The Absent User: Physical Use of Academic Library Collections and Services Continues to Decline 1995–2006

by Charles Martell
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Use of the physical collections and services of academic libraries continues to plummet, with some exceptions, while use of electronic networked resources skyrocket. This article frames the extent of this decline with a focus on circulation and reference among ARL University, Medical, and Law Libraries, the Ivy League, other associations, systems, and individual libraries.

Introduction
Library users are in an uncommonly good situation. They can access information day and night from anywhere in the world. The Internet, academic library portals, and full-text electronic resources provide them with a degree of access and utility that was impossible until the last few years of the 20th century. Because they access many of the library's resources remotely users may be able to complete their coursework and research without visiting the library. From their perspective this is undoubtedly a positive benefit. For those who guide the destiny of libraries the absent user has produced a series of formidable challenges. Foremost among these may be the continuing decline in the use of the physical collections and services. These declines make it more difficult to justify additional space, staffing, and other traditional resources.

"This article will provide data on library use from the 1990s to 2006 with a focus on circulation and reference. Data from a variety of different libraries and library systems will be provided."

In response to graphs demonstrating sharp declines in the median ratio of circulation and reference to full-time students in ARL University Libraries, Thomas Lord wrote "The graphs are misleading and almost irrelevant. We want to know the value created by the physical operation of a library and numbers like 'reference queries' and 'circulation' don't tell us that". Until this value is established and receives universal acceptance within higher education, however, the old standard measures of use will have to do. In fact, the old standards have served generations of librarians and university administrators quite well, being used to justify everything from staffing to materials budgets to the square footage needed in new library buildings.

This article will provide data on library use from the 1990s to 2006 with a focus on circulation and reference. Data from a variety of different libraries and library systems will be provided.

It is unclear how much deeper the declines in the physical use of library collections and services will go. It is equally
unclear how much further the growth in the use of electronic resources will go. The information environment, generally, will be considered. This includes brief mention of reserves, periodical collections, government documents, and newspaper rooms. These issues will be discussed and related to the percentage of the library materials budget consumed by electronic resources.

The use of library input/output measures in a selective and meaningful manner should assist library and university administrators as they strive to balance print and electronic expenditures, adjust staffing, and assess space needs.

**Circulation**

The circulation of books, serials, and other materials has been one of the major measures of library use for decades. Indeed, circulation and other outputs are viewed as more accurate indicators of a library’s utility than the traditional input measures such as volumes added.3 This has made the decline in circulation of such significance to the library community.

Annual *ARL Statistics* and the related *Research Library Trends* by Martha Kyrillidou and Mark Young have tracked this decline among the ARL University Libraries (Table 1).4 With the appearance of Scott Carlson’s “The Deserted Library” in the *Chronicle of Higher Education* (November 2001) the issue of declining use in the nation’s academic libraries was raised to a public level.5 The outcry was immediate and widespread. It was also relatively short lived. There does not appear to have been any research published as a follow up to Carlson’s allegations with the exception of this author’s two articles on the subject.6 This is unfortunate because the issue deserves greater attention no matter how disturbing the implications.

The decline in circulation is not universal and questions can be raised about the accuracy of the data upon which any conclusions are based. In order to mitigate this problem statistics from individual libraries, systems, associations, and types of libraries have been examined. In “The Elusive User: Changing Use Patterns 1995 to 2004”, circulation and reference transactions for each of the Ivy League Libraries were cited.7 Columbia, Harvard, and Yale showed circulation increases from 1995 to 2004 ranging from 72 to 74 percent. Princeton experienced a decline of 46 percent. Overall circu-

<table>
<thead>
<tr>
<th>Year</th>
<th>Circulation</th>
<th>Reference</th>
<th>Gate count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>231,500,000</td>
<td>1,900,000</td>
<td>16,500,000</td>
</tr>
<tr>
<td>1998</td>
<td>216,100,000</td>
<td>2,100,000</td>
<td>16,200,000</td>
</tr>
<tr>
<td>2000</td>
<td>194,000,000</td>
<td>1,600,000</td>
<td>16,500,000</td>
</tr>
<tr>
<td>2002</td>
<td>189,248,000</td>
<td>1,508,000</td>
<td>16,927,000</td>
</tr>
<tr>
<td>2004</td>
<td>200,204,000</td>
<td>1,423,000</td>
<td>19,369,000</td>
</tr>
<tr>
<td>% Change 1996–2004</td>
<td>−14%</td>
<td>−25%</td>
<td>+17%</td>
</tr>
</tbody>
</table>

**Table 2 Use Transactions**

<table>
<thead>
<tr>
<th>Year</th>
<th>Circulation</th>
<th>Reference</th>
<th>Gate count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>231,500,000</td>
<td>1,900,000</td>
<td>16,500,000</td>
</tr>
<tr>
<td>1998</td>
<td>216,100,000</td>
<td>2,100,000</td>
<td>16,200,000</td>
</tr>
<tr>
<td>2000</td>
<td>194,000,000</td>
<td>1,600,000</td>
<td>16,500,000</td>
</tr>
<tr>
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<td>189,248,000</td>
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<td>−14%</td>
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<td>+17%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Law</th>
<th>Medical</th>
<th>Ivy League</th>
<th>Private University</th>
<th>Public University</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>1,482,000</td>
<td>4,849,000</td>
<td>6,244,000</td>
<td>16,737,000</td>
<td>62,419,000</td>
</tr>
<tr>
<td>1999</td>
<td>1,327,000</td>
<td>5,085,000</td>
<td>6,006,000</td>
<td>17,194,000</td>
<td>58,927,000</td>
</tr>
<tr>
<td>2004</td>
<td>1,446,000</td>
<td>3,004,000</td>
<td>7,757,000</td>
<td>14,710,000</td>
<td>62,977,000</td>
</tr>
<tr>
<td>2006</td>
<td>1,379,000</td>
<td>2,056,000</td>
<td>6,351,000</td>
<td>17,040,000</td>
<td>50,234,000</td>
</tr>
<tr>
<td>% Change 1995–2006</td>
<td>−7%</td>
<td>−58%</td>
<td>+2%</td>
<td>+2%</td>
<td>−20%</td>
</tr>
</tbody>
</table>

At the University of Maryland circulation decreased 24 percent between 1995 and 2005 (Table 5). In California the situation was more dramatic. Circulation in the University of California System declined from 8,377,000 in 1991 to 3,326,000 in 2005, or 60 percent. Within the California State University System the decline between 1991 and 2006 was 43 percent (Table 6).

Declines in the circulation of library materials generally may also be considered in relation to other factors. For example, if a college or university has a dramatic drop-off in the number of its students, a corresponding drop-off in circulation transactions may be deemed reasonable. Among ARL University Libraries the number of FTE students did not drop off but increased by 22 percent between 1995 and 2006 and the number of volumes held increased by 31 percent (Table 7). Meanwhile, circulation decreased by 15 percent. Fig. 1 relates the number of FTE students to circulation.

### In-House Use

Statistics for the in-house use of library materials are not widely available and may not be widely collected. Nonetheless, they offer valuable assistance in monitoring the utility of a library’s collections.

The median in-house use among the 47 ARL Libraries reporting in *ARL Supplementary Statistics* was 923,000 in 1995 and 398,000 in 2003. This represents a 57 percent decrease. Between 1995 and 2005 in-house use at the University of Maryland declined 76 percent (Table 5). Between 1991 and 2006 in-house use in the California State University System declined from 11,197,000 to 2,846,000, or 75 percent (Table 6).

### RESERVES

The Reserve Book Room used to bustle with activity. It may still at some primarily residential colleges and universities. In my undergraduate days a two-hour loan period forced many of us to read class assignments in the Reserve Book Room. It also served an important social function. We met our dates there.

The online availability of assigned reserve materials has almost eliminated the need for users to visit the Reserve Book Room. While physical use has greatly diminished, and reserve transactions are no longer collected as a statistic by the ARL, electronic use has skyrocketed. At Fresno State University, for example, reserve use went from 27,000 in 2002 to 241,000 in 2006 (Table 6). Thus, the reserve function has been

### Table 4: Use Transactions - Association of Southeastern Research Libraries

<table>
<thead>
<tr>
<th>Year</th>
<th>Circulation</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>14,107,000</td>
<td>3,839,000</td>
</tr>
<tr>
<td>2001</td>
<td>13,327,000</td>
<td>3,716,000</td>
</tr>
<tr>
<td>2004</td>
<td>12,899,000</td>
<td>2,994,000</td>
</tr>
<tr>
<td>2006</td>
<td>10,382,000</td>
<td>2,252,000</td>
</tr>
</tbody>
</table>

% Change 1999–2006: -26% / -41%


### Table 6: California State University Library Statistics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Circulation</td>
<td>6,137,000</td>
<td>3,690,000</td>
<td>3,482,000</td>
<td>-43%</td>
</tr>
<tr>
<td>Reserves</td>
<td>1,245,000</td>
<td>755,000</td>
<td>1,331,000</td>
<td>+7%</td>
</tr>
<tr>
<td>In-house use</td>
<td>11,197,000</td>
<td>3,866,000</td>
<td>2,846,000</td>
<td>-75%</td>
</tr>
</tbody>
</table>


* Reserve statistics have increased significantly since some libraries in the system began counting electronic use. For example, at Fresno State reserve use increased from 27,000 in 2002 to 241,000 in 2006 and at Humboldt State use increased from 71,000 in 2002 to 189,000 in 2006.
Table 7
Relationship of Volumes Held and FTE Students and FTE Faculty to Circulation

<table>
<thead>
<tr>
<th>Year</th>
<th>Volumes Held</th>
<th>FTE Students</th>
<th>FTE Faculty</th>
<th>Circulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>358,950,000</td>
<td>2,076,000</td>
<td>151,000</td>
<td>79,156,000</td>
</tr>
<tr>
<td>1999</td>
<td>401,191,000</td>
<td>2,250,000</td>
<td>155,000</td>
<td>76,121,000</td>
</tr>
<tr>
<td>2005</td>
<td>458,152,000</td>
<td>2,537,000</td>
<td>168,000</td>
<td>70,726,000</td>
</tr>
<tr>
<td>2006</td>
<td>470,283,000</td>
<td>NA</td>
<td>NA</td>
<td>67,274,000</td>
</tr>
</tbody>
</table>
% Change 1995–2005 +31% +22% +11% −15%


revolutionized by the advent of electronic networked resources and its utility has vastly improved as a result.

PERIODICALS
The Periodicals Reading Room has suffered from some of the same factors that have impacted the Reserve Book Room. The reason is simple. One does not have to go to the library very often to get many current periodicals. Some journals and older back runs are not available electronically so a visit to the library remains necessary for these materials.

At Washington State University, Eileen Brady and her coauthors have followed the shift from print to electronic use in the disciplines of chemistry, mechanical and materials engineering, and physics. They report that “94 percent of all journal use in these disciplines is via electronic format.” Between 1998 and 2003 print journal use declined 43 percent but “overall journal use in both formats increased by 746 percent during the same period.”

Brady was surprised to learn that an earlier finding, i.e., an increase in print use occurred after electronic use was added, was no longer valid and that “patrons now favor[ed] electronic format.”

“Between 1998 and 2003 print journal use declined 43 percent but overall journal use in both formats increased by 746 percent during the same period.”

NEWSPAPER ROOM
In a study of news collections at the Pennsylvania State University Libraries, Debora Cheney and her coauthors note:

The use and importance of newspaper collections in academic libraries have been in decline as acquisition costs have increased significantly, as the difficulty obtaining daily issues in a timely manner has grown, and as newspaper readership has declined nationally. In contrast, today’s student and researcher are using television and Internet news sources heavily.

As a result, the library’s daily newspapers are “less relevant”, which has “led many libraries to allow their collections to lie fallow.”

OTHER COLLECTIONS
Libraries collect and hold materials in many formats. Many of these formats change with surprising frequency. Keeping up
with the changes can be difficult especially when they are re-
volutionary. The computer, Internet, and electronic resources
collectively have caused just such a situation to occur in aca-
demic libraries. Most, if not all, library formats have been im-
pacted. In the area of government documents, for example, the
Government Printing Office’s shift to CD’s in the 1990s caused a
decline in the acquisition and holdings of print resources.
Among the ARL Libraries holdings of government documents
decreased from 45,427,000 in 1995 to 36,429,000 in 2006. 12
Within the California State University System the decline for
the corresponding period was from 6,449,000 to 4,711,000. 13

A Government Trend Analysis suggests that as the GPO
redefines its role “government libraries are quickly needing to
become online, instead of real-space repositories.” 14 This will
surely cause a further decrease in the acquisition and use of print
government documents.

The availability of electronic resources may alter the growth
and use of microform collections but this is not yet evi-
dent. Microform holdings in the ARL Libraries increased from
396,794,000 to 513,129,000 between 1995 and 2006. 15 Sta-
tistics on the use of microforms were not found in the published
literature.

A breakdown of circulated materials by format is not
available in the published literature. This makes it difficult to
demonstrate how individual formats are contributing to changes
in the use of related materials. Of course, individual libraries
typically collect this type of information and are in a position to
assess more accurately the meaning of any change in use of their
collections.

REFERENCE

The decline in the use of reference has been widespread across
libraries and has continued unabated since the early to mid-
1990s. A plateau will be reached, but when is a matter of
speculation.

Among the ARL University Libraries declines in reference
use since 1995 range from 33 percent in Law to 63 percent in
the Ivy League (Table 8). Fig. 2 depicts this decline in rela-
tionship to full-time students.

In the ASERL, the decline since 1999 has been 41 percent
(Table 4). In its Academic Library Survey the National Center for
Education Statistics records a 25 percent decline from 1996 to
2004 (Table 2). The ACRL in its Summary Statistics reports a
37 percent increase between 1999 and 2005 (Table 3). Unfor-
lunately, this statistic is highly questionable as the number of
reference transactions in 2005 (33,205,000) so unexplainably
exceeds those of 2004 (18,554,000). At the University of Mary-
land reference use has declined 47 percent since 1995 (Table 5).
One of the more dramatic changes in use may have occurred at
Northwest Missouri State University where reference questions
fell from 20,801 in 1994 to 1405 in 2001, or 93 percent. 16

Reference services have received considerable attention as
the use of networked electronic resources has grown and use of
the reference desk has declined. Many new and expanded
services have been adopted, including virtual reference via
email or chat to QuestionPoint, Google Answers—recently
“retired,” and virtual reality—Facebook and Second Life.

LIBRARY INSTRUCTION

The number of ARL University Library group presentations
(formal bibliographic instruction, orientation sessions, tours,
and in-class presentations) increased from 79,000 in 1995 to
103,000 in 2006, a 30 percent increase. 17 The number of
participants increased from 1,101,000 to 1,710,000 during the
same period, or 55 percent. In the California State University
System the number of presentations increased from 7000 in
1995 to 9000 in 2006, a 29 percent increase. 18 The number of
participants increased from 131,000 to 202,000 during the same
period, or 54 percent. One factor contributing to the increase in
group presentations may be the shift in staffing and services
away from the reference desk.

INTERLIBRARY BORROWING

Interlibrary borrowing has been a bright spot for academic
libraries since the 1970s when the concept of access gradually
replaced the concept of ownership as the dominant paradigm.
From 1986–2005 interlibrary borrowing transactions in ARL
University Libraries increased 265 percent. 19

GATE COUNTS

Gate counts may appear to be the cloud with the silver lining for
those who are searching for a trend to offset starting drops in
circulation and reference use. The National Center for
Education Statistics’ Academic Library Statistics reports a
17 percent increase in gate count between 1996 and 2004 (Table
2). Broader evidence for a general increase in gate count was not
uncovered in the published literature. Interestingly, Washington
State University Library explains its 41 percent drop in gate
count between 1998 and 2003 by noting that “both gate count
and print use have declined as electronic use has increased.” 20

ELECTRONIC RESOURCES—BUDGETS

Electronic materials are consuming a greater and greater
percentage of the total materials budget of academic libraries.
Among the ARL University Libraries electronic materials accounted for almost 11 percent of the total materials budget in 1999 but more than 37 percent in 2006 (Table 9). At this rate of growth it seems reasonable to project that electronic materials expenditures will account for 50 percent of ARL University Libraries materials expenditures within 5 years.

Predictably, it will be monographs that will be most impacted by this shift in resources. For example, since 1986 the number of monographs purchased by ARL University Libraries has increased 1 percent while the number of serials purchased has increased 51 percent.21 If fewer books are purchased the utility of the print collection will diminish and additional declines in circulation will occur.

...the fact that publishers can produce a digital master of a book for as little as $200.00, suggests that the economics of publishing may soon favor the electronic book.”

A real wild card that could undercut the current position of printed books is the possibility that e-books may finally catch on, fueled perhaps by such recent developments as the release of Amazon’s Kindle, a wireless reading device.22 The ability of Amazon to offer New York Times best sellers and new releases wirelessly and within minutes at a cost of $9.99 in a package smaller and lighter than a paperback may provide the ultimate breakthrough for the e-book. This innovation, combined with the fact that publishers can produce a digital master of a book for as little as $200.00, suggests that the economics of publishing may soon favor the electronic book.

**Electronic Resources—Use**

If only we had equivalences for physical use (e.g., using a print article on site) relative to electronic use (e.g., using an electronic article off site), then we would know the cost implications for each type of use. It would be fascinating to know how many of one it takes to equal one of the other. Any equivalency would be based on library costs rather than user benefits. Nonetheless students and faculty have benefited enormously from the transition.

In the meantime, the utter magnitude of portal and web use is startling. One example is the Maryland Digital Library (MDL)

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**Table 9**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Materials</th>
<th>Computer Files</th>
<th>Electronic Serials</th>
<th>Electronic as % of Total Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>526,496,000</td>
<td>22,031,000</td>
<td>11,848,000</td>
<td>+6.43%</td>
</tr>
<tr>
<td>1999</td>
<td>727,623,000</td>
<td>10,848,000</td>
<td>67,125,000</td>
<td>+10.72%</td>
</tr>
<tr>
<td>2004</td>
<td>1,016,121,000</td>
<td>32,098,000</td>
<td>269,601,000</td>
<td>+29.69%</td>
</tr>
<tr>
<td>2006</td>
<td>1,159,554,000</td>
<td>48,794,000</td>
<td>383,127,000</td>
<td>+37.25%</td>
</tr>
</tbody>
</table>

% Change 1995–2006 +120% +121% +3234%

which was launched in July 2000. Almost 15 million searches have been conducted and 16 million full-text articles retrieved. MDL users conducted 4.3 million searches and retrieved 5.6 million full-text documents from July 2004 to July 2005.\(^2\) Another example is the HOLLIS Plus usage statistics at the Harvard University Libraries (Fig. 3). In 2001, electronic use totaled 1,336,000 and in 2006, 5,713,000. Harvard users were increasingly making connections to individual articles.\(^2\)

### Conclusion

In mystery stories and political thrillers the advice is often “follow the money”. In the library setting one might do better to “follow the user”. Clearly today’s users have substituted virtual use for in-person use. While they may be absent, they are not inactive. Networked electronic resources via library portals and the Internet have provided users with benefits that go far beyond anything available when physical use was the only alternative.

Librarians have coped successfully with the transition, as reported in several major user satisfaction surveys.\(^2\) This is an extremely positive sign. It demonstrates that librarians have done that which was in their power to achieve. Keeping users tethered to the physical library was never a realistic option. Instead users engage in whatever strategy works best for them. This has resulted in fewer visits to the library and more use of networked resources for research, study, and teaching.

Trying to bring students back to the library in order to use the print collections may fail as a strategy if instructors do not require such use from their students or if online alternatives are available. Adding a café, art gallery, computer labs, classrooms, and other non-library services may increase gate counts but they are unlikely to influence circulation rates.

There is no end in sight to the declines in circulation and reference that many libraries are experiencing. This presents considerable difficulties for anyone who is attempting to justify a new building or an improved materials budget. In these situations it becomes necessary to demonstrate how monumental increases in the usage of electronic collections and services balanced with sound investments in the print collections will provide optimum benefits to students and faculty.

### Notes and References


