

Why the I-900 Plan to Consolidate Multiple Reading
Rooms
Should Not be Implemented
In Light of
Best Practices for Reference Service
At the Library of Congress

A Series of Papers

Paper #6
Better Ways to Promote Transdisciplinarity,
An Analysis of FRD's
“New Librarianship and the Role of Reference
Librarians: A Bibliography [*sic*]”
And
The Principle of Least Effort

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Paper #6

Better Ways to Promote Transdisciplinarity, An Analysis of FRD's “New Librarianship and the Role of Reference Librarians: A Bibliography [sic]” And The Principle of Least Effort

In order to support the I-900 proposal the Federal Research Division (FRD) was asked to prepare a list of ostensibly supporting sources, 19 of which are listed in their “New Librarianship and the Role of Reference Librarians: A Bibliography [sic].” Let’s examine it.

The FRD bibliography

In general, we have no problem with the various cited books and articles outlining the benefits of promoting cross-disciplinary studies because almost all of them are talking very specifically about the increased use of online sources (See **Paper #1**). This is very commendable, as far as it goes.

What is generally (and conspicuously) lacking is any set of specific recommendations to increase transdisciplinarity at the point of use, where the researchers actually ask their questions and where the cross-connections are actually made or not made. (Library conferences are not that point; consolidated reference desks are not, either; see below.) We would therefore greatly improve on the good intentions of the FRD bibliography by pointing out how transdisciplinarity is actually to be achieved at that point of use.

As indicated in **Papers #1** and **#2**, transdisciplinarity is best achieved through online sources, not through printed reference collections (which have distinctive “muscular” functions of their own in providing overview and filtering mechanisms *within* disciplines).

Ways to promote transdisciplinarity *much* more effectively than via any specific suggestion in any of the FRD sources

We therefore recommend, at a minimum, use of the following online databases, which are almost entirely neglected by the FRD-cited books and articles. They are especially good in rounding up different disciplinary perspectives on the same subject:

- *Reference Universe*, an index (with some full-text links) to the individual articles and entries in ca. 50,000 reference sources in all subject areas. (I once helped a researcher doing a paper on “company towns”; this database identified reference articles not only from *Oxford Encyclopedia of Economic History* and the *Encyclopedia of American Urban History* but a 4-page article from the *Encyclopedia of American Forest and*

Conservation History. If any of these HC, HT, and SD classed sets had to be squeezed out of a consolidated MRR collection, readers would have to wait for an hour and a half for delivery of those call numbers from the Adams Building.)

- *Web of Science*, one of the best cross-disciplinary databases, covering even more sources—many more—than any of the FRD articles mention (see section I of the Appendix to this paper). Indeed, one of the articles listed by FRD is a study whose authors “examined articles in the Social Sciences Citation Index to determine what percentage of articles cited documents in disciplines outside those which the authors were affiliated [*sic*].” What is surprising is that the authors used only the Social Sciences Citation component of the full *Web of Science*, which also includes the Science Citation Index and the Arts & Humanities Citation Index (covering an additional 10,600 journals). This study on cross-disciplinarity, ironically, is itself not nearly as transdisciplinary as it easily could have been had the authors not confined themselves only to journals in the social sciences.
 - Note further that this *Web of Science* database provides not just transdisciplinary *content* but also multiple different ways to *search* that content, each of which is capable of producing different cross-disciplinary results—i.e., keyword searching, citation searching, and related record searching all produce different sets of hits on the same topic (see the example on “Economics of Antiquities Looting” in **Paper #1**). None of the FRD-cited sources shows any awareness of these *truly* “new” and “innovative” ways to greatly increase transdisciplinary connections among articles.
 - Note still further that there are *dozens* of other databases from EBSCO and ProQuest that allow citation searching, some of which enable related record searches as well. None of this is mentioned in the FRD sources.
- *America: History and Life* and *Historical Abstracts*, the two best overall indexes to history journals (*AH&L* covers U.S. and Canada; *HA* all other countries). The transdisciplinarity of these two databases shows up frequently because they cover not just traditional geopolitical history, but also the history of art, music, literature, philosophy, education, and a host of other areas. (I once helped a French scholar who wanted to know how science was taught in France from the 1880s to WWI; *Historical Abstracts* could hit that right on the button.)
- *Academic Search Complete*, a very large cross-disciplinary source covering more than 13,000 journals (over 5,500 full text) on animal science, anthropology, area studies, astronomy, biology, chemistry, civil engineering, electrical engineering, ethnic & multicultural studies, food science & technology, general science, geography, geology, law, materials science, mathematics, mechanical engineering, music, pharmaceutical sciences, physics, psychology, religion & theology, veterinary science, women’s studies, and zoology.

- *Academic OneFile* and *General OneFile*, covering over 14,000 and 13,000 journals (in all subjects) respectively with more than half full-text, and only about a 30% overlap.
- *Periodicals Index Online*, an index to ca. 6,000 periodicals in 60 languages going back 350 years. It simultaneously covers journals in 37 broad subject areas: Agriculture, Ancient Civilizations, Anthropology/Ethnology, Applied Arts, Archaeology, Architecture, Area Studies (Africa), Area Studies (Asia), Area Studies (Australasia), Area Studies (Europe), Area Studies (Middle East), Black Studies, Business/Management, Economics, Education, Fine Arts, Folklore, Geography, History (General), History (The Americas), Humanities (General), Jewish Studies, Law, Library/Information Science, Linguistics/Philology, Literature, Music, Performing Arts, Philosophy, Political Science, Psychology, Public Administration, Religion/Theology, Social Affairs, Social Sciences (General), Sociology, and Women's Studies.
- *Nineteenth Century Masterfile*, a database indexing tens of thousands of journal articles, books, government publications, newspapers, and images in all subject areas, and extending up to about 1930 in coverage. (One of our British Humanities scholars in the Kluge Center was writing his dissertation on popular perceptions of the canals of Mars around the turn of the last century. This database produced scores of hits in far-flung areas; the scholar told me the best one of all, demonstrating how surprisingly widespread the interest was, appeared in an 1892 issue of *Manufacturer and Builder*! See section II of the Appendix to this paper.)

All of these sources are essentially overlooked by the FRD-cited sources that are held up as models of promoting transdisciplinarity. And yet it is specific databases such as these—not consolidated reference collections “siloeed” in LCC classes, not librarians superficially trained as generalists and forced to work outside their areas of expertise at one physical location—that accomplish the real work of promoting transdisciplinarity where it is most needed: at the point of use.

Every one of these databases is available right now in every one of our reading rooms; access to them requires no lessening of the muscle of our several reference collections, and no increased hassles in making appointments with specialists who are no longer immediately available. If we wish to promote *effective* transdisciplinary research we recommend that librarians make greater use of them—and that I-900 planners become aware of their existence to begin with.

The generality, superficiality, and irrelevance to LC of the FRD-cited sources

While we can thus readily agree with the sources—virtually all of them—listed in the FRD bibliography that advocate greater use of *online sources* to promote cross-disciplinary studies, we find it curious that very few of them mention any of these particular databases, let alone discuss their remarkable power in *providing* exactly the

desired transdisciplinary research capability at the point of need. It is from databases such as these, however, that the real work of making cross-disciplinary connections is in fact best accomplished. The FRD articles talk, instead, of rather vague generalities, one might say “at the 30,000 foot level.” If there is learning to be done, the authors of the cited sources could learn much more from LC about promoting transdisciplinarity than we can from them.

For example, the FRD-cited volume *Social Science Libraries: Interdisciplinary Collections, Services, Networks* includes two articles with the titles “Disciplinary Boundaries in an Interdisciplinary World” and “Walls Tumbling Down: Opportunities for Librarians in Interdisciplinary Research.” Neither article even mentions any of the above databases. The former mentions research centers, conferences, collections, “tagging,” research archives, and Google Custom Search; the latter, in best PowerPoint style, lists “Five strategic priorities” for developing (exclusively) its library’s social sciences collections:

- team creation and development;
- defining and developing a Social Science Collection;
- relationship and awareness building;
- improving accessibility; and
- supporting, and working with, the research community to build capacity.

(No such list, of course, would be complete without the “action” words *developing*, *building*, *improving*, and *supporting*. But where, one wonders, are *increasing*, *providing*, *promoting*, *transitioning* and *fostering*? There seems to be insufficient *trans*-PowerPoint-*ality*.)

While we find little to disagree with in any of the sources listed by FRD, we also find nothing of specific relevance to the issue of consolidating reading rooms and reference service at the Library of Congress, with its very distinctive capabilities and responsibilities that are not shared by any other institution or body—not by Google, not by Amazon, not by any of the other ARL libraries singly or collectively, not by any non-ARL library, not by OCLC, and not by the entire Internet. With our unique collections we are called upon to do things that none of these other bodies can handle. (This is a major reason that we get so many applications for Kluge Fellowships.)

Disregard of the function of reference collections—especially their distinctive function in a huge library such as LC

First, none of these FRD sources discuss the peculiar functions of *reference collections* as opposed to *online sources* in addressing the two very distinctive purposes that reference collections are needed for (**Papers #1 and #2**), especially at LC, and that cannot be done even nearly as well via online sources:

- a) identifying the most important *concepts* relevant to the subject—i.e., “the basic facts”—or the “what’s important” ideas whose absence might

be fatal to a paper that overlooks them; and

- b) filtering the huge mass of available material to identify *core literature* on the subject, segregated from indiscriminate printouts or computer retrievals of hundreds or thousands of hits.

True, the FRD-listed article on the Portland State University library's "consolidation of separate reference services into a single reference desk . . . produced good results." No substantive "before and after" examples are actually provided, however. We must wonder, however, if Portland State has the very distinctive problem that LC has, which is not that of providing "something" on any subject, but rather that of cutting an overwhelming amount of material on all subjects down to size. This is discussed more fully in **Paper #2**, in which the example is given of our ability to help a reader zero in on the core literature of "human rights in Islam" rather than sort through our OPAC retrieval of over 450 books. In contrast, a search of "Human rights" and Islam* as Subject in the online catalog of PSU, limited to books (rather than other formats), produces a small and very manageable total of only 39 hits.

PSU as a model for the *Library of Congress*?

It is quite likely that the PSU librarians are not called upon to handle the peculiar kinds of difficulties that LC librarians must deal with routinely. Neither, then, would their much smaller reference collection be called upon to do what ours must do, with its requirement for multiple overlapping sources on the same subjects. This is not to say that the PSU librarians provide anything other than excellent service to their collection (2 million items total, rather than LC's 155 million) for their particular clientele of 30,000 enrolled students.¹ It is simply to point out that much more is required of LC's reference collection in identifying, digesting, summarizing, abstracting, annotating, and evaluating the otherwise overwhelming mass of primary and secondary literature in our immensely larger collection. The PSU example is simply not transferable to LC's situation; they are not called upon to do what we have to do.

Curiously, too, the article holds up the "reduction in hours that librarians spent at that [consolidated] desk" as a prime instance of its "good results"—as though forcing more students to make more appointments with absent staff is indeed a "good" outcome! We must strongly disagree because it is not good from the library *users'* viewpoint.

Disregard of greatly increased delivery times

Second, none of the FRD-listed articles mention another problem distinctive to LC—i.e., that closing the reading room in Adams, and relying only on MRR, would double the delivery time of most of the books—*12 million*—on Capitol Hill. (It would thereby ignore the solution to this problem, deliberately embedded in the very

¹ When I called (ca. 4:00 Pacific time on 3/21) to ask how many volumes were in the PSU collection there was no reference librarian at that single reference desk to pick up the phone. After listening to several menu options I finally found someone at their Circulation Desk to give me the figure.

architecture of the Adams Building in reserving its top floor for reading rooms, which solution has worked so well for 74 years.) The same problem would be created *ex nihilo* for deliveries from Madison. The consolidation of reading rooms, mentioned in only two studies in the FRD bibliography, poses no such major problem to those other libraries *that have open stacks and whose service is not dependent to begin with on the delays of a book delivery service.*

Disregard of staff consolidation problems, or irrelevancy of allusions to it

Third, the issue of consolidation *of staff* at a single desk, to judge by the FRD bibliography, is not even mentioned by the vast majority of sources. The Portland State U. article does not supply a model applicable to LC, and the article on “Eliminating Traditional Reference Services in an Academic Health Library” is equally irrelevant. Regarding the latter, perhaps it needs to be pointed out that a specialized library that is *discipline-specific to begin with* also cannot be held up as a model of “best practices” for the omni-disciplinary Library of Congress. LC is as far removed from a discipline-specific model as it is possible to be for any library on earth. One gets the impression that FRD was looking for *anything* that would support the idea of consolidating reading rooms . . . and that these two irrelevant articles were the very best they could come up with.

“Transdisciplinarity” at a focused Health Sciences Library as a model for LC?

At the Library of Congress we need a vast range of *printed reference sources* (for the purposes given above) that cannot even be approximated by any discipline-specific library. We must ask, have any of the Health Library personnel (being held up for us to imitate) been called upon answer any of such questions as these (some mentioned in **Paper #4**):

- “What do you have on humor in the New Testament?”
- “What do you have on human rights in Islam?”
- “What do you have on the Presidential Succession Act of 1947?”
- “What do you have on the Founders’ understanding of economics, particularly what Thomas Jefferson would have read?”
- “What books do you have dealing with ancient Chinese, Greek, and Roman views of occupation and work?”
- “What do you have on a doctor named Florence Sabin?”
- “What do you have on a translator named Edith Grossman?”
- “What do you have on the ancient writer Sidonius?”
- “What do you have on the development of music in Germany?”
- “What do you have on the history of the philosophy of time?”
- “What do you have on the relation of fashions in clothes to liberation?”
- “I’m writing a book on lying; what do you have on that?”
- “What do you have on the Boston Massacre for my son’s school project?”

We suspect they will not have had to answer most of the questions that LC librarians

must handle routinely—sometimes under Congressional pressure—and will currently have no need for the multiple overlapping reference sources within all subjects that LC requires in its own reference collections. (The MRR reference collection provided good starting points for almost all of the above questions.)

Increased barriers and delays in contacts between users and reference librarians

Further, the FRD annotation of the Health Library article mentions that the consolidation of reference service at one desk has led to “librarians being on call at their desks.” Undoubtedly this is feasible in a discipline-specialized library; but we do need to consider the very different situation at LC: we currently have subject experts in all areas (Humanities, Sciences, Social Sciences, Business, Genealogy and Local History, Newspapers and Government Documents) effectively available directly and immediately to any readers entering their respective reading rooms—each room servicing what are usually the largest relevant collections on earth. Readers do not usually have to make appointments to talk to someone knowledgeable in these areas; the specialists are right there to begin with at their appropriate reference desks. (The Portland State U. article, again, points out the “reduction in hours that librarians spent” at their own consolidated desk—possibly the situation that required me to talk to their Circulation desk for reference help?²)

Interestingly, some members of the group of ARL librarians who toured LC on 3/29 mentioned that they had the same problem: that the consolidation of reference desks in their own libraries led to the situation in which readers had to make appointments to talk to knowledgeable librarians. Further, the only ARL librarians who mentioned consolidation of reference desks at all pointed to monetary savings as the driving force at their libraries: they could no longer afford separate specialized staffs. (No monetary reason has been advanced as a justification of I-900 at LC, in spite of explicit questions on that point in the town-hall meetings with the Associate Librarian for Library Services. At LC, the only motivation offered is the desirability of achieving the ideological vision of unified, transdisciplinary service.) The same librarians mentioned their concern that subject expertise was being lost when everyone was called upon to do everything.

The Principle of Least Effort in information seeking behavior

The Principle of Least Effort in information seeking behavior is directly at issue regarding the ready availability of expert staff; it states that most researchers (even “serious” scholars) will tend to choose easily available information sources, even when they are objectively of low quality, and, further, will tend to be satisfied with whatever can be found easily in preference to pursuing higher-quality sources whose use would require a greater expenditure of effort. In other words, increasing the hassles inevitably and predictably decreases the contacts and the use.

Perhaps an analogy would be useful here, too:

² Footnote #1 above.

Let us compare doing library research to playing a pinball game. In a pinball game there are two factors, not one, that determine where the balls will wind up. The first is the skill of the players—their ability to manipulate the flippers and to shake the machine without tilting it in order to make the balls go where they want. The second factor, which is easier to overlook, is *the overall slope of the gameboard itself*. If the game designer were to change the slope of the surface by making it significantly steeper and also tilting it to the left side, then it would be inevitable and fully predictable that more of the balls will wind up in the lower left corner *regardless of the players' skill or experience*.³

Given the reality of the Principle of Least Effort in information seeking behavior⁴, it is not an improvement in service when subject experts are no longer immediately available at the point of need, and must be consulted via appointment. (Surely there will not be *five* specialist librarians—Humanities/Soc.Sci., Science, Business, Genealogy, Newspaper/Govt. Docs.—working simultaneously at the MRR Central Desk. Nor would that array appear together in the current Reference Assistance Room, a space that may also have to be used to service folio newspaper volumes, and items from the secure SpecMat collections). The two library models being held up to us in the FRD bibliography both point to *fewer* librarians, not more, staffing their consolidated reference desks. To reply that “readers can make appointments as needed” is to simply ignore the realities of service: a consolidated desk with fewer subject experts immediately available is not a model of “best practices” *from the researchers' viewpoint*.

We will be “sloping the gameboard” away from providing immediate access to subject expertise. We have never before in the Library’s history regarded this as an improvement in service (**Paper #5**). We have created multiple specialized reading rooms, with specialized staff immediately available in each, to begin with in order to *increase* immediate contacts of users with specialists.

If we want to promote more contacts with specialists, we cannot slope the library gameboard such that the specialists are no longer immediately at hand, as they are now in our current configuration. (Here we can learn at least as much from our visiting ARL colleagues as from FRD.) Contacts that would have been made immediately inevitably tend to drop off when *any* barriers are introduced, due to Least Effort.

The FRD bibliography somehow missed the overwhelming literature documenting this principle, as though the Principle of Least Effort—or Ranganathan’s 4th law—is not at all important in determining “best practices.” Or perhaps their commission was simply to support the idea “transdisciplinarity: *good*.” If so, they cannot be faulted for not making the many cross-connections to best practices that themselves impinge on transdisciplinarity from other library considerations—e.g.:

³ I am quoting a book that discusses best practices in some detail, but which unfortunately got overlooked by FRD: my own *Library Research Models* (Oxford University Press, 1993), p. 92.

⁴ For extensive annotated documentation of the reality of this principle, with direct quotations from the articles themselves, see the same *Library Research Models* volume, pp. 91-101 and 221-242—a source referenced over 600 times in *Google Scholar* alone. See also section III of the Appendix below.

- greatly increased delivery times for most of the Library’s books,
- decimation of multiple ready-reference and self-service collections,
- diminished availability of subject experts at the point of need,
- forced use of fewer computer terminals (and taking more time at each) by more researchers who can no longer read on paper multiple reference sets that previously were available in MRR (**Paper #3**),
- the likely dumbing down of reference collections’ major strengths (via overlapping coverage) in order to fit *something* on all subjects into a smaller consolidated space,
- loss of staff subject expertise from a growing belief that all reference librarians are essentially interchangeable (with the assumptions that a few training classes will bring them up to par, or that their provision of merely *something* relevant is all that is really needed).
 - We cannot rationally claim the subject expertise will be sustained when we are so radically “sloping the gameboard” against its maintenance. In the long run, the slope of the gameboard will win out: more librarians working from a Center of Knowledge will be expected to be generalists rather than specialists—when in reality we routinely need to rely on each other’s subject expertise rather than on any ability we may have to “promote transdisciplinarity.”

An I-900 proposal advocating cross-disciplinarity is intellectually hollow when it ignores the most important cross-connections relevant to its own operation, and repeatedly restores problems that were solved decades ago.

The FRD-listed article on “The Shift Towards [*sic*] Multi-Disciplinarity in Information Science” mentions, in making its point about multi-disciplinarity, that “an increasing number of articles were written by individuals from library- and information-related departments collaborating with authors from other academic disciplines.” This is wonderful—but we must ask again: how does that necessitate any consolidation of either reference staff or reference collections at the Library of Congress? The article does not discuss either the work of reference librarians in helping patrons or their use of reference collections! It is also apparently oblivious to the two distinctive functions of LC’s reference collections mentioned above, in providing overviews of and filters for much larger bodies of literature.

The latter two functions, for researchers *at LC*, are usually more welcome as starting points to their research than is any immediate need for finding transdisciplinary connections (**Paper #2**). Indeed, such connections are of *secondary importance* to basic “disciplinary” understanding at the start of any inquiry—and that’s what *reference collections* are *distinctively for*: to start things, in large part by solving the problem of too much junk otherwise retrieved by keyword searches lacking any disciplinary boundaries—i.e., “unified” searches of “everything”—the “full portfolio”—at once.⁵

⁵ Of course there are additional purposes for reference collections that are beyond the scope of this paper.

I-900's misunderstanding of the place of transdisciplinarity in the large scheme of reference service

To bring this discussion back to ground level, it would be (again) a waste of time to *start out* by looking for any transdisciplinary connections to “Humor in the New Testament” or “Human rights in Islam” or “Montague grammar” or “the Boston Massacre” in Business, Science, Genealogy, or Government Documents reference sources. I would have found considerably *less* than I did on these subjects, however, if the existing humanities strengths of MRR were diminished, and if the multiplicity of its overlapping encyclopedias were weeded in order to make more room for the other disciplinary reference collections.

I-900's promotion of ‘interdisciplinarity’ as a priority ahead of *real subject expertise* is putting the cart before the horse: it's better to *start* by finding the best subject-material within a field before *then* looking for its cross-disciplinary implications. It is also better, not just for our researchers, but for the reference staff itself if we can rely on the subject expertise of our colleagues being immediately available—expertise that is *itself* heavily dependent on nearby specialized reference collections.

None of the FRD-listed sources mentions these considerations. If we have overlooked the best—or just the *accurate*—subject-specific material to begin with, any connections we make to other subjects will only be superficial or even misleading. (I am reminded of the now discredited bromide that caused so much damage in the library profession: “Railroads got into trouble because they thought they were in the railroad business rather than the transportation business; and libraries will get into trouble if they think they're in the book business rather than the information business.” The apparent ‘cross-disciplinary’ weight of this analogy effectively gave librarians permission to start greatly under-valuing onsite book collections; but the analogy was based on a demonstrably false understanding of railroad history.⁶ Bad scholarship and bogus claims to evidence within one field lead only to seriously misleading analogies to another. Similar problems obtain when the future of librarianship is understood uncritically via cross-disciplinary biological categories, as “evolving” in a certain direction, as though a biologically *predetermined* DNA code were being *inevitably* unpacked; the fact is that non-inevitable *human choices* are being made, often in dismaying ignorance of what actually works best—e.g., subject expertise at the point of use, onsite rather than warehoused book collections, classified shelving—in promoting scholarship. ‘Interdisciplinarity’ that does not first have a firm grasp of the different subjects that are being related to each other can do much more harm than good. Indeed, it seems to be happening with the I-900 proposal itself and its reliance on “From Silos to Synergy” thinking. This is a misappropriation of a metaphor from an outside subject area [agriculture] for transdisciplinary application to our Library's *reference collection*, the primary purpose of which is not to promote synergy (**Paper #2**). We already do the latter much better—quite possibly even better than any of the libraries mentioned in the FRD bibliography—through the use of online sources such as those listed above that are

⁶ See pp. 268-69 of my article “The Importance of Books, Free Access, and Libraries as Places” in *Journal of Academic Librarianship*, 27, 4 (July, 2001), 268-81.

readily available right now without any consolidation of reading rooms. Note further that even within the field of agriculture itself, the consolidation of separate silos of corn, wheat, barley, and soybeans into a single merged pool would create a mishmash that would not do anyone any good because it could never be brought to market.)

The irrelevance of the FRD-cited sources to the real points at issue

One wonders if the I-900 proponents have actually read any of the sources they have commissioned FRD to find. Other than to assert “transdisciplinarity: *good*”—which has never been in doubt—the sources cited are remarkably vague about ground-level mechanisms for promoting such searches *at the point of inquiry*, where the real work of reference service is provided—i.e., not in conference panels, not in after-the-fact counts of citations (as valuable as they may be in reinforcing the *goodness* of transdisciplinarity), not in “tagging,” not in Google Custom Search, not in examining monograph purchase requests, and not in relying on “interdisciplinary teams” for *every* point-of-use question. (We can assemble such group responders at LC right now by calling the various reading rooms—where the specialists will be *immediately* available.) None of the sources addresses the specific problems *or the specific responsibilities* of reference work *at LC*. Despite the ill-repute for “bricks and mortar” libraries evident in some of the cited sources, we have to remember *here* that LC continues to receive 1,300 new *books* within our physical walls every single day (**Paper #7**)—copyrighted, printed, non-digitized, non-broadcastable, site-specific, physical *books* that all-electronic *special libraries* “at the cutting edge” of the profession do not have to deal with at all.

Overall summary

Promoting cross-disciplinary connections is indeed something good; that, however, is not at all the point at issue. The point at issue is how best to do it while simultaneously not throwing out the baby with the bath water—i.e., not losing crucial disciplinary, specialized strengths.

Regarding transdisciplinarity, we agree that it is good—but:

- if it is to be pursued by badly misapplying a philosophy appropriate to online Internet searching to the very different uses of LC’s printed, specialized reference collections; and
- if it is to be pursued by lessening the very muscle of LC’s specialized reference collections; and
- if it is to be pursued by forcing an inappropriate agricultural metaphor (“silos to synergy”) on reference collections whose main purpose lies in providing disciplinary (not transdisciplinary) overviews and filters *within* subject “silos”; and
- if it is to be pursued at the cost of the Main Reading Room’s loss of much of the transdisciplinary subject coverage it already offers in the areas of Law, Music, and Geography (through weeding of relevant large sets now in MRR); and

- if it is to be pursued by ignoring the real differences between ‘reference’ and ‘research’ questions and thereby decimating several different ready reference and self-service collections carefully formed over decades of experience in response to very real and fully predictable needs; and
- if it is to be pursued by repeatedly ignoring the *technicalities* of providing good reference service in exchange for grand, ungrounded, and impractical theories; and
- if it is to be pursued by significantly diminishing the time that real subject experts are simultaneously available to researchers at the point-of-need in LC’s reading rooms; and
- if it is to be pursued by requiring more readers to make more appointments with those absent specialists who cannot be simultaneously present at either the MRR Central Desk or the RAR area; and
- if it is to be pursued by radically changing the entire “slope of the gameboard” away from the maintenance and development of real specialized knowledge in reference librarians; and
- if it is to be pursued under the entailed assumption that reference librarians are all essentially interchangeable, and can all develop any necessary subject expertise through “cross-training classes”;
- if it is to be pursued via great institutional upheaval when the Library is already providing excellent transdisciplinary service through our online sources that we all have immediate access to right now, in all of our reading rooms; and
- if it is to be pursued through the expenditure of tens of thousands of dollars in staff time to bring about shifts in collections, and to hire more staff to deliver materials across the streets from Adams and Madison, when no such measures or expenses are needed at a time when the Library is already in dire financial straits; and
- if it is to be pursued by ignoring decades of LC’s history in steadily improving reference by creating *divisional expertise and focused responsibilities*; and
- if it is to be pursued by ignoring the fact that communication among subject specialists is already routinely made right now, where appropriate, with no need for librarians being physically next to each other in one space; and
- if it is to be pursued by repeatedly ignoring multiple problems in providing reference service whose solutions have been painstakingly incorporated into our current specialized rooms and, instead, *repeatedly restoring the original problems themselves and all of their difficulties*; and
- if it is to be pursued by ignoring the functionality of the existing reading room in Adams in assuring efficient and timely delivery for the Adams books—and thereby doubling delivery time for transport of *all* Adams books, which will have to be sent across the street; and
- if it is to be pursued by similarly ignoring the practical functionality of the Madison reading room in assuring specialized service and timely delivery

- of materials for its clientele; and
- if it is to be pursued in violation of the Principle of Least Effort in information seeking by needlessly creating delays, barriers, and extra steps in service—none of which currently exist; and
- if it is to be pursued under an extraordinarily naïve philosophy that “transdisciplinarity” should now trump real subject expertise—a philosophy coming from administrators who have little or no actual *experience* in providing any reference service at all, *either* disciplinary *or* transdisciplinary; and
- if it is to be pursued on the basis of irrelevant library literature that is in agreement only on using online sources (not reference collections) for transdisciplinarity—which we are very efficiently promoting already, in ways (and via sources) not even mentioned by the sources listed in the FRD bibliography commissioned by I-900 proponents; and
- if it can be—and already is—being promoted by mechanisms (above) that accomplish the cross-disciplinary connections *much* more effectively than would be brought about by a consolidation of very specialized reading rooms; and
- if the sources defending “transdisciplinarity”—whose value is not at issue to begin with—themselves lack awareness of the *cross-connections* to an array of several other important and impinging factors not only within the library literature itself but also *within their own planning*;

then reference service across the board would be much better served at the Library of Congress by maintaining our existing separate reading rooms for Humanities and Social Sciences, Science and Business, Genealogy and Local History, and Newspapers/Current Periodicals/Government Documents—and by allowing our Digital Reference librarians to go back to working at the full-time responsibilities they already have.

Indeed, we would be much better off by taking the tack of improving our existing reading rooms rather than eliminating them. There are ways to make major improvements in service without losing any of our current strengths and without causing great upheavals that are both unnecessary and counterproductive to the promotion of excellent service (**Paper #2, Appendix**).

The Library created many specialized departments over many decades for solid reasons; those reasons have not simply vanished regarding any of the above-named departments any more than they have vanished for Law, Music and Sound Recordings, or Geography—or Prints and Photographs or Motion Pictures or Rare Books or our Area Studies rooms. We most need specialists, and the specialized reference collections they rely on, in all of these areas *at the point of use*.

Appendix

I

The transdisciplinary coverage of the *Web of Science* database (compiled from the vendor's own promotional material)

Key journals in all of these disciplines are searched simultaneously.

Science (ca. 8,300 journals) covering: Acoustics, Agricultural Economics & Policy, Agricultural Engineering, Agriculture (Dairy & Animal Science), Agriculture (Multidisciplinary), Agriculture (Soil Science), Agronomy, Allergy, Anatomy & Morphology, Andrology, Anesthesiology, Astronomy & Astrophysics, Automation & Control Systems, Behavioral Sciences, Biochemical Research Methods, Biochemistry & Molecular Biology, Biodiversity Conservation, Biology, Biology (Miscellaneous), Biophysics, Biotechnology & Applied Microbiology, Cardiac & Cardiovascular Systems, Cell Biology, Chemistry (Analytical), Chemistry (Applied), Chemistry (Inorganic & Nuclear), Chemistry (Medicinal), Chemistry (Multidisciplinary), Chemistry (Organic), Chemistry (Physical), Clinical Neurology, Computer Science (Artificial Intelligence), Computer Science (Hardware & Architecture), Computer Science (Information Systems), Computer Science (Interdisciplinary Applications), Computer Science (Software Engineering), Computer Science (Theory & Methods), Construction & Building Technology, Critical Care Medicine, Crystallography, Dentistry (Oral Surgery & Medicine), Dermatology & Venereal Diseases, Developmental Biology, Ecology, Education (Scientific Disciplines), Electrochemistry, Emergency Medicine, Endocrinology & Metabolism, Energy & Fuels, Engineering (Aerospace), Engineering (Biomedical), Engineering (Chemical), Engineering (Civil), Engineering (Electrical & Electronic), Engineering (Environmental), Engineering (Geological), Engineering (Industrial), Engineering (Manufacturing), Engineering (Marine), Engineering (Mechanical), Engineering (Multidisciplinary), Engineering (Ocean), Engineering (Petroleum), Entomology, Environmental Sciences, Evolutionary Biology, Fisheries, Food Science & Technology, Forestry, Gastroenterology & Hepatology, Genetics & Heredity, Geochemistry & Geophysics, Geography (Physical), Geology, Geosciences (Multidisciplinary), Geriatrics & Gerontology, Health Care Sciences & Services, Hematology, History & Philosophy of Science, Horticulture, Imaging Science & Photographic Technology, Immunology, Infectious Diseases, Information Science & Library Science, Instruments & Instrumentation, Integrative & Complementary Medicine, Limnology, Marine & Freshwater Biology, Materials Science (Biomaterials), Materials Science (Ceramics), Materials Science (Characterization & Testing), Materials Science (Coatings & Films), Materials Science (Composites), Materials Science (Multidisciplinary), Materials Science (Paper & Wood), Materials Science (Textiles), Mathematics, Mathematics (Applied), Mathematics (Interdisciplinary Applications), Mechanics, Medical Ethics, Medical Informatics, Medical Laboratory Technology, Medicine (General & Internal), Medicine (Legal), Medicine (Research & Experimental), Metallurgy & Metallurgical Engineering, Meteorology & Atmospheric Sciences, Microbiology, Microscopy, Mineralogy, Mining & Mineral Processing, Multidisciplinary Sciences, Mycology, Neuroimaging, Neurosciences, Nuclear Science & Technology, Nursing, Nutrition & Dietetics, Obstetrics & Gynecology, Oceanography, Oncology, Operations Research & Management Science, Ophthalmology, Optics, Ornithology, Orthopedics, Otorhinolaryngology, Paleontology, Parasitology, Pathology, Pediatrics, Peripheral Vascular Disease, Pharmacology & Pharmacy, Physics (Applied), Physics (Atomic, Molecular & Chemical), Physics (Condensed Matter), Physics (Fluids & Plasmas), Physics (Mathematical), Physics (Multidisciplinary), Physics (Nuclear), Physics (Particles & Fields), Physiology, Plant Sciences, Polymer Science, Psychiatry, Psychology, Public & Environmental & Occupational Health, Radiology & Nuclear Medicine & Medical Imaging, Rehabilitation, Remote Sensing, Reproductive Biology, Respiratory System, Rheumatism, Robotics, Spectroscopy, Sport Sciences, Statistics & Probability, Substance Abuse, Surgery, Telecommunications, Thermodynamics, Toxicology, Transplantation, Transportation Science & Technology, Tropical Medicine, Urology & Nephrology, Veterinary Sciences, Virology, Water Resources, Zoology.

Social Sciences (ca. 2,700 journals) covering: Anthropology, Area Studies, Business, Business (Finance), Communication, Criminology & Penology, Demography, Economics, Education & Educational Research, Education (Special), Environmental Studies, Ergonomics, Ethics, Ethnic Studies, Family Studies, Geography, Gerontology, Health Policy & Services, History, History & Philosophy of Science, History of Social Sciences, Hospitality (Leisure, Sport & Tourism), Industrial Relations & Labor, Information Science & Library Science, International Relations, Law, Linguistics, Management, Nursing, Planning & Development, Political Science, Psychiatry, Psychology, Psychology (Applied), Psychology (Biological), Psychology (Clinical), Psychology (Developmental), Psychology (Educational), Psychology (Experimental), Psychology (Mathematical), Psychology (Multidisciplinary), Psychology (Psychoanalysis), Psychology (Social), Public Administration, Public & Environmental & Occupational Health, Rehabilitation, Social Issues, Social Sciences (Biomedical), Social Sciences (Interdisciplinary), Social Sciences (Mathematical Methods), Social Work, Sociology, Substance Abuse, Transportation, Urban Studies, Women=s Studies.

Arts and Humanities (ca. 2,300 journals) covering: Archaeology, Architecture, Art, Asian Studies, Classics, Dance, Film & Radio & Television, Folklore, History, History & Philosophy of Science, Humanities (Multidisciplinary), Language & Linguistics, Literary Reviews, Literary Theory & Criticism, Literature, Literature (African, Australian, Canadian), Literature (American), Literature (British Isles), Literature (German, Dutch, Scandinavian), Literature (Romance), Literature (Slavic), Medieval & Renaissance Studies, Music, Philosophy, Poetry, Religion, Theater.

II

The transdisciplinary coverage of 19th Century Masterfile

This database provides some coverage back to the 1200s and forward to about 1930. It includes links to over 13 million full texts within other library subscriptions (e.g., *JSTOR*, *American Periodicals Series*, *Hein Online*, *Accessible Archives*, Google Books) or in freely-available websites have been added. The database, up to now, has digitized and edited more than 70 indexes to 19th century magazines, newspapers, books, U.S. patents, and government publications (both American and British). Among these are the following:

- *A.L.A. Index to General Literature* (an index to book contents)
- *A.L.A. Portrait Index* (listing citations to 40,000 portraits of individuals before 1906)
- the *Accessible Archives* index of over 50 nineteenth-century American newspapers
- L. H. Wright's *American Fiction*
- *ARTstor Digital Library* (This is a subscription database containing over a million digital art images from museums and photo archives. *19th Century Masterfile* indexes the images and provides links to them if your library subscribes to *ARTstor*.)
- the Royal Society's *Catalogue of Scientific Papers* (1800-1900) and *Subject Indexes*
- an index to *Congressional Record 1789-1925* (including *Annals of Congress*, *Register of Debates*, and *Congressional Globe*)
- Alfred Cotgreave's *Contents-Subject Index to General and Periodical Literature 1850-1899*
- *Cumulative Title Index to United States Public Documents, 1789-1900*
- J. B. Johnson's *Descriptive Index to Engineering Literature, 1884-1891*
- ERIC documents [education]
- *Galloupe's General Index to Engineering Periodicals* (1883-1893)
- *Farmer's Bulletin* index, 1889-1939
- Benjamin Perley Poore=s *Descriptive Catalogue of the Government Publications of the United States 1774-1881*
- Ames's *Comprehensive Index to the Publications of U.S. Government 1881-1893*
- *Hansard's British Parliamentary Debates: House of Commons, First and Second Series 1803-1830*
- *Hansard's British Parliamentary Debates: House of Lords, First and Second Series 1803-1830*

- [further coverage of *Hansard's* is planned]
- *Harper=s Magazine Index* (1850-1892)
- E. C. Richardson's *Index to Periodical Articles on Religion 1890-1899*
- *Index to the Journals of the Continental Congress 1774-1789*
- *Index to the Oregon Spectator* (1846-1854)
- *Jones and Chapman=s Index to Legal Periodical Literature* (1786-1922)
- *Library Journal Index* (1876-1897)
- *Messages and Papers of the Presidents* (1789-1897)
- *New York Times Index* (1863-1905)
- *New York Daily Tribune Index* (1875-1906)
- *Palmer=s Index to the Times (London)* (1880-1890)
- *Index of Patents Issued from the U.S. Patent Office* (1790-1873)
- *The Psychological Index* (1894-1905 and 1906-1935)
- *Records of U. S. Congressional Serial Set* (1789-1830)
- *Smithsonian Institution Annual Reports* (1849-1961), and
- *Swem's Virginia Index* (1619-1930).

The publisher of the database keeps looking to add other sources, in all subject areas, for the pre-1930 time period, so coverage will be increasing.

III

The cross-disciplinary applicability and validity of the Principle of Least Effort

Extensive direct quotations from a range of cross-disciplinary sources establishing the validity of this principle are provided in *Library Research Models* (Oxford University Press); cf. footnote 4 above. Perhaps a more readily discernible overview, albeit “quick and dirty,” of the range is provided by a search of the phrase “principle of least effort” in the *Web of Science* database. The resultant 50 citations fall into all of these *Web*-defined disciplinary categories:

Information Science Library Science [the greatest number of hits]
Computer Science Information Systems
 Economics
 Psychiatry
 Sociology
 Computer Science Interdisciplinary Applications
 Computer Science Software Engineering
 Geography
 Social Sciences Interdisciplinary
 Anthropology
 Biochemical Research Methods
 Biotechnology Applied Microbiology
 Language Linguistics
 Linguistics
 Mathematical Computational Biology
 Physics Condensed Matter
Physics Mathematical
 Psychology
 Statistics Probability

Anatomy Morphology
Archaeology
Behavioral Sciences
Business
Business Finance
Computer Science Hardware Architecture
Computer Science Theory Methods
Engineering Electrical Electronic
Engineering Industrial
Geosciences Multidisciplinary
Literature Romance
Management
Mathematics Applied
Mathematics Interdisciplinary Applications
Mechanics
Multidisciplinary Sciences
Neurosciences
Physics Fluid Plasmas
Physics Multidisciplinary
Physiology
Political Science
Psychology Applied
Psychology Biological
Psychology Clinical
Psychology Experimental
Psychology Mathematical
Psychology Multidisciplinary
Psychology Psychoanalysis
Social Sciences Mathematical Methods
Zoology

Adding the search term “information” limits the results to the 11 disciplines that are italicized.