*A Preliminary Study of the Content of the AMICO Library
with Recommendations for Future Development*

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I. Executive Summary

This report presents the findings of a limited and preliminary study of the AMICO Library content. Although it makes references to the needs and interests of the range of AMICO users, it primarily considers the AMICO Library from the point of view of academic art historian, as potentially the most demanding, authoritative, and critical user.

The study compares illustrated art history texts to the content of the AMICO Library, concluding that only a very small percentage of such "text canon" works are currently part of the AMICO Library. The study, however, finds many great strengths in the AMICO Library, with especially strong holdings in Western European and American modern art, Old Master prints, Canadian art, and the history of photography as well as general holdings across the history of art in all world cultures. The study also uncovered various anomalies in the Library, discussed in the report, which result from the unique circumstances of its creation.

The report points to key differences between art historians' needs and expectations for digitized art images and the Library's current content. It explores methods for enhancing the Library's already considerable potential as a teaching resource, and recommends steps to enhance the Library's position in the future marketplace.

The report outlines the findings of the study in Sections II and VI below, with summary conclusions preceding a discussion of a series of research questions. The report discusses the marketing implications of its results, and the AMICO Library's potential as a teaching resource, with general recommendations preceding discussions, in Sections V-IX

II. Scope of project as executed

Summary conclusions:

➢ The study used a "sample drilling" approach to exploring the content of the AMICO Library. Using a general awareness of the field of academic art history and the nature of museum collections, the study sampled various parts of the AMICO Library and compared it to image collections typically used by art historians, especially as represented in the illustrations to eight printed texts, listed on p.5 and 6.

➢ Statistical surveys show that there may be conflict between what academic art historians expect of the AMICO Library and what the Library is able to provide.

Research questions and discussion:

1. What methods were used to search and explore the AMICO Library?

This study primarily reviewed the content of the AMICO Library from the point of view of academic art historians teaching in North America. For reasons explained below, the study's main research method was to compare the illustrations in selected printed art books with the current contents of the Library.

As a group, art historians seem to rely heavily on two types of sources in choosing images to use in their teaching: 1) the illustrations in printed books, especially those used as textbooks in their courses and 2) the slides in their institutional slide library, or other reproductions in photoarchives. Established scholars have often constructed large personal collections of images, either taken themselves, or copied from another source.[1]
Of the two sources, illustrations in printed books seem to be the more important source for a variety of reasons. Art historians often will teach from slide sets provided by textbook publishers and, even more commonly, use slides copied directly from the illustrations (some Art History Departments provide copy-stand services to produce such slides). Institutional slide libraries tend to contain a large number of images either copied from books or else ordered from other sources at the request of faculty members, who are using illustrated books to guide their requests.

Institutional slide libraries, like institutional libraries, are, in effect, the sum of faculty requests made largely based on the images printed in books and not, for example, based on the contents of art museums as such[2]
Art historians at institutions with large, well-established slide libraries tend to rely on them very heavily for the images they use in class and in teaching. Art historians at institutions without large slide libraries tend to rely more heavily on images in their own personal slide collections, especially those copied from books.

Slides ordered directly from art museums seem to play a relatively small (though not insignificant) role in the choice of images for teaching purposes. Except in the case of architectural historians, who typically make many slides from buildings and monuments while on research and study trips, slides made by art historians directly from original works of art also seem to play a relatively minor role in supplying images for teaching[3]

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[1] These comments are based on conversations with and informal surveys of academic art historians and slide librarians, the methodologies used by the Academic Image Collaborative, and the author's general experience with the ways art historians tend to work. A more extensive, objective, and statistically controlled research project on how art historians choose and use art images needs to be made to verify these assumptions.

[2] Again, this is a subjective assumption and needs to be confirmed by further, more objective study. *Object, Image, Inquiry, The Art Historian at Work,* (J. Paul Getty Trust, 1988) describes art historians research practices, which differ from their teaching habits.

[3] The digitized image project know as the Academic Image Collaborative is founded on the premise that art historians take large numbers of high quality slides from original works of art in art museums. The author's conversations suggest that art historians do take slides from original works of art when convenient, but for a variety of reasons are less likely to use them in teaching. Many museums, for example, forbid the use of cameras in their galleries and those that allow cameras severely restrict the use of lights, flashes, and tripods. This means that such photographs are made at far less than optimal conditions and are more likely to be used as memory aids and research tools than for use in classroom lectures. Some art historians have also reported a reluctance to use museum-supplied slides in teaching because of the restrictions that museums have begun to

Art historians and slide libraries tend to look to "alternative" sources of images, including art museums and personal slides, when looking for images that the slide library or text books cannot supply: for example, in providing an unusual view of the art object or when illustrating the work of a lesser-known or contemporary artist. Alternative sources are also used when searching for better-quality images, although the extent of purchase of these images is often limited by departmental budget considerations. The very informal research on the issue used in this report suggests that upwards of 70% of all art images used in college and university teaching are determined, in one way or another, by the images used in illustrated art books.

Another way of looking at the practices of art historians is that they tend to choose images that:

1. Have been pre-selected as relevant to teaching in a given field by other art historians, especially those who are well established in their own sub fields and most especially those who have published widely distributed art history textbooks.
2. Are easily and readily available, especially from an institutional slide library.
3. Show specific views and aspects of the work of art that they wish to emphasize in classroom lectures.

Although as a rule art historians emphasize image quality as an important consideration, the three above-listed criteria seem in practice far more relevant to their choices than quality as such. In other words, they will generally use a poor copy slide that is already in their institutional slide library rather than ordering a high quality slide from a museum, although they might add a better image of that particular work to their next request to their slide librarian.

Similarly, art historians tend to be reluctant to "reinvent the wheel" when choosing a canon of works relevant for teaching purposes. Instead, they seem to rely very largely on choices made by other art historians, supplemented with images they add to make specific points in teaching. Such a process is self-reinforcing and has implications about the creation of the "canon" discussed in Section III.

The current study was heavily oriented towards the biases of art historians described above. It chose a series of "text canons" that represent the sort of illustrated books that art historians use in teaching, comparing the illustrations with images found in the AMICO Library. The tables at the end of the report identify the sources of text canon images whether from museums or not, compare the percentages of text canon images found in the AMICO Library with those located in various other sources. The tables also compare the number of artists included in the AMICO Library with those in the text canons.

The text canon method was also useful for exploring the contents of the AMICO Library in a more general sense. The surveys uncovered some anomalies in the image collection and also many great strengths of the Library, especially those cases where the AMICO Library covers individual artists in depth.

The text canons used in this study include the following:

- H. W. Janson and Anthony F. Janson, *History of Art* (fifth edition, revised). New York: Harry N. Abrams, 1997.
  This is one of the most established "Art 100" texts. It is somewhat unusual compared to its competitors in that it concentrates entirely on the Western tradition in art and also has a relatively strong emphasis on architecture. It was used for the basic survey of Western art as described in Tables I a-e.

- *The 20th-Century Artbook.* London: Phaidon, 1999.
  Aimed at general audiences, this is a widely distributed book produced by an established and respected British art book publisher. It provides brief biographies of 500 contemporary artists with one illustration for each. Anonymously edited, presumably in London, the book shows a bias for contemporary artists of the British Commonwealth nations and Europe. It does not treat

place on the use of such images. Art historians and slide libraries often justify the use of images photographed directly from copyrighted books on the assumption that these are educational uses permitted under "fair use".

architecture and omits photography except for artists (Nan Golden, Cindy Sherman) who use photography as a conceptual tool. It was used for a survey of 20th-century art described in Table II.

- José López-Rey, *Velázquez: The Complete Works.* Cologne: Taschen/Wildenstein, 1997.
A recent study of the artist with a checklist of all know works, which was used in the survey of artists and schools recorded in Table III.

- Seymour Slive, *Dutch Painting 1600- 1800.* New Haven: Yale University Press/Pelican History of Art, 1995.
Based on earlier editions dating back more than thirty years, this text is written by a leading scholar of Dutch art, former director of the Fogg Art Museum and professor emeritus at Harvard, who had a teaching career of some 40 years. It is well established as a textbook in its field. The chapters on Rembrandt and Rembrandt's school were used in Table III.

- William Rubin, ed., *Pablo Picasso: A Retrospective.* New York: Museum of Modern Art, 1980.
Catalogue of the massive Picasso retrospective assembled by a leading modernism scholar and MoMA curator. Used in Table III.

- Karen Wilkin, *David Smith.* New York: Abbeville Press, 1984.
A volume in a general series on modern masters produced by a New York art publisher. Used in Table III.

- Michael Sullivan, *The Arts of China* (fourth edition, revised). Berkeley: University of California Press, 1999.
A general introduction to Chinese art, also used as a classroom text. It was used for the Non-Western survey recorded in Table IV.

- Sheila S. Blair and Jonathan M. Bloom, *The Art and Architecture of Islam 1250-1800.* New Haven: Yale University Press/Pelican History of Art, 1995.
A survey of later Islamic art published in the same textbook-oriented series as *Dutch Painting* above. Two chapters are analyzed in Table IV.

It is not possible to tell if the images in these texts can be assumed to be entirely representative of the author's desires for visual materials. Many factors shape the choice of illustrations in art books, including the availability of original photographs, the cost of printing, the availability of readily licensed materials, and the costs of photography, licenses and printing.   In many cases the publishers imperatives may have governed the final choices as well as the authors.

2. *What results were produced by these methods?*

These surveys suggest that there is a significant gap between the contents of the AMICO Library and what art historians would expect the Library to supply if they look to the AMICO Library to supply digitized images of the same works of art found in their institutional slide libraries and in their textbooks. Therefore art historians and slide librarians who attempt to use the AMICO Library in this way will be disappointed. Moreover, the research implies that, as presently constituted and organized, the AMICO Library will never be able fully to meet such specific expectations for works of art.

This is not at all to say, however, that the contents of the AMICO Library constitute a poor or irrelevant source for college and university teaching, even in art history. The study implies that complaints about AMICO Library content largely result from the following:

1. Lack of understanding about the difference between art historical "canons," as expressed by illustrated art books, and the contents of art museums.

2. An "over-establishment" of a canon based on books rather than on the full range of art in the world. (One potential benefit to the AMICO Library is, in fact, in its ability to present alternatives to this established canon.)
3. An inability, given current technical and organizational limitations, easily to integrate the AMICO Library with existing sources of art images and teaching materials.

The lack of other sources of digitized images that could supply the images that the AMICO Library does not contain, leading users to look, unrealistically, to the AMICO Library as a "one-stop" resource for art images. [Sections VIII and IX of this report, in particular, offer recommendations and suggests for how AMICO can overcome any negative implications of these false expectations and better position the AMICO Library towards its art historian users.]

3.   *What methods were used to analyze the results?*

The methods used to analyze the results of this study were highly subjective and are not independently verified. For this reason, this report should be regarded more as a prolegomenon to future studies rather than as a definitive study in itself.

Within the very limited scope of this study, however, the tabulated results are highly consistent and thus suggest that at least some of the reports conclusions are likely to be reliable. The "test-bore" methodology turned out as well to be a useful way at looking at and evaluating large cross-sections of the AMICO Library. This in turn had the effect of highlighting certain anomalies– artifacts of the Library's creation– that AMICO should address in its future planning. Issues related to these anomalies are discussed, in particular, in Section V below.

III. Definitions

Summary observations:

-   The issue of definitions has turned out to be at the core of any attempt to evaluate the contents of the AMICO Library. Larger, broader, and more subjective definitions– "canon," "consistency," "completeness," "depth" turn out to be the most crucial of all.
-   The survey points to AMICO's *own* self-definition as central to the nature of its future development. Is it a service dedicated primarily to academic art historians or to educators in general? Is its scope and direction market-driven or member-driven? Does it wish to position itself as an all-encompassing, one-stop image service or one of a range of service providers?
-   For the purposes of this report, the guiding definitions are based on those generally used by academic art historians. In considering its future direction, AMICO should, however, also consider alternative decisions based on such things as museum practice, needs of non-art historians, and the possibilities of future developments in the study of images.

Research questions and discussion:

1. What terms need to be defined in order to evaluate the content of the AMICO Library and why?

A key definition for art historians using the AMICO Library is **canon**. In this report, canon is defined as those artists and works of art are judged worthy or unworthy of serious study.

Defining the canon is at the core of the field of art history. Once it is defined, art historians like to think of the canon as immortal, objective, and unchanging. Nothing is further from the truth, however. As the late Francis Haskell has pointed out, "critics, historians, connoisseurs, and dealers have in fact pondered over, deplored, welcomed, and frequently benefited from, changes of taste in the visual arts virtually since the arts came into being as recognized categories of the human scene, though frequent attempts have been made to limit the scope of the problem raised by these changes." Haskell quotes a French 19th-century historian on the issue: "It is, then, as a result of a long, a very long, development that we have forgotten Albano so as to celebrate Botticelli."[4]

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[4] Francis Haskell, *Rediscoveries in Art: Some Aspects of Taste, Fashion, and Collecting in England and France* (Ithaca, NY: Cornell University Press, 1976).

Besides such changes over time, the academic canon of art is altered by context. The canon for an undergraduate survey course might be a few famous works by each artist or period covered. But the canon for a monographic graduate seminar would need to include a number of works by the artist from each period, works by teachers and students, transitional works, and probably works of doubtful attribution. The canon for preparing a catalogue raisonné would include every work attributed, formerly attributed, or possibly attributed to the artist as well as copies, forgeries, and adaptations after the artist's work.

Moreover, there are a host of specialized and subjective canons, such as canons for specific nationalities, and nowadays counter-canons (male vs. female artists; white artists vs. artists of color). The canons of non-art-historians (historians looking for illustrations of specific historical events, for example) might not be the same as those of art historians.

Since AMICO is a museum-based project, formed by uniquely museum-oriented processes, it needs to be emphasized that a *museum*-based canon is also very different from a *scholar*-based canon. The extent of this difference is poorly understood. Unlike academics teaching art history in universities, museums are dedicated to the *physical* possession of *original* works of art. Museums cannot choose from among all the works of art in the world, but must limit their choices by what is available, what they can afford, what they can properly house. An academic art historian can relatively easily acquire slides of the stained glass at Chartres, the Parthenon frieze, or Giotto's frescoes at Assisi. A museum cannot acquire the originals of these and similar works in situ.

Because academic art historians tend to specialize quite narrowly, usually in one nationality and century and not infrequently on a single artist and his or her circle, they tend to view museum collections through the lenses of their own fields, searching specifically for strengths in those areas. The non-art historian is more likely to view the museum as the source of discoveries. Thus he or she will more likely to remember serendipitous events more than the disappointments of not finding a specific work or artist.

AMICO both benefits and suffers from being the first digital art library of its kind available to academics. On the one hand, it is the only real option currently available on the market for digitized art images aimed at academic users. On the other hand, for that very reason, academic users tend to look to AMICO to be something it clearly cannot be: a one-stop source for every image they may wish to use, or at least a significant percentage of them. As this study will show, no database assembled by the methods AMICO can possibly fulfill this role.

At present it seems likely AMICO will be the only resource of its type for several years more at least.[5] Thus it must decide how to define and, more importantly, present itself to its users against other options that do not yet exist. AMICO has many choices here and, for its future health, must choose carefully. It can choose, for example, to *become* those missing options or it can choose to help create them. Alternatively, it could choose actively and visibly *not* to become those options, leaving them for the work of others.

2. What definitions have been used in guiding research and preparing the report?

In addition to the terms discussed above, the report uses the following terms in its research and tabulations:

Works in AMICO member collections refers to works credited to current museum members of AMICO, whether or not those works appear in the AMICO Library.

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[5] There has certainly been no lack of interest in developing art image databases in recent years. Examples include Bill Gates' Corbis, the American Association of Art Museum's subject-based project, Academic Press's Image Directory, and the Academic Image Cooperative, sponsored in part by the College Art Association. Despite high hopes, good ideas, creative energy, and (in the case of Corbis at least) lavish funding, none has so far lived up to its own expectations. The reasons for this anomalous desert in the desert marketplace seem to be many: underestimating the logistics involved in assembling and distributing an image database from widely scattered originals, overestimating the commercial market for digitized art work, unrealistic expectations about outside funding available for nonprofit projects, uncertainty and confusion about copyright issues, sibling rivalry between museums and academics, lack of sufficient human and technological resources at the museum level, and, perhaps most importantly, failure to see different projects as complementary efforts instead of competing ones. An important contribution AMICO could make to the field of digital image library development is the documentation and analysis of the reasons for its own relative success.

Works in the AMICO Library. For the purposes of this report, a work is considered to be in the AMICO Library when it is listed in "tombstone" form following a search of the AMICO Library in the Research Library Group's Eureka system .The report ignores for the most part temporarily missing images. If a copy of the same print or cast of the same sculpture were included in the Library, but credited to a different institution than the one in the "text canon," the work was counted as included in the Library. In rare cases, different versions of the same oil painting were also counted as included. Multiple copies within the AMICO Library were counted in the artist totals, but not in the text canon totals. Certain aspects of the database structure and interface, discussed in section VI below, sometimes make it difficult to determine if all the works in question have been accessed. This was especially true in the case of non-Western art.

Works in non-AMICO member museums in North America. Works tabulated under this term are credited as part of the collections of museums located in the United States and Canada that are not currently members of AMICO but could be under current membership guidelines.

Works in museums outside North America. Works tabulated under this term are credited as part of the collections of museums located in Europe, Japan, Africa, Asia, Central America, South America, or Australia. In a majority of cases, when cited these works are located in European museums.

Works not credited to institutions. Works tabulated under this term are not credited to a specific institution in the source material. These works are usually either prints or other kinds of multiples presumably to be found in many different collections.

Works outside museums. Works tabulated under this term are in private collections, collection or estate of the artist, are located in churches, civic buildings, or public places, are in private houses, house museums, or palaces, are integrated into the architecture of buildings in the form of architectural sculpture or frescoes, are temporary installations, lost, destroyed, or in unknown locations (except stolen works, which are credited to their legal owners), are works of architecture, are located in libraries not also collecting works of art, belong to non-museum government agencies, private foundations or corporations, or commercial galleries, or are otherwise not located in institutions organized along principles followed by AMICO member museums. Proportions of works within subcategories of this term vary widely. They have not, for the most part, been separately tabulated by type but their character and proportions are noted in the discussions of the various tables in part IV below.

Text illustration or **text image** is defined, for the purposes of this report, as a photograph or photographs of an original work of art appearing in a bound book printed on paper. Reconstructions, diagrams, drawings after originals, maps, floor plans, and charts are not counted as text illustrations. Different views or details of the same original are counted as one image. Different views of the same building or work of architecture are counted as one image; however, different photographs designed to show individual works within a building (a fresco or tympanum for example) are counted as separate images.

Art image is defined, for the purposes of this report, as any photograph made after an original work of art, whether it appears in digital or analogue form or as a transparency or on paper. Again, reconstructions, diagrams, drawings after originals, maps, floor plans and charts are not counted as art images.

Academic art historians refers to professional art historians teaching in colleges and universities in North America, regardless of whether they may also serve in other capacities in other kinds of institutions.

IV. Statistical survey and case studies of the AMICO Library Content

Summary conclusions:

- When compared to the "text canons" used in the study, AMICO museums contain relatively small numbers of the art works used as illustrations in the text canons (never more than 30% and usually less than 10%).
- Works available in the AMICO Library constitute an even smaller percentage of the works used as illustrations in the "text canons." Usually only about a third of the illustrated works from AMICO member museums are actually included in the AMICO Library, meaning that usually less than 10% of the works illustrated in the "text canons" are likely to be found in the current AMICO Library.
- Given the small proportion of their collections as yet documented within the AMICO Library, the likelihood of finding a *specific* art work known to belong to an AMICO member in the AMICO Library is quite small.
- From the point of view of the text canons, Library's greatest weaknesses currently seem to be in architecture and in works such as fresco and architectural sculpture that are physically part of buildings or monuments.
- The AMICO's Library's greatest strengths seem to be in Western European and American art from ca. 1700 – ca. 1950 (especially 1800-1920), in Old Master prints, and in the history of Photography.
- The material available in the AMICO Library is rich and potentially very useful in teaching art history at the college level. However, the "text canon" approach to art and art history will tend to obscure the AMICO Library's strengths.
- A AMICO Library is that it offers access to many works not generally known in the art historical literature. Different viewers, however, will naturally react differently to these works."

Research questions and discussions:

1. What statements can be made about the current distribution of content in the AMICO Library by period, artist, medium, culture, and physical location?

Generally speaking, the content of the AMICO Library is well distributed over the range of art typically found in North American art museums. In Western art, a solid majority of the artists included in the text canons (at least 50% and as many as 92%, depending on the period) were represented in the Library. Missing artists tended to be architects or designers (see below), contemporary artists, less-well-known figures outside the main artistic production centers, or artists or art media unavailable to North American art museums.

Within the Library's holdings for each artist, different media are generally well represented, although in the case of artists who were also print makers (Rembrandt, Goya) prints (including many duplicates) tend to constitute the majority of works in the Library. In some c
ases, especially in the case of sculptors, drawings or prints seemed to be over-represented when compared the artist's primary medium. In other cases (e.g., Jacob Epstein) certain genres (e.g., portraiture) are emphasized in the Librarian over ones considered more significant for the artist. It should be emphasized, however, that a full evaluation of these holdings really requires the careful examination of each artist in the Library by a specialist. A particular advantage of the AMICO Library is that it offers access to many works not generally known in the art historical literature. Different viewers, however, will naturally react differently to these groups of "unknown" work . Specialists will feel more comfortable evaluating them.

The survey of individual artists suggested that, when the numbers were significant (over 15 works represented) a good range of media and period were represented in the Library. As part of its long-term strategy, AMICO should seek ways of supplementing holdings of major artists where total numbers fall below 5, a point at which it becomes unlikely that the Library represents the full range of the artist's work.

From the point of view of Western art, the AMICO Library begins to show significant strengths with the advent of the 17th-century and remains strong through the 20th century. The holdings in 19th-century art and in the entire history of photography are particularly strong, with 644 works of 19th-century photography alone. "School of Paris" modernism from Neoclassicism through Picasso receives a heavy emphasis. Modernist artists from Northern and Eastern Europe tend to be relatively less well represented with, on average, less than five

works each as opposed to several dozen for some major School of Paris artists (e.g., Rodin at 67, Picasso at 81, Degas at 114).

Well-known American artists also tend to be well represented (Whistler at 258, Inness at 22, Homer at 53, Eakins at 23, Tanner at 20), although in the second half of the 20th-century the coverage tends to favor breadth rather than depth, with a good selection of individual artists represented by fewer works each (Jasper Johns at 2, Pollock at 7, Rauschenberg at 6). {In the more than 3000 works dated 1945-1999, there are numereous artists represented by relatively large numbers of works. Thanks to the participation of Canadian museums, the selection of the work of Canadian artists is probably without parallel.

Artists who are known for their prints tend to appear in the Library in much higher numbers than other artists. Callot is represented by 496 works, Piranesi by 130, Rembrandt by 270, Durer by 275. Thus Old Master printmaking constitutes another special strength of the Library thanks in part to the presence of large numbers of works from the Achenbach Collection of the Fine Arts Museums of San Francisco..

A notable feature of the Library revealed by the survey were the "peaks" produced by the very heavy representation in the library of certain artists, e.g., Henry Moore (358 works) and Edward Hopper (778 works). In some cases, these peaks represent special archives or collections at AMICO member museums; in others, these elevated levels represented high concentrations of prints (and duplicate prints from different institutions).

These peaks, and the comparatively smaller number of significant artists missing from the Library (e.g., Richard Estes, Lucian Freud, Jean-Michel Basquiat, van der Goes, Boccioni, Jawlensky, Balthus), reflect some anomalies in the way works are distributed within the Library. These anomalies are typical of museum collections, and in this case are probably the combined result of anomalies in the constituent museums and the way those museums contribute works to the AMICO Library.

Nevertheless, these anomalies may seem somewhat perverse to art historians. For example the selection of Hopper works, largely consisting of the Hopper bequest at the Whitney Museum, includes more than a dozen fascinating studies for *Nighthawks*, probably Hopper's best known painting. It does not include the painting itself, however, despite the fact that it is part of the collection of an AMICO member museum (Art Institute of Chicago). Similarly, modernists know the Philadelphia Museum of Art as the world's greatest repository of works by Marcel Duchamp, including such famous pieces as *The Large Glass*. However, the AMICO Library includes only two Duchamps, neither of which is from Philadelphia.

The survey of Picasso's work, in addition, illustrates the danger of judging the Library on numbers alone. The Library currently contains 81 works by Picasso. The text-canon used for Picasso included 43 works from AMICO member museums, only 6 of which are actually included as images in the Library, meaning there is only a small overlap between the two. Comparing the text-canon list with the Library list reveals that the text-canon list, although it is only about half as large in absolute numbers, contains a better balance of periods and styles and many more major works than does the Library list. Larger numbers of works in the Library thus does not necessarily mean a balanced or useful representation.

An anomaly of a different type turned up in the survey of Velázquez work. Three works recognized by the summary catalogue turned up in the AMICO Library but the Library search also produced a fourth work, not included in the list of the artist's complete works. This fourth work proved to be a black and white photograph of a "Velasquez painting," clearly not a genuine work of the artist, that came into the Library from the Library of Congress's photographic archive.

For various reasons, some of which are described below, evaluating the Library's holdings of anonymous and non-Western art proved to be more difficult. In some areas, such as African art, where concepts of originality are very different from Western notions, evaluating the Library's content may require the help of a specialist. Areas of both Western and non-Western art studied primarily via works in situ, e.g., Buddhist cave art and Italian fresco painting, not surprisingly tend to be poorly represented in the Library. Insofar as such matters can be evaluated, however, the distribution of Non-Western works within the Library seems to be broad over period, culture, and medium, with minor gaps, peaks, and anomalies comparable to those noted for Western art above.

2. What specific areas seem over or under represented and why?

The work of artists primarily known as architects is probably the single most under-represented area of the AMICO Library. Many if not most of the missing figures in the Western survey (Bramante, Palladio, Boromini, Wren, Adam, Le Corbusier) are known primarily as architects. One could make the argument that, for this reason, architecture should have been excluded from the survey. However, since in many periods of art, prominent artists practiced both architecture and work in other media and since several AMICO members collect architectural material, it was decided to include them.

Materials by architects that are included in the Library (Frank Lloyd Wright, Mies van der Rohe) tend to be items of decorative arts designed by the architects. The survey turned up no architectural drawings or models. Architecture illustrated in the text canons is the subject matter of some art works in other media (e.g., photographs of the Eiffel Tower in Paris or the Brooklyn Bridge and Empire State Building in New York) in the Library, but this material would be difficult to access without special subject cataloguing.

From the point of view of the academic art historian, the AMICO Library's greatest area of under-representation is in art works directly connected to architecture or architectural settings. In areas like French medieval art and early Italian Renaissance art, where the text canon works tend to be architectural sculpture and frescoes, the differences between a "text-based" canon and a "museum-based" canon become particularly apparent.

In the 20th-century, American museums largely replaced their 19th-century collections of plaster casts and photographs of European monuments with original objects from the same periods and cultures. These originals tended to be architectural fragments and smaller decorative arts pieces. Such works are well represented in the AMICO Library but they rarely appear on the text canon lists used in the survey.

Other areas of relative under representation seem to relate to the materials available to North American art museums. Certain important European artists (Grünewald, Friedrich, Leonardo, Runge, Giorgione) are only rarely found outside European collections, and thus are absent from the AMICO Library or under represented from the point of view of the text canons.

One of the more significant measures of under representation as related to teaching is the line between what is sufficient for a general survey course and what is sufficient for a more focused study on a single century, school, or artist. Only one or two works represents many Western artists in the AMICO Library; many more are represented by less than 10.

This means that for significant periods of Western art, especially the Middle Ages and the Renaissance, there are sufficient images to supplement teaching in a general survey of Western art, but not, except in the cases of peaks around individual artists like Dürer, something much more specialized. It isn't until the 18th century that the Library really provides enough depth in ***all*** the artists of a period to support more detailed study. After 1945, the average number of objects per artist again drops to general survey levels though in the aggregate there are more images in the AMICO Library than in any other particular source..

In the case of the non-Western survey, Chinese decorative arts (especially ceramics) seemed to be heavily represented when compared to other media from China. The survey turned up only one painting in the relevant text canon for Chinese art whereas in the case of ceramics and bronzes there were always multi examples that were at least close to the images in the text. The same emphasis on ceramics and decorative arts seemed also to hold true for other Asian cultures.

The limited survey of Islamic art was far more fruitful, suggesting that many of the works of Persian and Indian painting considered important by specialists are in fact in AMICO member collections.

Most non-Western cultures present special problems for both teaching and the AMICO Library, however. It has often been pointed out that the whole category of "Asian" art receives, in Western institutions, approximately the same amount of attention as a single European culture, despite the fact that "Asian" art is far more culturally diverse and historically extensive than the whole of European art.

Applied to the AMICO Library, "over representation" is an even more subjective term than "under representation." For example, from the point of view of an art historian preparing a survey course on European art, the heavy inclusion in the AMICO Library of old master prints, which includes variant and duplicate prints from different museum collections, may seem like an "over representation." This same resource, to a professor preparing a course on old master prints, may seem like a godsend.

In the same way, the large peaks noted above in the works by some artists may seem like over-representation to some, especially in comparison with the one or two works in the Library by some other artists. But to someone specializing in these artists, these peaks are among the Library's greatest strengths.

Compared to the works illustrated in the text canons, the AMICO Library clearly under-represents those "big" works that constitute the masterpieces used in most college survey courses. Not only are most such works not in the collections of AMICO members, in most cases the vast majority of them are not in the collections of North American museums. However, in only about a third of those cases where the text canon *are* in an AMICO member institution's collections does the Library contain an image of the work.

The survey suggests that a majority of the text canon images in North American museums belong to institutions that are already AMICO members. But there are many works in the cannon that will never be in the collection of a museum. With relatively few exceptions (e.g., the Museum of Modern Art for modern works, the Kansas City museums for Asian work, and the National Gallery of Art), AMICO cannot really look to membership recruitment in North America to dramatically increase the numbers of text canon images belonging to members. The major national museums and cultural monuments of Europe and East Asia constitute the significant repositories of those images.

On the other hand, the under-representation of text canon images that do belong to AMICO members constitutes another problem. If asked to evaluate the AMICO Library, the logical thing for an academic art historian to do is to search the library for specific works in his or her own specialty. If these works do not appear, even if the art historian knows them to belong to an AMICO member, he is apt to be disappointed. Anticipating every such search from every potential specialty may, however, be difficult, as will be assuring that the text canon images, when identified, are included in the Library. However, as the discussion in part IX suggests, the numbers of images actually involved may be relatively small.

3. How did the Library content affect the outcome of the case studies and why?

The scale of the AMICO Library is already such that a brief study can only begin to scratch the surface. At approximately 50,000 objects, the Library has, in its holdings of art images, reached the size and significance of a major urban art museum. An art museum of comparative size would have a staff of at least a dozen specialists regularly reviewing and evaluating its holdings, organizing exhibitions from it, publishing catalogues, and generally bringing its strengths to view. The present study can only be considered trivial in comparison.

V. Issues of consistency, completeness, and comprehensiveness

Summary recommendations:

- The AMICO Library should seek ways of including significant artists not now included in the Library from its members' collections.
- The AMICO Library needs to begin to approach its collection from a curatorial viewpoint: constantly surveying and evaluating its holdings for consistency and completeness and acquiring images in areas of weakness.
- AMICO needs to address the issue of the areas of art– especially the "text canon" works– that fall outside the collections of its members (see discussion below).
- AMICO needs to create for itself a clear identity and niche and present clearly what images it can and cannot provide to users. Ultimately, the questions of "completeness" can only be answered in relation to that identity.

Research questions and discussions:

1. How consistent is the content of the Library across institutions, cultures, and media? How might different Library users define consistency differently?

The "peaks" in artist representation noted above mean that, for any given area in Western art, the relative numbers of images in the Library are heavily skewed towards those artists. For example, in the survey of "Renaissance in the North" (Table Ic), 85% of the total number of works tabulated in the AMICO Library is by Dürer and most are prints. When compared to artists in this area represented by only a single work (Clouet, , Patinir) this emphasis seems inconsistent, though it is typical of the kinds of inconsistency found in museum collections in general. Other peaks in the Library– old master prints, 20th-century painting, photography– seem inconsistent when compared to Library weaknesses, such as architecture and early Italian Renaissance art.

The AMICO Library has been created in a decentralized manner, with each member choosing works from its own collections without much reference to other members. This has led to one inconsistency noted earlier-– an inconsistency of choice across institutions. A third party choosing at will among the AMICO member collections would be likely, for example, to include Duchamps from Philadelphia and Chicago's *Nighthawks* along with the Whitney's studies for the painting. A more curatorial approach to building the Library would monitor such inconsistencies and seek ways to correct them.

2. How "complete" is the content of the Library? What metrics should be used to determine "completeness?"

From the point of view academic art historians and the text canons, the AMICO Library will always be "incomplete" as long as it represents only North American art museums. As noted above, the vast majority of works in the text canon, at least as explored in this study, are located in European or Asian museums or are in non-museum settings.

From a museum-based point of view– that is, from the point of view of the areas and periods of art that the Library represents– the AMICO Library is already quite complete. With the exception of architecture, no areas of world art are left out entirely and many areas are represented in strength. A majority of Western artists considered significant are already included in the Library as well as representative works from most periods and cultures of Non-Western art.

Museums tend to measure their collections based on how much of the history of art in their area of specialty they can present to the public. A similar metric seems most appropriate for judging the completeness of the AMICO Library.

From a marketing perspective, however, AMICO needs to stay aware of the expectations created by prominently listing its member museums to potential users. Such a list implies that "major" works—however they may be defined---– from those members are included in the Library. The text canon surveys suggest that, from this point of view, the AMICO Library is currently quite incompletethis should not be here – move to a recommendation]

3. Is "completeness" in the Library the same as "comprehensiveness?" How might different Library users compare and value these two terms?

It seems clear that most academic art historians will distinguish "completeness" from "comprehensiveness" in the AMICO library. Academic art historians will tend to judge the Library as "incomplete" as long as it remains the only source of digitized art images generally available to them and does not contain at least a substantial majority of the specific works they want to use in teaching.

Those same art historians, however, might well define the Library as "comprehensive" for its broad coverage of world art. Other potential Library users will likely find a narrower gap between "comprehensive" and "complete." A historian of 19th-century Europe, for example, might find the Library's holdings very complete for his purposes. Similarly, any given art historian might find the Library very comprehensive– even more so than any other source– from the point of view of her specialty.

VI. Issues of interface, terminology, metaphor, and options

Summary recommendations:

- AMICO should be aware that the features of its interface will affect the judgments users make about Library content and should recommend changes to the interface based on those effects.
- AMICO should add to its interface features that make the special strengths of the Library more apparent to users.
- AMICO should seek ways to supplement its search options with options that make it easier to search by categories of art generally used by art historians.
- AMICO should try to correct inconsistencies in data and data management that are potentially confusing to users.
- To serve art historians, AMICO should strive to make its Library at least as easy to use as competing image sources like slide libraries and illustrated texts.
- AMICO should consider providing users with tools that manipulate images in familiar metaphors of slide and light table.

Research questions and discussions:

1. How does the AMICO Library user interface affect its content?

Because the current AMICO Library user interface makes it easier to search for specific artists and works than for schools, subjects, or art historical categories, the interface tends to emphasize the Library's weaknesses (lack of specific, well-known works) over its strengths (depth and breadth in specific areas). Unlike an illustrated textbook or museum space, the Library's interface is relatively opaque---- that is, it requires the active participation of the user before revealing its treasures. Ferreting out some of the special strengths of the library, such as a strong collection of Islamic miniature painting, requires some persistence and patience.

Certain inconsistencies in data and data management often detract from the Library's content and make it difficult to access. For example, currently the basic data on images contains many different spellings and treatments of artists' names. In slide libraries and in museum card catalogues, such inconsistencies are compensated for by subject headings (e.g. "Rembrandt"), which group together many inconsistent headings on the slides and cards (van Rijn, Rembrandt; Rembrandt; Rijn, Rembrandt van, etc.).

The AMICO interface currently compensates for this by presenting a range of spellings around the one used in the search. This approach tends to be annoying, however, and frequently provides confusing choices for those unfamiliar with art history, who will not know if the different variations are the same artists or different ones. Moreover, for some artists this approach does not work at all. A search on "Chirico," for example, yields an entirely different set of works from a search on "De Chirico" which are not close to each other in the alphabet. Similarly, a search on "Lorraine" yields no works. It requires a search on "Claude" to uncover the work of the artist Claude Lorraine.

Even more inconsistencies are revealed in searches on art historical period and in other areas where terms are used imprecisely in the discipline. A keyword search on "Greek" will include red-figure vase paintings, but only those not attributed to specific painters. Those vases attributed to artists ("the Pan painter," "the Berlin painter") in the museum data must be searched on each attribution separately.

Whereas in illustrated books, looking for works in a particular period or art historical category is easy, because the books are organized that way, searching the AMICO Library in this fashion tends to be difficult. Some common art historical terms ("Early Christian" "Prehistoric) do not exist in the Library; others ("Gothic") are inconsistently used in the source data. The Library contains many works that Janson classifies as "Aegean" but the multiple, overlapping searches and hand sorting required to uncover them made it impossible to come up with a reliable count.

Searches in non-Western art were even more problematic. Keyword searches by specific Chinese dynasty revealed some works from the period but also works from other dynasties and even works that were not Chinese. Changes in transliteration systems and frequent homonyms in the Chinese language ("Qin," example

is the name of a Chinese dynasty [also spelled "Chin"] but also the name of a stringed instrument often shown in Chinese paintings) made it difficult to know how accurate these searchers were in revealing all the works from a given dynasty in the Library. Unless the work was attributed to a named artist, it was also difficult to search a specific Non-western artist in the Library, hence the use of "NA" and (?) in Table IV.

2. How does the terminology used in the AMICO Library and its interface affect how the content is viewed and potentially used?

The terminology used in the AMICO Library interface is essentially that of a computer database. As such, it is not content-neutral and even tends to be in conflict with the more organic use of language favored by art historians. The language of art historians tends to be imprecise and full of shadings and nuance. The language of computer databases tends to be precise and "digital"– that is, oriented towards either-or choices.

Simple, well-established database terms may have some unintended consequences here. For example, the interface command "search" seems to encourage the user to ask the computer to find a specific work of art. If the same function was named "discover," for example, it might encourage the user to think of the computer as locating a range or group of works that might suit his needs, which is closer to what the interface actually does.

3. What metaphors are implied by the Library and interface and how might these metaphors affect its content?

The essential metaphor of the AMICO Library database is that of a text database– especially a network distributed bibliographic database. Again, this metaphor tends to reinforce the idea of searching for specific things, and to judge the content of Library based on how often the interface finds those things.

For art historians and others who work regularly with art images, there are probably some subliminal implications of the interface metaphor. Such people are used to looking at art in contexts—like art museum galleries and illustrated books– where the arrangement, juxtaposition, relative scale, and context of the images all have meanings, meanings which are further elaborated by printed texts.

The text database metaphor first of all favors texts and requires the user to navigate several levels of text material before accessing images. When presented to the user, the images are arranged mechanically and often (depending on the size of the result) randomly, without the subtle clues and text guidance found in galleries or books. Art historians and others used to different ways of looking at images may find large, undifferentiated displays of images disorienting or intimidating. Tools which sort the large sets resulting from searches are required to make sense of results. Multiple levels of searches and comparisons of the same sets sorted in a variety of ways would make the AMICO Library more usable.

4. What options are available to users of the AMICO Library and how do these options affect its content? What options are expected by users in different contexts?

Currently, the AMICO Library interface offers basic and more advanced searching capabilities, basic sorting capabilities (which often fail to work), and several sizes of images. Users used to working with slides are used to and might expect better options for manipulating, hand sorting, and comparing slides, such as is possible with physical slides on a light table. Significantly, most off-the-shelf image software uses a light table metaphors, in which many thumbnail images can be displayed together, moved without restriction from place to place, sorted, filed, cropped, and duplicated. Similar tools would probably much enhance the AMICO Library content for visually sophisticated users, as would tools that helped users incorporate digitized images in classroom presentations.

Users of different kinds would also appreciate search options of various kinds not currently facilitated by the interface: searches tailored to the content of art history classes, for example, or oriented towards particular kinds of subject matter. They would also appreciate options *limited* in various intelligent but not necessarily precise ways, for example "find me all the early 20th century photographs by Americans of New York City, leaving out the duplicates" or "find me the best red-figure vases currently on view in Boston, but don't give me more than twenty."

5. In what ways can such technical means as search engines and hyperlinks enhance or detract from the Library content?

Perhaps the greatest way technological features such as search engines detract from Library content is by implying a precision and completeness, which the searches do not deliver. When the imprecision of art historical terminology and the precision of computer searches yields unpredictable or confusing results, the user is apt to blame the Library content or the technology rather than the vagueness of art historical language.

On the other hand, search engines and hyperlinks could potentially overcome one of the Library's current weaknesses– the lack of connection between the collections of images provided by different members. With the application of some artificial intelligence, a more sophisticated search engine could learn, for example, that Claude Gellée and Claude Lorraine are the same artist, who is usually referred to as "Claude," that "Attic" art is also Greek, and "Cycladic" art might also be called "Aegean." Hyperlinks to artist biographies and writings, art historical terms (especially as used in the Library), artists from related schools, and the like would also help make the case for technologically enhanced image research.

VII. Issues of quality

Summary recommendations:

- AMICO should continue to establish, enforce, and improve standards for digitized images, basic data, multimedia, and supplemental text in the Library. Such standards should include basic plans for consistency for artists' names, art historical period, and the like.
- AMICO should conduct regular tests comparing its images with reproductions in books, slides, and other digitized images in various contexts including classroom teaching.
- AMICO should continue to encourage research into ways of improving digitized images from artwork and the exchange of information among member museums regarding digitization systems and technologies.
- AMICO should endeavor to become the standard in such issues as digitized images and regularization of art historical terminology.
- AMICO should conduct regular side-by-side demonstrations of digitized images and non-digitized images so that users and potential users can become familiar with the real (as opposed to imagined) differences between them.

Research questions and discussions:

1. What is the overall quality of the AMICO Library content? How does the quality (color, resolution, detail) of the Library's images compare to images in other media (slides, photographs, printed reproductions)?

It should be said at the outset that a full, objective assessment of the quality of the AMICO Library is beyond the ability of a limited study like this one. Such an assessment would require, among other things, side-by-side study of AMICO images and images from other sources, presented to objectively selected panels with controlled characteristics. No such study was even attempted in preparing this report.

Nevertheless, it seems fair to say, from a museum standpoint, that the AMICO Library presents high standards for quality. Compared to academic slide libraries, where the quality of individual slides varies from excellent to atrocious, the AMICO Library images are distinctly more consistent and probably well exceed the median level of quality of slide images. Color is far more consistent than that typical in academic slide libraries, partly because color dies in slides rapidly degrades over time and reverts to muddy tones unless the slides are regularly replaced. Focus and detail are probably, on average, also probably superior in the AMICO Library, if only because so many slides in academic slide libraries are copied from books or duplicated many times from a distant original.

Compared to the illustrations in recently-published art books, AMICO Library images as delivered over the WWW by Eureka are probably slightly below the level of detail found in the best-produced editions and probably below the level found in museum-produced, black-and-white photographs that have not been screened for printing. At their largest zoom levels, AMICO images may attain comparative or even greater

levels of detail. Because these very large images cannot be easily displayed whole on a computer screen, however, the positive value of the detail is lessened for the user.

Comparing the quality of color in AMICO images to that found in books is difficult without reference to the original works of art. However, because of the technical difficulties with correcting color during the stages of the printing process, AMICO images are likely to be at least as accurate as the average in current art book color reproductions.

In text quality, the AMICO Library probably well exceeds the general level of academic slide libraries, where individual labels contain very limited information, are rarely cross-edited or systematically updated, and are frequently highly inconsistent in such matters as artists' names, titles, and the like. Slide labels are almost never used in isolation, however, so such problems may not be especially significant.

Compared to text information in books, however, the AMICO Library is less consistent and more prone to obvious error. Art books, especially those prominently used as text books, are prepared by experts, reviewed for consistency and accuracy by a series of editors, and often have been refined and improved over many editions. AMICO Library data is undoubtedly a distinct improvement over the museum catalogue source material, but it contains many confusing variants on artists' names, inconsistent use of accents and diacritical marks, and other typical bugbears of raw museum data. AMICO has made an admirable start on standardizing data and terms across institutions, but reaching the levels typical of art text books will take additional efforts in this direction.

Whether the Library contents are, in fact, inferior art works to those in the text canons used in this survey is yet another interesting question this study cannot fully answer. This superficial survey of the works the Library provides suggests that, in some areas at least, it may well not be. The text canons are certainly to a large extent self-perpetuating and may well be subject to long-standing biases toward European institutions and museums as the centers of culture. For various reasons, the collections of many American art museums are not as accessible or well known to scholars. The AMICO Library may have the effect of changing or broadening the canon, or moving it new directions.

2. How is the quality of the Library likely to be judged by Library users?

Non-art historian users will likely rate the quality of the Library as high. The images will be among the best available to them for teaching and, as long as the detail and resolution are high enough to make their points, quality will seem adequate. Minor inconsistencies of text data will be unlikely to trouble them much and finer points of attribution and connoisseurship, as reflected in the text, will not be an issue in most cases.

Art historians will likely judge more harshly, and not necessarily as objectively. Art historians seem to have a general bias towards the 35 mm slide and against digitized images. Their off-the-cuff judgments of quality often seem to be a mind's eye comparison of the best 35 mm slide projected on perfectly focused equipment in a darkened hall with a digitized image of unknown origins projected on borrowed machinery in a well-lit classroom. When confronted with real-time, side-by-side comparisons of slides and digitized images, however, the digitized images never seem to fail to impress.

Academic art historians will also probe more deeply into the finer points of the AMICO text, debating museum attributions, transliteration systems, and the like. Much of this will be no more than the usual debates that take place inside any discipline. If AMICO can find ways of incorporating such differences of opinions and debates into its written content, however, the results will not only make the AMICO texts more interesting, they will add to its acceptance among academic art historians.

3. How factually accurate is the text content of the Library? How adequate?

Aside from obvious typographical errors, the text of the AMICO Library appears to properly reflect each museum's assessment of the facts relating to each object in its collection. It is adequate for the types of searches now possible via the interface but is less adequate for other sorts of searches AMICO users may desire. It also seems less adequate in reflecting other judgments– such as alternative attributions– in expressing various nuances of the objects history– such as its history of restoration– or in expressing the relationship between objects in the Library– such as might be done in a set of exhibition labels.

4. How does the quality of the images compare to the quality of the text and what are the relationships between the two?

Overall, the AMICO images convey the physical reality of the original works of art with considerable depth and drama. The text is currently less dramatic and less deep—it is certainly factually adequate but is less vividly arresting and is consequently likely to be less valued by AMICO users. The promise of rich, involving texts relating to each of the AMICO images is something still to evolve.

VIII. Relation of AMICO Library Content to AMICO Library users

Summary recommendations:

- AMICO should not think of its audience as uniform or consistent, but as a diverse and changing group of users who will have different interests and biases at different times.
- AMICO should explore ways of using technology (e.g., different search engines and interfaces) to better cater to the needs of different kinds of users.
- AMICO should consider creating different subsets or anthologies of the Library (e.g., "Chinese Art," "Modern Art in New York," "The History of Photography") that cater specifically to different audiences and needs. Such anthologies, which are practically limitless in variety of subject, might be selected with the help of outside experts and might include specially prepared texts, enhancing their authority and usefulness.
- As the AMICO Library grows in size, the need for ways to limit searches intelligently and sort and classify sets of images in meaningful ways will grow proportionally.
- For marketing reasons alone (see below), AMICO will need to incorporate ways in which users can directly influence the Library content and features of the interface. This may require some changes in the way images are added to the Library.

Research questions and discussions:

1. Who are likely to be the users of the AMICO Library?

One of the most exciting possibilities of the AMICO Library is ability to spread the use of art images more widely in the academic and educational world. Potentially, the AMICO Library could be used by professors of religion teaching about images from Bible history, chemists teaching about artists' materials, English professors using illustrations from Shakespeare, music historians explaining the uses of historical instruments, and in many other fields. Many enthusiastic users of the AMICO Library are non-art historians with some computer skills who are willing and able to explore the system to come up with images suited to their needs.

Art historians, on the other hand, tend to be wedded to the text canon approach and are disappointed when the Library does not yield the specific works they are looking for. They tend to look to AMICO to provide things– such as a digitized equivalent of an academic slide library– that it is not currently structured to provide. Yet, art historians are often considered, even by AMICO members, to be the "natural" audience for AMICO and are likely to be called on as evaluators of the AMICO content by potential institutional subscribes.

2. What sort of content will these audiences be looking for?

Much of the content these audiences will seek already exists in the AMICO Library. Art historians, as noted, will continue to seek images that reflect illustrations in texts used in teaching or duplicate the contents of their institutional slide libraries. All audiences, however, will appreciate content that is pre-digested in some way, and organized especially around teaching subjects.

Most AMICO users will only need a small percentage of the AMICO Library, and will appreciate ways of reaching that percentage quickly and easily. This suggests that organizing the Library into selected subsets aimed at particular users and uses will be increasingly important as the total size of the Library grows.

3. How much will different sub-sets of the AMICO Library users group differ from each other in their content interests?

As the user base of the AMICO Library grows, the variety of content interests will initially grow proportionally. As different academic specialties discover and begin to use the Library, they will develop different sets of content interest, creating demand in further and further sub fields until a saturation level is reached. As the user group develops beyond traditional art historians, more interest in subject-related content is likely to develop, for example, for art work representing specific historic events, or photographs representing particular places at particular times. Consequently, over time the content interests are likely to become more diverse and may eventually require different kinds of evaluation methods than the ones used in this report.

4. How will changes in Library content affect they way it is used?

As the Library grows in size, its ability to supply different content needs, and thus to attract a wider variety of users, will also grow. At the same time, however, current search options of the Library will increasingly yield large, unwieldy, and essentially indigestible results for many users. A search engine that produces several hundred options where only one image is required is not likely to impress its users with its efficiency. Thus the growth of the Library implies not only more and more diverse users but also a changing interface to meet a greater variety of content interests and needs.

5. How much should user needs and desires determine Library content? How, and how much can they determine Library content?

In classic market terms, user needs and desires should play a major role in determining the AMICO Library content. The AMICO Library's expansion is largely managed by and receives significant funding from its member museums, which currently receive no particular benefits from responding to market forces. Significant parts of the AMICO audience currently labor under some misconceptions of what AMICO is and what it can be and thus their desires will not easily translate into practical reality. Finally, under current arrangements, the content of the AMICO Library is limited by the collections of its member museums.

Nevertheless, some response to market desires not only makes business sense but is good public relations both for AMICO and its members. The study suggests that relatively modest efforts in selected areas might make significant differences in the perception of the AMICO Library.

Nevertheless, some response to market desires not only makes business sense but is good public relations both for AMICO and its members. The study suggests that relatively modest efforts in selected areas might make significant differences in the perception of the AMICO Library.

For example, only a bit more than a third of the works illustrated in Janson credited to AMICO member institutions is currently included in the AMICO Library. As noted, such a low percentage is likely to disappoint an art historian cross-referencing Jason with the Library. Raising the percentage to 100 would require adding only 70 works to the Library, a relatively tiny number when compared to the hundreds added to the Library monthly.

IX. Marketing issues of AMICO Library Content

Summary recommendations:

- A significant portion of AMICO's market seems to be perceiving the Library as a "one-stop" resource for digitized art images AMICO is currently not well placed to such a resource and needs to consider to what extent it wishes to move in that direction.
- Not withstanding its eventual market direction, AMICO should plan logical, practical steps to improve and manage its collection from the point of view of its users. Within that process, AMICO may need to choose, at least for the short term, whether to focus on adding absolute numbers of images, building on the strengths of the present Library, or filling in gaps or weaknesses, though a well thought out strategy may be able to do both

- AMICO needs to address a full range of Library packaging and market segmenting issues to better serve its various potential markets. This will grow increasingly important as the size of the Library grows in absolute numbers.
- In presenting itself to users, AMICO should present itself as a museum-based program, and emphasize the special identity and features this gives the AMICO Library.
- AMICO should establish programs to highlight the special strengths of its Library, especially those that the interface tends to conceal. These programs might include on-line exhibitions, electronic catalogues, displays and news stories on new acquisitions, an on-line newsletter, and written guides to special sections of the collection.
- AMICO's home page should introduce users to the concepts behind AMICO, its content, and its more important features. It should, for example, explain how museum photographs are made and should feature changing galleries of images selected from the library or even a "virtual AMICO museum."
- AMICO should establish a board of expert advisors to act as surrogate curators to the Library. Ideally, such a board would include a mix of curators from AMICO member institutions and academic art historians from AMICO user institutions. Board members would advise on strengths and weaknesses in the collection, advise on the management of the Library, on new acquisitions, and on new projects.
- To best serve a variety of markets, AMICO will need to develop interfaces, text data, and other tools that help users make sense of the Library as a whole. In other words, AMICO will need to move from an approach that deals primarily in individual objects and images to one which is more oriented towards connections between objects.

Research questions and discussions:

1. How is the AMICO Library content distinguished from currently available non-electronic sources of images such as books, slides, photographs, and the like? How should it be?

From a marketing point of view, the AMICO Library now occupies an odd position with regard to its non-electronic "competitors." From the point of view on non-art historian users, the AMICO Library offers some distinct and compelling advantages:

- It is easier to search for non-art historical purposes than books or slide collections.
- It is often more accessible to non-art historians than institutional slide libraries, which often favor art historians.
- Its images are never "checked out" and are thus always available for use.
- The Library's holdings are broad and deep enough to serve many non-art historical uses.
- In preparing a lecture or course packet, non-art historian users will often be able to work entirely from the AMICO Library without recourse to other sources of images.

From the point of view of traditional art historians, however, the AMICO Library has some distinct disadvantages when compared to the established text canon-slide library approach based on non-electronic images:

- The Library's contents are not preselected, sorted, and organized by experts into categories directly related to teaching methods in art history.
- Very few of the art images used in standard art history texts are available in the AMICO Library.
- Images in the library are not grouped with explanatory text, as they are in books.
- The contents of the AMICO Library are not directly responsive and responsible to art historian users as are the contents of academic libraries and slide collections.
- Computer-based methods for managing and accessing data are not especially congenial to the less precise methods art historians have used to classify and work with images.
- At present, the book and slide methods provide most of an art historian's teaching and research needs, but the AMICO Library does not.
- Because of its licensing arrangements, images from the AMICO Library cannot be "owned" and transported the way slides and books can. Thus art historians are much more inclined to invest time and effort in to book-and-slide based methods and much less inclined to risk time on methods based on the AMICO Library.

- Except in very rare cases, art historians preparing a lecture or course packet will not be able to rely entirely on the AMICO Library alone for digitized images. Since there are essentially no comparable alternative sources for digitized art images, this means art historians wishing to use digitized images are confronted with a long series of awkward choices, and may well decide to stick with traditional methods.

In correcting these discrepancies, AMICO should keep the following in mind:

- As a general goal, AMICO should strive to make its Library at least as easy to use as alternative sources of images. This is likely to mean developing specialized interfaces and packaging selected parts of the Library to serve different user needs.
- AMICO should provide, wherever possible, special software tools to make the Library more accessible to those used to more traditional methods.
- AMICO will need to address, in one way or another, the "lack of alternative sources" issue (see below).
- AMICO needs to take every opportunity to demonstrate the special advantages of teaching with digitized images to potential users. It cannot assume that such advantages are readily apparent or that they are more apparent than the disadvantages.
- AMICO should consider ways to build a customer-support mechanism that can directly respond to individual users.
- AMICO should consider modifying its licensing arrangements to reward and encourage users to experiment with the Library contents.(how?)

2. How do the AMICO Library images compare to other sources of digitized art images available to its potential users?

For all practical purposes, the AMICO Library stands, at present, quite alone. The AMICO Library is presently the only widely-distributed, large-scale, indexed, regularly updated, quality-controlled, and copyright-cleared collection of digitized art images available anywhere in the world. Despite any complaints and criticisms of AMICO, the present alternatives tend to be worse: of poorer quality, of dubious legality, badly indexed and documented, frequently expensive, and often spottily distributed with no guarantee of permanent availability.

To date, none of the many attempts to create large-scale alternatives to AMICO have been able to bring a viable product to market. Alternative sources of digitized images include CD-ROMs produced by museums or third party companies (e.g., Corel), amateur websites such as Artchives, and, probably most significantly, museum websites produced by museums world-wide. Aside from the complicated issues of intellectual property involved, none of these sources offers the much-wished-for, permanent, cost-effective, one-stop source for digitized art images. Their quality varies from source to source and image to image and using them requires many hours of searching through different search engines, storing, and manipulating images in digital form.

3. How will content issues affect AMICO's ability to compete with other potential sources of images, digital and non-digital, in the future?

AMICO's apparent market advantage is, in fact, a very mixed blessing. As long as only one resource for digitized images remains viable on the market, it will likely be criticized for not being all things to all people. Further, and more important, as long as sources for digitized art images remain restricted and issues of intellectual property remain at their present level of confusion, colleges and universities will be reluctant to invest the time and effort to converting their campuses to digital imagery.

In other words, there is a serious Catch-22 in AMICO's market future. As long as it has no serious digital competitors, it will be at a market disadvantage compared to traditional methods of using images. If it helps break the digital logjam by encouraging alternative sources, however, it may well find itself in a crowded marketplace with a lower priority for users than sources that more directly cater to their needs and wishes.

In the short term, then, AMICO faces two alternative directions in its marketing plan:

- It can continue developing along its present direction, adding new member museums from North America, adding large numbers of digitized images from their collections to the Library, and leaving to others the task of providing the "text canon" images art historians, in particular, are looking for. This course suggests that, down the road, AMICO will occupy a specialized niche in a range of electronically distributed digital art image sources, much as, say, RILA now occupies a niche in a range of electronically distributed bibliographic databases.
- It can move in the direction of becoming the hoped-for Holy Grail of digitized art images: a one-stop, low-cost, headache-free on-line slide library. This choice implies expanding AMICO's membership base to include European museums (or at least licensing key images from them), placing a lower priority on acquiring further North American members, and adding relatively fewer images in a much more directed way. This will help AMICO in the market and forestall potential competitors, but at the cost of blurring its original mandate and abandoning a clearly defined market niche.

4. How much can and should the Library content be defined by market forces and how much can and should it be defined by AMICO's institutional members?

To some extent, this question is easily answered: as long as the largest part of AMICO's funding comes from its institutional users, it must be more responsive to the wishes of those users than to those of its institutional members. To do otherwise is to risk economic extinction.

Despite the harsh capitalist choices outlined above, however, there are steps AMICO can take to move in a more market-oriented direction while keeping its original mandates in the foreground and positioning itself in an emerging digital marketplace. Ordered priorities for such an approach might include an agenda such as the following:

- Reviewing works belonging to AMICO members illustrated in standard text canons and making sure that images of these works are included in the AMICO Library. As explained above, such a project would likely involve a comparatively small number of the works annually added to the Library, but could significantly improve its image with academic users.
- Recruiting as members or creating special licensing arrangements with museums that hold large numbers of text-canon images so that those images can be added to the Library. This step needs to be carefully managed so as not to create conflicts with present AMICO members.
- Creating systems to regularly review the contents of the AMICO Library, becoming pro-active in acquiring images to fill gaps and meet user needs.
- Licensing and commissioning photographs of art works and monuments not in museum settings so they can be added to the Library as well.

All such options need to be assessed for cost-effectiveness as well as for their marketing potentials. An apparent constant in the field of digitized art images seems to be under-estimating the cost of acquiring images while over-estimating the potential income to be derived from them.

One thing AMICO seems to have learned, however, is that large-scale licensing arrangements, such as the contract negotiated with ARS[6], are potentially far more cost-effective than piece-meal arrangements (such as those used by Corbis) or avoiding licensing arrangements altogether (as in the approach used by AIC)[7]. AMICO should thus keep an open mind about licensing images from outside its membership. AMICO's greatest potential, however, is in its ability to expand the accessible range of art images beyond the limited and

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[6] Details of AMICO's contract with the Artists Rights Society (ARS) for licensing rights managed by ARS were presented at the 1999 AMICO User's meeting.

[7] The Academic Image Cooperative (AIC) has launched a pilot project aimed very directly at concerns and market interests of academic art historians. Aimed in part at perceived limitations in the AMICO Library, AIC has sought to acquire copyright-free images, very directly related to text canons in use by art historians, and selected with the active involvement of academic users. Although the appeal of unrestricted art images is very high among academic art historians, AIC's image acquisition costs actually seem to be quite high. Conversations with AIC's executive director suggest that per-image costs during the pilot year were in excess of $300. This is presumably much higher than AMICO's per-image costs and suggests that directly licensing such images, especially on the broad-based scale of the ARS agreement, may be a much more cost-effective approach.

self-perpetuating number implied by the text-canons by creating a wide-ranging Library not restricted in scope by temporary marketing concerns.

5. What sorts of marketing research should AMICO be conducting on a regular basis?

AMICO needs to be in regular contact with its current and potential users for simple public relations reasons as well as to gather marketing information for the future development of the AMICO Library. The more AMICO talks to users, the more comfortable users are likely to feel with AMICO's practices and priorities and the more familiar they are likely to become with what AMICO can and cannot provide.

In further developing the Library content, AMICO could use regularly updated information on the following:

- The sources academic art historians use for art images and what specific images they most need for teaching.
- The texts currently most in use in teaching art history in American colleges and universities and attitudes towards them.
- Attitudes towards intellectual property and licensing issues among academics and academic administrators.
- Attitudes toward and skill levels among academics in computer and network related areas.
- Current state of technological infrastructures on American campuses, especially on the classroom level.
- Current state of IT structure and support on American campuses.
- Current fashions in and potential future directions of both art history and the emerging field of "visual studies."

Clearly, AMICO's ability to gather information in these areas will be limited by its financial resources and AMICO will need to choose its methods carefully for their cost-effectiveness. AMICO will also need to be sensitive to academics traditional aversion to marketing methodologies, questionnaires, and other elements associated with the commercial world.

X. Tables and Charts

Table 1: Comparison of the AMICO Library to the Illustrations in a Major Western Art Survey (Janson)

- a. **Prehistoric and Ancient**
- b. **Middle Ages**
- c. **Renaissance**
- d. **Baroque and Rococo**
- e. **Modern**

Table II: 20th Century Survey

Table III: Artists and Schools Survey (Velásquez, Picasso, Smith)

Table IIIa and b: Artists and Schools Survey Rembrandt (Slive)

Table IVa: Non-Western Art Survey: Chinese Part 1

Table IVa: Non-Western Art Survey: Chinese Part 2

Table IVb: Non-Western Art Survey: Islamic

Table Ia: **Western Art Survey: Prehistoric and Ancient**	**"Prehistoric Art" (Janson Pt. 1, Ch. 1)** Works of art illustrated (16)	**"Egyptian Art" (Janson Pt. 1, Ch. 2)** Works of art illustrated (25)	**"Ancient Near Eastern" (Janson Pt. 1, Ch. 3)** Works of art illustrated (31)	**"Aegean Art" (Janson Pt. 1, Ch. 4)** Works of art illustrated (16)	**"Greek Art" (Janson Pt. 1, Ch. 5)** Works of art illustrated (67)	**"Etruscan Art" (Janson Pt. 1, Ch. 6)** Works of art illustrated (12)	**"Roman Art" (Janson Pt. 1 Ch. 7)** Works of art illustrated (44)
Works in Janson	16	25	31	16	67	12	44
Works outside of museum collections	11 (69%)	12 (48%)	8 (26%)	3 (19%)	10 (15%)	3 (25%)	21 (48%)
Works in museums outside North America	5 (31%)	10 (40%)	19 (61%)	13 (81%)	54 (81%)	9 (75%)	20 (45%)
Works in non-AMICO Museums in North America	0	0	4 (13%)	0	0	0	0
Works in AMICO Member Museums	0	3 (12%)	0	0	3 (4%)	0	3 (7%)
Works in AMICO Library	0	2 (8%)	0	0	0	0	0
Works in general period in AMICO Library (see discussion)	NA	391	NA	NA	344	18	137

Table Ib: Western Art Survey: Middle Ages	"Early Christian Art" (Janson Pt. 2, Ch. 1) Works of art illustrated (39)	"Early Medieval Art" (Janson Pt. 2, Ch. 2) Works of art illustrated (22)	"Romanesque Art (Janson Pt. 2, Ch. 3) Works of Art illustrated (34)	"Gothic Art" (Janson Pt. 2, Ch. 4) Works of art illustrated (74)
Works in Janson	39	22	34	74
Works outside museum collections	24 (62%)	15 (68%)	30 (88%)	53 (72%)
Works in museums outside North America	13 (33%)	6 (27%)	4 (12%)	17 (23%)
Works in non-AMICO Museums in North America	1 (3%)	1 (5%)	0	0
Works in AMICO Member Museums	1 (3%)	0	0	4 (5%)
Works in AMICO Library	0	0	0	2 (3%)
Works in general period in AMICO Library (see discussion)	NA	NA	NA	NA

Table Ic: Western Art Survey: Renaissance	"Early Renaissance in Italy" (Janson Pt. 3, Ch. 1) Works of art illustrated (51)	"High Renaissance in Italy" (Janson Pt. 3, Ch. 2) Works of art illustrated (35)	"Mannerism and Other Trends" (Janson Pt. 3, Ch. 3) Works of art illustrated (32)	"Late Gothic" (Janson Pt. 3, Ch. 4) Works of art illustrated (22)	"Renaissance in the North" (Janson Pt. 3, Ch. 5) Works of art illustrated (27)
Works in Janson	51	35	32	22	27
Works outside museum collections	29 (57%)	19 (54%)	19 (59%)	4 (18%)	4 (15%)
Works in museums outside North America	19 (37%)	16 (46%)	9 (28%)	14 (64%)	19 (70%)
Works in non-AMICO Museums in North America	0	0	1 (3%)	0	0
Works in AMICO Member Museums	3 (6%)	0	3 (9%)	4 (18%)	4 (15%)
Works in AMICO Library	2 (4%)	0	1 (3%)	0	4 (15%)
Works by named artists in AMICO Library (see discussion)	28 [50%]	19 [67%]	74 [75%]	27 [58%]	323 [67%]

Table Id: **Western Art Survey:** **Baroque and Rococo**	**"Baroque in Italy and Spain" (Janson Pt. 3, Ch. 6)** Works of art illustrated (31)	**"Baroque in Flanders and Holland" (Janson Pt. 3, Ch. 7)** Works of art illustrated (28)	**"Baroque in France and England" (Janson Pt. 3, Ch. 8)** Works of art illustrated (19)	**"Rococo" (Janson Pt. 3, Ch. 9)** Works of art illustrated (25)
Works in Janson	31	28	19	25
Works outside museum collections	18 (58%)	1 (4%)	9 (47%)	9 (36%)
Works in museums outside North America	8 (26%)	17 (61%)	6 (32%)	10 (40%)
Works in non-AMICO Museums in North America	3 (10%)	5 (18%)	3 (16%)	1 (4%)
Works in AMICO Member Museums	2 (6%)	5 (18%)	1 (5%)	5 (20%)
Works in AMICO Library	1 (3%)	2 (7%)	0	0
Works by named artists in AMICO Library (see discussion)	119 [75%]	394 [82%]	550 [50%]	397 [70%]

Table Ie: Western Art Survey: Modern	"Neoclassicism and Romanticism" (Janson Pt. 4, Ch. 1) Works of art illustrated (81)	"Realism and Impressionism" (Janson Pt. 4, Ch. 2) Works of art illustrated (36)	"Post-Impressionism, Symbolism" (Janson Pt. 4, Ch. 3) Works of art illustrated (48)	"20th-Century Painting" (Janson Pt. 4, Ch. 4) Works of art illustrated (89)	"20th-Century Sculpture (Janson Pt. 4, Ch. 5) Works of art illustrated (47)	"20th-Century Architecture" (Janson Pt. 4, Ch. 6) Works of art illustrated (32)	"20th-Century Photography (Janson Pt. 4, Ch. 7) Works of art illustrated (33)	"Postmodernism" (Jason Pt. 4, Ch. 8) Works of art illustrated (19)
Works in Janson	81	36	48	89	47	32	33	19
Works outside museum collections	27 (33%)	5 (14%)	20 (42%)	21 (24%)	17 (36%)	31 (97%)	18 (55%)	17 (89%)
Works in museums outside North America	35 (43%)	17 (47%)	14 (29%)	18 (20%)	6 (13%)	0	1 (3%)	2 (11%)
Works in non-AMICO Museums in North America	2 (2%)	6 (17%)	5 (10%)	30 (34%)	17 (36%)	0	8 (24%)	0
Works in AMICO Member Museums	17 (21%)	7 (19%)	9 (19%)	20 (23%)	7 (15%)	1 (3%)	6 (17%)	0
Works in AMICO Library	9 (11%)	2 (6%)	3 (6%)	4 (4%)	3 (6%)	0	3 (9%)	0
Works by named artists in AMICO Library	1283 [62%]	839 [76%]	540 [89%]	447 [92%]	750 [74%]	7 [26%]	644 [75%]	31 [39%]

Table II: 20th Century Survey works of art illustrated in:	The 20th Century Art Book (Phaidon) Total works and artists illustrated: 500
Works not credited to a collection	10 (2%)
Works in non-museum collections and locations	304 (61%)
Works in museums outside N. America	115 (23%)
Works in non-AMICO Museums in N. America	29 (6%)
Works in AMICO Member Museums	42 (8%)
Total works by artist/period in AMICO Library	3131
Artists in AMICO Library	316 [63%]
Works in AMICO Library not credited in text	5 (1%)
Works in AMICO Library credited in text	0

Table III Artists and Schools Survey	Velázquez (López-Rey)	Pablo Picasso (Rubin/MoMA)	David Smith (Wilkin)
Total in source	120	740	112
Non-museum locations	20 (15%)	260 (35%)	67 (60%)
Museums outside North America	94 (72%)	320 (43%)	4 (4%)
Non-AMICO Museums in N.Am.	6 (5%)	117 (16%)	25 (22%)
AMICO Member Museums	10 (8%)	43 (6%)	16 (14%)
AMICO Library	3 (3%)	6 (1%)	3 (3%)
Artist/period in AMICO Library	4 (NA)	81	9

Table IIIa: Artists and Schools Survey Rembrandt (Slive)	1625 - 1631	1632-1639	1640-1647	1648-1669	Rembrandt (Slive)
Total in source	7	12	12	28	59
Non-museum locations	1	2	3	3	9 (15%)
Museums outside North America	6	10	8	21	45 (76%)
Non-AMICO Museums in North America	0	0	0	0	0
AMICO Member Museums	0	0	1	4	5 (9%)
AMICO Library	0	0	0	0	0
Artist/period in AMICO Library	26	76	46	114	262

Table IIIb: Artists and Schools Survey Rembrandt Pupils and Followers (Slive)	Rembrandt Pupils & Followers (Slive)	Unidentified	Jan Lievens	Gerrit Dou	Rembrandt van Rijn	Govert Flinck	Ferdinand Bol	Carel Fabritius	Samuel van Hoogstraaten	Gerbrandt van den Eeckhout	Nicolas Maes	Barent Fabritius	Willem Drost	Jacobus Leveck	Constantijn Daniel van Renesse	Arent De Gelder
Total in source 14 artists	33 works	3	3	2	1	4	3	2	2	1	3	1	2	1	1	4
Non-museum locations	2 (6%)	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
Museums outside North America	28 (85%)	3	2	2	0	3	2	2	2	0	3	1	2	1	1	4
Non-AMICO Museums in North America	1 (3%)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
AMICO Member Museums	2 6%)	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
AMICO Library	1 3%)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Artist/period in AMICO Library	16 (69%)	NA	3	1	NA	0	4	1	0	0	1	1	1	0	1	3

Table IVa: Non-Western Art Survey: Chinese, Part 1	"Pre-Shang Periods" (Sullivan Ch. 1) Works of art illustrated (9)	"Shang Dynasty" (Sullivan Ch. 2) Works of art illustrated (23)	"Zhou Dynasty" (Sullivan Ch. 3) Works of art illustrated (6)	"Warring States Period" (Sullivan Ch. 4) Works of art illustrated (24)	"Qin and Han Dynasties" (Sullivan Ch. 5) Works of art illustrated (35)	"3 Kingdoms, 3 Dynasties Period" (Sullivan Ch. 6) Works of art illustrated (33)
Works in AMICO Member Museums	0	1 (4%)	2 (33%)	5 (21%)	3 (9%)	2 (6%)
Works in AMICO Library	0 (?)	0 (?)	0 (?)	0 (?)	0 (?)	0 (?)
Works by named period in AMICO Library	NA	NA	NA	NA	NA	NA
Works in non-AMICO Museums in North America	0	4 (17%)	2 (33%)	8 (33%)	2 (6%)	6 (18%)
Works in non-museum collections and locations	4 (44%)	12 (52%)	1 (17%)	6 (25%)	19 (54%)	17 (52%)
Works in museums outside North America	5 (56%)	6 (26%)	1 (17%)	5 (21%)	11 (31%)	8 (24%)

Table IVa: Non-Western Art Survey: Chinese, Part 2	"Sui and Tang Dynasties" (Sullivan Ch. 7) Works of art illustrated (37)	"Five Dynasties, Song Dynasty" (Sullivan Ch. 8) Works of art illustrated (43)	"Yuan Dynasty" (Sullivan Ch. 9) Works of art illustrated (21)	"Ming Dynasty" (Sullivan Ch. 10) Works of art illustrated (42)	"Qing Dynasty" (Sullivan Ch. 11) Works of art illustrated (38)	"20th Century" (Sullivan Ch. 12) Works of art illustrated (31)
Works in AMICO Member Museums	4 (11%)	7 (16%)	1 (5%)	3 (7%)	1 (3%)	0
Works in AMICO Library	1 (?)	0 (?)	0 (?)	1 (?) (2%)	0	0
Works by named period in AMICO Library	NA	NA	NA	NA	NA	NA
Works in non-AMICO Museums in North America	3 (8%)	2 (5%)	0	8 (19%)	5 (13%)	1 (3%)
Works in non-museum collections and locations	22 (59%)	10 (23%)	7 (33%)	13 (31%)	13 (34%)	26 (84%)
Works in museums outside North America	8 (22%)	24 (56%)	13 (62%)	18 (43%)	19 (50%)	4 (13%)

Table IVb: Non-Western Art Survey: Islamic	"Iran under Safavids and Zands" (Blair and Bloom Ch. 12) Works of art illustrated (37)	"India under the Mughals" (Blair and Bloom Ch. 19) Works of art illustrated (43)
Works outside museum collections	4 (19%)	9 (43%)
Works in museums outside North America	8 (38%)	5 (24%)
Works in non-AMICO Museums in North America	3 (14%)	4 (19%)
Works in AMICO Member Museums	6 (29%)	3 (14%)
Works in AMICO Library	1 (?) (5%)	1 (?) (5%)
Works by named period in AMICO Library	72 (?)	41 (?)