Preface and Introduction

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This is the 36th volume of the *Annual Review of Information Science and Technology (ARIST)* and the first under my editorship. Readers who are new to *ARIST* and interested in its purpose and evolution may wish to visit the Web site hosted on the homepage of the American Society for Information Science and Technology (ASIST), the parent organization (http://www.asis. org/Publications/ARIST/index.html). For the last twenty-five years *ARIST* has been expertly edited by Professor Martha Williams, to whom we owe a very considerable debt. She has set an exacting benchmark for her successors.

A change in editorship is almost invariably accompanied by changes in the product, whether in terms of style, coverage, or design, or all of the foregoing. Connoisseurs of *ARIST* will quickly notice some of the initial changes, and not all of these, I imagine, will be greeted with unalloyed enthusiasm. Perhaps the most obvious breach with convention is the adoption of the APA (American Psychological Association) referencing style, a move welcomed rapturously, it must be said, by some contributing authors. Since the *Journal of the American Society for Information Science and Technology (JASIST)* uses this convention, and since *ARIST* and *JASIST* are stablemates with much in common, not least authors, readers, and topic coverage, there seems little reason for *ARIST* to persist with its rather baroque bibliographic practices: all the more so now that *JASIST*'s

transatlantic peer, the *Journal of Documentation*, has announced its adoption of the APA referencing style. Additionally, I should note, authors are being granted some latitude in their interpretation of the APA rules.

I am also keen to move beyond the bibliographic review model and have authors inject more of their own voices into the text in an effort to overcome (and I am quoting here from Theodore D. Kemper's piece, *Toward Sociology as a Science, Maybe*, in the August 11, 2000 issue of the *Chronicle of Higher Education*) what the sociologist John Lofland of the University of California at Davis termed "analytic *interruptus,*" the failure of many review chapter authors to engage analytically with their subject matter. The aim, in other words, is to provide the reader with a balanced, though certainly not uncritical or characterless overview of current and emerging issues, a summary of recent work in the focal area, and a sense of the important research questions to be addressed. Other actual or imminent changes are sufficiently cosmetic or uncontentious as to be unremarkable, such as the inclusion of short biographical entries on our contributors—those who, ultimately, provide the volume's warrant. The nature of the index to the volume changes as well, covering the text of the reviews but not the bibliographic references. On the production side, there have also been a few changes. The practice of sending camera-ready copy to the publisher will be discontinued with the present volume: henceforth, the publisher, Information Today, Inc., will have ultimate responsibility for copyediting and proofing. For some time it has been the practice to publish *ARIST* late in the year, typically to coincide with the ASIST annual meeting in November. That practice changes with volume 36: Henceforth, *ARIST* will appear at the beginning of the calendar year.

Some things, however, will not change. *ARIST* has long been considered a landmark publication within the information science community. It provides the reader with analytical, authoritative, and accessible overviews of recent trends and significant developments. I fully intend to see that these three virtues are reaffirmed in the years ahead. The range of topics will vary considerably, reflecting the dynamism of the domain and the diversity of prevailing research, both theoretical and applied. My goal is to progressively broaden the coverage by increasing the number of chapters and reducing slightly the average length both of the text and bibliography. While *ARIST* will naturally continue to cover foundational topics associated with what I shall call classical information science, of

which bibliometrics and information retrieval are notable staples, my intention is to expand its footprint, prudently and selectively, in an effort to connect more tightly with cognate academic and professional communities where the study of information phenomena, behaviors, and artifacts is also of central intellectual concern. Interest in information science, broadly defined, is growing apace, and the challenge for *ARIST* is to consolidate its leadership position by building on its pedigree and perceived authority. However, introversion or ideational xenophobia could eventually undermine *ARIST's* value and attractiveness to core constituencies. Thus, the principal challenge, as I see it, is to subtly reposition *ARIST* such that it neither abandons its heartland market nor fails to establish a credible presence in emerging areas of importance to the wider information science community.

In their elegant study, *Visualizing a Discipline*, published in the *Journal of the American Society for Information Science* (1998 v. *49*, pp. 327–355), Howard White and Katherine McCain mapped the intellectual boundaries of the discipline and identified a core population of information science scholars. They claimed that the "rich word 'information' has seduced some into characterizations of the field that are, to date, overgeneral." They went on to add that these "definitions would have *ASIS*-style information science dealing with employers' payrolls, a housewife's grocery receipts, *Nightline*, arrival and departure listings in airports, the Grand Ole Opry, and color-coded vial caps used by crack dealers." The problem with this exclusionary logic, even allowing for a degree of playful irony, is that it ignores the fact that insights, regularities, and proto-models pertaining to information generation and use are quite possibly instantiated in all of these cases and contexts, as Paul Solomon's chapter in the present volume should make clear. In fact, their comments echo in some regards those of Roy Harris in his recent review of George Steiner's *Grammars of Creation* published in the *Times Higher Education Supplement* (May 4, 2001, p. 27):

> Steiner ushers us into the library, the museum, the art gallery, the university, occasionally the academic conference. He never takes us into the kitchen, or the street, or the factory, or the football match. That, as a writer, is his prerogative. But then he cannot complain if at the end of his book we conclude that he was never interested in elucidating human creativity at all, but in celebrating the mystique of his threatened professional world, and lamenting its passing.

A further irony in all of this is that many of those listed in White and McCain's canonical group are not information scientists in the strict sense of the term; in fact, many of them were intellectual journeymen who fortuitously traversed the formative landscape of information science. Moreover, some of these scholars' most significant work might not have passed the White/McCain admissibility test. This is not a trivial semantic issue, nor a spat between latter-day schoolmen; rather it is a plea to recognize the need for ecumenism without, I should add, irresponsibly ceding turf or diminishing one's intellectual patrimony.

What, then, does repositioning *ARIST* entail? First, the gradual identification of activity domains that are currently underrepresented, and, second, drawing upon a larger and more heterogeneous pool of authors to reflect the range of perspectives and approaches in play. In all of this, of course, it will be critical to both preserve and augment the traditional values that have contributed to *ARIST's* longevity. Volume 36 affords a sense of what I have in mind. We open with an expansive (so much for the Editor's suggested word cap) and imaginatively structured review of the sprawling literature on scholarly communication and bibliometrics, two areas that lie at the heart of classical information science. The authors, Christine Borgman and Jonathan Furner, are information science "insiders" (even though Christine's doctorate is in communication), but they reach outside to embrace the burgeoning research literature of cybermetrics, much of which, at first blush, might seem to lie beyond the information science pale. By way of contrast, I have invited a complete "outsider," Philip Davies, whose academic home is international and strategic studies, to introduce *ARIST* readers to the high-profile topic of information warfare and its correlatives. His wide-ranging chapter on intelligence, information technology, and information warfare brings a raft of new topics to the pages of *ARIST* for the first time. Yet, as he makes abundantly clear in his introduction and subsequent analysis, these topics are implicitly, if not always explicitly, connected to the day-to-day concerns of many ASIST members and to a growing band of researchers in the broadly defined information science domain. The admittedly simplistic insider/outsider dualism breaks down with Susan Herring, a sociolinguist (i.e., outsider) who recently made a strategic career shift into information science where she is arguably better positioned to apply her theoretical and methodological skills to communicative structures and discursive practices

in computer-mediated environments. But would the kinds of conversations, interactions, and observations that are grist to her investigative mill pass muster with White and McCain? Possibly, but I certainly do not doubt the value of applying the formalisms of linguistics to novel communicative contexts and emergent information behaviors.

Another topic, which is indicative of the push into new territory, is "intellectual capital." As many readers will know, there is a considerable literature on information economics, much of it originating in mainstream economics, some of it in information science, but *ARIST* has not heretofore offered a systematic deconstruction of the concept of intellectual capital and the challenges associated with valuing and managing intangible assets. The chapter by Herbert Snyder and Jennifer Burek Pierce constitutes a highly commendable effort to relate the arcana of accounting to the praxis of information science.

Although this year's *ARIST* does not include a chapter with the ubiquitous words "knowledge management" in the title, many of the complex issues associated with the creation, codification, and communication of knowledge are addressed in nuanced fashion by Elisabeth Davenport and Hazel Hall. Their approach is to root knowledge management in organizational dynamics, and they pay special attention to the concept of "communities of practice," a salient term in the literature of business administration and organizational theory, but one that, thus far, has not been foregrounded in *ARIST*. Their chapter is notable for stressing the importance of the tacit and the informal, and also for debunking the all-too-common notion that virtual communities are somehow synonymous with communities of practice—a concept, by the way, that evokes fond memories of "invisibles colleges," another signature topic of the classical information science literature.

Several of the issues raised by Davenport and Hall relating to sociotechnical systems design find their echo in Thomas Finholt's extremely lucid exposition of collaboratories, another subject making its debut in *ARIST*. His review of much recent research shows clearly that normative expectations and behavioral factors play important roles in shaping scientists' use and assessment of the value of collaboratories. Several other chapters deal with subjects that have previously appeared in *ARIST*. Pierrette Bergeron and Christine Hiller's overview of trends and developments

in competitive intelligence builds on earlier contributions dealing with environmental scanning and social intelligence, but this is the first time *ARIST* has devoted a chapter specifically to competitive intelligence, a topic of considerable interest to professional information managers in a wide variety of corporate and other settings.

While Paul Solomon's chapter on discovering information is another first, many of the underlying themes have been pebble-dashed across previous *ARIST* volumes. Solomon weaves together the dispersed literature on information seeking, sense making, and information encountering in an effort to demonstrate the importance of context. His goal is to illuminate the ways in which situational factors facilitate or inhibit the creation, discovery, and shaping of information. This leads him to introduce the idea of a sociotechnical systems design science, a theme that finds its echo in a number of other chapters (e.g., Davenport & Hall, Finholt). A different, more formalistic, take on information discovery is provided by Gerald Benoît, whose chapter on data mining is a solid synthesis of a fast-moving field, one that, as he notes in his introduction, has been treated previously in *ARIST*.

In the section on *Information Theory,* Ian Cornelius has crafted the kind of chapter that will appeal especially to those whom I have somewhat whimsically labeled as classical information scientists. It revisits several of the grandees of early information science, Bertram Brookes for instance, in a clear-headed effort to determine whether information science has a theory of information. But he also connects the reader with the work of outsiders, both old and new, such as Claude Shannon and Jon Barwise. Counterpointing Cornelius, we have a grounded analysis of social informatics by Steve Sawyer and Kristin Eschenfelder. This is not the first time "social informatics" has appeared in *ARIST*: An earlier chapter brought a social informatics perspective to bear on digital library design. However, the present authors range more widely and, more specifically, have attempted to answer a question that has been asked more than once: Just what is social informatics? Or, to put it another way, as the authors do here, what is not social informatics?

I have grouped the remaining two chapters under the rubric *Technology and Service Delivery*. The topic of digital libraries is set to become a perennial of *ARIST*, given the extraordinary growth in research and

development activity, not just within the information science community, but in a number of other academic disciplines, most notably computer science. Indeed, digital libraries constitute the principal site, anthropologically speaking, where these two tribes meet and seek to forge a *lingua franca* to drive next-generation digital library provision. Edward Fox (computer science) and Shalini Urs (information science) have provided a well-structured conspectus of current research and development trends worldwide. Volume 36 concludes with another overview of trends in information technology and their effect on information provision, this time in the area of health care. The subject is not new to *ARIST*, but, as with digital libraries, this is a huge sphere of activity characterized by rapid and frequent innovation, a sense of which is well conveyed by the authors, Marie Russell and Michael Brittain.

In conclusion, these thirteen chapters constitute a modest initial effort to chart a slightly different course for *ARIST*. As I write this introduction, the contributors to volume 37 are beavering away on their chapters. If all goes according to plan, the 2003 *ARIST* will introduce several more novel topics and also a number of outsider authors who have not previously graced our pages.

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Editor