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Op Ed - The Death of Knowledge

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The Death of Knowledge

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For three hundred years, the priority of knowledge ruled science, the Humanities, and the academic mission. No more. The managers of the very organizations charged with the conservation of knowledge are in revolt. Following World War II they substituted "relative" measures for "gold" standards of excellence. Now they seek to guarantee their revolution through economic sanctions, indifference, and political intrigues that will crush the rule of knowledge in science and higher education. The "new paradigm," as they call their scheme, has become a sinister shibboleth like "copia nostra." It sullies the government as well as the private sector. For instance, every year, Congressional committees hear witnesses request funding and reauthorization for the National Science Foundation [NSF] and the Office of Science and Technology Policy [OSTP]. Members of Congress routinely avoid the cornerstone of research and education: dissemination.

With such tacit blessings, Federal agencies easily hover above the law. They permit government contractors to operate without tough standards or assessments. Under the "new paradigm" the agencies abdicated specific requirements of the National Science and Technology Policy, Organization and Priorities Act of 1976 (42 U.S.C. B 6601 et seq.), legislation intended to emphasize dissemination. This law was grounded in recommendations and concerns expressed by presidential panels, the National Academy of Sciences, the Congressional Research Service, and Federally funded research into science communications. It sought, "to foster the interchange of scientific and engineering information among scientists and engineers in the United States and foreign countries."

The law instructs NSF, "to make comprehensive studies and recommendations regarding the Nation's scientific research effort and its resources for scientific activities... and its foreseeable scientific needs." NSF published its first report titled Statistical Indicators of Scientific and Technical Communication the same year the law was passed. Its preface called the need for comprehensive assessment of information resources and activities "urgent." The urgency died suddenly after the second report was published in 1977. Was it the report or was it the "new paradigm"? NSF then folded its division of science information. Both reports reflected the decline of research communications. Today, dissemination in general, academic libraries in particular, are excluded from NSF's studies and recommendations.

In an equally striking example, OSTP betrays governing principles which call for, "the development and maintenance of a solid base for science and technology in the United States, including strong participation of and cooperative relationships with... the private sector... elimination of needless barriers to scientific and technological innovation [and] effective management and dissemination of scientific and technological information." In carrying out its mission, the law directs the Director of OSTP to "provide the President with periodic reviews of Federal statutes and administrative regulations of the various departments which affect research and development activities, both internally and in relation to the private sector, or which may interfere with desirable technological innovation." Major libraries increased less than 60%, adjusted for inflation, since 1970. (Fig. 1) Research more than tripled, far exceeding the capacity of libraries to absorb and disseminate findings reported around the world. This disparity must impair productivity by increasing entropy and confusion. OSTP blissfully ignores it.

Figure 1 — Indexes of Comparative Growth 1970-1995

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<th>1975</th>
<th>1985</th>
<th>1995</th>
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<td>Typical Library Growth</td>
<td>1.00</td>
<td>1.02</td>
<td>1.02</td>
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<tr>
<td>Academic R &amp; D Growth</td>
<td>1.00</td>
<td>1.06</td>
<td>1.27</td>
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<tr>
<td>World Science Growth</td>
<td>1.00</td>
<td>1.26</td>
<td>1.60</td>
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Sources: Association of Research Libraries; National Science Board, National Federation of Abstracting and Indexing Services.

The law also calls for a President's Committee on Science and Technology (PCST). Staffed with, among other specialists, an expert in information dissemination, this panel was designed to consider "the role to be played by the private sector in the dissemination of information." Under an executive order, PCST was quietly scrapped. We have instead a President's Committee of Advisors on Science and Technology [PCAST]. It is chaired by an executive from the information technology industry—in my eyes a lobbyist for rich-as-Cococcus electronics manufacturers—unimpeded by anyone distinguished by expertise in dissemination. Doesn't the organization of "public" research help preserve "trade secrets" privately developed with billion-dollar R&D budgets? Doesn't confusion also permit technocrats to mis-allocate resources?

As if to complete the round of blows to the rule of knowledge, a 1978 executive order entrusts to the Director of the Office of Management and Budget (OMB), "the responsibility for fostering any policies to facilitate the transfer and utilization of research and development results." Between 1978 and 1983, funding of the Higher Education Act Title II-A, which had provided millions of dollars for college library materials over the prior decade, was phased out of the budget. In repeated revisions of the scandal-ridden Circular A-21, covering indirect costs claimed for the government's "fair share" of the expenses of libraries, facilities, and administration, OMB neatly sidestepped the serials crisis. For instance, $7 million in library costs was identified as unallowable or questioned because, "Stanford did not use the de-continued on page 26
Profiles

Encouraged

Judy Webster
Head, Acquisitions and Processing, Univ. of Tennessee Libraries and Director, 1998, Charleston Conference
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In the beginning: I am a native Tennessean and have worked at the University of Tennessee, Knoxville Libraries for 29 years. My first job, after moving away from Knoxville for three years and starting a family, was checking out books at the circulation desk as a classified staff member.

People who influenced me: Mentors who have most influenced in career decisions were Carl Cox, a library science professor at UTK, who convinced me to get my library degree and Richard Boss, Director of the UTK Library during a portion of the 1970s, who convinced me not to make a job that would put me on a career path behind the scenes in the library. Both of these individuals pushed me to accomplish more than my own self-confidence could muster at the time.

Library jobs: I have held positions as a professional librarian both in public services and technical services. Although I have been in technical services for the majority of my career now, that’s not how I began. I like to think that I have retained many public service attitudes and goals and have allowed them to guide decisions that I have made in technical services. I am currently manager of a library team that includes Acquisitions, Serials, Processing, Binding, and Preservation. We have a $4.9 million library materials budget, including endowments, and we have 25 staff who report to me, including one librarian.

Spare time: I enjoy traveling in my spare time with my husband who photographs lighthouses and maintains a famous Webpage with his own photographs and writings about our trips. I am a part-time gardener investing mainly in perennials. I have yet to grow a decent delphinium, so I’m not sure that I can claim success in this area of my life. I also am an avid reader of current literature and mysteries, especially the British ones.

Musings: My work with the Charleston Conference has been very rewarding and exciting over the years. I think that I have attended all of the conferences and have been actively involved in the programming process for approximately 6 years.

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fault method specified by OMB in Circular A-21," according to the General Accounting Office and the NSF Inspector General (OIG 91-2 Dec. 1988). They were more concerned about bookkeeping than padded reports that Stanford canceled 500 research journals in 1987 due to the devaluation of the dollar.

NSF, OSTP, and PCST are responsible under the law to assess the treatment of scientific and technical information, treatment that easily could be called miserly and ruinous. They have, instead, set a new standard for Milgramesque obedience to praeatarian authority, ignoring cries of frustration expressed by researchers, librarians, the National Enquiry on Scholarly Communication, and publishers for twenty years. If they were writing today of "two cultures," the late C.P. Snow might well have explored the gulf between the "new paradigm" cabal’s obsession with budgets and the community dedicated to the progress of knowledge. Former science advisor D. Allan Bromley made it clear in his 1994 memoir that university presidents have a clear channel to influence reforms in the allocation of resources. Doesn’t the throttling of communications hinder potentially adverse assessments of their programs? Doesn’t it protect “invisible colleges” from competition? The major scientific societies also wield considerable influence. Doesn’t the impoverishment of libraries repel competitive publishing ventures?

Thus the priority of knowledge across the entire spectrum of academic disciplines is doomed by the "new paradigm." Full-time faculty positions, tenure, and publication of research, which attract and qualify the best teachers, are under siege. Librarianship is undervalued as library schools are shut or reformed. “Distance learning” dilutes instruction as it cuts faculty payrolls. Bowing to the jealous ambition and power of campus managers, libraries cut back on collection development and hiring. Large segments of the publishing industry are reeling. University presses, trade publishers, technical publishers, and serious authors all suffer from the systemic depression in sales to academic libraries. Plummeting sales force prices up. High prices eliminate buyers. This degenerative cycle discourages developments in dissemination: electronic media, specialty journals, database coverage, monographs, reviews, and reference works. It discourages the reiterative synthesis of research findings into useful knowledge—a complex process similar to separating wheat from chaff, refining flour, combining ingredients, kneading dough, baking, and slicing bread. Each day the modern researcher is served staggering mountains of “untheshed, unrefined, and uncooked” findings. (It’s no wonder review articles, which survey lines of research, are so heavily cited.) The impoverishment of librarians also discourages investments in the critical appreciation of art and culture.

The subversion of law undermines the academic mission at its core. Ultimately it suppresses information for researchers and students who are not email insiders and who cannot wait for photocopies from foreign sources. Reviewers are stymied when denied the full range of primary reports. The greatest flaw in peer review is the deluge of dissemminated knowledge—a failing so profound that it was avoided completely by NSF’s 1997 task force on merit review. Postpublication assessments in areas of physics and clinical medicine suggest that half or more research is poorly informed and makes no contribution to knowledge. To compound the weakness of peer review, agencies award grants without calling for extensive evaluations of prior research—evaluations that would require teams of specialists and comprehensive information resources—that might also reveal unproductive spending.

The 1976 law aimed to defend the priority of knowledge. I believe that it failed because the “new paradigm” opposes it. Government contracts have indeed become the substitute for intellectual curiosity, as President Eisenhower warned in 1961. By that time the science bureaucracy had already ditched Vannevar Bush’s dictum that universities are responsible for the conservation of knowledge. Now even the leadership of organizations chartered to promote dissemination supports the revolution. Eta Brute? If Congress serves the taxpayer—aiming to maximize progress and the cost-effectiveness of research—it must intervene. Or, the tragedy will play out. Science will drown in its own undisseminated work product, taking the Arts and Humanities down with it.  

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