Evaluation of Internet Advertising Research: A Bibliometric Analysis of Citations from Key Sources

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EVALUATION OF INTERNET ADVERTISING RESEARCH

A Bibliometric Analysis of Citations from Key Sources

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ABSTRACT: How has scholarly research shaped the Internet advertising field since the mid 1990s? This study addresses that broad question with a bibliometric analysis of academic literature on Internet advertising. By examining most-cited authors and papers, as well as co-citation patterns, a general picture of the field can be drawn. This analysis sets a baseline that will enable future scholars to see where the field of Internet advertising research began and trace its shift over time.

In 1993, the Internet burst into public consciousness. The introduction of the Web browser made the Internet more user friendly than it had been in the 1970s and 1980s when it was dominated by scientists and researchers. By the mid 1990s, many businesses and consumers began to use the technology, and both advertising practitioners and researchers had begun to examine the potential of the Internet as an advertising medium (Leiner et al. 2000). Since then, the medium has gone from a small-scale technology used mostly by the techno literati to a tool that is used by more than two-thirds of all Americans (Madden 2003). What is the current status of the scholarly research about Internet advertising? How has the scholarly research shaped the Internet advertising field? This study will seek to answer these broad questions with a bibliometric analysis of the academic literature on Internet advertising. The purpose of the study is a disciplinary review in the field of Internet advertising research. Three research questions will be addressed in the context of the literature on Internet advertising:

1. What are the influential cited works in the field of Internet advertising research? Who are the most-cited authors? What are the most-cited Internet advertising papers?
2. What are the underlying themes among the most cited works in the field of Internet advertising?
3. What are the co-citation networks among influential cited works in the field of Internet advertising? What schools of thought are presented among co-citation networks?

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Evaluating the current status of Internet advertising research is important because it also provides both historical perspective and a glimpse into the future. Cho and Khang (2006) found that over the past 10 years, Internet research has grown dramatically, with contributions from multiple disciplines and theoretical and methodological perspectives. By examining most-cited authors and papers, as well as co-citation patterns, a general "picture" of the field can be drawn that shows key influences and influencers. This bibliometric analysis also has the potential to set a "baseline" for the emerging field of Internet advertising that will enable future scholars to see where the field began and trace its shift over time.

LITERATURE

In essence, the data collection and analysis process used for a bibliometric study such as this is a kind of "meta-review" of the literature. Thus, the review of literature specific to the field of Internet advertising will occur in later sections of this paper. Before examining that literature, however, it is important to briefly review the principles of citation analysis that provide the basic tools for addressing the research questions posed by this study.

Bibliometric analyses including citation analysis and co-citation analysis are valuable to illuminate "the processes of written scholarly communication and . . . the nature and course of development of a discipline," by measuring and analyzing written communication (Borgman 2000, p. 144; see also Pritchard 1969). Bibliometrics are directly applicable to the study of formal channels of scholarly communication, the written record of scholarship. This method can provide a large and rich characterization of scholarly processes, especially when combined with other data.

Citation analysis is a bibliometric technique that considers the citation as the basic unit of analysis. By analyzing which authors and papers are cited frequently, the technique goes beyond a simple counting of publications to an analysis of which authors and publications have "value" to other researchers (Pasadeos, Phelps, and Kim 1998). Although the method has clear links to the sociology of science (Crane 1972), it has been used in a diverse range of fields, such as humanities (Wiberley 2003), Internet research (Bar-Ilan and Peritz 2002), and communications (Lievrouw 1989; Pasadeos, Phelps, and Kim 1998; Pasadeos, Renfro, and Hanily 1999).

A list of the most-cited authors can help indicate who is shaping the field and a list of most-cited papers can illustrate key concepts that are driving a field, but the addition of co-citation analysis to a bibliometric study adds insight into the evolution of a field of study. Co-citation involves "connecting" documents if they have been cited together by a number of other works. Strength of co-citation relationships can be measured by how many scholars have cited the two documents together (Tankard, Chang, and Tsang 1984).

Cawkell (2000) reports that the value of co-citation analysis was first proposed by Eugene Garfield. Later, Henry Small (1980, 1999) suggested using co-citation methods by identifying the most-cited papers and aggregating co-cited pairs of them to form clusters. Small indicated that such clusters represent the consensus of a set of authors working in a specific research area (Cawkell 2000). As a useful method for identifying the domain of a particular research area (i.e., Internet advertising) represented by a group of authors, co-citation analysis refers to a form of document pairing that measures the number of documents that have cited any given pair of documents (Culnan 1986; Pasadeos, Phelps, and Kim 1998). A list of all possible pairs of works cited among all citations in a given document enables the researcher to obtain co-citation frequencies and co-citation networks (Pasadeos, Phelps, and Kim 1998; Usdiken and Pasadeos 1995). A co-citation network refers to a visualized co-citation connection constructed by drawing a line between two documents if they are cited together by a number of other works (Pasadeos, Phelps, and Kim 1998). By assessing linkages among authors or publications, co-citation networks help to examine cumulative practice and reference disciplines in a research area at the level of the individual author or publication.

Furthermore, co-citation analysis is valuable because it can facilitate visualizing social networks among scholarly communications in a discipline. The indirect networks through the highly influential members usually show clusters that refer to schools of thought and "invisible colleges." For example, X and Y may be among the most-published works in the field of Internet advertising. X and Y may also be frequently cited together in multiple other studies. If authors X and Y are frequently cited together in multiple papers about

Internet advertising, the cluster of work represented by those cited studies is clearly influencing the literature on Internet advertising. This type of co-citation analysis shows the indirect scholarly influence of the co-cited works.

This type of co-citation analysis has been referred to as examination of "schools of thought," "disciplinary paradigms," and "invisible colleges" (Lievrouw 1989; Pasadeos, Phelps, and Kim 1998; Pasadeos, Renfro, and Hanily 1999). However, it should be noted that these invisible colleges might also form around social structures such as former faculty/student relationships, co-workers, and participation in formal or informal groups (White, Wellman, and Nazer 2004).

METHOD

The data used for this bibliometric analysis were obtained from the citations found in papers about Internet advertising that have been published in four core advertising journals: *Journal of Advertising, Journal of Advertising Research, Journal of Current Issues and Research in Advertising,* and *Journal of Interactive Advertising.*

We focused our study on the above-listed publications for the following reasons. First, the Social Science Citation Index (SSCI) indicates that the *Journal of Advertising* and *Journal of Advertising Research* are core journals in the advertising discipline. Journal Citation Reports (2003) indicates that the journals we selected have high "impact factors" that allow researchers to evaluate the most frequently cited journals, highest impact journals, and leading journals in a field. Second, most previous bibliometric studies have focused on core journals in a field (Pasadeos, Phelps, and Kim 1998). Third, *Journal of Current Issues and Research in Advertising* was chosen because it is considered one of the principal academic journals in the advertising field (Cho and Khang 2005, 2006), along with the *Journal of Advertising* and *Journal of Advertising Research.* Several previous studies (Barry 1990; Cho and Khang 2005, 2006; Henthorne, LaTour, and Loraas 1998) evaluated *Journal of Advertising, Journal of Advertising Research,* and *Journal of Current Issues and Research in Advertising* as the three leading U.S.-based academic journals devoted primarily to the field of advertising. Those studies (Barry 1990; Cho and Khang 2005, 2006; Henthorne, LaTour, and Loraas 1998) collected data for their research from *Journal of Advertising, Journal of Advertising Research,* and *Journal of Current Issues and Research in Advertising* as "traditional," full-length papers (Henthorne, LaTour, and Loraas 1998). Henthorne, LaTour, and Loraas (1998) proposed that the proportion of papers in *Journal of Advertising, Journal of Advertising Research,* and *Journal of Current Issues and Research in Advertising* in advertising research would proliferate, even with the increase of new journals (Hult, Neese, and Bashaw 1997). Fourth, *Journal of Interactive Advertising* was chosen because it has a distinctive place in the Internet advertising field (Cho

and Khang 2005, 2006; Leckenby and Li 2000). Specifically, *Journal of Interactive Advertising* has played an important role as an innovator in the Internet advertising field.

We searched for papers in a 10-year period (1994–2003) that appeared in one of our core journals and that were related to Internet advertising. All Internet-related papers found in those sources were included in our analysis. Thirteen papers in *Journal of Advertising,* 52 papers in *Journal of Advertising Research,* 10 papers in *Journal of Current Issues and Research in Advertising,* and 38 papers in *Journal of Interactive Advertising* were incorporated in our analysis. For each paper identified, we coded information about all of the items that appeared in the citation list. The first Internet-related papers found appeared in *Journal of Advertising Research* in 1996*.* Thus, the data set actually represents an eight-year period from 1996 to 2003.

In fact, the *Proceedings of the American Academy of Advertising* started to accept studies related to Internet advertising earlier than core journals did. The first Internet-related papers found appeared in the *Proceedings of the American Academy of Advertising* in 1995. However, some papers and abstracts in the *Proceedings of the American Academy of Advertising* did not include a citation list. Furthermore, in general, the proceedings are cited less often than journal publications (Pasadeos, Phelps, and Kim 1998). Thus, the *Proceedings of the American Academy of Advertising* were excluded from our primary analysis, although these early works in the proceedings do appear among the lists of some of the most-cited works in the field as well as in the co-citation analysis.

As citations were coded, we obtained the following information:

1. *Authors:* The names of all authors of the cited work were recorded. The order of multiple authors was noted.
2. *Title of the cited work:* The titles were fully recorded.
3. *Year of the cited work:* The four digits of the year were recorded.
4. *All citations in footnotes and/or endnotes:* Citations to working papers, unpublished presentations, trade and popular magazines, newspapers, and unpublished dissertations were noted. Citations of those works were excluded for co-citation analysis.
5. *Self-citation:* Cited works written by at least one of the authors were noted so that they could later be excluded from bibliometric analysis.

A total of 113 papers were analyzed, and the 2,935 citations within those papers were recorded and analyzed. A coefficient of reliability is not appropriate for a bibliometric study such as this because data collection did not require judgment coding (Pasadeos, Phelps, and Kim 1998). Accuracy of data collection was considered crucial, however, because of the huge volume of the data set. To avoid instrumental error, rather than

recording the initial data set by hand, the authors recorded it directly by scanning full citations using Adobe software; they then transformed that scanned data to Microsoft Excel files. Next, the authors classified and recorded the data set as detailed above. The authors also double-checked the entire data set of 2,935 citations.

All the citations in a given publication were analyzed in terms of both citation analysis and co-citation analysis. Citation analysis is a method of tracking publishing patterns based on the assumption that a heavily cited author, paper, or book should be considered important by a large number of scholars in a discipline. This method was used to address Research questions 1 and 2, which seek to determine the most-cited authors and works in the field of Internet advertising. Co-citation analysis is a method of document pairing that measures the number of documents that have cited any given pair of documents. A list of all possible pairs of works cited enables the researcher to obtain co-citation frequencies and co-citation networks, thus addressing Research question 3.

All self-citations were excluded in the citation analysis and co-citation analysis. Self-citations were eliminated in the analysis of most-cited authors and the analysis of the most-cited works to more clearly suggest the impact that authors and works are having on other researchers. Thus, the data reported in Tables 1 and 2 do not include any self-citations. Furthermore, self-citations were also excluded in the co-citation network analysis (presented in Figure 1) to offer a clear picture of co-citations of work other than the author's own.

MOST-CITED AUTHORS AND WORKS

Tables 1 and 2 summarize the most-cited authors and the most-cited works identified in papers about Internet advertising in the target publications. There are clearly some overlaps between the two lists. For example, Donna Hoffman is the most-cited author in Table 1 and her 1996 paper with Thomas Novak tops Table 2. These two tables provide consistent insights into how specific individuals and research works are shaping the field.

Table 1 was designed to show the influence of authors. Therefore, it uses two conventions to "weight" the work of those authors. First, a system was developed to code for first, second, and third authorship. If an individual was first-named author of a paper, he or she received a score of three for that citation, second-named authors received a score of two, and third-named authors received a score of 1. Second, all of the works of a given author were grouped together for this analysis.

As noted above, the influential work of Hoffman and Novak on marketing in on-line environments appears at the top of the list of Table 1, as well as at the top of the list of influential papers in Table 2. Some additional trends emerge from this list that help to point out influential authors and topics in the field.

TABLE 1
Most-Cited Internet Advertising Authors

Ranking	Scores of citation received	Number of citations	Authors	Ranking	Scores of citation received	Number of citations	Authors
1	243	88	Hoffman, D. L.	23	48	16	Heeter, C.
2	214	96	Leckenby, J. D.	23	48	16	Steuer, J.
3	182	84	Novak, T. P.	28	42	14	Alba, J.
4	126	43	Petty, R. E.	28	42	14	Coyle, J. R.
5	109	37	Cho, C. H.	28	42	14	Sheehan, K. B.
6	96	37	Wells, W. D.	31	39	13	Batra, R.
7	93	23	Briggs, R.	31	39	13	Ha, L.
8	78	26	Ducoffe, R. H.	33	36	12	Danaher, P. J.
9	73	28	Chen, Q.	33	36	12	Donthu, N.
10	69	23	Rodgers, S.	33	36	12	Korgaonkar, P.
10	69	23	Eighmey, J.	33	36	12	Lang, A.
12	66	21	McMillan, S. J.	37	33	11	Blatlberg, R. C.
13	62	29	Cacioppo, J. T.	37	33	11	Dahlen, M.
13	60	20	Dreze, X.	37	33	11	Brown, S. P.
15	58	26	Thorson, E.	37	33	11	Holbrook, M. B.
16	57	20	Aaker, D. A.	37	33	11	Stafford, M. R.
16	57	27	Hollis, N.	37	33	11	Zaichkowsky, J. L.
16	57	19	Rafaeli, S.	43	30	10	Bruner, G. C.
16	57	19	Rossiter, J. R.	43	30	10	Lord, K. R.
20	54	18	MacKenzie, S. B.	43	30	10	Mitchell, A. A.
21	51	20	Deighton, J.	46	27	9	Bagozzi, R.
21	51	17	Li, H.	46	27	9	Bettman, J. R.
23	48	16	Bezjian-Avery, A.	46	27	9	Biocca, F.
23	48	16	Berton, P.	46	27	9	Maddox, L. M.
23	48	16	Ghose, S.	46	27	9	Shimp, T. A.

Note: Scores of citations are calculated by first author: 3; second author: 2; third author: 1.

John Leckenby emerges as a key influencer. He contributed to multiple papers as both a first and second author. His work in mentoring many of his students on topics such as interactivity and on-line media buying has contributed to this influential role. Analysis of total citations (without weighting for order of authorship) actually shows Leckenby as the most-cited author. Similarly, Chang-Hoan Cho has contributed to multiple papers as both a first and second author, and as a former student of Leckenby, has continued and expanded research in areas such as interactivity.

In general, most of the authors who appear on Table 1 are doing research directly in the field of Internet advertising. In addition to the authors already named, key influencers include Rex Briggs's early work on response to banner advertising, Robert Ducoffe's work focusing on the perceived value of Web advertising, William Wells and Qiemi Chen's work on attitude toward the Web site, Shelly Rodgers and Esther Thorson's work on modeling interactive advertising, and John Eighmey's early work on profiling the on-line consumer. However, the "top ten" list also includes Richard Petty, whose work has had a strong influence on the field even though it is not directly related to Internet advertising. This illustrates the influence

of the Elaboration Likelihood Model (ELM) as a theoretical underpinning of much of the research in the target journals (Petty was first author on most of the studies that developed and explained the ELM).

The focus of Table 2 is on influential works. Just as Table 1 revealed the influence of work that is directly related to Internet advertising as well as historical and theoretical works, Table 2 also shows the influence of both the target publications and other related journals and books. Of the 91 papers that were cited four or more times, over one-third (29 papers) appeared in the *Journal of Advertising Research.* This shows that the *Journal of Advertising Research* has played an important role in shaping the field of Internet advertising. Part of the reason for this influence was that the *Journal of Advertising Research* began publishing work on Internet advertising early (see, for example, Berthon, Pitt, and Watson 1996; Briggs and Hollis 1997; Dreze and Zufryden 1997; Ducoffe 1996; Eighmey 1997; Maddox and Mehta 1997), and much of that early work has helped to shape ongoing research on Internet advertising.

The second-most frequently cited journal was the *Journal of Consumer Research,* with nine separate papers listed on Table 2. Unlike the *Journal of Advertising Research* papers, those in

TABLE 2
Most-Cited Works in Internet-Related Papers

Citations received	Authors
35	Hoffman and Novak (1996), *Journal of Marketing*
23	Briggs and Hollis (1997), *Journal of Advertising Research*
19	Ducoffe (1996), *Journal of Advertising Research*
16	Bezjian-Avery, Calder, and Iacobucci (1998), *Journal of Advertising Research*
16	Ghose and Dou (1998), *Journal of Advertising Research*
16	Steuer (1992), *Journal of Communication*
14	Berthon, Pitt, and Watson (1996), *Journal of Advertising Research*
14	Chen and Wells (1999), *Journal of Advertising Research*
12	Eighmey (1997), *Journal of Advertising Research*
12	Korgaonkar and Wolin (1999), *Journal of Advertising Research*
11	Cho (1999), *Journal of Current Issues and Research in Advertising*
11	MacKenzie, Lutz, and Belch (1986), *Journal of Marketing Research*
10	Coyle and Thorson (2001), *Journal of Advertising*
10	Donthu and Garcia (1999), *Journal of Advertising Research*
10	Rodgers and Thorson (2000), *Journal of Interactive Advertising*
10	Zeff and Aronson (1999), Book
9	Blattberg and Deighton (1991), *Sloan Management Review*
9	Brown and Stayman (1992), *Journal of Consumer Research*
9	Maddox and Mehta (1997), *Journal of Advertising Research*
8	Alba, Lynch, Weitz, Janiszewski, Lutz, Sawyer, and Wood (1997), *Journal of Marketing*
8	Bruner and Kumar (2000), *Journal of Advertising Research*
8	Cho and Leckenby (1999), *Proceedings of the American Academy of Advertising*
8	Dreze and Zufryden (1997), *Journal of Advertising Research*
8	Eighmey and McCord (1998), *Journal of Business Research*
8	Ha and James (1998), *Journal of Broadcasting and Electronic Media*
8	Novak, Hoffman, and Yung (2000), *Marketing Science*
8	Mitchell and Olson (1981), *Journal of Marketing Research*
7	Batra and Ray (1986), *Journal of Consumer Research*
7	Deighton (1996), *Harvard Business Review*
7	Hair, Anderson, Tatham, and Black (1998), Book
7	Heeter (2000), *Journal of Interactive Advertising*
7	Hoffman, Novak, and Chatterjee (1995), *Journal of Computer-Mediated Communication*
7	Li and Bukovac (1999), *Journalism and Mass Communication Quarterly*
7	McMillan (2000), *Proceedings of the American Academy of Advertising*
7	Pavlou and Stewart (2000), *Journal of Interactive Advertising*
7	Petty, Cacioppo, and Schumann (1983), *Journal of Consumer Research*
7	Rogers (1995), Book
7	Rossiter and Percy (1997), Book
7	Rafaeli and Sudweeks (1997), *Journal of Computer-Mediated Communication*
6	Alba and Hutchinson (1987), *Journal of Consumer Research*
6	Bush, Bush, and Harris (1998), *Journal of Advertising Research*
6	Haley and Baldinger (1991), *Journal of Advertising Research*
6	Krugman (1965), *Public Opinion Quarterly*
6	Leckenby and Li (2000), *Journal of Interactive Advertising*
6	Leong, Huang, and Stanners (1998), *Journal of Advertising Research*
6	Nunnally (1978), Book
6	Petty and Cacioppo (1986), Book
6	Rafaeli (1988), Book
6	Stafford and Stafford (1998), *Proceedings of the American Academy of Advertising*
6	Stevenson, Bruner, II, and Kumar (2000), *Journal of Advertising Research*
6	Wells and Chen (1999), *Proceedings of the American Academy of Advertising*
6	Wu (1999), *Proceedings of the American Academy of Advertising*
5	Celsi and Olson (1988), *Journal of Consumer Research*
5	Cho and Leckenby (1997), *Proceedings of the American Academy of Advertising*

TABLE 2 (*continued*)

| Citations received	Authors
5	Dahlen (2001), *Journal of Advertising Research*
5	Dellaert and Kahn (1999), *Journal of Interactive Marketing*
5	Harvey (1997), *Journal of Advertising Research*
5	Heeter (1989), Book
5	Kennedy (1971), *Journal of Advertising Research*
5	Lavidge and Steiner (1961), *Journal of Marketing*
5	Maheswaran and Sternthal (1990), *Journal of Consumer Research*
5	Morris and Ogan (1996), *Journal of Communication*
5	Rafaeli (1986), *Computers and the Social Sciences*
5	Ratchford (1987), *Journal of Advertising Research*
5	Schlinger (1979), *Journal of Advertising Research*
5	Vaughn (1980), *Journal of Advertising Research*
5	Yoo and Stout (2001), *Proceedings of the American Academy of Advertising*
4	Cho, Lee, and Tharp (2001), *Journal of Advertising Research*
4	Clary, Snyder, Ridge, Copeland, Stukas, Haugen, and Miene (1998), *Journal of Personality and Social Psychology*
4	Coffey and Stipp (1997), *Journal of Advertising Research*
4	Ducoffe (1995), *Journal of Current Issues and Research in Advertising*
4	Engel, Blackwell, and Miniard (1993), Book
4	Gallagher, Foster, and Parsons (2001), *Journal of Advertising Research*
4	Hoffman, Kalsbeek, and Novak (1996), *Communications of the ACM*
4	Hoffman and Novak (1997), *The Information Society*
4	Holbrook and Batra (1987), *Journal of Consumer Research*
4	Katz and Aspden (1997), *Internet Research: Electronic Networking Applications Policy*
4	Leckenby and Hong (1998), *Journal of Advertising Research*
4	McDonald (1997), *Journal of Advertising Research*
4	Meeker (1997), Book
4	Metheringham (1964), *Journal of Advertising Research*
4	Murry, Lastovicka, and Singh (1992), *Journal of Consumer Research*
4	Papacharissi and Rubin (2000), *Journal of Broadcasting and Electronic Media*
4	Quelch and Klein (1996), *Sloan Management Review*
4	Rodgers and Cannon (2000), *Proceedings of the American Academy of Advertising*
4	Roehm and Haugtvedt (1999), Book
4	Rossiter and Bellman (1999), *Journal of Current Issues and Research in Advertising*
4	Shamdasani, Stanaland, and Tan (2001), *Journal of Advertising Research*
4	Singh and Dalal (1999), *Communications of the ACM*
4	Zaichkowsky, Judith Lynne (1985), *Journal of Consumer Research*
4	Zaichkowsky, Judith Lynne (1994), *Journal of Advertising*

Notes: ACM = Association for Computing Machinery. Numbers of citation received are for the single paper identified. Self-citation has been excluded.

the *Journal of Consumer Research* all predate the study of Internet advertising and all address theoretical underpinnings to Internet research. For example, Brown and Stayman (1992) addressed attitude toward the ad, Batra and Ray (1986) examined affective response on advertising, and Petty, Cacioppo, and Schumann (1983) developed the Elaboration Likelihood Model. Other papers dealt with topics such as consumer expertise (Alba and Hutchinson 1987), advertising process and product judgment (Maheswaran and Sternthal 1990), feeling and linking responses (Murry, Lastovicka, and Singh 1992), emotions and attitude (Holbrook and Batra 1987), and involvement (Celsi and Olson 1988; Zaichkowsky 1985).

The third-most frequently cited journal was the *Journal of Interactive Advertising,* with four separate papers listed on Table 2. The *Journal of Interactive Advertising* offered influential works related to interactive advertising—works such as Rodgers and Thorson (2000), Heeter (2000), Leckenby and Li (2000), and Pavlou and Stewart (2000).

Two additional journals appear three times on Table 2: the *Journal of Marketing,* with one paper specific to Internet advertising (Hoffman and Novak 1996), one that focuses on the broader issue of interactive home shopping (Alba et al. 1997), and one on advertising effectiveness (Lavidge and Steiner 1961). The *Journal of Current Issues and Research in Advertising*

FIGURE 1
Co-Citation Network
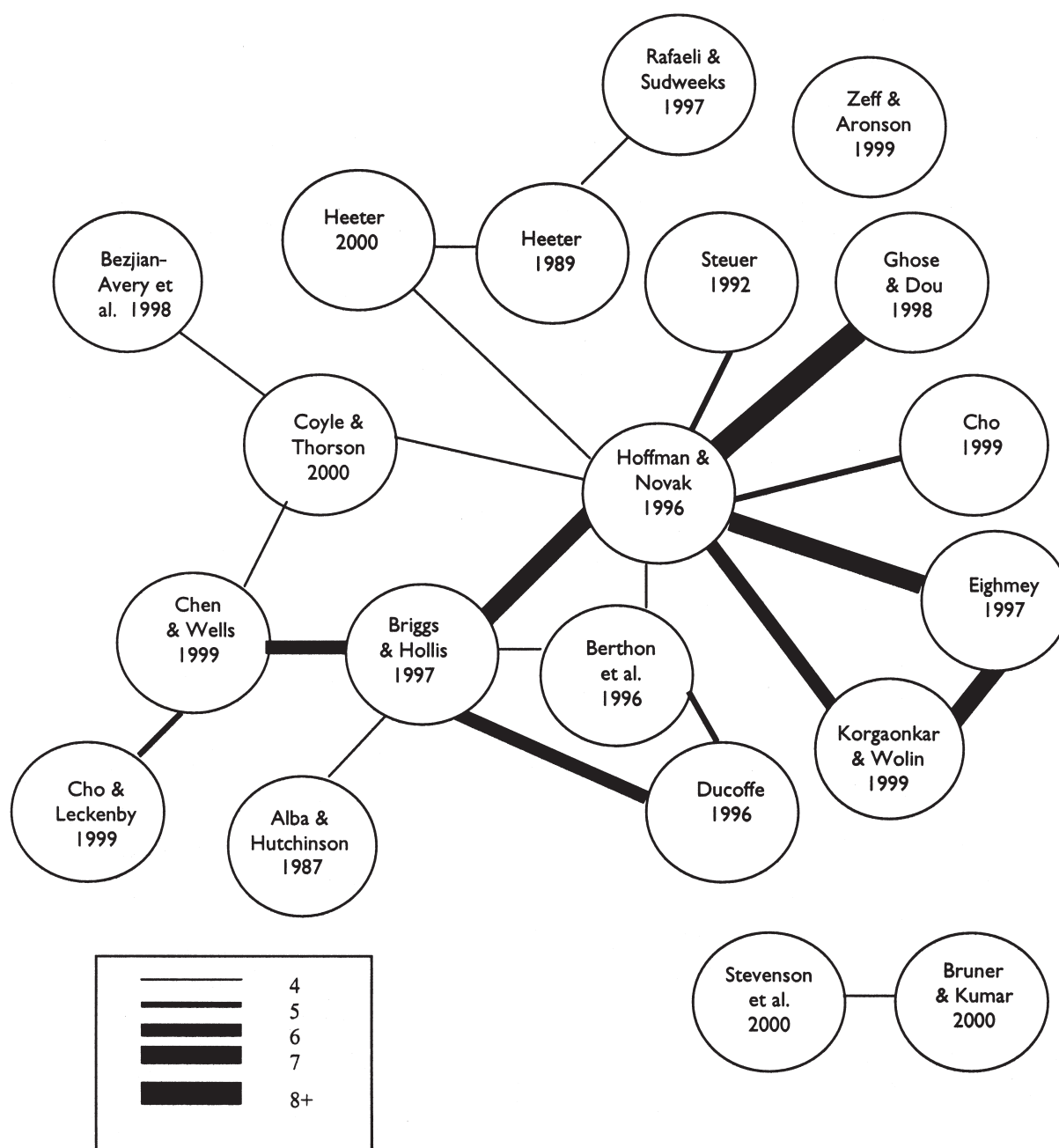
is included, with one paper that focuses on advertising process on the Web (Cho 1999), one specific to advertising effectiveness on the Web (Rossiter and Bellman 1999), and one about the value of advertising (Ducoffe 1995).

Four additional journals appear twice on Table 1: Two pieces from the *Journal of Marketing Research* predate Internet advertising (MacKenzie, Lutz, and Belch 1986; Mitchell and Olson 1981). Other journals with two papers include the *Journal of Broadcasting and Electronic Media* (Ha and James 1998; Papacha-

rissi and Rubin 2000), the *Journal of Communication* (Morris and Ogan 1996; Steuer 1992)*, the *Journal of Computer-Mediated Communication* (Hoffman, Novak, and Chatterjee 1995; Rafaeli and Sudweeks 1997), the *Journal of Advertising* (Coyle and Thorson 2001; Zaichkowsky 1994), *Communications of the ACM* (Hoffman, Kalsbeek, and Novak 1996; Singh and Dalal 1999), and *Sloan Management Review* (Blattberg and Deighton 1991; Quelch and Klein 1996). Most of the papers in this list focus on Internet communication and/or advertising either

directly or indirectly. The exception is papers that appeared prior to 1995, most of which provided theoretical underpinnings of later Internet advertising studies.

Finally, each of the following journals appears once on Table 2: *Computers and the Social Sciences* (Rafaeli 1986), *Journal of Business Research* (Eighmey and McCord 1998), *Journal of Interactive Marketing* (Dellaert and Kahn 1999), *Journal of Personality and Social Psychology* (Clary et al. 1998), *The Information Society* (Hoffman and Novak 1997), *Internet Research: Electronic Networking Applications Policy* (Katz and Aspden 1997), *Marketing Science* (Novak, Hoffman, and Yung 2000), *Harvard Business Review* (Deighton 1996), and *Journalism and Mass Communication Quarterly* (Li and Bukovac 1999), *Journal of Communication* (Steuer 1992), and *Public Opinion Quarterly* (Krugman 1965).

Books have also been influential in shaping the field. The 11 citations in this category include theory-building work (Engel, Blackwell, and Miniard 1993; Heeter 1989; Nunnally 1978; Petty and Cacioppo 1986; Rogers 1995; Rossiter and Percy 1997), work that focuses more specifically on the Internet and/or Internet marketing and advertising (Meeker 1997; Rafaeli 1988; Roehm and Haugtvedt 1999; Zeff and Aronson 1999), and a book on methodology (Hair et al. 1998). Although much of the work that first appears in the *Proceedings of the American Academy of Advertising* goes on to publication in other venues, eight pieces from the proceedings appear on the list of most-cited works with four or more citations (Cho and Leckenby 1997, 1999; McMillan 2000; Rodgers and Cannon 2000; Stafford and Stafford 1998; Wells and Chen 1999; Wu 1999; Yoo and Stout 2001).

THEMES AMONG MOST-CITED WORKS

While grouping the most-cited papers by journals provides some information on citation patterns, it is also useful to examine thematic patterns in these 91 papers—particularly among those that specifically address the topic of Internet advertising. Six primary themes seemed to emerge: effectiveness of Internet advertising, interactivity, electronic commerce, advertising processes, attitude toward the site/ad/brand, and comparisons to traditional media.

While effectiveness was a consideration in many of the papers, a set of papers specifically addressed the issue of effectiveness in Internet advertising (Berthon, Pitt, and Watson 1996; Briggs and Hollis 1997; Cho and Leckenby 1997; Cho, Lee, and Tharp 2001; Dahlen 2001; Dreze and Zufryden 1997; Ducoffe 1996; Eighmey 1997; Eighmey and McCord 1998; Lavidge and Steiner 1961; Li and Bukovac 1999; Papacharissi and Rubin 2000; Pavlou and Stewart 2000; Rodgers and Thorson 2000; Rossiter and Bellman 1999; Shamdasani, Stanaland, and Tan 2001; Stevenson, Bruner II, and Kumar 2000). These papers also covered a range of theoretical issues

(such as user perception) and practical applications (such as click-through).

As further detailed in the co-citation analysis, interactivity is a key feature of Internet advertising that has been explored in some depth by advertising researchers. Many of the most-cited papers address interactivity, either from a conceptual perspective or as an important variable in the context of Internet advertising (Cho and Leckenby 1999; Coyle and Thorson 2001; Ghose and Dou 1998; Ha and James 1998; Heeter 1989, 2000; McMillan 2000; Rafaeli 1988; Rafaeli and Sudweeks 1997; Roehm and Haugtvedt 1999; Steuer 1992; Yoo and Stout 2001; Wu 1999).

The third theme was electronic commerce. Although many papers at least tangentially addressed the issue of "converting" on-line advertising messages into sales, some more specifically focused on the on-line shopper and the opportunities and challenges for e-commerce (Alba et al. 1997; Blattberg and Deighton 1991; Deighton 1996; Donthu and Garcia 1999; Hoffman and Novak 1996, 1997; Hoffman, Kalsbeek, and Novak 1996; Hoffman, Novak, and Chatterjee 1995; Korgaonkar and Wolin 1999; Novak, Hoffman, and Yung 2000). The work of Hoffman and Novak dominates this stream of literature.

The fourth theme is illustrated in papers that address issues of how advertising works and focus on the persuasion process (Batra and Ray 1986; Bruner and Kumar 2000; Cho 1999, Holbrook and Batra 1987; Petty and Cacioppo 1986; Petty, Cacioppo, and Schumann 1983; Rossiter and Percy 1997; Vaughn 1980) and the key concept of involvement (Celsi and Olson 1988; Kennedy 1971; Krugman 1965; Zaichkowsky 1985, 1994). A related area is the issue of how advertising works and motivations from theoretical frameworks such as Uses and Gratification (Stafford and Stafford 1998) and examination of motivations (Clary et al. 1998; Katz and Aspden 1997; Maheswaran and Sternthal 1990). Many of these papers predate the Internet, and those that do directly relate to the Internet appeared relatively early in the sample (Cho 1999; Katz and Aspden 1997; Stafford and Stafford 1998).

The fifth theme focuses on the key concept of attitude. While many papers at least tangentially addressed attitude, a few focused specifically on this construct. Only one of the four papers in this theme is directly related to Internet advertising (Chen and Wells 1999). The others are "classics" in the field of attitude toward the advertisement and attitude toward the brand (Brown and Stayman 1992; MacKenzie, Lutz, and Belch 1986; Mitchell and Olson 1981).

The sixth theme in these papers is comparison to traditional media (Bezjian-Avery, Calder, and Iacobucci 1998; Coffey and Stipp 1997; Gallagher, Foster, and Parsons 2001; Leckenby and Hong 1998; Leong, Huang, and Stanners 1998; Maddox and Mehta 1997). Many of the papers that took this thematic approach appeared relatively early in the sample period when

researchers were still attempting to "place" Internet advertising in the context of traditional advertising.

CO-CITATION NETWORK ANALYSIS

Co-citation pairs were analyzed among the most cited works with four or more citations from the 113 research papers that dealt with Internet advertising because the goal of this research was to gain co-citation networks among influential citation works and an understanding of the domain of Internet advertising.

To obtain co-citation frequencies and co-citation networks, all of the examined works that cited any given pair of documents were analyzed. In the co-citation network, a co-citation connection was constructed by drawing a line between two documents if they are cited together by a number of other works. Co-citation networks help to examine cumulative practice and reference disciplines in Internet advertising research and to gain an understanding of a school of thought in Internet advertising.

Figure 1 presents the 20 papers from the most cited works in the examination set that were co-cited together in four or more of the examined papers. Numbers of co-citations are broken out into those with four, five, six, seven, and eight or more co-citation pairs in the targeted journals. Co-citation pairs that occurred fewer than four times were excluded because they would not have been meaningful (Pasadeos, Phelps, and Kim 1998). The co-citation networks would suggest visual representations of schools of thought, disciplinary paradigms, and/or research streams (Lievrouw 1989; Pasadeos, Phelps, and Kim 1998; Pasadeos, Renfro, and Hanily 1999).

In the main body of the co-citation network, one cluster addresses interactivity and includes the works of Coyle and Thorson (2001), Ghose and Dou (1998), Heeter (1989, 2000), Rafaeli and Sudweeks (1997), and Steuer (1992). Specifically, Figure 1 shows that Coyle and Thorson (2001), who examined effects of interactivity and vividness in Web marketing sites, are interconnected with Heeter (2000), who also discussed interactivity. Heeter (2000) is linked to Heeter (1989), who discussed interactive technologies and communication. This pair of papers was co-cited four times. Heeter (1989) is linked to Rafaeli and Sudweeks (1997), who articulated the concept of interactivity, with co-citation pairs found four times. Then, Rafaeli and Sudweeks (1997) are connected to Steuer (1992), who articulated dimensions of interactivity and telepresence.

Many of the papers in this interactivity cluster also link directly to Hoffman and Novak (1996), who offer a baseline of Internet advertising research that is both the most cited work on Table 1 and a central hub in the co-citation network. Hoffman and Novak (1996) are strongly interconnected with Ghose and Dou (1998), who examined impacts of interactive functions. These co-citation pairs were found ten times. In the interactivity cluster of the co-citation network, it is noteworthy that the works of Coyle and Thorson (2001), Heeter (1989, 2000), Rafaeli and Sudweeks (1997), and Steuer (1992) are interconnected with each other and are also indirectly connected to Ghose and Dou (1998) through Hoffman and Novak (1996). The co-citation network among those works (Coyle and Thorson 2001; Ghose and Dou 1998; Heeter 1989, 2000; Rafaeli and Sudweeks 1997; Steuer 1992) shows interconnections and highlights centrality of interactivity research as a main school of thought in the field of Internet advertising.

In the main body of the co-citation network, a subcluster addresses effectiveness issues in Internet advertising (Berthon, Pitt, and Watson 1996; Briggs and Hollis 1997; Ducoffe 1996). This cluster is also strongly interconnected with Hoffman and Novak (1996), primarily through Briggs and Hollis (1997), who examined effectiveness of Internet advertising by employing copy testing, with the co-citation pairs found seven times. Briggs and Hollis (1997) are strongly connected to Ducoffe (1996), who examined effectiveness by discussing users' perceptions on the value of Internet advertising, with the co-citation pairs found six times. Berthon, Pitt, and Watson (1996), who discussed the effectiveness of the Internet as an advertising medium, are interconnected to Briggs and Hollis (1997) and Ducoffe (1996).

Effectiveness is also a thematic similarity in the small, but heavily co-cited, group of papers represented by Eighmey (1997), Korgaonkar and Wolin (1999), and Hoffman and Novak (1996). Eighmey (1997), who examined user responses to Internet advertising and effectiveness, is strongly linked to Korgaonkar and Wolin (1999), who discussed Web usage in the context of electronic commerce. The study by Hoffman and Novak (1996) connects the two groupings of effectiveness research, providing a linkage among the works of Berthon, Pitt, and Watson (1996), Briggs and Hollis (1997), Ducoffe (1996), Eighmey (1997), and Korgaonkar and Wolin (1999), thus emphasizing the importance of effectiveness research in the field of Internet advertising.

In addition, Briggs and Hollis (1997) are linked to Chen and Wells (1999), who investigated attitude toward Web sites with co-citation pairs found six times, and to Alba and Hutchinson (1987), who discussed consumer expertise. Chen and Wells (1999) are moderately linked to Cho and Leckenby (1999), who examined interactivity. Coyle and Thorson (2001) are linked to Bezjian-Avery, Calder, and Iacobucci (1998), who discussed interactive advertising with direct comparison to traditional media. Steuer (1992) is linked to Zeff and Aronson (1999), who discussed general issues of Internet advertising.

Figure 1 also presents one small cluster detached from the main body of co-citation networks. This small cluster addresses attitude and hierarchy of effect issues of Internet advertising. This small cluster includes Stevenson, Bruner, and Kumar (2000), who examined effects of Web page background on

attitude (i.e., attitude toward the ad, brand attitude, attitude toward the Web site) and purchase intention, and Bruner and Kumar (2000), who examined Web ads and hierarchy of effects considering attitude (i.e., attitude toward the ad, brand attitude, attitude toward the Web site) and purchase intention. In the two works listed above, the pair of papers was co-cited four times.

Overall, the main body of co-citation network shows interactivity as a research stream in the Internet advertising discipline. The strong interconnections among Coyle and Thorson (2001), Heeter (1989, 2000), Rafaeli and Sudweeks (1997), and Steuer (1992) and an indirect link to Ghose and Dou (1998) through Hoffman and Novak (1996) focus primarily on interactivity as a main research stream. Furthermore, a subcluster among Berthon, Pitt, and Watson (1996), Briggs and Hollis (1997), Ducoffe (1996), Eighmey (1997), and Korgaonkar and Wolin (1999) focuses on effectiveness in Internet advertising. The co-citation network suggests that those authors and papers are influential in the domain of interactivity and proposes interactivity and effectiveness as central schools of thought among influential works.

DISCUSSION

This study assessed citations and co-citation networks of research on Internet advertising as a discipline. Citation and co-citation analyses provided insight into the evaluation of Internet advertising research with specific focus on three research questions: (1) What are the influential cited works in the field of Internet advertising research? Who are the most-cited authors? What are the most-cited Internet advertising papers? (2) What are the underlying themes among the most cited works in a field of Internet advertising? (3) What are the co-citation networks among influential cited works in the field of Internet advertising? What schools of thought are presented among co-citation networks?

A key finding that emerged from this study is the overall importance of the concept of interactivity to research on Internet advertising. In analysis of the most-cited papers, 11 research papers address interactivity either from a conceptual perspective or as an important variable in the context of Internet advertising (Cho and Leckenby 1999; Coyle and Thorson 2001; Ghose and Dou 1998; Ha and James 1998; Heeter 2000; McMillan 2000; Rafaeli and Sudweeks 1997; Roehm and Haugtvedt 1999; Steuer 1992; Yoo and Stout 2001; Wu 1999). Among the top-20 most-cited authors, three (Leckenby, McMillan, and Rafaeli) have conducted multiple studies related to interactivity. In fact, Rafaeli is often credited with being the "father" of the study of interactivity in computer-mediated environments.

Co-citation analysis offers insights into "invisible colleges" within a field. Co-citation analysis is valuable to present invis-

ible colleges because it can facilitate visualizing social networks among scholarly communications in a discipline. The indirect networks through the influential members in a field usually show clusters that refer to schools of thought and invisible colleges. Interactivity is one such invisible college to emerge as a strong influence on Internet advertising research. The co-citation network shows the strong interconnections among the works of Coyle and Thorson (2001), Heeter (1989, 2000), Rafaeli and Sudweeks (1997), and Steuer (1992) and an indirect link to Ghose and Dou (1998) through Hoffman and Novak (1996), all of whom highlight interactivity as a central research stream.

Co-citation networks also present another set of strong interconnections among Berthon, Pitt, and Watson (1996), Briggs and Hollis (1997), Ducoffe (1996), Eighmey (1997), Hoffman and Novak (1996), and Korgaonkar and Wolin, which discussed effectiveness in Internet advertising. The co-citation network suggests that those interconnected papers are influential works in the domain of Internet advertising and interactivity and effectiveness research as invisible colleges and/or school of thought.

Another finding is timeliness. Several papers (Bezjian-Avery, Calder, and Iacobucci 1998; Coffey and Stipp 1997; Leckenby and Hong 1998; Maddox and Mehta 1997) that appeared relatively early in the sample period considered issues of effectiveness, but always as a direct comparison with traditional media. The researchers were still attempting to "place" Internet advertising in the context of traditional advertising, and these early studies have not retained a central position in the co-citation network. However, the most recent papers in the co-citation network are those dated in 2000. Quite simply, it takes time for a network of co-citations to build around key studies.

This study also offers insights into the theoretical concepts that provide the underpinnings for the study of Internet advertising. A sampling of key influencers that appear in Tables 1 and 2 are the Elaboration Likelihood Model (Petty, Cacioppo, and Schumann 1983), attitude toward the ad (MacKenzie, Lutz, and Belch 1986; Mitchell and Olson, 1981), uses and gratification (Stafford and Stafford 1998), and diffusion of innovation (Rogers 1995). It appears that both marketing and communication theories are driving Internet advertising research.

In answer to the research questions, somewhat different patterns were found in terms of most-cited authors and works. As noted earlier, the authors named in Tables 1 and 2 are somewhat different, primarily because some of the cited authors have a few highly cited pieces (e.g., Hoffman and Novak), whereas others have multiple papers that are frequently cited (e.g., Leckenby). It is also important to remember that a system of "weighting" was used to account for the relative importance of first, second, and third authors in Table 1.

Thus, for most authors, the numbers in the "sources of citation received" column are somewhat inflated. This inflation is most significant for those who appear as a first or sole author of cited works. Tables 1 and 2 also include citations to earlier work that provides the underpinnings of Internet advertising research. This explains why authors such as Petty, Cacioppo, Mackenzie, Lutz, and Belch, Mitchell and Olson, and Rafaeli, who are not generally known for Internet advertising research, appear in Tables 1 and 2.

In addressing Research question 3, the focus of co-citation pairs was on the research papers that deal with Internet advertising within the targeted publications because this research question focused on articulating influences and interconnections of authors and their works in the Internet advertising discipline. We included in the network analysis (see Figure 1) all papers that were cited together in four or more papers. This is the same threshold that was used for Table 2, which listed all papers that were cited at least four times. The "cutoffs" for Tables 1 and 2 and Figure 1 were cohesive, but we also felt that the data presented represent natural "break points" in the overall frequency of citations and co-citations. In the co-citation network, similar patterns were found in terms of most-cited works and co-citation networks. All the co-citation works that were cited together four or more times were among the most cited works that were cited at least four times.

A limitation of this study is the relative youth of the Internet advertising field. Co-citation networks among the most cited papers might present a picture of invisible colleges at the very beginning of a research area of Internet advertising and offer a baseline for future researchers.

Because academic analysis of Internet advertising began only about 10 years ago, it is not yet possible to compare citation patterns over time as has been done in other similar bibliometric studies (e.g., Pasadeos, Phelps, and Kim 1998). Further studies that aggregate and interconnect citation and co-citation networks should be done to show paradigm changes in the discipline over time.

REFERENCES

Alba, Joseph W., and J. Wesley Hutchinson (1987), "Dimensions of Consumer Expertise," *Journal of Consumer Research,* 13 (March), 83–95.

———, John Lynch, Barton Weitz, Chris Janiszewski, Richard Lutz, Alan Sawyer, and Stacy Wood (1997), "Interactive Home Shopping: Incentives for Consumers, Retailers, and Manufacturers to Participate in Electronic Marketplaces," *Journal of Marketing,* 61 (July), 38–53.

Bar-Ilan, Judit, and Bluma C. Peritz (2002), "Infometric Theories and Methods for Exploring the Internet: An Analytical Survey of Recent Research Literature," *Library Trends,* 50 (3), 371–392.

Barry, Thomas E. (1990), "Publication Productivity in the Three Leading U.S. Advertising Journals: Inaugural Issues Through 1988," *Journal of Advertising,* 19 (1), 52–60.

Batra, Rajeev, and Michael L. Ray (1986), "Affective Responses Mediating Acceptance of Advertising," *Journal of Consumer Research,* 13 (September), 234–249.

Berthon, Pierre, Leyland F. Pitt, and Richard T. Watson (1996), "The World Wide Web as an Advertising Medium: Toward an Understanding of Conversion Efficiency," *Journal of Advertising Research,* 36 (1), 43–54.

Bezjian-Avery, Alexa, Bobby Calder, and Dawn Iacobucci (1998), "New Media Interactive Advertising Vs. Traditional Advertising," *Journal of Advertising Research,* 38 (4), 23–32.

Blattberg, Robert C., and John Deighton (1991), "Interactive Marketing; Exploring the Age of Addressability," *Sloan Management Review,* 33 (1), 5–14.

Borgman, Christine L. (2000), "Scholarly Communication and Bibliometrics Revisited," in *The Web of Knowledge,* Blaise Cronin and Helen Barsky Atkins, eds., Medford, NJ: Information Today, 143–162.

Briggs, Rex, and Hollis Nigel (1997), "Advertising on the Web: Is There Response Before Click-Through?" *Journal of Advertising Research,* 37 (3), 33–45.

Brown, Steven P., and Douglas M. Stayman (1992), "Antecedents and Consequences of Attitude Toward the Ad: A Meta-Analysis," *Journal of Consumer Research,* 19 (1), 34–51.

Bruner, Gordon C., II, and Anand Kumar (2000), "Web Commercials and Advertising Hierarchy-of-Effects," *Journal of Advertising Research,* 40 (1/2), 35–42.

Bush, Alan, Victoria Bush, and Sharon Harris (1998), "Advertiser Perceptions of the Internet as a Marketing Communications Tool," *Journal of Advertising Research,* 38 (2), 17–28.

Cawkell, Tony (2000), "Visualizing Citation Connections," in *The Web of Knowledge,* Blaise Cronin and Helen Barsky Atkins, eds., Medford, NJ: Information Today, 177–194.

Celsi, Richard L., and Jerry C. Olson (1988), "The Role of Involvement in Attention and Comprehension Processes," *Journal of Consumer Research,* 15 (September), 210–224.

Chen, Qiemi, and William D. Wells (1999), "Attitude Toward the Site," *Journal of Advertising Research,* 39 (5), 27–37.

Cho, Chang-Hoan (1999), "How Advertising Works on the WWW: Modified Elaboration Likelihood Model," *Journal of Current Issues and Research in Advertising,* 21 (1), 33–50.

———, and Hyoung Koo Khang (2005), "Trend of Internet-Related Research: 1994 to 2003," in *Proceedings of the American Academy of Advertising,* Carrie La Ferle, ed., East Lansing: Michigan State University, 162–179.

———, and ——— (2006), "The State of Internet-Related Research in Communications, Marketing and Advertising: 1994–2003," *Journal of Advertising,* 35 (3), 143–163.

———, and John D. Leckenby (1997), "Internet-Related Programming Technology and Advertising," in *Proceedings of the American Academy of Advertising,* M. Carole Macklin, ed., Cincinnati: University of Cincinnati, 69–79.

———, and ——— (1999), "Interactivity as a Measure of Advertising Effectiveness," in *Proceedings of the American Academy of Advertising,* Marilyn S. Roberts, ed., Gainesville, FL: University of Florida, 162–179.

———, Jung-Gyo Lee, and Marye Tharp (2001), "Different Forced-Exposure Levels to Banner Advertisements," *Journal of Advertising Research,* 41 (4), 45–56.

Clary, E. Gil, Mark Snyder, Robert D. Ridge, John Copeland, Arthur A. Stukas, Julie Haugen, and Peter Miene (1998), "Understanding and Assessing the Motivations of Volunteers: A Functional Approach," *Journal of Personality and Social Psychology,* 74 (6), 1516–1530.

Coffey, Steve, and Horst Stipp (1997), "The Interactions Between Computer and Television Usage," *Journal of Advertising Research,* 37 (2), 61–67.

Coyle, James R., and Esther Thorson (2001), "The Effects of Progressive Levels of Interactivity and Vividness in Web Marketing Sites," *Journal of Advertising,* 30 (3), 65–77.

Crane, Diana (1972), *Invisible Colleges: Diffusion of Information in Scientific Communities,* Chicago: University of Chicago Press.

Culnan, Mary (1986), "The Intellectual Development of Management Information Systems, 1972–1982: A Co-Citation Analysis," *Management Science,* 32 (2), 156–172.

Dahlen, Micael (2001), "Banner Advertisements Through a New Lens," *Journal of Advertising Research,* 41 (4), 23–30.

Deighton, John (1996), "The Future of Interactive Marketing," *Harvard Business Review,* 74 (6), 151–161.

Dellaert, Benedict G. C., and Barbara E. Kahn (1999), "How Tolerable Is Delay? Consumers' Evaluation of Internet Web Sites After Waiting," *Journal of Interactive Marketing,* 13 (Winter), 41–54.

Donthu, Naveen, and Adriana Garcia (1999), "The Internet Shopper," *Journal of Advertising Research,* 39 (3), 52–58.

Dreze, Xavier, and Fred Zufryden (1997), "Testing Web Site Design and Promotional Content," *Journal of Advertising Research,* 37 (2), 77–91.

Ducoffe, Robert H. (1995), "How Consumers Assess the Value of Advertising," *Journal of Current Issues and Research in Advertising,* 17 (1), 1–18.

——— (1996), "Advertising Value and Advertising on the Web," *Journal of Advertising Research,* 36 (5), 21–34.

Eighmey, John (1997), "Profiling User Response to Commercial Web Sites," *Journal of Advertising Research,* 37 (3), 59–66.

———, and Lola McCord (1998), "Adding Value in the Information Age: Uses and Gratifications of Sites on the World Wide Web," *Journal of Business Research,* 41 (3), 187–194.

Engel, James F., Roger D. Blackwell, and Paul W. Miniard (1993), *Consumer Behavior,* 7th ed., Fort Worth, TX: The Dryden Press.

Gallagher, Katherine, K. Dale Foster, and Jeffrey Parsons (2001), "The Medium Is Not the Message: Advertising Effectiveness and Content Evaluation in Print and on the Web," *Journal of Advertising Research,* 41 (4), 57–70.

Ghose, Sanjoy, and Wenyu Dou (1998), "Interactive Functions and Their Impacts on the Appeal of Internet Presence Sites," *Journal of Advertising Research,* 38 (2), 29–43.

Ha, Louisa, and Lincoln James (1998), "Interactivity Reexamined: A Baseline Analysis of Early Business Web Sites," *Journal of Broadcasting and Electronic Media,* 42 (4), 457–474.

Hair, Joseph F., Jr., Rolph E. Anderson, Ronald L. Tatham, and William C. Black (1998), *Multivariate Data Analysis,* 5th ed., Upper Saddle River, NJ: Prentice Hall.

Haley, Russell I., and Allan L. Baldinger (1991), "The ARF Copy Research Validity Project," *Journal of Advertising Research,* 31 (2), 11–32.

Harvey, Bill (1997), "The Expanded ARF Model: Bridge to the Accountable Advertising Future," *Journal of Advertising Research,* 37 (2), 11–20.

Heeter, Carrie (1989), "Implications of New Interactive Technologies for Conceptualizing Communication," in *Media List in the Information Age: Emerging Patterns of Adoption and Consumer Use,* Lerry Savaggio and Jennings Bryant, eds., Hillsdale, NJ: Lawrence Erlbaum, 53–75.

——— (2000), "Interactivity in the Context of Designed Experience," *Journal of Interactive Advertising,* 1 (1), available at www.jiad.org (accessed September 20, 2004).

Henthorne, Tony L., Michael S. LaTour, and Tina Lorass (1996), "Publication Productivity in the Three Leading U.S. Advertising Journals: 1989 Through 1996," *Journal of Advertising,* 27 (2), 53–63.

Hoffman, Donna L., and Thomas P. Novak (1996), "Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations," *Journal of Marketing,* 60 (3), 50–68.

———, and ——— (1997), "A New Marketing Paradigm for Electronic Commerce," *Information Society,* 13 (1), 43–54.

———, William D. Kalsbeek, and Tomas P. Novak (1996), "Internet and Web Use in the U.S.," *Communications of the ACM,* 39 (12), 36–46.

———, Thomas P. Novak, and Patrali Chatterjee (1995), "Commercial Scenarios for the Web: Opportunities and Challenges," *Journal of Computer-Mediated Communication,* 1 (3), available at http://shum,huji.ac.il/jcmc/voll/issue3/volln03 .html (accessed August 10, 2004).

Holbrook, Morris B., and Rajeev Batra (1987), "Assessing the Role of Emotions as Mediators of Consumer Responses to Advertising," *Journal of Consumer Research,* 14 (December), 404–420.

Hult, G. Thomas M., William T. Neese, and R. Edward Bashaw (1997), "Faculty Perceptions of Marketing Journals," *Journal of Marketing Education,* 19 (Spring), 37–52.

Journal Citation Reports Social Science Edition (2003), available at http://isi3.isiknowledge.com.proxy.lib.utk.edu:90/portal .cgi (accessed September 20, 2004).

Katz, James E., and Philip Aspden (1997), "Motivations for and Barriers to Internet Usage: Results of a National Public Opinion Survey," *Internet Research: Electronic Networking Applications Policy,* 7 (3), 170–188.

Kennedy, John R. (1971), "How Program Involvement Affects TV Commercials," *Journal of Advertising Research,* 11 (February), 33–38.

Korgaonkar, Pradeep K., and Lori D. Wolin (1999), "A Multivariate Analysis of Web Usage," *Journal of Advertising Research,* 39 (March/April), 53–68.

Krugman, Herbert E. (1965), "The Impact of Television Advertising Learning Without Involvement," *Public Opinion Quarterly,* 29 (Fall), 349–356.

Lavidge, Robert C., and Gary Steiner (1961), "A Model for Pre-

dictive Measurements of Advertising Effectiveness," *Journal of Marketing,* 25 (October), 59–62.

Leckenby, John D., and Jongpil Hong (1998), "Using Reach/Frequency for Web Media Planning," *Journal of Advertising Research,* 38 (1), 7–20.

———, and Hairong Li (2000), "Why We Need the *Journal of Interactive Advertising," Journal of Interactive Advertising,* 1 (1), available at www.jiad.org (accessed September 20, 2004).

Leiner, Barry M., Vinton G. Cerf, David D. Clark, Robert E. Kahn, Leonard Kleinrock, Daniel C. Lynch, Jon Postel, Lawrence G. Roberts, and Stephen S. Wolff (2000), *A Brief History of the Internet,* available at www.isoc.org/internet-history/ (accessed September 20, 2004).

Leong, Elaine K. E., Xueli Huang, and Paul-John Stanners (1998), "Comparing the Effectiveness of the Web Site with Traditional Media," *Journal of Advertising Research,* 38 (5), 44–51.

Li, Hairong, and Janice L. Bukovac (1999), "Cognitive Impact of Banner Ad Characteristics: An Experimental Study," *Journalism and Mass Communication Quarterly,* 76 (2), 341–353.

Lievrouw, Leah A. (1989), "The Invisible College Reconsidered: Bibliometrics and the Development of Scientific Communication Theory," *Communication Research,* 16 (5), 615–628.

MacKenzie, Scott B., Richard J. Lutz, and George E. Belch (1986), "The Role of Attitude Toward the Ad as a Mediator of Advertising Effectiveness: A Test of Competing Explanations," *Journal of Marketing Research,* 23 (2), 130–143.

Madden, Mary (2003), *America's Online Pursuits: The Changing Picture of Who's Online and What They Do,* Washington, DC: Pew Internet and American Life Project.

Maddox, Lynda M., and Darshan Mehta (1997), "The Role and Effect of Web Addresses in Advertising," *Journal of Advertising Research,* 37 (2), 47–49.

Maheswaran, Durairaj, and Brian Sternthal (1990), "The Effects of Knowledge, Motivation and Type of Message on Ad Processing and Product Judgments," *Journal of Consumer Research,* 17 (June), 66–73.

McDonald, Scott C. (1997), "The Once and Future Web: Scenarios for Advertisers," *Journal of Advertising Research,* 37 (2), 21–28.

McMillan, Sally J. (2000), "Interactivity Is in the Eye of the Beholder: Function, Perception, Involvement, and Attitude Toward the Web Site," in *Proceedings of the American Academy of Advertising,* Mary Alice Shaver, ed., East Lansing: Michigan State University, 71–78.

Meeker, Mary (1997), *The Internet Advertising Report,* New York: Harper Business.

Metheringham, Richard A. (1964), "Measuring the Net Cumulative Coverage of a Print Campaign," *Journal of Advertising Research,* 4 (4), 23–28.

Mitchell, Andrew A., and Jerry C. Olson (1981), "Are Product Attribute Beliefs the Only Mediator of Advertising Effects on Brand Attitude?" *Journal of Marketing Research,* 18 (August), 318–332.

Morris, Merrill, and Christine Ogan (1996), "The Internet as Mass Medium," *Journal of Communication,* 46 (1), 39–50.

Murry, John P., Jr., John L. Lastovicka, and Surendra N. Singh (1992), "Feeling and Liking Responses to Television Programs: An Examination of Two Explanations for Media Context Effects," *Journal of Consumer Research,* 18 (March), 441–451.

Novak, Thomas, Donna Hoffman, and Yiu-Fai Yung (2000), "Measuring the Customer Experience in Online Environments: A Structural Modeling Approach," *Marketing Science,* 19 (Winter), 22–44.

Nunnally, Jum C. (1978), *Psychometric Theory,* New York: McGraw-Hill.

Papacharissi, Zizi, and Alan M. Rubin (2000), "Predictors of Internet Use," *Journal of Broadcasting and Electronic Media,* 44 (2), 175–196.

Pasadeos, Yorgo, Joseph Phelps, and Bong-Hyun Kim (1998), "Disciplinary Impact of Advertising Scholars: Temporal Comparisons of Influential Authors, Works and Research Networks," *Journal of Advertising,* 27 (4), 53–70.

———, R. Bruce Renfro, and Mary Lynn Hanily (1999), "Influential Authors and Works of the Public Relations Scholarly Literature: A Network of Recent Research," *Journal of Public Relations Research,* 11 (1), 29–52.

Pavlou, Paul A., and David W. Stewart (2000), "Measuring the Effects and Effectiveness of Interactive Advertising: A Research Agenda," *Journal of Interactive Advertising,* 1 (1), available at www.jiad.org (accessed August 10, 2005).

Petty, Richard E., and John T. Cacioppo (1986), *Communication and Persuasion: Central and Peripheral Routes to Attitude Change,* New York: SpringerVerlag.

———, ———, and David Schumann (1983), "Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement," *Journal of Consumer Research,* 10 (2), 135–146.

Pritchard, Alan (1969), "Statistical Bibliography or Bibliometrics?" *Journal of Documentation,* 25 (4), 348–349.

Quelch, John A., and Lisa R. Klein (1996), "The Internet and International Marketing," *Sloan Management Review,* 38 (Spring), 60–75.

Rafaeli, Sheizaf (1986), "The Electronic Bulletin Board: A Computer-Driven Mass Medium," *Computers and the Social Sciences,* 2 (3), 123–136.

——— (1988), "Interactivity: From New Media to Communication," in *Advanced Communication Science: Merging Mass and Interpersonal Processes,* Robert P. Hawkins, John M. Wiemann, and Suzanne Pingree, eds., Newbury Park, CA: Sage, 110–134.

———, and Fay Sudweeks (1997), "Networked Interactivity," *Journal of Computer-Mediated Communication,* 2 (4), available at www.usc.edu/dept/annenberg/v012/issue4/rafaeli.sudweeks.html (accessed September 20, 2004).

Ratchford, Brian T. (1987), "New Insights About the FCB Grid," *Journal of Advertising Research,* 27 (4), 24–38.

Rodgers, Shelly, and Hugh Cannon (2000), "The Many Faces of Web Users: An Exploratory Study of Functionally-Based Web-Usage Groups," *Proceedings of the American Academy of Advertising,* Mary Alice Shaver, ed., East Lansing, MI: Michigan State University.

———, and Esther Thorson (2000), "The Interactive Advertis-

ing Model: How Users Perceive and Process Online Ads," *Journal of Interactive Advertising,* 1 (1), available at http://jiad .org/v011/n01/rodgers (accessed October 5, 2005).

Roehm, Harper, and Curtis Haugtvedt (1999), "Understanding Interactivity of Cyberspace Advertising," in *Advertising and the World Wide Web,* David Schumann and Esther Thorson eds., Mahwah, NJ: Lawrence Erlbaum, 27–39.

Rogers, Everett M. (1995), *Diffusion of Innovations,* 4th ed., New York: Free Press.

Rossiter, John R., and Steven Bellman (1999), "A Proposed Model for Explaining and Measuring Web Ad Effectiveness," *Journal of Current Issues and Research in Advertising,* 21 (1), 13–31.

———, and Larry Percy (1997), *Advertising Communications and Promotion Management,* 2d ed., New York: McGraw-Hill.

Schlinger, Mary Jane (1979), "A Profile of Responses to Commercials," *Journal of Advertising Research,* 19 (March/April), 37–46.

Shamdasani, Prem N., Andrea J. S. Stanaland, and Juliana Tan (2001), "Location, Location, Location: Insights for Advertising Placement on the Web," *Journal of Advertising Research,* 41 (4), 7–21.

Singh, Surendra N., and Nikunj P. Dalal (1999), "Web Home Pages as Advertisements," *Communications of the ACM,* 42 (8), 91–98.

Small, Henry (1980), "Co-Citation Context Analysis and the Structure of Paradigms," *Journal of Documentation,* 36 (3), 183–196.

——— (1999), "Visualizing Science by Citation Mapping," *Journal of the American Society for Information Science,* 50 (9), 799–812.

Stafford, Thomas F., and Marla R. Stafford (1998), "Uses and Gratifications of the World Wide Web: A Preliminary Study," in *Proceedings of the American Academy of Advertising,* Darrel D. Mueling, ed., Pullman: Washington State University, 174–181.

Steuer, Jonathan (1992), "Defining Virtual Reality: Dimensions Determining Telepresence," *Journal of Communication,* 42 (4), 73–93.

Stevenson, Julie S., Gordon C. Bruner II, and Anand Kumar

(2000), "Webpage Background and Viewer Attitudes," *Journal of Advertising Research,* 40 (1/2), 29–34.

Tankard, James W., Tsan-Kuo Chang, and Kuo-Jen Tsang (1984), "Citation Networks as Indicators of Journalism Research Activity," *Journalism Quarterly,* 61 (124), 89–96.

Usdiken, Behlul, and Yorgo Pasadeos (1995), "Organizational Analysis in North America and Europe: A Comparison of Co-citation Networks," *Organization Studies,* 16 (3), 503–526.

Vaughn, Richard (1980), "How Advertising Works: A Planning Model," *Journal of Advertising Research,* 2 (5), 27–33.

Wells, William D., and Qimei Chen (1999), "Surf's Up-Differences Between Web Surfers and Non-Surfers: Theoretical and Practical Implications," in *Proceedings of the American Academy of Advertising,* Marilyn S. Roberts, ed., Gainesville, FL: University of Florida, 115–126.

White, Howard D., Barry Wellman, and Nancy Nazer (2004), "Does Citation Reflect Social Structure? Longitudinal Evidence from the 'Globenet' Interdisciplinary Research Group," *Journal of the American Society for Information Science and Technology,* 52 (2), 111–126.

Wiberley, Stephen E., Jr. (2003), "A Methodological Approach to Developing Bibliometric Models of Types of Humanities Scholarship," *Library Quarterly,* 73 (2), 121–159.

Wu, Guohua (1999), "Perceived Interactivity and Attitude Toward Website," in *Proceedings of the American Academy of Advertising,* Marilyn S. Roberts, ed., Gainesville: University of Florida, 254–262.

Yoo, Chan Y., and Patricia A. Stout (2001), "Factors Affecting Users' Interactivity with the Web Site and the Consequences of Users' Interactivity," in *Proceedings of the American Academy of Advertising,* Charles R. Taylor, ed., Villanova, PA: Villanova University, 53–61.

Zaichkowsky, Judith Lynne (1985), "Measuring the Involvement Construct," *Journal of Consumer Research,* 12 (December), 341–352.

——— (1994), "The Personal Involvement Inventory: Reduction, Revision, and Application to Advertising," *Journal of Advertising,* 23 (4), 59–70.

Zeff, Robbin, and Brad Aronson (1999), *Advertising on the Internet,* 2d ed., New York: John Wiley.