technologies during the periods of introduction into the public consciousness:

Far too often newspapers, when looking for expert guidance regarding new and confusing technologies, look to the industry that produces that technology. Of course, the industry is likely to exhort the positive results of new technologies and such positives can become the focus of their stories without newspapers noting the potential drawbacks that technology may present.²⁶

This same criticism could certainly be levelled at home computer magazine publications during the 1980s. Many of those publications sold lavish, process-color advertising spaces to the same companies whose computer systems, software, or peripheral devices featured in the reviews and main articles in the same issue of the publication. At the same time, that advertising revenue played a large part in funding the editorial staff and operational costs to produce sometimes-thick monthly issues packed with computing-related articles and recurring features not possible in a daily newspaper, where information and developments from the then-young personal computing industry had to jockey for space and position with other news events and feature articles.

Answering broader questions

In defense of the publishers of computer magazines, its writers, like the readers themselves, often stood in the position of trying to make sense of what was taking place in the home computer market. Cogan notes that during the early-to-mid-1980s, journalists covering the personal computer industry were often expected to play advocate for the technology. In general, these journalists would take what they themselves had been able to learn about the systems and make apparent to readers the advantages and usefulness in owning a home computer system, even when available computer literature did not make those points clearly.²⁷ The editorial staffs of monthly computer magazines did not stand apart from this inferred responsibility (and, arguably, may have felt even more compelled since advertisement content was nearly 100 percent computer-related) and thus produced numerous features looking at specific products, broader social implications of the technology, or just old-fashioned “how to” instructional articles.

As for the broader questions regarding impact on society and culture, a discourse analysis of media products in the past can sometimes yield interesting comparisons and contrasts to the present. To this extent, Meryl Alper examined mid-1980s family-oriented computer magazines to see how those publications presented “hacker culture” at a time when computer usage was not far removed in time from its do-it-yourself, hobbyist roots in the 1970s. While the terms “hacking” and “hacker” have long carried negative connotations of lawbreaking activities or disruptive effects to otherwise secure, networked computer systems such as found in banking and government, Alper’s study found a discursive framework within 1980s computer magazines presenting the term and concept “as a means to reveal the social shaping of the personal computer in the mid-1980s and to better understand complex contemporary understandings of youth hacking.”²⁸

In a similar fashion, but on a broader topical scale, this study intends to examine how computer magazine articles representative of the time period presented the personal

computer industry and its products to readers who either already owned a home computer system or were potential customers for one. This leads to two research questions regarding the magazine content:

RQ1: What themes were most prevalent in general computer magazines in the mid-1980s in constructing discourse about home computing, and its real or potential applications for owners/users?

RQ2: How did the content of articles provide insight, and thus a discursive framework, into home computer uses?

Method

To answer these research questions through discourse analysis, three monthly home computer market magazine publications were chosen: *Byte*, *Compute!*, and *Family Computing*. This study specifically examines the 1984 and 1985 editions of those magazines. Those years were selected because of the impending shift in the home computer industry, a time that saw increased competition among home computer system manufacturers and the emergence of the two computing platforms that would eventually dominate the market by the decade's end, the IBM PC and Apple's Macintosh, both introduced in early 1984. The magazines were selected for their respective coverage of new home computer systems arriving on the consumer marketplace during those years, as well as feature articles and other content in support of established home computer systems.

Likewise, all three magazines presented articles examining topics of particular interest to home computer system owners and users, such as buying guides, applications, and future impact or potentials for then-current systems. It should also be noted that these magazines covered topics relevant to multiple home computer systems of the time, contrasting them to a number of machine-specific publications that appeared during the same decade (*Compute!* spawned a couple of subsidiary magazines: *Compute! Gazette*, which focused on Commodore computers, and the shorter-lived *Compute! for IBM PC/PCjr*). Finally, all three magazines prospered for more than a decade each (although changing coverage focus as the market changed and, in the case of *Family Computing*, publication title in its later years).

Compute! began its life in the late 1970s as *The PET Gazette*, a printed resource journal for owners of Commodore Business Machines' (CBM) line of PET brand microcomputers. But in late 1979, the publisher, Small System Services Inc. of Greensboro, N.C., decided to expand the journal's articles to include other emerging microcomputers at the time, necessitating the publication's name change.²⁹ By the time of the issues included in this study, the magazine had been purchased by ABC Publishing and, prior to new ownership, had begun including type-in programs for owners of most of the major retailed

computer systems of the time. Soon after the takeover by ABC Publishing in 1983, *Compute!* boasted a monthly circulation of 420,000.³⁰

Byte is the oldest of the three magazines included in this study, with the first issue distributed in September 1975, when microcomputing was still very much in its hobbyist phase. The early years of the magazine reflected this with mostly do-it-yourself articles on electronics and software projects to improve the usefulness of many of the kit-type microcomputer systems of that time. The magazine's growing readership and subscriber base eventually led to its sale in 1979 to publisher McGraw-Hill. About two years later, the magazine shifted away from the hobbyist and user-programmer articles to become the first mass-market computer magazine to include product reviews. Another interesting note about *Byte* is that the magazine started its own online service in 1985. Despite a peak circulation well into the 1990s of half a million for the English-language edition, *Byte* advertising revenue had declined substantially and the magazine was unceremoniously discontinued shortly after its purchase in 1998 by CMP Media.³¹

In contrast to the 1970s roots of *Compute!* and *Byte*, *Family Computing* did not begin publication until September 1983 as the concept of the personal computer had become fully established in the general consumer marketplace. The publication went through two name changes in later years, first to *Family and Home Office Computing* and then to *Home Office Computing* as its content swung decidedly toward small business/home business interests.³² The debut column by the magazine's editor-in-chief noted several areas of interest its articles would serve: Features on families using their home computers, how-to articles, buying information, programming help, ideas for home computing, and reader contributions.³³ By 1986, the magazine's circulation had grown to 420,000.³⁴

Access to the content of the magazines included in this study came through scanned archives hosted by the Internet Archive (archive.org), a non-profit organization based in San Francisco whose mission is "to build an Internet library" and whose purposes include "offering permanent access for researchers, historians, scholars, people with disabilities, and the general public to historical collections that exist in digital format."³⁵ The magazines and their specific issues concerned in this study are part of the website's Computer Magazine Archive. Each issue of each magazine is available in PDF format files, rendered exactly as it appeared—including cover art and advertisements—in its original printed form. Although outside the scope of this study, the printed advertisements and other non-article materials provide a broader framework in which to examine the publications as a whole, and the inclusion of such content in the scans provided by the Internet Archive lends an air of authenticity to the preserved articles that would be missing from simple text-only reprints or partial publication scans that might be available elsewhere.

Each of the three titles included in this study published monthly during 1984 and 1985, yielding a total of 36 issues. Counting feature articles, cover stories, and regular editorial content within each title for the two years of issues examined, *Family Computing* averaged 24 articles per month, *Byte* averaged 34 articles, and *Compute!* averaged 27 articles.

Across 24 issues for each title, the magazines yielded 576, 816, and 648 articles, respectively, for a grand total of 2,040 articles. Each of these articles were subsequently identified and grouped by theme, issue, or purpose for the identification of distinct discursive frames. Non-prosaic article content such as reader feedback or letters to the editor, classified advertising, and event listings were not included in the analysis.

Results and Analysis

In examining the cover stories, other feature articles, and regular editorial content of the three magazines during this time period, three distinct discursive frames could be identified: advisory, instructive, and social/cultural. Some articles, however, could arguably fall into more than one of these frames. Articles presenting an advisory discourse to readers included such features as “buyer’s guide” articles and software reviews. The instructive discourse identity can be found in “how-to” articles regarding home computer uses, as well as something that was a unique feature to many computer magazines in the 1980s—type-in programs, published in magazine pages and offering everything from simple games to full-featured word processors. The social/cultural discourse frame can be found largely in cover stories and regular monthly columns in which the content deals with the computer industry at large, future or potential uses of the technology, and other issues such as the gender gap in computing. In answering both RQ1 and RQ2 as stated above, the analysis of articles that follows presents several recurring themes with these three discursive frames.

Navigating a Changing Market

With the rapid development of consumer-level computer systems came a complex and financially significant decision for those wishing to purchase one for the home. In this brave, new retail world, computer magazines often positioned themselves as print-based advisors for hardware and software purchases. From 1982-1984, consumers saw a changing of the guard in home computers as older, more limited systems like the Commodore Vic-20 and Apple II gave way to their comparably powerful, new successors in the Commodore 64 and the Apple IIe and IIc. Additionally, the beginnings of what would become the dominant personal computer dichotomy in the 1990s and beyond reached the marketplace with IBM’s PC and PCjr systems, and the first Macintosh computer by Apple. The latter system provided the cover story for *Byte*’s February 1984 issue (on the heels of Apple’s famous one-off “1984” commercial during that year’s Super Bowl), in which author Gregg Williams touted the Macintosh’s delivery of a graphics-based user interface for less than \$2,500 (about \$5,723 in 2015). The article continues with an in-depth breakdown of the system’s hardware and motherboard.³⁶ A sidebar article by one of the Macintosh design team members gave readers a look at the new operating system’s software design.³⁷ In the same issue, *Byte* also published an interview article with members of the Macintosh design team.

Around the same time, *Compute!* chose to highlight the release of IBM’s much-anticipated foray into the home computer market with its PCjr model in two versions, priced

at \$669 (\$1,531 in 2015) for the 64K, disk drive-less “Entry Model” and \$1,269 (\$2,905 in 2015) for the 128K, single 5 1/4” disk drive “Expanded Model.” Underscoring the public’s general surprise that business-oriented IBM would try to go head-to-head with more established home system manufacturers like Apple, Commodore, and Atari, the article offered an analysis of IBM’s design strategy for the PCjr:

“In almost every sense, the PCjr is truly a junior PC. It is apparent that one of IBM's overriding design considerations was to retain as much compatibility as possible between the PC and PCjr, while protecting the PC's business market against competition from the PCjr. These considerations explain both the PCjr's capabilities and its limitations.”³⁸

Family Computing also chimed in on the two big, new, and more expensive entrants into the home computing market, remarking that the PCjr “is intended to be a computer for all seasons—for children to use both at home and at school, for people who want to bring work home from the office, and for parents.”³⁹ The magazine waited until its May issue that year to publish a hands-on review of the Macintosh, starting with a statement that seemed intent on easing some of the initial sticker shock of a \$2,495 price tag in the eyes of the magazine’s readership:

“While the Macintosh's primary market—given its price tag (\$2,495) and initial program offerings—is business users, its extreme ease of use, portability, and Apple's long-standing commitment to the educational market give the Macintosh enormous potential as a family computer.”⁴⁰

To readers at the time, these articles pointed to the rapid development of a two-tiered market for home computers in the mid-1980s and for the foreseeable future: A budget-level home computer market, exemplified by systems like the Commodore 64 and Atari 800XL, and a premium business/home computer market, represented by the IBM PCjr and Apple Macintosh. The magazines also attempted to justify to its readerships the inclusion of these higher-priced systems in their coverage by portraying the systems as powerful and versatile family investments. Although critical of the Macintosh’s actual working price of more than \$3,000 (\$6,867 in 2015)—owing to the fact that no software, not even a programming language, came bundled with the hardware—the *Byte* article also proclaimed, “The Macintosh brings us one step closer to the ideal of computer as appliance.”⁴¹ The *Family Computing* review concluded, “The Macintosh is truly a machine for the future, both in the home and the office,”⁴² and in its PCjr preview article touted the PCjr’s advantage over cheaper systems with IBM service and support, and the cheaper Entry Model’s ability to be expanded in memory to run software requiring more than 64K.⁴³

Software reviews became another regular feature in these magazines, providing another important side of the advisory discourse with readers, particularly those looking to invest money in prepackaged programs written to run on a specific system. As one example, *Compute!* published a roundup of new fall 1985 game releases for several home computer formats, giving each game highlighted in the article a brief synopsis and review as well as

listing the systems for which the game was being released and a suggested manufacturer's retail price.⁴⁴ During this time period, both *Compute!* and *Family Computing* also published full reviews of selected software titles, usually ranging from productivity titles to educational programs to games and entertainment. *Family Computing* published what it called a "quick guide" with a tabular format on the page including a program's title, manufacturer, retail price, system compatibility, a brief description of the program, backup and disk replacement policy from the manufacturer (an important matter in the pre-Internet days of everything on magnetic floppy disks), and star-based ratings in several categories like graphics quality and ease of use. The issues of *Byte* analyzed in this study tended to eschew reviews of games and educational software in favor of reviews of business or home office software programs and devices like modems and hardware enhancements for systems. However, similar to that of home computer systems themselves, the software reviews in these magazines presented an advisory discourse to the eyes of readers looking for just the right program from among multiple title options available through both retail stores and mail-order distributors.

Software included

With a few exceptions, most of the home computer systems in the 1980s included a ready-to-use programming language. The editorial staffs of many computer magazines, knowing that a vast number of home computer owners were willing to spend time learning to write programs or at least invest personal time typing in program code, catered to those system owners by including free type-in software programs inside each month's issue. Although *Byte* did not publish type-in programs, *Compute!* and *Family Computing* did, not only providing readers with what was essentially free software, but providing instructional examples of programming code relevant to the reader's particular home computer system. *Compute!* usually published several type-in programs each month, including games, educational programs, and sometimes even system utilities and productivity programs on par with some commercial software offerings. Of particular note among *Compute!* type-in software was a word processor called SpeedScript. Version 3.0 of the program for the Commodore 64 appeared in the March 1985 edition of *Compute!*, while versions for the Atari home computer systems and the Apple II series computers appeared a few months later in the magazine.

Even with its stronger emphasis on business and home office systems in the mid-1980s, compared with the other two magazines in this study, *Byte* still offered its share of instructional discourse to its readers. Several examples can be found in the October 1985 issue, including an instructional piece on developing a virtual machine, or, put simply, a different computer operating system running within a software-based "box" in a computer, a concept that was relatively new to all but the most skilled programmers at the time. What followed was instructions and programmer's notes on constructing the author's VM2 virtual machine.⁴⁵

Business and personal finance applications for home computers also loomed large within the instructional discourse in the magazines. As systems with larger banks of RAM (or easier expansion of on-board RAM) and faster microprocessors became more affordable in

the early-to-mid-1980s, a growing number of software programs for statistical and financial applications began to appear on the home computing marketplace. This increased presence of such applications for home computer systems led to feature stories like “How *Compute!* Readers Use Personal Computers in Their Businesses,” although this article focused on people writing their own programs to assist with tasks specific to their business. Farming, comic book collection tracking, and flight planning are among the examples provided through interviews in the article, which notes on its beginning page, “There are salesmen and accountants, engineers and professors, sergeants, seamen, and comic book collectors, all of whom have other uses for a computer besides ‘Star Raiders’ or teaching Johnny how to spell” (34).⁴⁶ Reinforcing this point, the same issue of *Compute!* featured a type-in program to help analyze and manage securities investments, with versions for the Commodore 64, memory-expanded VIC-20, Atari systems, and the IBM PC and PCjr.⁴⁷

Home computers and the larger picture

Social/cultural discourse in the computer magazine articles took on a number of topics. *Byte*'s July 1985 issue featured a set of articles dedicated to the computer's influence on space science. One of those articles noted, “In the past five years, microcomputers have had a revolutionary impact on astronomy, the oldest of the sciences. The revolution has, perhaps, been most visible in the area of optical astronomy at smaller observatories” (179)⁴⁸ *Compute!*, in its December 1984 edition, featured an article that looked at then-present and future home control applications for home computers. *Family Computing*'s March 1984 edition featured a cover story on utilizing home computers for gardening tasks. That same edition also featured multiple articles looking at ways telecomputing could or would change interaction with others, something of a sage analysis almost a decade before widespread access to the Internet and two decades prior to social media apps of today.

Part of discourse analysis is not only looking at discursive frames that are present in media, but also those that are noticeably lacking or missing altogether. Of the magazine issues included in this study, only one—*Family Computing*'s August 1984 issue—devoted its cover story to addressing gender inequality in the home computing market. The cover article in that issue presents girls involved in computer applications and programming as an exception to the male-dominated rule, citing a 1982 University of California study showing 25 percent more boys than girls with a computer at home and a Stanford University study that showed a 3:1 ratio of boys to girls at computer camps. The article then goes into a solution-seeking mode and places the task for instigating more gender equality in the computing field on the parents, particularly moms, because “If young women are to keep pace with their brothers and boyfriends, mothers must enter the computer age....”⁴⁹ Tying into another point in that article, a secondary feature provides advice on buying the right software for girls interested in computers.⁵⁰ Additionally, none of the magazine issues included in this study addressed the topic of what is now commonly known as the “digital divide” regarding access to computers by socio-economically disadvantaged individuals and families.

Discussion and conclusion

The discursive frames presented through the magazines and their articles over a two-year period in the mid-1980s are by no means an exhaustive analysis of either home computing-related discourse during that time or the article topics and content by which publishers and editorial staffs at that time presented such discourse. The study does, however, show a variety of discursive frames that stood relevant to the needs of home computer system owners and buyers, who were also the target readership audience for these magazines. Essentially, a sample of general-market home computer magazines from 1984 to 1985 showed the publications providing discourse in the areas of advice on buying hardware and software, instruction on how to use and how to program most home computer systems, and consideration of larger social and cultural effects of home computers as they became more commonplace in households in the United States by the mid-1980s.

In conducting the discourse analysis within this study, the researcher admits prior familiarity with two of the three magazines included in the analysis, those being *Byte* and *Compute!*, and being a frequent consumer of *Compute!* and its subsidiary magazine for Commodore Computer owners, *Compute's Gazette*. The researcher routinely purchased copies of one or both magazines primarily for the type-in program content, both for the purpose of enhancing his understanding of programming languages like BASIC and MOS Technology 6502 assembly language and obtaining a low-cost source of useful software for a Commodore VIC-20 and, later, a Commodore 64 home computer system. However, among the categories of computer magazine articles within the discursive frames determined by the study, type-in program was the only one the researcher can confirm prior familiarity as a category or type of article found within computer magazines of the time period.

Awareness of possible discursive frames within computer magazines of the time period included in this study was made possible solely through the presence of digitized, complete issues of the magazine editions in The Computer Magazine Archives, hosted by the Internet Archive. The ability to download each issue from 1984-1985 for each of the three magazines included in this study meant that all feature articles, including cover stories and magazine covers, regular columns, and departmental articles (those that dealt with a specific system or general point of computer usage) could be examined for content and placement within a discursive frame. This fact also highlights the importance and benefit of online media archives such as the libraries and collections within the Internet Archive, particularly for research being conducted on media content from previous decades and for future research, in which present media content will be sought for examination and analysis.

There are a few limitations, mostly temporal and topical, to this study that might spawn ideas for future research. As noted earlier, the number of magazines included in the study is small compared to the total number of computer-related publications that existed from the late 1970s through the 1980s; the three selected represented an attempt to analyze discursive frames within widely-distributed general or multi-platform computer magazines. Future research might examine whether the same discursive frames can be found within a range of machine-specific magazine titles, or whether the discursive frames differed and were

dependent upon the target audience (i.e. owners or potential buyers of a specific home computer system or series of systems). Also, the study concerned itself with computer magazines primarily purchased or subscribed to within the United States and Canada (*Compute!* was also available in the UK), so a similar study might be conducted on computer magazines available or specific to periodical markets in other countries. Finally, research more closely examining the relationship between advertisers in computer magazines of this time period and the magazines' editorial content, and how media frames and discourse might have been affected by that relationship, stands as a project well worth pursuing. This last area potentially stands as a problematic issue in analyzing media discourse about the then-emerging field of home computing; the aforementioned admission of advertiser-created editorial content in issues of *Byte*, for instance, muddies the relationship with media audiences and casts a cloud over the true intentions of the publication from a discursive framing standpoint. Similarly, the lack of discourse regarding gender and interest in computers, evident in the 1980s, has continued since then and has been the subject of cultural-critical research.⁵¹

By the qualitative evidence shown here, though, it can be easily seen how computer magazines existed as a regular and somewhat reliable source (advertiser influences aside) during a tumultuous time period for consumers, who in turn were looking for authoritative voices through the media to help them understand and adapt home computer technology and associated products into productive, useful roles. To this end, discursive frames presented by these computer magazines likely provided a sense of structure and instruction to readers as the computer age moved out of the realm of science-fiction literature and film and into the realm of retail stores, mail-order distributors and, eventually, family life. This study adds to journalism scholarship by providing insight through qualitative research on how the media has, in the past, influenced and shaped audiences' perceptions of emerging new technology, and how the media can continue to do so as we await the latest round of new technologies in the early 21st century.

Ironically, future discourse on future technological developments likely will not be presented in print magazine format. The last surviving general interest magazine for personal computing, *PCWorld*, ceased print publication in 2013 and has since existed solely as an online website, like several other computer magazines that carried on into the 2000s.⁵² If nothing else, archives of the computer magazines during the 1970s, 1980s and beyond, whether digital scans or physical copies, will greatly assist future generations in understanding a time period when computers and writing about them were truly new frontiers in society.

Notes

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¹⁴ Crawford, "Personal Computers and Media"

¹⁵ Cogan, "Framing Usefulness"

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²⁰ Harrasser, "Transforming Discourse into Practice"

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²⁴ Gail Pool and Michael Comendul, "The Computer Magazines' Puffery Problem," *Columbia Journalism Review* 24, no. 3 (1985), 49-51.

²⁵ Opt, "Early Computer Advertising"

²⁶ Cogan, "Framing Usefulness"

²⁷ Cogan, "Framing Usefulness"

²⁸ Meryl Alper, "'Can Our Kids Hack It with Computers?' Constructing Youth Hackers in Family Computing Magazines (1983–1987)," *International Journal of Communication* 8(2014), 673-98.

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- ⁴² Gajeway, "Apple's Macintosh: The Computer That Roared," 53
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