

Simple Citation Analysis and the Purdue History Periodical Collection

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Scholarly research has been growing enormously in recent decades. Research production has grown geometrically in the sciences and in the technologies where the impetus for highly specialized and up-to-the-minute research is a given in techno-scientific work. In academia the concern with publication of research results is a driving force which generates a need for the latest information possible. A parallel phenomenon is occurring in the humanities and in the social sciences, one which compels scholars to take on the techno-scientific model of research and publication.

Considerable effort is expended in academic librarianship in dealing effectively with the exponential explosion in scholarly information. Compounded with the drive for scholarly cachet in the academic milieu is the necessity of communicating with one's colleagues and with interested constituencies in one's field. Barring the often mentioned cliché of "publish or perish", the proliferation of published research is here to stay and is a permanent feature of academic life. When the considerations of academic librarianship are entertained,

the seriousness of this scholarly phenomenon takes on the characteristics of an inundation.

The problems of the serials librarian abound in the literature. Accelerating costs for subscriptions (domestic as well as foreign), concerns over bibliographic control, storage, and patron service have focused attention upon the amorphous world of periodicals and serials in the contemporary academic library. For the research library supporting graduate level studies and student and professorial research, these problems become especially acute. Solid curricula and research potential must be considered seriously and meshed with the capabilities of the library's own support base and capacity for growth. The desirability of and the need for a sound collection policy is tantamount to a constitution by which a given library can assure itself of flexible parameters for the present and for the future requirements of its patrons and the society it serves.

Collection management can not be underestimated in its capacity to steer the bibliographic ship into calm seas. Knowledge of the desires

and requirements of patrons and the pedagogical enterprise are facets of a greater picture. The collection itself looms large in the proper development of a given collection. Monographs, non-print media, and periodicals and serials constitute most research collections in their most basic elements. However, the effort which a collection development librarian or subject bibliographer expends in the nurturing of a general or subject collection is very significant to the purpose if not the value of that collection. Subject knowledge is essential to the decision-making nuances in a subject bibliographer's repertoire. Moreover, the necessity of the monitoring of collection growth is the sine qua non of the intellectual mission and cooperation with teaching faculty and the academic community at large.

Various approaches have been utilized in collection development and analysis. Subjective impressions, statistical modeling, among other tested approaches and methodologies, have proved successful to varying degrees. Citation analysis has been at the center of some of the bibliometric procedures applied to collection evaluation; when applied to a periodical collection, its usefulness becomes evident.¹ Journal citations form the raw data which when tabulated and analyzed provide a topography of the journal's respective position in its scholarly field as well as of the currency of information cited and the journal's degree of cross disciplinaryity with other subfields and disciplines. Such information about a given journal or several journals can be used to determine the relative strength of a research collection in any discipline.

Procedure

The periodical holdings in the history collection at Purdue University Libraries was selected for this experiment. Of limited scope and purpose, this study attempted to apply a citation count of the citations found in three selected core history journals known for their established inter-disciplinarity. The *Journal of Social History*, *The Journal of Interdisciplinary History*, and *The Journal of the History of Ideas* constituted the target segment since it was hypothesized that their inter-disciplinarity would enhance the sample of potential journals cited.

Three two-year target segments (1972-1973, 1979-1980, 1986-87) separated by two five-year periods were chosen for examination. Only journal titles with respective dates were tabulated for citations found in articles, book reviews, and technical notes. Primary language per journal was noted as well as the field of inquiry and specialization. Upon final tabulation of total journal titles, top producers of citation "hits" were isolated and identified. This procedure produced 4,349 citations from a pool of 1,464 journals cited. Disciplines and fields most represented were history (218) and the general category of literary and university reviews, society transactions, and broadly based cross-disciplinary journals. Although an in-depth examination would reveal more characteristics and configurations in the raw data, such permutations are not within the purview of this study.

Even as the data presented interesting features from a purely bibliographic perspective, the tabulated data could be used as a workable yardstick for collection development if not evaluation. Although not "scientific," when applied to the

periodical holdings, it provides an interesting and useful assessment of a collection's status. The assumption that the three target journals are indicative of the major research being done in their respective fields is one borne out by the data. The journals covered such areas as aging, childhood history, crime, gender studies, as well as the fields of cultural and intellectual history and fine arts, not excluding history of technology and science, all subfields which are "hot" and being mined by historians. With this information as a template, one can gain a better view of the orientation of the journals as well as of the periodical collection as a whole or as a specialized area of concentration.

When the journals producing twenty plus citations were examined, the "hit" rate was 92.7% for the *Journal of Social History* — in other words, 92.7% of the items cited in this journal were held by the Purdue University libraries. The "hit" rates were 92.5% for the *Journal of Interdisciplinary History* and 96.9% for the *Journal of the History of Ideas*, an exceptionally strong showing. Further, it should be acknowledged that both foreign and domestic language journals were included in this sample result. As in all scholarly publication the universal aspect of research is well established in the literature. English language journals predominated, with French (10.9%) and German (8.2%), and others (7.4%) completing the language field.

Final Observation

The experimental nature of this procedure bears a more careful examination. Not only could it be useful for collection evaluation in periodicals management, it could also function as a measure of evalu-

ation for monographs. Albeit unsophisticated as a statistically grounded bibliometric model, this simple procedure is quickly understood and easily used. As an auxiliary tool for collection evaluation, it provides a supplement to other more in-depth and systematic methodologies. Whichever way it is used, the citation study of journals reveals not only characteristics peculiar to their intellectual mission, evolution, and direction, but to their use as indicators of which journals are being cited and their frequency, with direct application to analyzing journal acquisitions, collection maintenance and possible deletion.

As with all bibliometric procedures, citation analysis is simply a useful tool among other tools of evaluation. With judicious use² these studies provide a way to evaluate the current status of a periodicals collection, its various disciplines and subfields, its intellectual contours, as well as the scholarly direction of research journal production. For the hard-pressed subject bibliographer or serials librarian, the above procedure offers not a panacea but a viable evaluative measure in one' bibliographic arsenal.

Notes

1. See Thomas E. Nisonger, "A Test of Two Citation Checking Techniques for Evaluating Political Science Collections in University Libraries," *Library Resources and Technical Services* (April-June 1983): 163-176; William C. Baum, et al, "American Political Science Before the Mirror: What Our Journals Reveal about the Profession," *Journal of Politics* 38 (November 1976): 895-917; and Stephen J. Bensman, "Journal Collection Management as a Cumulative

Advantage Process," *College and Research Libraries* 46 (January 1985): 13-29.

2. Very enlightening is Robert N. Broadus, "A Proposed Method of Eliminating Titles from Periodical Subscription Lists," *College and Research Libraries* 46 (January 1985): 31-35; and "The Application of Citation Analysis to Library

Collection Building," *Advances in Librarianship* 7 (New York: Academic Press, 1977): 299-335.

Editor's Note: For further details concerning this study, see Jean-Pierre V. M. Herubel, "The Nature of Three History Journals: A Citation Experiment," *Collection Management* 12, Nos. 3/4 (1990): 57-67.