

An Art Resource in New York: The Collective Collection of the NYARC Art Museum Libraries

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A publication of OCLC Programs and Research

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May 2008

OCLC Programs & Research
Dublin, Ohio 43017 USA
www.oclc.org

ISBN: 1-55653-401-9 (978-1-55653-401-0)
OCLC (WorldCat): 226970440

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Suggested citation:

Lavoie, Brian, and Günter Waibel. 2008. An Art Resource in New York: The Collective Collection of the NYARC Art Museum Libraries. Report produced by OCLC Programs and Research. Published online at: www.oclc.org/programs/publications/reports/2008-02.pdf

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Introduction

New York is a city rich in art resources, and home to some of the world's great art museums and collections. Visitors to Manhattan can admire paintings by Van Gogh, Picasso, and Matisse at the Museum of Modern Art; inspect the Metropolitan Museum of Art's world-renowned collection of musical instruments; and walk through the galleries of the "old masters" collection at the Frick. A short subway ride to the Brooklyn Museum reveals still more treasures, including a unique collection of ancient Egyptian art.

The paintings, sculptures, and other works of art held in the permanent collections of these and other art museums in the New York City area represent a world-class art resource. The extent of this art resource, however, goes well beyond the artifacts themselves. The four institutions mentioned above collectively hold more than a million items in their affiliated libraries: a collection of books, periodicals, catalogs, and other materials spanning the history of art from the ancient to the modern. While these materials originally were collected for the curatorial staff at each museum, this resource now attracts and supports an international art community of researchers, students, art professionals, and increasingly, the general public. The breadth and depth of this resource is amplified by ignoring the boundaries between individual collections, and focusing instead on the aggregate: in other words, the concentration of art-related information resources available in the New York City area.

Libraries are finding more and more opportunities to extend their perspective beyond the boundaries of the local collection. Studies of aggregate collections – the combined holdings of multiple institutions – have been applied to a range of topics, from thinking about ways to expand the array of resources accessible to users, to identifying opportunities to improve efficiency and eliminate redundancy. Aggregate collection analysis can confirm widely-held, yet unproven "received wisdom" about the size and characteristics of the collective holdings of a group of institutions, as well as reveal aspects that were previously unknown.

The New York Art Resources Consortium (NYARC) includes the Frick Art Reference Library, the Metropolitan Museum of Art's Thomas J. Watson Library, and the libraries of the Brooklyn Museum and the Museum of Modern Art. NYARC was formed under the auspices of a Mellon Foundation planning grant aimed at exploring opportunities for deeper collaboration among the four libraries. As part of this effort, three of the NYARC members – the Frick Art Reference Library and the libraries of the Brooklyn Museum and the Museum of Modern Art – recently announced the selection of Innovative's Millennium ILS platform to host a new shared catalog offering integrated access to the collective holdings of the three libraries.¹

This paper reports the results of a study examining the size and characteristics of the aggregate collection of the NYARC member institutions. The goal was to provide these institutions with an empirical context for their ongoing discussion on future opportunities for collaboration. The study also represents a general demonstration of the value and potential applications of aggregate collection analysis. The remainder of this paper is as follows:

- Section I provides a few remarks about the NYARC art libraries, and the data used for this study
- Section II discusses the size and holdings patterns of the NYARC collective collection
- Section III discusses some of the characteristics of this collection, with an emphasis on two material types of special interest to art libraries: exhibition catalogs and auction catalogs
- Section IV examines the degree of overlap of the NYARC aggregate collection compared to the library system as a whole, several other New York-area institutions, and a peer institution located in another part of the country
- Section V draws on conversations with representatives of the NYARC libraries to sketch out some possible applications for this kind of analysis in terms of future planning and decision-making
- Section VI offers some concluding thoughts.

I. A note about the NYARC libraries and data

The motivation for collaboration among the NYARC institutions emerges from both the similarity and distinctiveness across their collections. In terms of similarity, the NYARC institutions share a mission to support their curatorial staff as well as researchers, students, and the general public. Hence, collaboration helps *reinforce a shared mission*. Despite the differences in the art work collected at each institution, the art museum libraries overlap to some degree in the bibliographic materials acquired, either in regard to classes of materials (e.g., all four institutions collect exhibition catalogs), or even in regard to specific titles (for example, general art reference works and databases). Collaboration among the NYARC institutions therefore helps *identify opportunities to remove unneeded redundancy*. The benefits from collaboration are also enhanced by differences across each of the four NYARC library collections. Because each museum specializes in different forms of art work, the nature of the art museum library collections will also be different. Collaboration among the NYARC libraries therefore helps them *leverage the distinctive features of each library collection across a wider audience*.

All of these motivations for collaboration can be encouraged and made more concrete by aggregate collection analysis. The fact that there are similarities across the collecting activities of the four libraries suggests opportunities to minimize redundancy; analysis of the NYARC institutions' aggregate holdings will characterize the degree to which the four collections overlap, and more specifically, help identify areas where redundancy can be usefully eliminated. Similarly, each individual NYARC library collection has a distinctive contribution to make to the combined NYARC resource. Aggregate collection analysis can marshal tangible evidence to support the assertion that the collective holdings of the four institutions embody a resource of greater depth and scope than any single collection in isolation.

The analysis of the NYARC aggregate collection is based on data from the RLG Union Catalog and the SCIPPIO database of auction catalogs (prior to the integration of these databases with WorldCat, the OCLC bibliographic database). The data used for the study was extracted in January 2007.² The study explores various aspects of the size, scope, and characteristics of the four libraries' "collective collection". While a comprehensive set of results has been shared with the NYARC libraries, this paper focuses on outcomes of general interest. Results attributable to a particular institution are omitted.

II. Size and holdings patterns

The individual collections of the four NYARC institutions exhibit significant dispersion in size: the largest collection is about three-and-a-half times the size of the smallest. While even the largest NYARC collection is small in comparison to that of a typical academic library, adding the four collections together (without eliminating duplicate holdings across institutions) yields a combined resource of over 1.1 million items. Taking into account that the subject range represented in an art museum library collection is necessarily limited, focusing primarily on materials related to the institution's object collections and the world of art generally, a more appropriate comparison would be to other institutions' holdings in similar subject areas; by this yardstick, the NYARC institutions, individually and collectively, manage a research and learning resource of considerable proportions.

When analyzing the aggregate holdings of multiple institutions, it is useful to eliminate duplicate holdings across institutions in order to achieve a more accurate perspective on how the scope and depth of the institutions' collective holdings expand through aggregation. In light of this, we define the NYARC aggregate collection as the combined holdings of the four institutions, adjusted to eliminate duplicate holdings – in other words, the collection of unique titles held by the four institutions.

With this in mind, the NYARC aggregate collection, as represented in the RLG Union Catalog (RUC) and SCIPPIO databases in January 2007, consists of 962,290 unique titles. Eliminating duplicate holdings therefore reduces the size of the four institutions' combined holdings by 17 percent. This suggests that when the holdings of the four institutions are combined, less than one item in five is held by at least two NYARC institutions; the overlap across the institutions is relatively small. As a point of comparison, a recent study of the original five libraries participating in the Google Book Search digitization program³ determined that combining the print book holdings of the five libraries resulted in a redundancy rate of about 40 percent. We can gain a better perspective on the relative uniqueness of the NYARC collections, both individually and in the aggregate, by taking a closer look at the holdings patterns embedded within them.

More than 80 percent of the titles in the NYARC aggregate collection are held by a single institution, compared to less than 1 percent (or 4,170 titles) held by all four (Figure 1). This suggests that a high degree of uniqueness exists across the four individual NYARC collections, which in turn suggests a value in aggregation: the collective holdings of the four institutions represent a collection of far greater scope than any single collection in isolation.

Figure 1. Holdings patterns in the NYARC aggregate collection

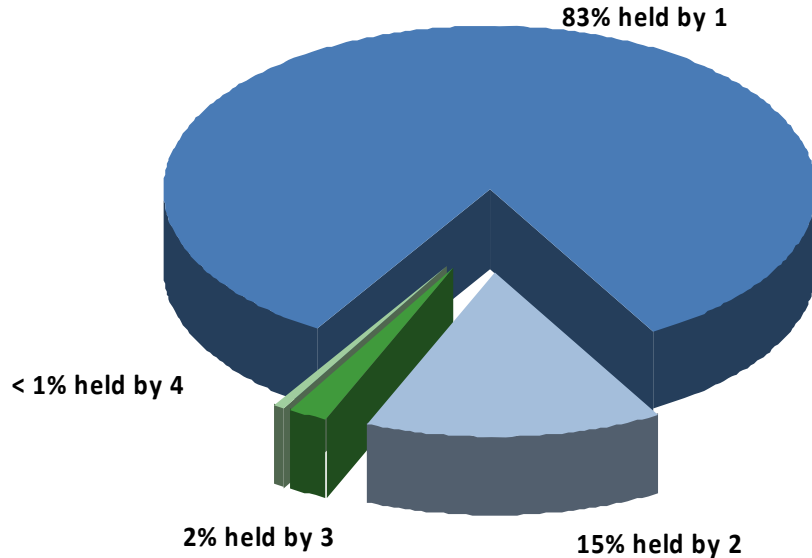


Table 1 reports separate holdings patterns across the four NYARC institutions for titles appearing in the RUC database, and those appearing in the SCIPIO database of auction catalogs. Breaking the NYARC aggregate collection down into its RUC and SCIPIO components permits the analysis to isolate holdings patterns for auction catalogs, which are a class of materials of special interest to art museum libraries. Comparison of the RUC and SCIPIO holdings patterns indicates that the latter exhibits a slightly higher degree of overlap than the former, suggesting more convergence in collecting activities in regard to auction catalogs *vis-à-vis* the remaining materials in the NYARC aggregate collection. However, the difference is small, and the degree of uniqueness of auction catalog holdings is still high, with nearly 80 percent of the auction catalog titles in the aggregate collection held by a single NYARC institution.

Table 1. Holdings patterns, RUC and SCIPIO

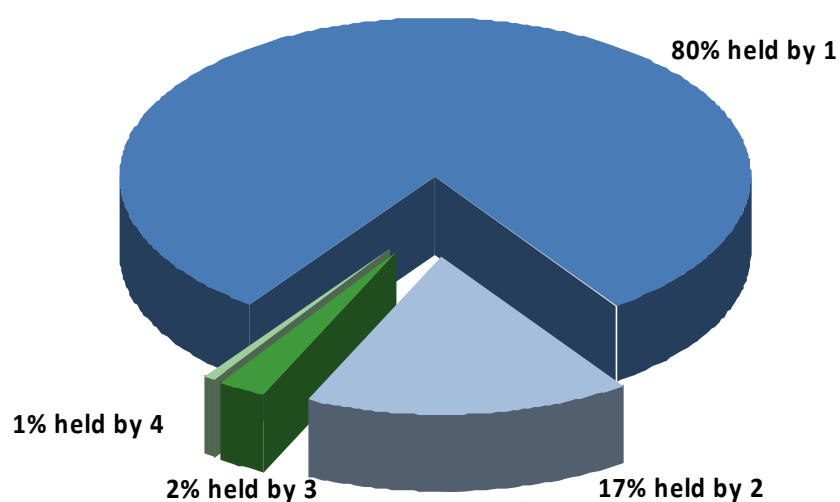
Holdings Pattern	RUC Only	SCIPIO Only	Total
Held by one institution	83%	79%	83%
Held by two institutions	14%	21%	15%
Held by three institutions	2%	< 1%	2%
Held by four institutions	1%	N/A*	< 1%

*Note: Only three institutions report auction catalog holdings in SCIPIO.

In considering uniquely held materials – that is, materials held by a single institution – it is useful to account for materials that are “intrinsically unique”: for example, archival materials, or “vertical

files” of clippings and other materials organized by artist or gallery. Resources of this kind are by their very nature uniquely held; no other institution could have a precisely equivalent resource. Given this, the question arises as to whether the degree of uniqueness evident across the individual NYARC collections is mainly attributable to these “intrinsically unique” materials. Consultation with NYARC participants in the study yielded reasonable bibliographic criteria for isolating these special materials; subsequent analysis indicated that 117,488 titles in the NYARC aggregate collection fell into this category, or about 12 percent. Holdings patterns for the NYARC aggregate collection, *excluding* these “intrinsically unique” materials, are shown in Figure 2.

Figure 2. Holdings patterns in the NYARC aggregate collection, excluding “collections”



Excluding these special materials has little impact on the overall contour of the holdings patterns across the four NYARC institutions: 80 percent of the remaining titles are still held uniquely by a single institution. This reinforces the notion that the degree of uniqueness across the four collections is high, and suggests that this uniqueness arises not just from the presence of archival or other special materials in the collections, but also as a product of differences in collecting activity within the realm of published materials.

The high degree of uniqueness present in the combined holdings of the four NYARC institutions suggests another question: is this uniqueness disproportionately attributable to the holdings of one or two institutions, or are the unique contributions to the aggregate collection spread relatively evenly over all four institutions? To answer this question, we computed the percentage of each NYARC institution’s collection that was unique relative to the NYARC aggregate collection as a whole; computing the percentage, rather than number of titles, controls for differences in collection size. Results indicated that a significant portion of each collection was unique relative to the aggregate collection, ranging from a high of 79 percent for one institution to a low of 58 percent for another. Excluding the “intrinsically unique” materials from the analysis did not impact these numbers significantly: the proportions decline to a high of 70 percent for one institution to a low of 57 percent

for another, but are still highly significant. In short, each of the individual NYARC collections appears to be highly unique compared to the combined holdings of the other NYARC institutions.

Another perspective on the degree of uniqueness within the NYARC aggregate collection is obtained through an examination of pair-wise holdings overlap between the NYARC institutions. In other words, given any two NYARC institutions, what is the degree of overlap between their two collections? Analysis indicated results ranging from a high of 12 percent overlap, to a low of 3 percent overlap. Put another way, no two NYARC institutions exhibited more than a 12 percent overlap across their two collections. As before, removing the “intrinsically unique” materials from the analysis did not impact the results significantly: the range of results adjusts slightly to a high and low of 13 percent and 4 percent, respectively.

These results corroborate the existence of a high degree of uniqueness across the four NYARC collections. The considerable cross-collection uniqueness results in an aggregate collection of far greater scope, depth and utility than any single NYARC collection in isolation.

III. Some characteristics of the aggregate collection

The analysis to this point has focused on the size and holdings patterns of the NYARC aggregate collection. In this section, we analyze the characteristics of the materials in the NYARC collection along a variety of dimensions, including material type, language, and publication date.

Material types

The vast majority of the materials in the NYARC aggregate collection – 85 percent – are monographs. The second largest category of materials – 12 percent – is comprised of the “collections” discussed above: e.g., archival materials, vertical files, and so on. Serials accounted for about 2 percent of the titles in the aggregate collection, and the remaining 1 percent included a variety of other, sparsely represented materials types, such as integrating resources, monographic component parts, and serial component parts.

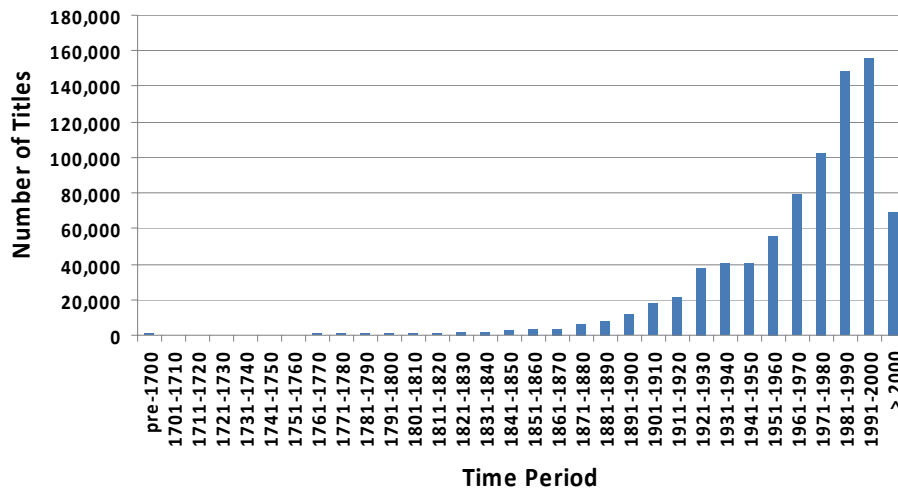
Languages

More than 150 different languages were represented among the materials in the NYARC aggregate collection. Not surprisingly, English-language materials predominate, accounting for 49 percent of the titles in the aggregate collection. French was the next most common language, at 14 percent, followed by German (11 percent); Italian (7 percent); and Spanish (3 percent). Although roughly half of the titles in the NYARC collection are English, and 84 percent are distributed across only five languages, there is nevertheless a great deal of language diversity to be found in the aggregate holdings of the four NYARC institutions, at least in terms of representation if not quantity.

Publication dates

Another dimension along which to sketch the contours of the NYARC aggregate collection is the distribution of titles by publication date. The distribution of titles in the NYARC collection by publication date is shown in Figure 3. Approximately half of the NYARC collection was published after 1970; almost a quarter was published after 1990. In comparison, the analysis of the aggregate collection of the original five libraries participating in the Google Book Search project referenced earlier revealed that about half the collection was published after 1974; another study which examined the system-wide aggregate collection of print books⁴ found that about half of this collection was published after 1977. The NYARC collection therefore exhibits a median “age” similar to those associated with the “Google 5” and system-wide aggregate collections.

Figure 3. Distribution of publication dates in the NYARC aggregate collection



While a substantial fraction of the NYARC collection is of fairly recent publication, a significant number of titles are much older. About 9 percent were published prior to 1923, which can be interpreted as a rough demarcation between in- and out-of-copyright materials. Determination of the copyright status of the titles in the NYARC collection could be critical information in the context of activities such as digitization or other forms of re-purposing. The analysis of the NYARC collection’s publication patterns indicates that a little more than 90,000 titles are in the public domain, presumably with no copyright restrictions attached. Assuming that this out-of-copyright material is of general interest to the art community, it could be a strong candidate for digitization and online access.

Exhibition catalogs and auction catalogs

Exhibition catalogs and auction catalogs are items of special interest to art museum libraries; consequently, our analysis of the NYARC aggregate collection paid particular attention to these materials. Exhibition catalogs are publications in conjunction with an exhibit, often including images of objects on display, as well as essays documenting the show. They are valuable as a form

of “permanent record” of an otherwise transitory event, and might also serve as a means of documenting the intellectual effort involved in selecting or arranging the pieces included in the exhibition. Auction catalogs are listings of objects available for bidding at an auction, and are important records to establish the provenance and historic valuation of a particular item.

More than 250,000 unique exhibition catalog titles can be found in the NYARC aggregate collection, along with more than 130,000 unique auction catalog titles. Exhibition catalogs account for 26 percent of the NYARC aggregate collection; auction catalogs account for 14 percent. Taken together, both types of catalog account for 40 percent of the combined holdings of the four NYARC institutions. Clearly, extensive holdings of exhibition and auction catalogs represent one of the distinctive features of an art museum library, and a core aspect of its collecting activity.

Focusing on exhibition catalogs for the moment, three of the individual NYARC collections devote roughly a quarter of their holdings to this class of material. The exhibition catalog holdings of the fourth NYARC institution, however, account for 40 percent of its collection. The NYARC libraries were particularly interested in a pair-wise analysis of exhibition catalog holdings overlap – that is, the degree to which the exhibition catalog holdings of any given pair of NYARC libraries coincided. Results ranged from a low of 6 percent to a high of 13 percent, where the percentages are interpreted as the fraction of the two institutions’ combined exhibition catalog holdings held by both institutions. These results suggest that exhibition catalog holdings are fairly unique across the NYARC institutions. The degree of overlap, however, is not insignificant, and suggests that exhibition catalogs might be one area where the NYARC members could collaborate to reduce redundant collecting activity.

Auction catalogs are another important part of the NYARC aggregate collection. Collectively, the NYARC libraries hold more than 130,000 unique auction catalog titles, accounting for about 14 percent of the aggregate collection. Closer inspection of the NYARC auction catalog holdings suggests that more than 2,800 distinct auction houses are represented in the collective NYARC holdings. Examination of the individual collecting patterns for auction catalogs among the NYARC members shows a substantial amount of overlap in terms of the auction houses that are the focus of collecting activity, especially in regard to the two NYARC libraries with the largest auction catalog collections. Given the vast number of auction houses whose catalogs are of interest to the art community, combined with the evidence that there is already significant overlap across the NYARC members in terms of coverage of many of these auction houses, opportunities may exist to optimize collecting activity for these materials within the NYARC framework of cooperation. For example, there may be mutually beneficial arrangements in which the auction catalog collecting activity is apportioned across the NYARC members in such a way as to maximize coverage of auction houses while minimizing redundant collecting activity.

IV. Beyond the NYARC aggregate collection...

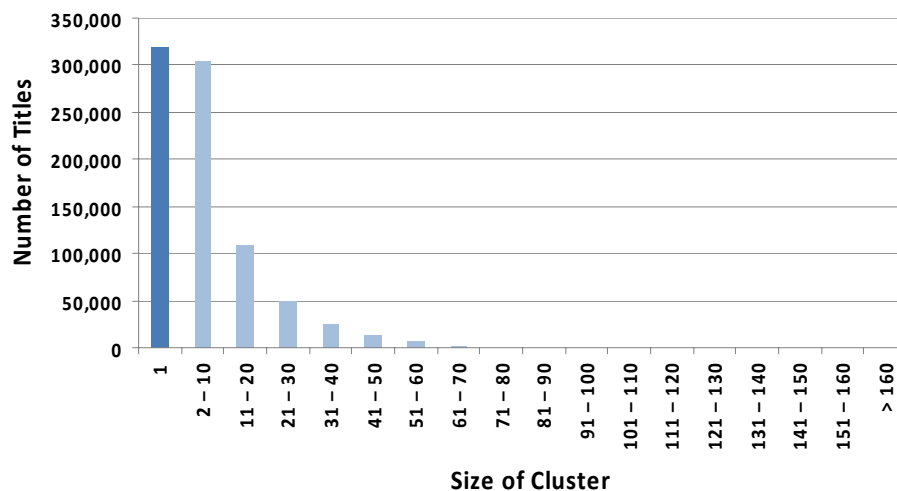
The analysis to this point has examined holdings patterns and the degree of uniqueness *within* the NYARC aggregate collection. But how does the NYARC collection itself compare to a wider world? How unique is the NYARC collection *vis-à-vis* the collections of other libraries? A variety of further comparative studies provide a sense of how the NYARC aggregate holdings compare to other collections, such as the system-wide collection of libraries as approximated by the RUC/SCIPPIO and, to an even greater extent, the holdings in WorldCat. Comparisons to the collections of other New York-area research institution, as well as the collections of a peer institutions round out the picture.

NYARC vis-à-vis RUC and SCIPIO

To assess the NYARC aggregate collection in comparison to the RUC and SCIPIO, we examined “cluster sizes” for each NYARC title. In the RUC and SCIPIO environments, each title is associated with a cluster of records, with each record corresponding to an institution holding the title in its collection. The size of the cluster, therefore, indicates the number of institutions holding the title, at least in terms of those institutions whose holdings are represented in the RUC and SCIPIO databases.

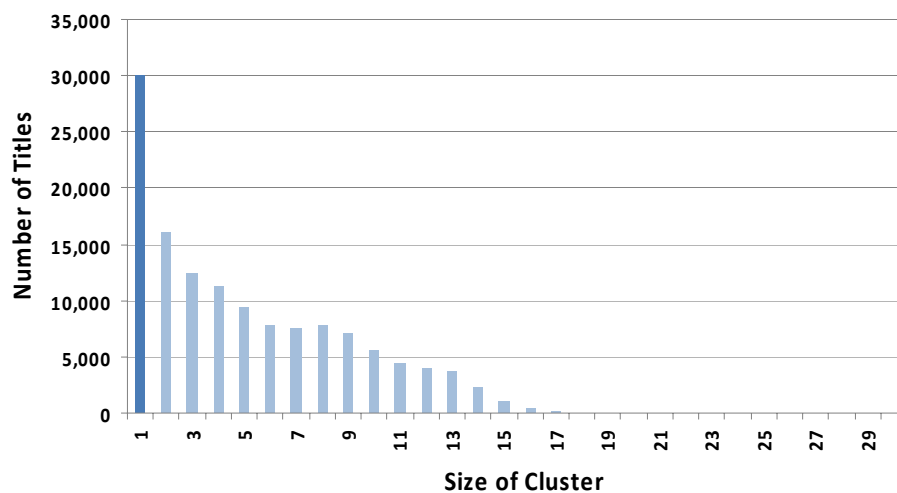
To conduct this analysis, RUC and SCIPIO titles were segregated and analyzed separately; since SCIPIO represents a class of materials (auction catalogs) of special interest to art museum libraries, it is likely that cluster sizes will tend to be smaller on average than those associated with other materials. Results for the RUC titles are reported in Figure 4. Examination of the RUC titles in the NYARC collection yields 319,684 titles, or 33 percent, with clusters of size equal to one (highlighted in red in Figure 4), indicating that at least in the context of the holdings represented in the RUC database, a NYARC institution is the only institution holding the title. This suggests that a large proportion of the NYARC aggregate collection exhibits a degree of uniqueness that extends beyond the limited context of the NYARC institutions themselves.

Figure 4. Distribution of RUC cluster sizes for titles in NYARC aggregate collection



Similar results were obtained for the auction catalogs in the SCIPIO database (shown in Figure 5), where 30,077 titles were in clusters of size equal to one, indicating that at least in the context of the institutions whose holdings are represented in SCIPIO, the title is held exclusively by a single NYARC institution. Taken together, these results suggest that the NYARC aggregate collection represents a highly unique resource even when examined within the wider scope of all institutions with holdings represented in the RUC and SCIPIO databases.

Figure 5. Distribution of SCIPIO cluster sizes for titles in NYARC aggregate collection



Finally, we examined the degree of uniqueness associated with the NYARC institutions and their collections by computing the percentage of each individual NYARC collection that was unique compared to the rest of the holdings represented in the RUC and SCIPIO databases. This analysis yielded results that varied significantly over the four NYARC institutions: roughly half of one of the NYARC collections was unique compared to the rest of RUC and SCIPIO; at the other extreme, only 13 percent of another NYARC collection was unique compared to other RUC and SCIPIO holdings. The other two NYARC institutions registered about a third of their collections as unique *vis-à-vis* the rest of RUC and SCIPIO.

NYARC vis-à-vis WorldCat

The second external comparison was also the largest in scale: the NYARC aggregate collection was compared to WorldCat, the world's largest bibliographic database. Since WorldCat embodies the combined holdings of thousands of libraries world-wide, it arguably serves as the most accurate proxy for the "system-wide library collection" – the aggregate collection of libraries everywhere. The NYARC libraries were interested in knowing to what degree their aggregate holdings overlapped with those of the general library community. Put another way, is the NYARC aggregate resource easily replicable by aggregating the collections of some other combination of libraries?

Auction catalogs were excluded from the analysis, since this category of material, while commonly held by art libraries, is not usually collected by other institutions, and therefore would tend to inflate the degree of uniqueness associated with the NYARC aggregate collection. Exclusion of auction catalogs left approximately 830,000 unique titles in the NYARC collection. When compared against WorldCat, approximately 60 percent of these titles were held by at least one other library with holdings represented in WorldCat. Alternatively, about 40 percent of the NYARC aggregate collection constitutes a unique resource in the general library environment as represented by WorldCat, a slightly higher percentage compared to the 33 percent from the RUC comparison. Both figures,

however, confirm that if a user wishes to consult a title in this portion of the NYARC aggregate collection, it is likely that the only option will be to do so through one of the NYARC libraries.

This result suggests that the NYARC institutions hold a significant amount of material that is, at the least, not easily obtainable from other institutions. Given this, it follows that any measure that improves the general accessibility of the NYARC collective collection holds the promise of significant benefits in terms of supporting the research and learning needs of an art community that extends well beyond the on-site visitors to the four NYARC institutions. These benefits spring from the relatively unique niche the NYARC aggregate collection occupies in the library landscape.

NYARC vis-à-vis NYPL, Columbia and NYU

The NYARC libraries were also interested in determining the degree to which their aggregate holdings overlapped with other, non-art museum research libraries in the New York City area. To make this comparison, the NYARC aggregate collection was compared against the collective holdings of the libraries at New York University and Columbia University, as well as the New York Public Library. Results of this comparison revealed that about a third of the NYARC aggregate collection was held at one or more of these New York research institutions; two-thirds of the NYARC collection, on the other hand, was not. As with the comparison to WorldCat, these results once again speak to the uniqueness of the NYARC “collective collection”, but this time in relation to a smaller “space”: the landscape of information resources available in the New York City area. Several interesting possibilities emerge from this analysis. The fact that as much as a third of the NYARC aggregate collection overlaps with resources available at other, geographically proximate institutions suggests a possible opportunity for the NYARC institutions to relinquish some of their collecting activities to these institutions, and re-allocate them toward the areas of distinctiveness of their collections. On the other hand, the fact that two-thirds of the NYARC collection is unique relative to the collections at NYU, Columbia, and the NYPL suggests that users at these latter institutions might benefit greatly from easy access to a unique art resource in close proximity to their primary research centers. A reciprocal agreement would also benefit NYARC patrons, including curators. As scholarship becomes more and more interdisciplinary, the materials available in other local research libraries might provide a valuable backdrop for the highly specialized NYARC content. In summary, opportunities might exist for the NYARC libraries to reduce their collecting activities in areas characterized by high redundancy with other nearby institutions, strengthen the distinctive or unique aspects of their collective holdings, and enhance the accessibility of the aggregate NYARC resource to nearby researchers and students while at the same time expanding available materials for their own audiences.

NYARC vis-à-vis the Getty Research Institute

Finally, the NYARC institutions were interested in a comparison between their aggregate holdings and those of a non-NYARC peer institution – that is, the holdings of another art library. To shed some light on this question, the NYARC aggregate collection was compared to the holdings of the Getty Research Institute in Los Angeles, California. Analysis revealed that the holdings overlap between NYARC and the Research Institute was about 20 percent – in other words, 20 percent of the materials in the NYARC aggregate collection were also available at the Getty. This degree of overlap falls below the corresponding percentages for the system-wide library collection (WorldCat) and the three New York research institutions. In a sense, however, a collection overlap of 20 percent seems proportionately high: in this case, the comparison is between the NYARC collection and the holdings

of a *single* institution. In contrast, the comparison to the New York research centers involved the holdings of three libraries, while the NYARC-WorldCat comparison involved thousands of libraries. If the overlap with the Getty Research Institute is indeed proportionately high, this can be at least partially attributed to the fact that the Getty is a peer institution, and like the NYARC members, specializes in collecting in art-related subject areas.

Whether or not one considers the NYARC-Getty overlap high, the fact remains that 80 percent of the NYARC aggregate collection is not available at the Getty. Once again, uniqueness seems to be the prevailing theme. In this case, the uniqueness is manifested in the “space” of peer institutions, and even here, the NYARC collection stands out as a unique art resource.

V. Possible applications of the analysis

The analysis reported in the previous three sections paints a general picture of the NYARC aggregate collection: size, holdings patterns, characteristics of its content, and uniqueness *vis-à-vis* other collections. Information of this kind is useful as a descriptive tool, but its true value is released when it is *actionable*: that is, when it can be directly applied to a range of decision-making needs. In what areas could this aggregate collection analysis be applied within the NYARC framework of cooperation? After sharing the results of the analysis with the NYARC institutions, a teleconference was held with representatives from the four libraries to discuss decision-making areas in which they felt the analysis might be particularly illuminating. As the discussion proceeded, four major areas emerged; these are listed below, accompanied by examples of aggregate collection analysis particularly relevant to each area.

- Shared storage: reduce cost and leverage economies of scale through collaborative print storage solutions
 - *Identify print materials held by multiple NYARC libraries*
- Resource sharing: expand the landscape of information resources available to users, regardless of location
 - *Identify patterns and concentrations of holdings in various subject areas across the NYARC institutions*
- Digitization: improve access to rare or unique materials through digital surrogates
 - *Identify uniquely held or rare materials at each NYARC institution*
- Partnerships with other libraries: establish cooperative arrangements with local and peer institutions in areas like collection development and reciprocal borrowing agreements
 - *Assess strengths and weaknesses of NYARC collection vis-à-vis collections held by other institutions or groups of institutions*

Knowledge of the contours of the NYARC collective collection provides a foundation for deeper forms of collaboration in all of these areas. NYARC is but one example of the increasing importance of aggregate collections, spurred by the growing “interconnectedness” among libraries as networks of cooperation within the library community develop and expand. As the examples listed above suggest, the opportunities for creating value through collective action, or by aligning local collections with certain aspects of a larger context, are numerous and diverse. Aggregate collection

analysis illuminates these opportunities, and aids the formulation of appropriate decisions and policies to act on them.

VI. Conclusion

As the analysis of the collective collection of four New York City-area art museum libraries demonstrates, studies of aggregate collections provide valuable intelligence in support of collaborative initiatives impacting multiple institutions and their collections. Awareness of broader contexts extending beyond the boundaries of the local collection is becoming increasingly important for libraries and other collecting institutions. Networks of collaborating institutions are growing in areas such as mass digitization, cooperative print storage, collection development, and shared discovery environments. As these networks continue to develop and expand, the need for aggregate collection analysis will grow commensurately. Aggregate collection analysis facilitates collective action on the part of multiple institutions, and even informs local decision-making by placing it against a wider context.

Sketching out the contours of the NYARC aggregate collection supports collaboration among the four libraries across a variety of dimensions: eliminating redundant collecting effort; identifying and leveraging individual institutional strengths within a framework of cooperation; and as three of the NYARC members have done, consolidating their collective holdings into an integrated discovery environment, thus creating a collective art resource of considerable proportions to which the art community will naturally gravitate. Aggregate collection analysis of the kind reported in this paper provides a useful context against which discussions of possible future collaborations can take place.

There are a variety of ways to conceive of aggregating library collections: aggregation by geography, aggregation by subject specialty, aggregation by consortial affiliation, and so on. The combined collection of the NYARC institutions represents what is perhaps a rare breed of aggregation, in that their collective holdings touch on all of these dimensions: they are clustered in a fairly narrow geographical area; they are all art-centric collections; and they represent the holdings of institutions who are members of a consortium formed to explore collaborative opportunities. In short, the NYARC institutions are clustered together in a variety of spaces – geography, subject, affiliation – and by extension, their collections are clustered in these spaces as well. Consequently, the incentives to analyze the scope and characteristics of the collective NYARC holdings are clear. Looking beyond the NYARC members to the general library community, the opportunities for aggregate collection analysis might not always be this apparent, but they nevertheless exist and can be leveraged to make cooperation and collective action among libraries as fruitful as possible.

Notes

¹ The news release is available at <http://www.iii.com/news/pr.php>.

² NYARC participants noted some materials in their collections that had not yet been cataloged and/or loaded into the RUC or SCIPIO at the time of the extraction: 25,000 and 32,000 vertical files respectively from two NYARC institutions, and 5,000 and 15,000 auction catalogs respectively from two institutions. These materials are not included in the analysis. Auction catalogs from one of the NYARC institutions were only available in RUC, not in SCIPIO; these were not included in the analysis of auction catalogs reported later in the paper. It should be noted that identification of unique titles in the analysis is based on clustering within the RUC and SCIPIO databases. Variations in cataloging may introduce a small margin of error if they prevent identical titles from clustering.

³ Lavoie, Brian, Lynn Silipigni Connaway, and Lorcan Dempsey. 2005. "Anatomy of Aggregate Collections: The Example of Google Print for Libraries." *D-Lib Magazine*, 11,9 (September). Available at: <http://www.dlib.org/dlib/september05/lavoie/09lavoie.html>.

⁴ Schonfeld, Roger C. and Brian F. Lavoie. 2006. "Books without Boundaries: A Brief Tour of the System-wide Print Book Collection." *Journal of Electronic Publishing*, 9,2 (Summer). Available at: <http://hdl.handle.net/2027/spo.3336451.0009.208>.