Book Circulation Per U.S. Public Library User Since 1856

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Digital forms and ubiquitous networks are greatly increasing opportunities to circulate authored symbolic works. Digitization projects are creating huge online libraries of digitized books that persons around the world can access at zero incremental cost. Storage prices are dropping so rapidly that one small device will soon be able to store all the music that most persons listen to throughout their lives. Video sharing sites are collecting and distributing large amounts of video across the Internet. Many persons can now easily create a huge library of digital works. How persons respond to vastly expanding access to works will significantly shape the communications industry.

To better understand the circulation of works, consider U.S. public-library users' book borrowing behavior since the mid-nineteenth century. Measured relative to the unskilled wage, the dime novels that Irwin Beadle began selling in 1860 were almost five times more expensive than the twenty-five cent paperbacks being sold in 1950.[2] A lower real purchase price for books increased the incentive to purchase rather than borrow. Average time spent reading, according to the best available estimates, fell 50% from 1925 to 1995.[3] Less time spent reading implies less demand for borrowing books.

Other factors probably pushed toward more borrowing. The number of books in print, and the number of books in libraries, increased immensely from the mid-nineteenth century to the early twenty-first century.[4] Perhaps such a change encouraged persons to read a larger number of books less thoroughly, and hence favored borrowing books relative to purchasing books. Library users' travel costs, in time and money, probably fell with improvements in transportation technology since the mid-nineteenth century. Lower travel costs reduce the total cost of borrowing books from a library.[5]

Library book circulation per user has no strong, long-run trend. From 1856 to 1978, library users borrowed from U.S. public libraries about 15 books per user per year. From 1978 to 2004, book circulation per user declined approximately 50%. The growth of audiovisuals circulation, estimated at 25% of total circulation in 2004, accounts for about half of this decline. These figures depend on estimates and disparate samples of libraries with varying circulation and user accounting methods. Nonetheless, these figures are of

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[2] The price of a hardcover book about 1850 was roughly a dollar. Zboray (1988). The average price for personal (consumer/end-user) purchases in 2001 was $9.54. Greco (2005) Table 8.5, based on 2001 consumer Research Study of Book Purchasing. Relative to the unskilled wage, the price of a hardcover book in 1850 was 1.8 times higher than the price in 2001. For the unskilled wage deflator, see Williamson (2006).

[3] See Galbi (2001) Table 4.

[4] In 1853, 420 original American books were published. See Zboray (1988), quoting speech of George Putnam. In 2004, 181,199 U.S. book titles were published. See Bowker Annual, 2004.

[5] Travel costs significantly affect library use. In 2002, 51.6% of households less than 1 mile from a library used the library in the preceding year. For households 6-10 miles away, the figure was 40.9%. See National Center for Education Statistics (2007) Table 2. White (1983) observes that residential proximity has increased library use since at least the mid-twentieth century. The effect of lower travel cost depends on the residential distribution of library users. If most library users lived close to libraries in the mid-nineteenth century, or the average distance increased since the mid-nineteenth century, the over-all effect of travel costs could have lowered library use.

sufficient quality to suggest that historically established institutions significantly stabilize borrowing behavior.

I. Studies of Library Book Circulation

Statistics on library use are worth studying. Much data exists. Large individual libraries often issued annual reports that included statistical data on use of the library. In addition, since 1836 interested individuals, professional organizations, and government bodies have produced about 250 separate compilations of library statistics covering different dates and libraries. A leading library historian has observed:

> *Despite their value, little critical attention has been given by library historians to the purposes, methods, quality, and uses of the data.*[6]

The data is not simple to analyze. One of the few scholars who has analyzed the data observed:

> *The writer did not find easy going in collecting and assembling this material. Gaps in reporting by individual libraries, lack of uniform standards in reporting, obvious misprints in tables, sporadic appearance of data, and frequent changes in the type of data reported are a few of the obstacles encountered.*[7]

On the other hand, data encompassing large investments in communication across long periods of time are rare. Books require significant investments in writing and reading. Circulation of public library books is an important indicator of communication. Aggregate data on library use potentially offers important, long-run insights on communication.[8]

Circulation per user per year is a meaningful, feasible measure of library use across long periods. In this paper, circulation per user means borrowing for use outside the library per person who has affirmatively established the administrative right to borrow books from the library. Circulation per user indicates a significant type of individual behavior both in establishing an administrative relationship to a library and in using library materials. Total population, persons in libraries' legal serving areas, and the number of persons who use libraries have risen over time. Circulation per user is conceptually distinct from these trends. Circulation per user is also conceptually distinct from changes in the distribution of library sizes and the scope and composition of the library sample.[9]

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[6] Williams (1991). Professor Williams is compiling an annotated bibliography of these studies. He plans to make the bibliography, along with digitized copies of key statistical compilations, available on the web. I am grateful to Professor Williams for sharing with me a preliminary version of his bibliography.

[7] Kaiser (1948).

[8] All statistics have weaknesses and limitations. With respect to library statistics, weaknesses in the statistics tend to be emphasized more than possible insights from sound analysis. Some discussions of library statistics are tendentious and intellectually weak. For documentation of weak analysis of academic library statistics, and important, better analysis of them, see Molyneux (1994).

[9] Circulation per user is conceptually distinct in the sense that circulation per user could reasonably be constant despite changes in these other variables. But circulation per user is not necessarily independent from changes in these other variables. If the increase in the aggregate share of library users were primarily from an increase in the share of users among a population with heterogeneous use-relevant characteristics, rather than from increased coverage of sub-populations with similar distributions of use-relevant characteristics, circulation per user would vary with the share of users. Similarly, if library size is strongly

Because circulation per user is a measure of average user behavior, it suggests user-weighted aggregation of library statistics. Sums of users and circulation across libraries implicitly is such an aggregation. Most importantly, sufficient data exist to estimate reasonably circulation per user since 1856.[10]

Kaiser's study of large public libraries from 1908 to 1946 found that circulation per user did not change greatly.[11] This study collected data for all reporting public libraries in cities with population 200,000 persons or more.[12] The study also reported juvenile circulation for some years. Data reported to the American Library Association (ALA) in 1914 indicated that juvenile circulation per juvenile borrower was about 50% greater than adult circulation per adult borrower. This ratio and the juvenile circulation share series imply estimates for adult circulation per adult library user.[13] These estimates indicate that adult circulation per adult user was 13 in 1908, rose to 20 in 1930-33, and then fell to 14 in 1946 (see Table 1).

Table 1
Reported Public Library Circulation in U.S. Cities with Population 200,000 Persons or More

Year	Circulation. per User	Percent Juvenile Circulation	Adult Circulation per Adult User
1908	15.4	38.0%	13
1913	16.6	32.8%	15
1921	15.5	34.1%	14
1926	21.6	34.3%	19
1930	22.8	35.3%	20
1933	23.1	36.0%	20
1937	21.1	36.9%	19
1940	19.8	35.0%	17
1943	16.4	40.9%	14
1946	16.6	41.3%	14
Source: Calculated from Kaiser (1948).			

The Index of American Public Library Circulation provides annually from 1939 to 1983 circulation per person served.[14] These estimates were constructed from a representative sample of U.S. public libraries. The population that libraries serve, however, is larger than the number of registered library borrowers. Supporting data for the Index of American Public Library Circulation does not include the share of registered borrowers, but does include share of juvenile circulation.

correlated with library quality, and library quality significantly affects users' borrowing behavior, then circulation per user depends on library size.

[10] Measures of library use other than circulation per user exist. For reviews of library statistics and the measurement of library services, see Thompson (1951) and Krikelas (1966).

[11] Kaiser (1948).

[12] The number of libraries reporting varied from 20 to 45 from 1908 to 1946. See Kaiser (1948).

[13] See discussion below under *Public Library Statistics for 1913*. For the data, see Galbi (2007a).

[14] See Goldhor (1985). For additional details about the index, which is similar to an index of Illinois public library circulation, see Goldhor (1949).

The share of juvenile circulation is correlated with the share of juveniles in the population. In 1939, juveniles (persons ages 14 and under) were 25% of the population and juvenile circulation was 33% of total circulation. By 1957 these figures had risen to 30% and 51%, respectively. By 1980, with the passing of the post-World War II baby boom, juveniles had fallen to 22% of the population, and juvenile circulation had fallen to 31% of total circulation. Circulation per person served varies from 3.2 to 5.8 between 1939 and 1983 (see Table 2). A significant share of that variation is driven by the changes in the percentage of juvenile borrowers and juvenile's higher borrowing per juvenile library user.

Table 2 Circulation from U.S. Public Libraries			
Year	Percent of U.S. Population Served	Percent Juvenile Circulation	Circulation per Person Served
1939	60.4%	33%	5.3
1940	61.4%	31%	4.8
1941	62.5%	34%	4.3
1942	63.5%	36%	3.9
1943	64.6%	36%	3.8
1944	65.6%	38%	3.8
1945	66.6%	38%	3.8
1946	68.4%	38%	3.5
1947	70.2%	42%	3.4
1948	72.1%	42%	3.2
1949	73.9%	45%	3.4
1950	75.7%	44%	3.3
1951	74.7%	44%	3.4
1952	73.8%	49%	3.5
1953	72.8%	49%	3.7
1954	71.9%	50%	3.9
1955	71.0%	50%	4.0
1956	70.0%	50%	4.2
1957	70.4%	51%	4.3
1958	70.9%	51%	4.5
1959	71.3%	50%	4.6
1960	71.8%	50%	4.6
1961	72.2%	49%	4.8
1962	72.7%	51%	4.9
1963	73.1%	50%	4.8
1964	73.6%	52%	4.9
1965	74.0%	51%	5.3
1966	74.5%	50%	5.5
1967	74.9%	50%	5.6
1968	75.4%	49%	5.7
1969	75.8%	44%	5.8
1970	76.3%	39%	5.7
1971	76.7%	37%	5.8
1972	77.2%	35%	5.5
1973	77.6%	34%	5.4
1974	78.0%	33%	5.4

1975	81.0%	34%	5.6
1976	84.0%	32%	5.4
1977	87.0%	32%	5.2
1978	90.0%	32%	4.9
1979	93.0%	31%	4.6
1980	95.9%	31%	4.4
1981	96.0%	30%	4.7
1982	96.2%	31%	4.8
1983	96.4%	32%	4.8
Source: Goldhor (1985), Table 2.			

Colorado historical library circulation data show the importance of accounting for changes in the share of registered borrowers. From 1920 to 2000, Colorado public library circulation per capita has risen by more than a factor of three (see Table 3). However, in 1941, 22% of the population was registered borrowers, while in 2000 the corresponding figure was 66%.[15] Those figures imply that circulation per registered borrower (user) has dropped from 16 in 1941 to 14 in 2000.

Table 3	
Circulation from Colorado Public Libraries	
Year	Circulation Per State Population
1920	2.33
1925	2.51
1930	3.24
1935	3.76
1941	3.62
1946	2.74
1951	3.24
1955	3.37
1960	4.58
1965	5.62
1970	5.41
1975	5.00
1980	4.89
1985	5.00
1990	6.45
1995	8.13
2000	9.09
Source: Colorado Library Research Service (2003).	

White's study of library use indicates that circulation per registered library user changed little from 1890 to 1970. This study reports "library registrations as percent of total population" and "book circulation per capita" for varying collections of cities in 1890, 1900, 1910, 1920, and 1970.[16] The ratio of these figures gives book circulation per

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[15] Colorado Library Research Service (2003).
[16] White (1983), Table 4-7.

registered user. The median book circulation per registered user is within 14 to 18 books borrowed per year per user from 1890 to 1970 (see Table 4).[17]

Table 4 Median Circulation Per User Across Sets of U.S. Cities		
Year	Number of Cities	Circulation per User
1890	17	14.6
1900	25	14.9
1910	25	14.1
1920	22	17.8
1970	28	15.7
Source: Calculated from White (1983).		

The studies discussed here, which seem to have attracted little attention, suggest the value of additional analysis of library circulation per library user. These studies indicate that scaled circulation figures are relatively constant. That's an interesting finding. It becomes even more interesting to the extent that it holds over longer time periods with greater social, economic, and technological change.

II. Book Circulation Per User for U.S. Public Libraries from 1856 to 2004

The graph below and Table 5 provide estimates book circulation per user from 1856 to 2004. These figures re-enforce previous findings with more data and extend them over more years. Compared to strong secular trends since the mid-nineteenth century in years of education per person, leisure time, scientific and practical knowledge, cost of communication and transportation, and books published per year, library book circulation per user has been relatively stable.

From at least the early twentieth century, circulation of books to juveniles has been a significant share of total library circulation. In 1913, juvenile circulation accounted for perhaps 45% of total library book circulation.[18] In 2004, juvenile circulation amounted to 35% of total circulation. Limited available twentieth-century data indicates that juvenile circulation per juvenile user is 1.5 to 1.6 times adult circulation per adult user. Assuming that juvenile circulation was insignificant in the mid-nineteenth century, adult circulation per adult user was 25% less in the mid-twentieth century than in the mid-nineteenth century. Like over-all circulation per user, adult circulation per adult user shows no strong trend from 1856 to 2004 (see Table 5).

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[17] For the individual city and year data, see Galbi (2007c).
[18] The age definition of juveniles is not standardized in library statistics. However, persons under age 14 is a reasonable interpretation of this category.

Library size, in a cross-sectional analysis of libraries in a given year, is positively correlated with circulation per user. Thus a sample of libraries that under-represents small libraries will have a higher circulation per user than a more representative sample. For the reasonably comprehensive twentieth-century library surveys, exclusion of relatively small libraries is likely to matter little because, in aggregate, these libraries have only a small share of total circulation and total users.

The figures presented here are based upon various sources and estimation procedures, as described below. While circulation statistics commonly appear as part of library statistics, statistics that include the number of library users are more difficult to find. I have made much supporting data freely available so that others might be able to improve these estimates or use the data in other ways.

Book Circulation
Per U.S. Public Library User Per Year

Table 5
Circulation from U.S. Public Libraries
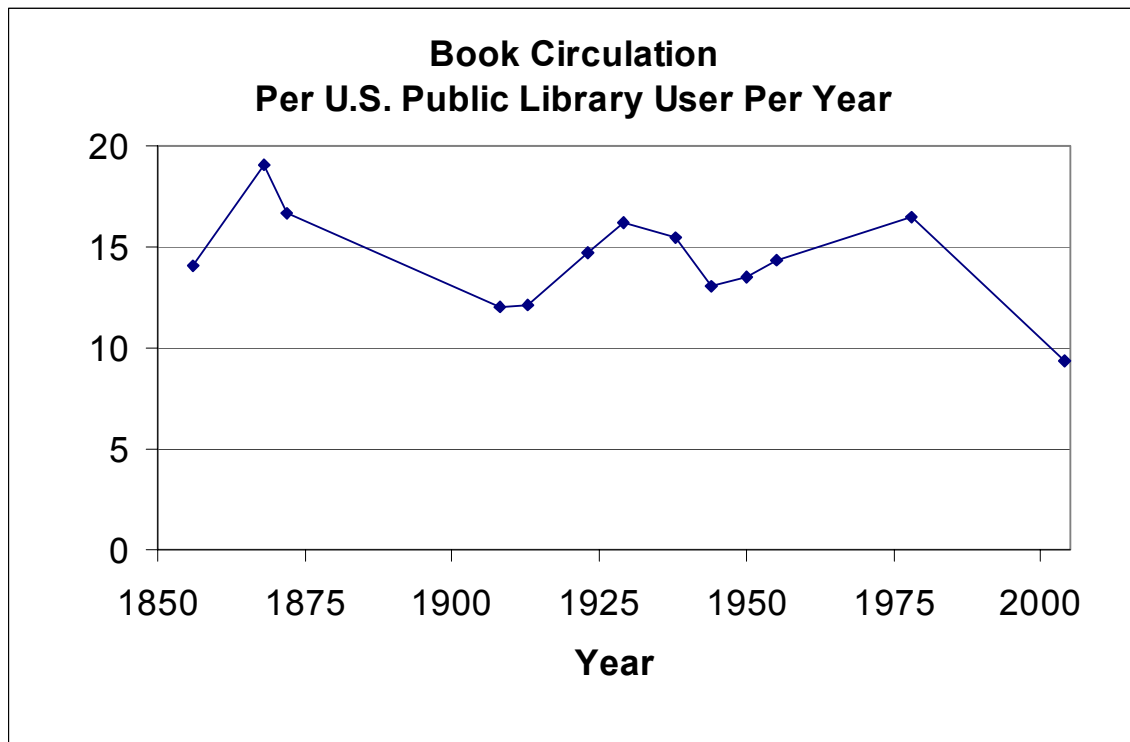
Year	Circulation per User	Adult Circulation per Adult User
1856	14	14
1868	19	19
1872	17	17
1908	12	
1913	12	10
1923	15	
1929	16	
1938	15	14
1944	13	11
1950	14	11
1955	14	12
1978	16	14
2004	9	8

Table 6
Statistics on U.S. Public Libraries

Year	Libraries Reporting	Volumes per Library	Libraries Reporting	Circulation per Library	Libraries Reporting	Users per Library
1856	1,297	3,254		5,856		416
1868	87	12,817	87	24,464	87	1,286
1872	306	13,068	180	35,339	135	2,119
1908	5,640	16,955	2,835	25,005	2,775	2,083
1913	4,601	12,150	2,924	31,632	3,043	2,605
1923	5,080	23,788	3,199	64,930	3,110	4,423
1929	6,429	24,003	4,380	76,885	4,134	4,750
1938	5,805	18,099	5,515	75,745	4,934	4,895
1944	6,033	20,742	5,731	58,499	5,128	4,483
1950	6,028	23,711	5,783	66,506	5,162	4,913
1955	6,263	27,750	6,166	79,855	5,491	5,571
1978	8,456	52,701	8,456	116,688	8,456	7,092
2004	9,207	87,427	9,207	163,797	9,207	17,547
Note: Some of these figures are estimates. For sources and estimation procedures, see text below.						

Public Library Statistics for 1856

Source: Rhees (1859).

In the nineteenth century, the term "public library" included a wide variety of libraries: social libraries, college libraries, student libraries, academy and professional school libraries, society libraries, etc. Libraries that required a fee for membership were considered to be public libraries. These statistics include all these types of libraries. While the source includes descriptive entries for each library, the aggregate statistics do

not indicate the number of libraries that reported circulation and users. The number of libraries reporting users and circulation appears to be significantly smaller than the number reporting total volumes. Users are defined in various ways across the individual library reports.[19]

Public Library Statistics for 1868

Source: *Seventeenth Annual Report, 1869, Boston Public Library*, Appendices XXII and XXIII, pp. 112-33.

The first appendix provides a table of 88 libraries in Massachusetts, 1868-9. The second appendix provides a table of 75 libraries in the United States (Massachusetts excepted) and British North America. I extracted from these tables entries for libraries that included figures for both users ("persons using the library") and circulation ("Use of Books yearly; loans"). Libraries reporting both figures numbered 49 Massachusetts libraries and 38 non-Massachusetts libraries, including two in Canada, for a total of 87 libraries (about 112,000 users). I calculated circulation per user as the sum of loans across the libraries, divided by the sum of users across the libraries. For the relevant individual-library data, see Galbi (2007e).

The table in the source includes an entry for "age of most of users." A typical range was 15-30 years of age. Among libraries that listed a range (most libraries), a lower-bound age for "age of most of users" of 10 years of age or less occurred for 8 Massachusetts libraries and 6 other libraries.

Public Library Statistics for 1872

Source: United States Bureau of Education (1876) pp. 828-31.

The Bureau of Education's monumental 1876 report on public libraries unfortunately did not include figures for number of users for each library. However, the text of the report included summary statistics on readers and circulation from a 1872 survey that included some data from 306 responding libraries. For the 135 libraries reporting "average number of readers in the year," the average number of readers per library was 2119. Among 180 lending libraries reporting "average weekly circulation of books," the average weekly circulation was 721 volumes. Assuming an average of 49 weeks of library operation per year, I calculate average yearly circulation per user as $(721)(49)/2119 = 16.7$

Public Library Statistics for 1908-1929

Sources: United States Office of Education (1909), United States Office of Education (1915), United States Office of Education (1926), and United States Office of Education (1931).

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[19] For state-level statistics and discussion of estimates of circulation per user, see Galbi (2007f).

The U.S. Office of Education issued reports containing individual library statistics for years about 1884, 1891, 1896, 1900, 1903, 1908, 1913, 1923, and 1929.[20] The reports prior to 1908 did not include the number of library users. Among the reports for 1908 and after, the 1913 report is most detailed. The 1913 report includes information on books issued for juvenile use, with school libraries tabulated separately from public and society libraries (the term "public library" by this time had acquired a narrower meaning than its meaning in the nineteenth century). In order to be more consistent with the twentieth-century understanding of public library, I did not include school libraries in the figures for 1913. The figures for 1908, 1923, and 1929 include school libraries because aggregate statistics that exclude them are not available.

Table 7 U.S. Public Library Statistics, 1908-1929								
Year	Library Types	Library Size Range (vols)	Rept. Libs.	Volumes (ave/lib)	Rept. Libs.	Users (ave/lib)	Rept. Libs.	Circulation (ave/lib)
1908	p,s,e	1000-4999	3,342	2,178	1,514	512	1,451	4,831
1908	p,s,e	>=5000	2,298	38,447	1,261	4,368	1,384	54,344
1913	p,s	301-999	569	644	272	230	191	1,799
1913	p,s	1000-4999	2,188	2,515	1,489	680	1,346	6,673
1913	p,s	>=5000	1,844	27,132	1,282	5,624	1,387	70,453
1913	e	301-999	4,815	539	518	152	614	531
1913	e	1000-4999	3,265	1,895	736	302	707	2,120
1913	e	>=5000	1,005	24,957	357	2,547	386	35,266
1923	p,s,e	>=3000	5,080	23,788	3,110	4,423	3,199	64,930
1929	p,s,e	>=3000	6,429	24,003	4,134	4,750	4,380	76,885
Note: Under library types, p=public libraries, s=society libraries, and e=school libraries. Rept. Libs. (reporting libraries) gives the number of libraries reporting the following statistic.								

Table 8 Juvenile Circulation from U.S. Public Libraries, 1908-1913				
Year	Library Types	Library Size Range (vols)	Reporting Libraries	Juvenile Circulation (ave/lib)
1908	p,s,e	>=5000	645	26,892
1913	p,s	>=5000	898	29,622
1913	e	>=5000	70	131,623
Note: Under library types, p=public libraries, s=society libraries, and e=school libraries.				

The 1913 report includes data for public and society libraries with more than 300 volumes. Data were reported in three groups: libraries with 301 to 999 volumes, libraries with 1000 to 4999 volumes, and libraries with 5000 volumes and over. The averages for users and circulation are weighted across these categories by the number of libraries

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[20] The reports were typically issued a year or two after the (approximate) date of the data, with a typical title, "Statistics of public, society, and school libraries."

reporting volumes in each category, because the later figures are larger and are a likely to be a better approximation to the total universe of public libraries. I aggregated the two size categories for libraries in the 1908 survey similarly.

The 1913 report includes data on juvenile circulation for public and society libraries containing 5000 or more volumes. Based on data for surveys in 1938 through 1955 (see below), I estimated that 6% of total circulation was not distributed among juvenile and adult circulation. I estimated over-all average juvenile circulation per library using the juvenile share of distributed circulation in libraries containing 5000 or more volumes. I calculated average adult circulation as average total circulation minus average juvenile circulation.

 The report includes only information on total users. I calculated adult circulation per adult borrower based on a parameter s relating juvenile circulation per juvenile borrower to adult circulation per adult borrower:

$$[1] \quad \frac{c_j}{u_j} = s \frac{c_a}{u_a}$$

Since total users $u_t = u_a + u_j$, equation [1] can be rewritten as

$$[2] \quad \frac{c_a}{u_a} = \frac{c_a + \dfrac{c_j}{s}}{u_t}$$

The American Library Association (ALA) Bulletin in 1915 provides detailed statistics on 85 public libraries in 1914. Twenty-five entries include complete figures for adult and juvenile circulation and adult and juvenile borrowers.[21] Total adult circulation per total adult users was 13.5, and total juvenile circulation per total juvenile user was 20.4, giving $s = 1.51$. That value and the value for the other variables on the right side of [2] give the estimate for adult circulation per adult user.

Table 9	
Estimating Adult Circulation per Adult User in 1913	
Juvenile Circulation Share (for libraries with >=5000 vols)	45%
Undistributed Circulation Share	6%
Juvenile Circulation (ave/lib)	14,149
Adult Circulation (ave/lib)	17,483
s (see equation [1])	1.5
Adult Circulation per Adult User	10.3

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[21] For the data, see Galbi (2007a).

The ALA data probably indicate high circulation per user relative to that statistic for the 1913 survey because the average size of libraries in the ALA sample is relatively large. Overall circulation per user for the 25 libraries reporting adult and juvenile circulation from the ALA sample is 15.7, and average number of volumes per library is 55,412. Similarly, 167 libraries reporting circulation data through the ALA for 1915 showed circulation per user of 15.1, and had 68,056 volumes per library on average.[22] The much larger 1913 Office of Education survey showed circulation per user of 12.1, with 12,150 volumes per library on average.

Public Library Statistics for 1938, 1944, 1950, 1955

Sources: Dunbar and Foster (1942), Mishoff and Foster (1947), United States Office of Education (1957).

The Office of Education collected public library statistics under the year descriptors 1938-39, 1944-45, 1950, and 1955-56. The 1955-56 report noted:
> *Since public-library fiscal years vary, reporting library systems were asked to submit data for fiscal years ending any time between July 1, 1955, and June 30, 1956. A majority of libraries reported either a straight January-December 1955 calendar year or a July 1, 1955-June 30, 1956, fiscal year, with a very small number reporting fiscal years ending in all months of the year.[23]*

The years 1938, 1944, 1950, and 1955 appear to the single years that best encompass the reported data. I thus use these years to designate the figures. But some data comes from plus or minus one year relative to these indicated years.

While the 1950 and 1955 data include the number of libraries reporting circulation and users ("registered borrowers"), the 1938 and 1944 data do not include these figures. I calculated the share of libraries reporting circulation and users in 1950 and 1955, and used these figures to estimate shares for 1938 and 1944. These shares then imply the number of libraries reporting, as given in Table 6 and used in calculating average figures.

Table 10 Incomplete Reporting Shares in Survey Years				
	1938	1944	1950	1955
Share Reporting Circulation	95%	95%	95.9%	98.5%
Share Reporting Users	85%	85%	85.6%	87.7%

The 1938 data do not include the number of juvenile users. I estimated adult circulation per adult user and juvenile circulation per juvenile user using an estimate for *s* and equation [2] and then [1] above. Data for 1944, 1950, and 1955 indicate *s* of 1.49, 1.63, and 1.59, respectively.   A sample of libraries in 1914 showed an *s* of 1.51 (see above). I set *s* for 1938 to be 1.5.

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[22] The invidual library data are available in Galbi (2007b).
[23] United States Office of Education (1957).

	1938	1944	1950	1955
Table 11				
Estimating Adult and Juvenile Circulation Per User in Survey Years				
Adult Circulation (ave/lib)	48,868	32,620	35,852	39,527
Adult Users (ave/lib)		2,928	3,220	3,392
Juvenile Circulation (ave/lib)	26,876	25,879	30,654	40,328
Juvenile Users (ave/lib)		1,555	1,693	2,179
Adult Circulation per Adult User	13.6	11.1	11.1	11.7
Juvenile Circulation per Juvenile User	20.5	16.6	18.1	18.5
s	1.5	1.49	1.63	1.59

Public Library Statistics for 1978

Main source: Eckard (1982).

The date for these data is somewhat confusing. The report is entitled *Statistics of Public Libraries, 1977-1978*. The report states, "The data collected were for fiscal year 1977 and fall 1978."[24] In current U.S. usage, fiscal year 1977 would run from October 1, 1976 to September 30, 1977. It seems more likely that the data collected were for fiscal year 1978, running from Oct. 1977 to Sept. 1978, with fall 1978 data added. Hence I refer to the survey date as 1978.

The figures are estimates for a universe of 8,456 public libraries in the U.S. calculated from a sample of about 1,500 libraries. The estimated standard error for total circulation is about half a percent of total circulation.[25] That error is much smaller than the probable error in estimating total users and adult circulation shares.[26]

The estimate of average registered users comes from other sources. Other surveys indicate that U.S. public libraries served 199.9 million persons in 1978.[27] The median figure for library registrations as a percent of total population for 28 cities in 1970 was 27%.[28] Gallup surveys of adults in 1975 and in 1978 found that 40% and 51%, respectively, reported using a library at least once in the previous year. Because persons use libraries for study, in-library reading, and reference works, persons who borrow books from a library are a subset of persons who use a library. I roughly estimate the share of persons who borrow books from libraries (users as defined here) to be 30% of the population served. That figure, with the figure for population served and 8,456 total libraries, implies an average of 7,092 users per library.

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[24] Eckard (1982).
[25] Eckard (1982).
[26] The sampling error is also independent of these errors.
[27] Goldhor (1985), Table 2.
[28] White (1983) Table 4-7; data available in Galbi (2007c).

Separating adult and juvenile circulation also depends on other sources and estimates. Goldhor (1985), Table 2, gives juvenile circulation as 32% of total circulation in 1978. Based on the library statistics for 1950 and 1955, I estimate *s* to be 1.6 in 1978. Adult circulation per adult user is then calculated from equation [2] above.

Public Library Statistics for 2004

Main source: Chute, Kroe et al. (2006).

Based on state-level library statistics about 2004, 57% of the population that libraries serve were registered library users. Unduplicated population served and the total number of libraries then imply average (registered) users per library.

Chute, Kroe et al. (2006) includes juvenile circulation, but not juvenile users. As I did for the 1978 statistics, I take s=1.6 to estimate adult circulation per adult user via equation [2].

Based on the data summarized in Galbi (2007d), I estimate audiovisuals to make up 25% of total circulation. Hence book circulation is estimated to be 75% of total circulation.

III. Speculations Upon the Stability of Borrowing Behavior

Borrowing books from public libraries is well-connected to a variety of institutions and values. Much of the pleasure from reading may be derived from discussing a book with friends who have also read the book. The desire to discuss books among friends may constrain the rate at which individuals will read books. At the same time, persons may value going to the library as an activity in itself. Borrowing library items may be in part a by-product of interest in those visits. On the supply side, libraries can counterbalance changing demand for books by shifting the distribution of book collections between popular and less popular works, by changing investments in promoting book borrowing, and by shifting collections from books to audiovisuals.

Media use that is connected to wider scope of behaviors and interests is likely to change more slowly. The shifts in music from vinyl records, to CDs, and then to digital downloads were format changes that required relatively small changes in behavior. Persons who read the same newspaper every morning while using the bathroom, or who watch a half-hour television news program every evening before dinner, have their media use connected to relatively stable patterns of life. Generational changes in patterns of life, rather than changes in relative prices, quality, or features, are more important for such media use.[29] Established institutions, meaning both routine patterns of personal activity and indefinitely chartered organizations, can give media use considerable stability despite major changes in activity incentives and technological possibilities.

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[29] Data on newspaper readership shows this type of change. See Yelvington (2007).

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