



A BIMONTHLY REPORT ON RESEARCH LIBRARY ISSUES AND ACTIONS FROM ARL, CNI, AND SPARC

## INFORMATION, KNOWLEDGE, AUTHORITY, AND DEMOCRACY

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I want to begin by congratulating all of you on the 75th anniversary of the founding of the Association of Research Libraries, a significant milestone in the history of North American scholarship. Duane Webster was kind enough to send me a copy of the superb volume *Celebrating Research: Rare and Special Collections from the Membership of the Association of Research Libraries*, and I must say that I am highly impressed. What a remarkable collection of treasures discovered, protected, interpreted, and exhibited for the edification and enjoyment of all of us. We see in this volume the old, the new, the artistic, the scientific, the erudite, and the arresting. It is an excellent example of the role research libraries play in American culture: reminding all of us of our intellectual heritage and teaching us to use and respect it.

My talk today is about “authority,” as that term applies to information and knowledge. Authority is a concept we Americans distrust, as bumper stickers regularly remind us. We are democrats all, with a small “d.” The very notion of authority makes us uncomfortable. But, and you would expect a classicist to commit an etymology, “authority” comes from the Latin word *auctoritas*, an august term meaning dignity, weight, influence, or even the liberty (to do something), in the sense of “authorization.” *Auctoritas* in turn comes from *auctor*, one who brings something into existence, or promotes its prosperity, whether by originating it or by giving it permanence. Our word “author” of course comes from *auctor*. “Authority” is, then, the weight and influence exercised by an *auctor*. In the

realm of scholarship we speak of an “authority” on Plato or Shakespeare, or on government, by which we mean an expert whose knowledge is to be trusted as the best available on a given topic.

The history of “authority” in the realm of knowledge and information in America is an interesting and cautionary tale. Because we are going to the Library of Congress this evening, and because the “author” of that library was James Madison, I will begin with him. Let me tell you a story illustrating Madison’s status as The Authority on government when this nation was born. In the year 1789, George Washington opened the history of our Republic as the first President with a speech to the first Congress. Washington believed that the occasion called for a major address, so he called upon one of the leading speechwriters of the day for a declamation. The man produced 70 pages of rhetoric, which, before using, Washington fortunately decided to show to his friend James Madison, whose opinion he trusted. Madison looked it over and told Washington that it was a terrible speech, setting the wrong tone for the new Republic and failing to appreciate the respective roles of the Congress and the Presidency. Like the good CEO he was, Washington then asked Madison to draft a new speech for him. Madison did so, and Washington delivered it to applause and acclaim from Congress. It was a proper Republican address.

Members of Congress so liked the speech that they decided it deserved a formal reply. Who should draft it? It was obvious to all that the young representative from Virginia, Mr. Madison, was best qualified for this important assignment. When asked, Madison said he would be delighted to draft the reply, and did so. This is not quite the end of the story. Washington was so pleased with the response from Congress that he asked Madison to draft two further speeches, one for him to

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deliver to the Senate, the other to the House. The opening act of our Republic consisted of James Madison talking to himself!

Now that story reveals that, in the eyes of George Washington and the first US Congress, the “authority” on government in this country was the 38-year-old James Madison. How did he come by that status? The answer is straightforward: of the 55 delegates to the Constitutional Convention of 1787, the best prepared, the most scholarly, the best informed about the history and theory of federations the world over was the young James Madison, who had spent the two years prior to Philadelphia reading everything known to mankind about the topic. To perform this task, Madison had asked his friend Thomas Jefferson, then residing in Paris, to send him the most authoritative, up-to-date books available in that capital of Enlightenment learning. Jefferson, always happy to buy books, obliged by sending two trunkloads of erudite volumes, many written in Latin and French, to Madison at his home in Orange County, Virginia.

Working with this “literary cargo,” as he affectionately called it, Madison produced what Douglass Adair has called “probably the most fruitful piece of scholarly research ever carried out by an American.” Why? Because his purposeful reading enabled Madison to create a theory of government based upon the most “useful knowledge” available in the world, and the scholarly evidence to defend that theory in the crucibles that would make the decisions to create and ratify the American Constitution. As another delegate to the Convention put it, “James Madison took the lead in the management of every great question.... He blends together the profound politician with the Scholar.... He always comes forward the best-informed man on any point in debate. The affairs of the United States, he perhaps, has the most correct knowledge of, of any Man in the Union.” Imagine a time when *one* person, armed with *one* set of books from Paris, could be said to be the most knowledgeable American on political theory and the history of confederations. That is clear evidence of the scarcity of knowledge in the late 18th century, and the dominant role that could be played by one person who knew what to do with it.

Because of his contributions at Philadelphia, his major role in writing the Federalist Papers for the New York ratification process, and his essential interventions in the Virginia ratifying convention, Madison gained the reputation as the authority on government that led Washington and the first Congress to trust him with the entire opening act of the Republic. He believed that if you are going to take a serious part in public life, you should be extremely well informed. While still a member of the Continental Congress in 1783 he called for Congress to have a library containing the most

authoritative works available on finance, commerce, law, international affairs, and history and geography, and he drew up a list of some 300 titles for the purpose. For Madison, the sine qua non for a free people and its government is access to first-rate libraries. It is altogether fitting that the words chiseled on the front of the Madison Building, the only monument to James Madison in our capital, are Madison’s core belief: “What spectacle can be more edifying or more seasonable, than that of Liberty & Learning, each leaning on the other for their mutual and surest support?” Liberty can only be assured through knowledge. Following the burning of the Capitol in 1815, President James Madison restored the Library of Congress by purchasing Thomas Jefferson’s library for the nation. It was Jefferson’s unique classification scheme that the first full-time Librarian of Congress, appointed by Madison, used in reorganizing the library. The United States, embodied in the Congress, was to have the best library in the world because knowledge was necessary to its fundamental purpose, the creation and protection of liberty.

James Madison believed, in other words, that he lived in a “knowledge age.” In our myopic way, we like to think that we invented the knowledge age sometime late in the 20th century. We did not. Madison and his contemporaries had complete faith and confidence in the necessity of what they called “useful knowledge,” which, of course, privileged many things we no longer consider useful, such as the ability to read Latin and Greek and to understand the lessons of ancient history. And they admired and respected “authorities” precisely because they had more useful knowledge than others. We must acknowledge that it was an age that respected scholarly learning more than ours does. It also respected the individuals who possessed that learning. Such reverence for college-educated scholar/statesmen like Adams, Jefferson, and Madison did not last long in America: by the first decades of the 19th century, we were moving to a more democratic ethos, as modern liberalism replaced classical republicanism as our dominant ideology.

We began to elect non-aristocrats as our presidents, and it is fairly obvious that we have elected non-scholars. The number of colleges expanded from 9 in 1776, to 25 by 1800, to 516 by the time of the Civil War. From a mere handful of fields of study in Madison’s day, primarily the classical languages and “natural philosophy,” dozens, then hundreds of disciplines arose as knowledge expanded exponentially. For many reasons, we can be grateful for this historical trend towards the democratization of American society. We have also democratized knowledge to an extent that would astonish James Madison and his contemporaries. Today, if you want information from Paris, or anywhere

else in the world, you just call it up on your computer at home. But we pay a price for this remarkably egalitarian access: a conceptual shift in our definition of authority that results from the current methods of collecting, publishing, and retrieving information. Which brings me to the vexed and vexing topic of authority and democracy in the realm of 21st-century knowledge and information, and the role professional librarians play in organizing and searching it.

There has never been so powerful and so democratic an instrument for distributing information as the Internet. Even private individuals with few resources can “publish” their messages to enormous audiences across the world. The sheer abundance of information, and the enormous diversity of sources of that information, insure that we now have easy and swift access to whatever we want to know, and in fact, to lots of what we don’t want to know. The result, as the ACRL Roundtable on

Technology and Change last November pointed out, is that “Traditional structures of authority and qualitative certification...have been engulfed in a flood of information from multiple sources, disseminated primarily in digital form, and retrievable by means that the library, and hence

the academy, no longer control.” And as Michael Jensen claims in his article “The New Metrics of Scholarly Authority,” published in the *Chronicle of Higher Education* in June of this year, “new trends and approaches to authority have taken root in Web 2.0...; authority is conferred mostly by applause and popularity. At present, it continues to be a great way of finding ‘answers’—facts and specific information—from authoritative sources, but it has yet to do a very good job at providing a nuanced perspective on a source or, say, scholarly communication.” (Note that use of “authoritative” to describe Web sources—we will come back to that).

To take the best-known example, Wikipedia operates by “group construction of authority and validity. Anyone can modify any article, and all changes are tracked; the rules are few.” This is “user-generated authority, the “democratization of authority” in Jensen’s phrase. Definitions change daily, users want speed and access, and you are judged by the degree to which you can help them move fast enough to keep up with the information appearing on the Web.

This need for speed is why you are being urged by your many advisors and consultants, and in fact, by

many of your own leaders, to get with the program and join in the game of Web 2.0, or what Jensen calls “Authority 2.0.” Otherwise, you are warned, you will lose all of your own authority to user-generated authority, and eventually to “Authority 3.0,” authority generated by artificial intelligences. Here are two recommendations from the roundtable in Chicago:

*Library staff must include people who see themselves as active contenders in a race for relevance, regard, and resources.*

*Library staff in general must become more agile, more highly attuned to, and aggressive in proclaiming just how different the world of knowledge has already become.*

These exhortations to librarians are not only alliterative, they are alarming! I picture all of you

breathlessly working out each morning in order to get ready for the day’s relentless race for relevance, or increasing your agility and aggressiveness for what sounds like a boxing match. These do not sound like the characteristics of librarians I have known and loved!

Before we jump onto this bandwagon, let’s go

back and examine the history of this word “authority” as it is applied to knowledge in the world of the Web. We revert all the way back to the year 1997, a frontier period in Internet time. In that year Jon Kleinberg, a very bright young Cornell computer scientist, published a seminal article called “Authoritative Sources in a Hyperlinked Environment.” What Jon noted was that search engines lagged, as he now says, “maximally behind information on the Web.” How could one take advantage of all the information being accumulated on the Web? As a good mathematician, he recognized that the Web was a system unto itself, that is, it had its own self-contained structure, though it lived “in the world.” The question he asked himself was, can I study the system within itself? His answer was “yes,” by analyzing its structure. Here is what he wrote:

*The network structure of a hyperlinked environment can be a rich source of information about the content of the environment, provided we have effective means for understanding it. In this work, we develop a set of algorithmic tools for extracting information from the link structures of such environments, and report on experiments that demonstrate their*

*Information on the Web has acquired a startling degree of authority, but it is often the kind of authority you would expect to derive from the criteria of relevance and popularity. Those quintessentially democratic measures may be useful for finding some types of information, but they are surely dangerous as means of validating knowledge.*

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*effectiveness in a variety of contexts on the World Wide Web (www) [Berners-Lee et al. 1994]. In particular, we focus on the use of links for analyzing the collection of pages relevant to a broad search topic, and for discovering the most "authoritative" pages on such topics.*

He went on to say, "This notion of authority, relative to a broad-topic query, serves as a central focus in our work. One of the fundamental obstacles we face in addressing this issue is that of accurately modeling authority in the context of a particular query topic. Given a particular page, how do we tell whether it is authoritative?" Here was his answer:

*Hyperlinks encode a considerable amount of latent*

*human judgment, and we claim that this type of judgment is precisely what is needed to formulate a notion of authority. Specifically, the creation of a link on the www represents a concrete indication of the following type of judgment: the creator of page p, by including a link to page q, has in some measure conferred authority on q. Moreover, links afford us the opportunity to find potential authorities purely through the pages that point to them; this offers a way to circumvent the problem, discussed above, that many prominent pages are not sufficiently self-descriptive.*

This is in effect a voting system, and Jon saw the possibility of refinements based upon "unequal voting," that is, the granting of more "authority" to certain creators, or, as he termed them, "hubs," based upon their track record of voting for top vote getters.

The criteria he developed for finding authority on the Web were "relevance" and "popularity," and he developed in the same article a method of finding the proper balance between the two in modeling authority. Though Jon bestowed the term "authority" upon the winners of these voting contests, he knew, again as a good mathematician, that the process is somewhat circular because authorities reinforce each other, and the authorities and the sites (hubs) rise together in such a contest. That circular process has now become even more problematic because many Web sites employ tactics specifically designed to appeal to the "measures of authority" and thus to increase their chances of emerging as winners of the voting contests. We thus have a "feedback effect" that exacerbates the problem of circularity.

The result is that those pursuing knowledge on the Web tend to follow a "vein" of information leading along a narrow track, a track created by "measures of authority." This process enables us to find useful information quickly. We need, however, to appreciate the problems inherent in this means of conferring authority. It is extremely malleable, and therefore manipulable. We now know, from fancy new algorithms, who some of the "democratic contributors"

to Wikipedia are: hired hands of corporations which want definitions of terms to suit their corporate interests, as well as opponents of corporations who want the opposite. The broad public, students in particular, are easy victims of such "authority" because they so prefer speed and simplicity to study and

complexity. We have now reached the point, as Jensen emphasizes, where "Knowledge that is fluid and even imperfect today carries higher value than knowledge perceived as static and intact." Is "imperfect" a euphemism for "partial?" Does "fluid" mean knowledge that "can be changed to suit your needs?" Given some student papers I have read recently, I am beginning to think so. Information on the Web has acquired a startling degree of authority, but it is often the kind of authority you would expect to derive from the criteria of relevance and popularity. Those quintessentially democratic measures may be useful for finding some types of information, but they are surely dangerous as means of validating knowledge. Information comes to us quickly but quite arbitrarily on the Web, and along narrow tracks. Under such circumstances, users must perform critically important tasks: first, they must be aware that there are multiple clusters of sources for all kinds of information we seek; second, they must "see" these clusters of sources that differ from each other, and then hold the whole "space" in our heads. We might call this function "distillation."

Finally, of course, users need to perform the most critical task of all, that of evaluation, a task that necessitates going outside the system of the Web altogether. As Kleinberg saw, though the Web is a system unto itself, it exists in the world. We need to use our experience of the world to evaluate the information we gain on the Web, even, or especially, information upon which the Web has conferred "authority." Democracy is a great thing, but hasty, uncritical democracy, as we all know, is perfectly capable of causing disasters.

*Plato believed that the only way to gain "authority," therefore autonomy, as a thinking human being, is to develop it yourself through deep thinking and argumentation with other deep thinkers.... We appear to be on the verge of moving from a written culture back to an oral one, though the voices are conveyed visually.*

At the end of the fifth century BC, another paradigm shift in the transmission of information and knowledge occurred, and it too transpired within a democratic culture, that of ancient Athens. From the time of the Homeric epics, Greeks had conveyed important information orally and in poetry. Even philosophical works were composed poetically. But in the late fifth century, written literature made its appearance, prose began to compete for the first time with poetry, and a book culture began to emerge in democratic Athens. The advantages of writing were quickly recognized: written texts had a permanence lacking in oral communication, and therefore were a more reliable means of transmitting information. It was not long before prose began to supplant poetry, and writing began to replace orality in Athenian culture, and the process has continued, abetted by Gutenberg, down to the present day. As paradigm shifts go, this one was the most significant in Western culture, even including the digital revolution of our day.

But in the early phases of that revolution, one Athenian asked some probing questions about the new technology. The philosopher Plato recognized that although writing offered some distinct advantages, it also contained inherent problems. The first was the likelihood that the powers of memorization, which had always played a key role in Greek education and culture, would fade and eventually fail. It would take a while, but in the end, of course, Plato's prediction was fulfilled. Second, Plato perceived that the book lacked a feature essential to dialectic, the intellectual give and take required by inquiry into any serious philosophical question: the ability to "talk back." You can read a book, but it can't respond to your questions, your rebuttals, your critique. The book is deaf and dumb. The reader of the book is therefore a passive recipient of knowledge, not an active generator or creator, or even debater. Plato believed that the only way to gain "authority," therefore autonomy, as a thinking human being, is to develop it yourself through deep thinking and argumentation with other deep thinkers. As a result, Plato pursued and taught philosophy in his Academy by means of oral dialectic with his students, and he composed written dialogues meant not so much to convey knowledge to a reading public, as to demonstrate to readers how they should discuss and debate serious intellectual questions themselves.

Let us reflect upon the consequences of our own paradigm shift. We appear to be on the verge of

moving from a written culture back to an oral one, though the voices are conveyed visually. Unlike books, the Web can talk back. It is remarkably interactive, but there is a danger that it talks too much and too fast. Furthermore, too many voices are doing the talking. Under these circumstances, sorting out information that can be trusted from what cannot is difficult. The "authority" produced by search engines is increasingly suspect. To paraphrase one commentator, "There is

something about the pace of the Internet that feels morally dangerous." Is this democracy run amok? Where do we turn for true authority, that is, verifiable knowledge that we can trust?

To return to our starting point: James Madison did not simply read great books and then

propose a Constitution. He also drew upon his experience as a member of the Continental Congress, experience in the give and take of political decision making, experience in winning and losing arguments, experience in forming coalitions of interest and in compromising with opponents. His authority came from his superior knowledge, his extensive experience, and the quality of his political rhetoric: he was an "author," an autonomous thinker and actor. Because of his authority, and the authority of his colleagues in Philadelphia, and the authority of the thousands of thinking Americans who ratified the Constitution in the 13 states, the US Constitution has more true authority than any other document, law, or person in this country. We respect it, and we follow it. It has weight.

In today's Internet culture, we have an overwhelming need for critical judgment in the evaluation of sources of knowledge. We need to separate the real authorities from the ones generated by popularity contests and clever, often corrupt, manipulation. You, the professional librarians of the leading intellectual institutions of this country, have a critical role to play in enabling the public, particularly the next generation, to perform this function well, in leading them to slow down, to eschew the fast and the faddish, to identify true authorities in the realm of knowledge, and to use them critically in developing their own authority and eventually autonomy. Only then can we be assured of realizing Madison's vision of the "edifying and seasonable spectacle of liberty & learning, each leaning on the other for their mutual and surest support."

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