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The Slide: Image and Object

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SLIDE: IMAGE AND OBJECT - MORRIS

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by

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B.A., Art, Hope College, 1986

THESIS

Submitted in Partial Fulfillment of the
Requirements for the Degree of
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ABSTRACT OF THESIS

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Abstract

Through an extensive review of the literature of the history and methodology of art history and visual resources, this thesis charts the effect of the use of slides for the discipline of art history.

The three chapters examine the conjunction between slides and art history. Chapter one gives an account of the pedagogical and practical reasons for the current predominance of the slide as the reproduction of choice in art history, concluding with a discussion of the relative importance of the text and image for art history. The second chapter briefly traces the evolution of magic lantern to 35mm format for slides and projectors. Consideration will be given to the slide as an object itself, including those aspects which are unique to the slide, as well as qualities it shares with photography in general. The final chapter considers the question of the nature of the relationship between the reproduction and original. After a discussion of the variety of words used in place of "reproduction," I will note how the most appropriate choices for art history are those terms which imply replacement.

This study concludes that the use of the slide has created a paradox in art history. Use of the photographic reproduction may be seen to heighten the awareness of the original, especially when the user or viewer is aware of the slide as an object with peculiar properties itself, and not just as a "neutral" tool or visual referent. Yet, by loosening the absolute hold of the original as the sole appropriate subject of study, art history has become a highly theoretical discipline, with a literary tradition, rather than restricting itself to critical commentary on objects and their creators.

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INTRODUCTION

The representation projected from a photographic slide is one which has been called an image without substance. The luminous object appearing on the lecture room wall is indeed composed of light rather than physical matter, and its substance is provided at least in part through the accompanying lecture. None the less, the slide and its projected image have contributed substantially to the discipline of art history. This is an examination of that contribution, and of that object and image with little substance, the slide.

The photographic slide, as it is currently used in the discipline of art history is both an image, of that which is pictured in the slide, and an object in its own right. The former is a well accepted point, for this representation -- the presentation of the particular art work, or object, usually for discussion or comparison -- is the reason slides are used by art historians. The slide, though, is also an object, a physical entity in the photographic medium with a characteristic size, shape and transparency which allows luminosity when projected. Not only this, but an additional object is created with use of the slide, a projected image. This is not to say that it is a work of art, or an art object itself; but none the less, it is an item with its own particular media characteristics, and an aesthetic that will affect the presentation of the object represented in the slide. A slide may be well made, but its usefulness resides in its projection, rather than in the fact that

the information packed image originates from such a compact, portable, storable object. The slide is a physical object, but its importance rests with the object in the image it presents to the viewer.

The slide has been called ubiquitous in art history, and it is certainly, along with the art history text from which if frequently derives, the prime teaching tool. And in order to accommodate its use, an extensive support organization of slide libraries, or visual resource collections has evolved. Slide libraries have often originated as personal collections grown too large for personal use. Institutional collections have been traced back to the 1880s, located with and reflecting organizational patterns of supervising institutions such as museums, archives, and colleges and universities. Traditionally a hierarchical arrangement of media, nationality, time period and individuals has dictated the locating of individual slides within a collection. Awareness of this classifying scheme facilitates access to slides, and it is assumed the user knows its general heirarchy, if not its minutiae. In this way, slide use and collections are said to perpetuate a canon of objects in art history.

Though the original work of art, its creator(s) and the circumstances of its creation are the focus of art history, the photographic slide is an integral aspect of the practice of art history. The present study examines the nature of the relationship between an original work of art and reproduction with respect to the academic discipline. In researching the topic of art history and slides, one will often find comments such as "Without photography, there would be no art history" -- with little or no additional discussion or substantiation. This paper is an attempt to gather currently available information which does address this topic, as well as extrapolate from appropriate material which addresses

similar issues, to examine in a more substantive manner and method just what is characteristic and unique about the relationship of slides and art history.

Discussion will encompass the more general fields of photography and reproduction, as the slide is an intersection and subset of each, and practically speaking, research material devoted exclusively to the slide, particularly regarding its association with art history, is rare. An extensive review of the literature of the history and methodology of art history and visual resource collections, and including some aspects of the history of projection and cinema as well as educational technology have informed the structure and content of this project. Although how slides are used is a portion of this study, the focus is on what their use has enabled, and how their use has affected the development of the discipline.

The three chapters examine the conjunction between slides and art history. Chapter one examines the start of the discipline of art history, which coincides with the invention of photography. Art history becomes a systematic, formal discipline when many of the procedures of scientific examination are used as models, particularly the demonstration lecture. For art history, the demonstration lecture would include visual examples, frequently reproductions rather than originals. An account of the pedagogical and practical reasons for the current predominance of the slide as the reproduction of choice in art history is traced, concluding with a discussion of the relative importance of the text and image for art history.

The second chapter briefly traces the evolution of magic lantern to 35mm format for slides and projectors. Particular focus is given the unique qualities of the projected slide; the debates surrounding the transitions between lantern and 35mm slides, and

almost concurrently, color and black and white slides. Consideration will be given the slide as an object itself, including those aspects which are unique to the slide, as well as qualities shared with photography in general.

The final chapter considers the question of the nature of the relationship between the reproduction and original. The slide is the reproduction of choice for art history, even though it is does not present an objective view of the original. This discussion includes considered responses to four well known writings on photography, photographic reproduction and works of art. The lack of 'artistry" of the photographic reproduction introduces discussion of Barthes' essay, "The Photographic Message," and whether the connoted and denoted messages are apparent or separable. William Ivins' Prints and Visual Communication is also examined, for his thoughts on visual expression and communication, rather than his now discredited ideas of photography's lack of syntax. Andre Malraux's "Museum without Walls" is briefly considered with regard to the photograph's effect on the value of the original. Finally, Walter Benjamin's "The Work of Art in the Age of Mechanical Reproduction" is considered for the slide's participation as a photographic reproduction in the destruction of the aura of the original. Other authors have written that the slide serves only as a visual referent to the original, and after a discussion of the variety of words used in place of "reproduction", it will be argued that the most appropriate choices for art history are those terms which imply replacement.

In this discussion of the relationship between slides and art history, there will not be an attempt to over-inflate the importance of the slide; the slide is of secondary importance to the primacy of the discipline and the original object. Art history was not "invented" because of the slide, but, without the slide, art history would not be what it is

today. The slide is a tool, primarily an instruction aide, but occasionally also helpful for initial research. But because of the prevalence of use of the slide, it has had a measurable impact on the formation, development and evolution of the discipline. This role has been largely unacknowledged, and will be the focus of the current examination of art history. The slide is not just a surrogate for the absent original, but a participant in the discipline; it has a physical presence of its own, evident in access and instruction issues, and an attendant aesthetic. There is in addition the theoretical significance of the use of surrogates which has also been largely undiscussed.

This leads to the conclusion that the slide has allowed art history a paradoxical effect. Use of the photographic reproduction may be seen to heighten the awareness of the original, especially when the user or viewer is aware of the slide as an object, and not just as a tool or visual referent. Yet, by loosening the absolute hold of the original as the sole appropriate subject of study, art history has become a highly theoretical discipline, with a literary tradition rather than restricting itself to critical commentary on objects and their creators.

There is the additional irony that a major tenant of the discipline of art history is study of the original object, yet the teaching of art history is so involved and dependent on the surrogate -- the slide. On the one hand, this has had the effect of broadening the base and increasing the accessibility of art history -- a democratization of access so to speak. Still, there remain obstacles to access in terms of study of the original object.

CHAPTER I

ART HISTORY AND THE SLIDE LECTURE

> In the darkened room, the tall figure of the professor appeared as a black silhouette. He stood next to the slide machine in the back of his auditorium, very calm.... Haltingly and tersely the words came from his mouth, stimulated by the picture which appeared on the screen and elucidating its significance with an uncanny accuracy. How splendidly selected were his examples! Most of them contrasting types. The way in which he compared them was a revelation to all of us. Each lecture was a new adventure in "seeing." [1]

The professor professing in a darkened room, enraptured students "seeing" art objects with a new understanding and clarity because of the supremely chosen visual examples and precisely coordinated verbal description (unless they have been put to sleep by the same darkened room and ineffectual image and text combination) -- this is the characteristic image of art history instruction. Certainly, students do visit and discuss original objects in museum and gallery settings. Also, time is spent researching in libraries and archives, and in solitude while writing and in contemplation of ideas and works present in fact or by reproduction; but while art historic activities, they are not the typical learning activity of students. How the slide lecture has come to be so strongly associated with art history will be the focus of the current discussion[2].

Although its origins are frequently traced to Giorgio Vasari's The Lives of the Most Eminent Painters, and earlier individuals and writers are occasionally cited, art history as we now know and practice it dates from the later half of the nineteenth century.[3] Still, there are numerous reasons to begin the current examination of art history a century earlier, specifically, with Johann Joachim Winckelmann, another of the esteemed founding fathers of art history. Panofsky cites Winckelmann's The History of Art in Antiquity, (Geschichte der Kunst des Alterums, 1764), as "The first book to flaunt the phrase 'history of art' on its title page..."[4] In this book, Winckelmann states as his goal, a systematic examination of art with broader implications for Greek culture at large. Specifically, "The history of ancient art which I have undertaken to write is not a mere chronicle of epochs and of the changes which occurred within them. I use the term history in the more extended signification which it has in the Greek language; and it is my intention to attempt to make the subject systematically intelligible."[5] With his examination of the Laocoon, Winckelmann makes just such analytic leaps from the study of the object to judgments about the character (noble simplicity and quiet grandeur) of ancient Greek life and culture. This systematic approach, the attempt to define and create a structure or model for the study of art objects may be found throughout nineteenth century academic studies. And whether or not we agree that Winckelmann was the first 'modern' art historian, his methodology has been a prime example for succeeding generations.[6]

From the end of the eighteenth through the nineteenth century, systematic analysis seems to have been the modus operandi for any number of art historians. Often, scientific methodologies were specific models for art historical practice. Michael Ann Holly

proposes the 1880s as the start of modern art history. By using as her marking point the establishing of "systematic principles of art historical investigation" she names Morelli, Reigl, Wolfflin and Warburg as founders of the discipline. Writings of these men as well as a few others set the precedent and protocol for work over the course of the last century which "have witnessed apparent solutions to many art historical problems. Periods, provenances, and patrons have been labeled, the oeuvres of famed artists sorted out, questions of style and content periodically answered. The categories of art historical thought appear to have been established."[7] From this foundation, art history, by implication has continued to develop.

In an article, "The Question of Art History", Donald Preziosi examines an aspect of early art historical methodology. He states, quite plainly, the thesis of his discussion is "simply an attempt to delineate some of the principal characteristics of the discipline as an evidentiary institution in the light of the material conditions of academic practice that arose in the latter half of the nineteenth century in relation to the history of museological display. In brief, this essay is concerned with the circumstances of art history's foundations as a systematic and 'scientific' practice, and its focus is limited to a single, albeit paradigmatic, American example."[8] Preziosi's paradigmatic example is the Fogg Museum at Harvard. He describes the intended original set up for the Fogg Museum containing classrooms, a library, archive and exhibition space. Except for the library with its textual focus, each of the listed activity areas were designed to make use of reproductions, lantern slide projection in the classrooms, slides and photographs in the archive and photographs, plaster casts and architectural models in the exhibition space.[9] Preziosi describes the Fogg Museum's purpose to be:

> ...a laboratory for study, demonstration, teaching, and for training in the material circumstances of artistic production. It was intended to be a scientific establishment devoted to the comparison and analysis of works of art of (potentially) all periods and places, to the estimation of their relative work, and to an understanding of their evidential value with respect to the history and progressive evolution of different nations and ethnic groups.[10]

He then proceeds with his historical examination of the institution and its influence on the practice of the discipline of art history.

Sybil Kantor has also examined the Fogg Museum, including especially what has come to be called the Fogg method. Continuing the discussion of parallels between art history, or art historical pursuit and scientific pursuit, she writes:

> Fairly consistently, the science of art history is described as empiricism, a demonstrable 'fact' of informed looking at art objects. The Fogg method is evidence of this. The line between [Charles Eliot] Norton [, influential instructor of History of Fine Arts,] and succeeding generations remained unbroken. His legacy included the preference for employing the principles of design as a basis for aesthetic judgments. This connoisseurship, although it started with Norton's transcendental morality and excessively personal responses to art, and with Berenson's aestheticism, became more rational, more scientifically inclined, and more object-oriented with the advent of the second generation of professors. The 'good-taste' of the genteel tradition had given way to a connoisseur's empiricism -- a formalist strategy that would become known as the 'Fogg method.'[11]

Furthermore, the Fogg method is defined as "The insistence on studying the technical basis of the arts, as well as the fundamental principles of design, [which] opened the way for an aesthetic structured on the analysis of formal elements of the visual arts...."[12]

The Fogg method and its conscious modeling on scientific methods and inquiry are typical of late nineteenth and early twentieth century art historical practice. There were numerous attempts to ally art history with the rigors of science and scientific methods. David Van Zanten writes of Princeton that the scientific approach in higher

education was advocated for promoting professionalism and forming research scholars. Specifically, the science of art history was acknowledged in this way; "The Study of art history on the graduate level, introduced in America around 1900, claimed to be a uniquely scientific form of higher humanistic scholarship because of its precise techniques for reading mute cultural remains....with the essentially archaeological method of making physical objects yield up their meaning to dispassionate scientific examination."[13] The methodical examination and study of art objects is an activity repeatedly advocated in a variety of academic situations.

Thus far, this discussion has focused on the general patterning of art historical practice on the scientific method or inquiry. It is possible, however, to name the scientific demonstration lecture as a particular practice adopted by art history. The precise nature of any parallel between the disciplines, or modeling of the younger upon the more established may be pursued elsewhere. What is of value here is Trevor Fawcett's point that "The medical and scientific demonstration lecture offered a pedagogic model quite different from the older literary (ultimately rhetorical) precedents followed by Reynolds."[14]

This discussion of science is intended to set the precedent for use of visuals in art history. Trevor Fawcett describes the scientific demonstration lecture upon which art history increasingly modeled itself:

> What is especially to the point here though is the now decidedly empirical or evidential nature of lecturing. The science lecture with its experiments, demonstrations, and display of natural specimens and mechanical artefacs, had become the paradigm. Almost whatever the subject of the lecture it was now necessary to adduce evidence, quote instances, provide sources, show examples. If the illustrations could be visual, so much the better....

> Lectures on less physical subjects were also particularised and illustrated whenever possible: history and archaeology by surviving relics and artefacs; music by examples sung or played at the keyboard; and literature by extensive quotation and reciting of passages from the authors discussed. It is against this background that nineteenth-century art lectures should be assessed.[15]

The art and art history demonstration lecture would need a visual of some sort; and when the original art objects were not available themselves or when their display would be inappropriate, the need for surrogates arises. Helene Roberts writes of the usefulness of the demonstration, in a broader context than the lecture; but makes the further point that this activity was not reliably possible until photography was available.

> Although an art history that placed works of art in an historical continuum, relating them to stylistic evolution, and recording anecdotes of their making, had existed before photography -- Pliny, Vasari, Winckelmann, and others, are certainly art historians in this sense -- the rigor of a discipline which contained a body of knowledge that could be systematized, documented, and taught, could not be achieved before comprehensive sustained study of a large number of works of are was possible. And this had to wait until the invention of photography.[16]

As Roberts indicates, after the photographic recording of works of art was a possibility, art history could be a subject of study, practically pursued and demonstrated. William Ivins writes, "The photograph in its way did as much for the study of art as the microscope had done for the study of biology."[17]

Although it may be possible to link the start of art history with particular individuals or publications -- Vasari, Winckelmann, or others -- it may also be useful to locate as a starting point a year, such as 1873, the year the first international art historical conference was convened. This particular date falls within the range of dates relating to other proposed start dates in the later half of the nineteenth century. This time period also

coincides with the continued popularization of photography. Not only were roll film and snapshot cameras (1875-89) available to a wide range of the public, but, what might be called photographic products were also more available. Photographic prints could be purchased as vacation mementos. Also dating from this period are photographic entertainments, the praxinascope (1877), and especially relevant to the current discussion, magic lantern and lantern slide presentations that were increasingly available for home and public performance.

The use of lantern slides in art history has been reported by Howard Leighton in a 1984 article, "The Lantern Slide and Art History".[18] General use of the magic lantern and lantern slides is discussed by a number of authors. Olive Cook in Movement in Two Dimensions, provides an extensive discussion of all aspects of their history and use. Elizabeth Shepherd's article "The Magic Lantern Slide " covers a history of general educational use of lantern slides. There are also several modern reprints of late nineteenth and early twentieth original material. The most extensive sources of early lantern slide, or magic lantern, use are in British sources; indeed, the most active modern and renewed interest seems still to be in England.[19]

The slides and lanterns or projectors will be discussed in the next chapter. The evolution of their use is of interest to the current discussion, though. The first painted glass slides were used in early lantern projectors in the seventeenth century. As the common name, magic lantern implies, illusion was an important aspect of the entertaining experience. Soon after its introduction, it was not enough just to project an image. Improvements to the projection apparatus and quality of the image were demanded which drove innovation. The appeal of magic lantern entertainments ranged

from movement between sides to amazing slide images themselves; that is movement between and within slides' (a slide's) projected image -- the monkey pulling off an old woman's wig to painted depictions of famous geographical locations. This later type of image was given a boost by the availability of photographic processes by the 1850s, or practically speaking, from the late 1880s. Frequently, either producing lantern slides, or acquiring a lantern projector and hiring oneself and equipment out were recommended as practical ways for photographers to support themselves.[20] Once photographic slides were available, that is when slide sets of scripted stories were photographically recorded, their use expanded to include educational settings. Sunday schools were among the first to use the lantern slide sets with morality tales. Although there was early resistance from ministers, "who viewed the 'magic' lantern as a worldly amusement rather than a valid instruction device," lantern slides were eventually permitted in Sunday evening services; either simply to project the words from a hymn, or more extensively to present a morality lesson.[21] From the 1860s through 1900, temperance societies were among the most frequent presenters of lantern entertainments, frequently using staged, photographic slides.[22]

In addition to public entertainments, lantern slides and the magic lantern were marketed as educational tools, for the home as well as the upper levels of educational institutions. Articles for a popular audience were written about the magic lantern, even a periodical called "The Magic Lantern", was published beginning in 1874 in Philadelphia by Bennerman and Wilson Lantern Slide Company to promote the lantern slide business.[23] These print outlets praised the device, described practical and educational opportunities for its use, and offered instructive slide sets. Walter Woodbury wrote "a

series of articles describing optical experiments which could be performed at home with lantern slides. Scientists and physicians such as J.I. Woodward and Dr. Isaac Rhen (professor of Toxicology and Chemistry at Pennsylvania Medical University) produced sets of anatomical or microscopic slides for instructional purposes...and he exhibited slides of microscopic subjects at the Franklin Institute in 1856."[24]

Use of slides by the scientific and medical community is also described by others. Howard Leighton records 1851 as the year of the first presentation of photographic lantern slides in a public institution for educational purposes, Dr. Thomas Story Kirkbride, Superintendent of the psychiatry branch of the Pennsylvania Hospital for the Insane, was among the first to use these newly developed photographic slides. Dr. Kirkbride gained an international reputation as an advocate of treating the mentally ill humanely. In this pursuit, he had been presenting nightly lectures for his patients since 1844, illustrating them with expensive, hand-drawn slides. He "was quick to see the advantage of the cheaper yet more accurate and detailed photographic slides."[25] Thus, wrote M.A.Root, a 19th century historian of the magic lantern, "Dr. Kirkbride was the first man to introduce and use photographic slide in the magic lantern, in a public institution for amusement and instruction."[26] Irregular use of lantern slides may be documented in the 1880s, but regular use was not made until the next decade, the1890s, when the electric stereopticon was available for use at all levels of education.[27]

By this time, visual aids had already been used in art or art history lectures for nearly a century. In the period 1770-1790s, Fawcett cites Thomas Sandby, as among the first lecturers on art at the Royal Academy, to use visual material, in this case, "carefully executed drawings."[28] Early in the next century, besides drawn visual aids, John Soane

made available his personal collection of plaster casts, fragments, books and prints for study at his house. "These were deliberately arranged so that students could have free access since there was no substitute, he believed, for visual experience."[29] Also at the Royal Academy, Turner used visual materials. Fawcett describes "The contrast between his indistinct rambling delivery and the accompanying feast of visual examples..." [30]

While Reynolds, in the late eighteenth century might have avoided the use of reproductions because they not only were unnecessary for his literary or rhetorical lecture style, but also because the selection, quality and scale, along with lecture location set up were unfavorable. Though the value of reproductions was debated, the usefulness of an illustration as a starting point for discussion, or as a way to ensure a common visual idea, and to document a "fact" was seen as a great benefit:

> Illustrating a lecture made a fundamental difference. It introduced an alternative message system; one speaking the same direct visual language as art itself, even if in the foreign accent of a reproduction. Intricate counterpoint was now possible between oral statement and observable evidence. Works of art could be examined in all their particularity or used as pegs on which to string some theory of artistic personality or stylistic change or cultural generation. A young artist, reared in a climate of historicism, could be shown the gamut of past solutions to artistic problems. A lay audience might be trained in the art of seeing. Illustrations were positivist facts.
>
> Furthermore the use of visual display helped to focus attention and added a quality of theatre....As soon as a lecture began to refer to illustrations he assumed the role of demonstrator....Recalling Zola's phrase that experiments were a kind of 'provoked observation', all this was not very far removed from the rituals of the contemporary science lecture.[31]

Fawcett re-emphasizes that those reasons for the contemporary use of reproductions are almost a given. If not strictly for instructional purposes, reproductions

have been valued by art historians since before there was such a discipline. As Roberts writes:

> When standing in front of a work of art that one does not own, it is not possible to be sure of seeing that work again tomorrow, or ever again in the future. The impulse to capture some essence, some lasting aspect of the object, is thus often a part of the viewer's experience....The art historian particularly desires to possess an image of the work, an image to study, to analyse, to aid the memory, and to stimulate the imagination. This desire to possess a lasting impression of the work of art has, in the course of history, led to the development of a variety of methods of representing works of art including sketches, copies, facsimiles, replicas, cast, and engravings. These methods, however, were rapidly overwhelmed as reproductive media by the invention of photography.[32]

Reproductions were certainly in use before photography was available, whether in copies from the same material or not, in two or three dimensions. Aside from personal use, graphic prints were probably the most common. And as John Soane did, others used them in instruction. Fawcett has also written an extensive article on the comparative use of graphic and photographic reproductions in nineteenth century art lectures. He writes that prints were initially valued for capturing the essence of an original rather than what was initially called the photograph's mechanical fidelity. This attitude evolved through the 1840s to a new valuing of "truth" to original rather than truth to its spirit or a recollection of it.

> Critical comment suggests that the idea of absolute fidelity to the originals was gradually taking hold. Not only was it no longer tolerable to reverse the image, as prints had frequently done in the past, there should be no tampering, adjusting to suit modern preferences, or prettification of any sort. The ArtUnion of 1846 regretted that the wood engravings after A.W.Callcott's copies of Giotto in the Arena Chapel were 'recollections' rather than attempted facsimiles, and failed to convey 'the peculiarities in execution of the period of the works.' Reviewing W. Ternite's lithographic

> Waldgemalde aus Pompeii und Herculaneum in the same year, the Athenaeum emphasized that what was important was not 'the beauty or captivating qualities of the pictures *per se*' but their accuracy as surrogates....[33]

It was indeed an evolution in thought to accept a photographic reproduction rather than an "essentialized" copy, created or translated by another medium.

> For the total change of medium and the reduction in scale absolutely compelled the copyist to reinterpret. Engraving had a double duty in fact - 'a la fois copier et commenter la peinture' - a task quite beyond the camera, which copied blindly, sacrificing all the poetry of the original in a dear statement of facts.
>
> Perhaps fairer in his appraisal, Philippe Burty in the recently founded Gaxette des Beaux-Arts admitted that photographs fell short in conveying the whole effect of paintings, but did at the minimum capture physiognomies, attitudes, and silhouettes in every minute detail; where as an engraver constantly obtruded his own self, and the more personal the version, the less faithful it was.[34]"

And in the second half of the nineteenth century, fidelity in reproduction was a valued attribute.

As the visual aid "state of the art" came to feature photographic reproduction, we will return to art history in Germany, where art historiography and methodology are quite well documented in the later nineteenth through the early twentieth century. The discussion will examine the truth of Anthony Hamber's statement: "The photographically illustrated art lecture was revolutionised by the adoption of the lantern slide."[35]

The contributions of German scholars to art history and art historical practice are well examined, and with the use of visual aides, this trend continues. The names to note are Bruno Meyer, professor of art history at the Polytechnic Institut in Karlsruhe,

Hermann Grimm, professor of art history at Berlin, and his successor to the chair, Heinrich Wolfflin.

Meyer was one of the first advocates of the use and production of lantern slides. Fawcett writes:

> In the belief that slide lecturing would indeed catch on he advocated the technique at the first art historical congress in 1873 and set up a manufactory to produce *Glasphotogramme* in quantity for sale at two marks apiece. Eventually his catalogue listed some 4,000 slides together with relevant factual data: about 2,000 covering Classical Antiquity, another 1,000 the Middle Ages, and the remainder the Renaissance and later periods - a revealing emphasis but one also reflecting his reliance on subjects in the Prussian museums rather than the photographic archives of firms like Braun and Alinari. Otherwise the scope was commendably wide, extending as far as costume and minor arts and including examples of works photographed from different positions or in close-up detail. For viewing he recommended a Liesegang limelight Sciopticon.[36]

Likewise, Grimm is also among those commonly cited as the first to use lantern slides in the 1880. Later art historians have linked his use of reproductions with Grimm's primary interest in the artist and secondary interest in the work of art. Udo Kultermann writes of Grimm in his history of art history, or history of art history's personalities, "[He] was fascinated by technical advances and was one of the first art historians to use slide projection in his teaching -- proof perhaps of the relative unimportance, or the merely documentary status, that individual works had for him beside the life and 'vital essence' of their creator."[37] In many ways, Grimm's focus does recall Vasari and the artist's biography.

In an extended discussion, Fawcett describes Grimm, his use of slides, and their effect in shaping lecture content.

> The most significant early convert to the electric Sciopticon was Herman Grimm, who then held the chair of art history at Berlin. The extrovert Grimm loved lecturing; at the same time he had long been convinced of the importance of photographic documentation for art history. He quickly realised the potential of giving illustrated lectures to large audiences: the increased income from course fees; the attendance of the general public; the visual impact now possible; the fusion of word and image. No longer would he be frustrated by his inability to show adequate copies of what he was discussing or be reduced to passing reproductions around the audience as he spoke. Prints and photographs usually showed works of art much reduced in scale. The slide lantern was able to project them full-size or enlarge small works and fragments to colossal proportions. In the darkened auditorium, with everyone's attention fixed on the luminous screen, word and picture were perceived simultaneously and became bonded in a quite new manner. Rapidly succeeding ideas and images flowed together in the mind. A vast amount of visual information could be communicated in a brief sequence of slides....with Raphael who had been difficult to illustrate by conventional methods; students had been obliged to take Grimm's descriptions on trust and he himself had needed to overemphasise the historical context....Most important of all, the lantern slide released art from its entanglement in history. Art regained its primacy. The image seemed to speak directly to the observer. An artist's development became self-evident. 'Dem Zuhorer ist das ganz Phanonem anschaulich." And the lecturer's own role was diminished in proportion."[38]

Fawcett quotes Grimm from 1892, writing that the projected slide "'enables us to make a clear distinction between that in art which moves the soul and that which is merely of interest from the aspect of art history.' Grimm was interested in the aesthetic and even more in the ethical message of the great work of art and believed that slides were capable of sending those messages."[39]

As the leading quotation for this chapter indicated, probably the best known advocate of slide use, and an early innovator was Wolfflin, who is also traditionally credited with introducing the use of two slides, side by side, for comparisons. This comparative method is epitomized in the double projector slide lecture, characterizing not only instructional pedagogy, but art history practice in general.

His theories have continued to hold their methodological grip on formalistic analysis for almost eighty years, especially in the practice of American art history, with its pragmatic and empiricist bent. He is especially appreciated because of his objectivity. His descriptive categories, particularly as they are employed in his well-known comparative method (the source, perhaps, of the tendency of most teaching American art historians to show two slides at once in the classroom), appear to divorce the object of art from all feeling and from *subjective* notions of worth and, most important, meaning.[40]

Wolfflin's use of slides in lectures is further described by Fawcett:

Barely a decade (after Grimm's activities) later almost every art history seminar in Germany had a growing collection of slides and one or more projectors. Heinrich Wolfflin had now succeeded Grimm at Berlin. Deeply impressed by Burckhardt, whom he recalled lecturing at Basle with the aid of a variegated mass of *Bildermaterial* held up to view and then circulated. Wolfflin resorted constantly to displays of slides. His method was essentially visual, allowing each image on the screen to register with the audience before adding his own seemingly unpremeditated, eye-riveting comments. It was a training in seeing and formal analysis that matched verbal and optical modes to perfection. Wolfflin was perhaps the first to make regular use of twin projection. While he had reservations about overdoing visual comparisons in his books, he admitted 'the juxtaposition of contrasting pictures...may well render good service in a lecture, where it is possible to correct the one-sidedness of the single comparison by means of various other comparisons....' Indeed the illustrated lecture could present an argument in greater complexity than a book because it 'offers the possibility of continuously supporting the spoken word with pictorial demonstration. Not only can more examples be shown, but variants and exceptions can be brought forward without danger of distracting the hearer, since the keynote may be immediately struck anew. Finally, the lecturer has in great measure the freedom to make use of exaggerations for purposes of clarification (and entertainment), inasmuch as it is in his power to retract them at any moment.[41]

With Wolfflin, slide use seems to have been firmly established in art history in Europe and Germany in particular. Hammer writes that there were incidents of slide use in the United States, at Princeton by Alan Marquand in 1882, and contemporaneously by

James Hoppin at Yale.[42] But regular or routine use in higher education comes in the early twentieth century.

Returning to the default starting date of modern art history in the 1870s, Wolfgang Freitag considers how an art historian of that time would fit in today, with the conclusion that it is just this use of visual material which would be least familiar.

> So, an art scholar of the eighteen-seventies, were he to step out of the past to visit our centers of research today, would certainly notice that the field of art history has enormously expanded its boundaries, since it came into being as an independent academic discipline during the second half of the nineteenth century, but he would feel quite comfortable, when he discovered that even if some of the basic tenets have also changed, the types of publications that support research and their form, *ie* the printed 'tools of the trade', are still essentially what they were then. This, notwithstanding the fact that they too have expanded in their coverage and have proliferated in numbers on a vast scale.
>
> However, our visitor would be shaken out of his complacency and find himself much bewildered, as soon as he noticed the fantastic array and variety of the non-verbal, visual resources material at the disposal of his latter-day colleagues.[43]

Although the quantity of visual material has increased tremendously, and the technical capability of slide projectors have improved, use of visual material has remained essentially constant since Wolfflin's double projection innovation. Beaumont Newhall reminisces of his experiences at Harvard, recalling art history lectures using the double projection of slides, inferring that his was among the first incidences of their use in the United States[44]. Following the adoption of this innovation traditionally attributed to Wolfflin, there have been few further developments. Certainly, the change from use of lantern slides to the 35mm film transparency was a great technical advancement, allowing the expansion within art history programs and creation of new programs and departments

at colleges and universities across the country. Likewise, there has been a comparable mushrooming of support organizations, like slide libraries.[45] The 1930s-60s have been identified by a number of scholars and researchers as a period of great florescence for art history in the United States. In fact, many have characterized the teaching of art history in the United States as based on reproductions.

> American teaching in art history is based on slides, books, and photographs. American scholarship in art history, insofar as it is carried on by teachers, is also largely based on books and photographs. Many American scholars carry on their work remote from original works of art, either because they are unable to get at them, or because they do not feel the need for an immediate contact with original works. The character of American teaching in the history of art has been deeply influenced by this condition, and so has the character of American scholarship, though to a lesser extent.[46]

In any case, as previously stated, the use of slides has changed little. Whether an individual instructor uses many or a few visual examples in their lecturing, use of two slide carousels is the standard. Often, one tray will contain views of the whole painting, or characteristic general views of the primary side of a piece of sculpture or built structure. To supplement, slides of works for comparison, or details and close up views will be shown in the second tray. A single lecturer in architectural history has put forward the idea of using the "slide dissolve," a technical capacity of projectors not often utilized, to transition from plans and diagrams to photographic views; but the formidable obstacles of dissimilar scales, or the lack of consistent standards in slide image creation has prevented this from being a practical application of slide projector technology.[47]

The use of slides implies a series or sequence, development of which allows the lecturer to present a narrative. Olive Cook cites the flash-back and close-up, elements

generally associated with cinema, as actually deriving from slide sequencing.[48] And numerous authors have cited the persuasive powers of carefully selected and ordered slides. In fact, one author seems to imply that the selective choice of quality images can be used to draw slanted conclusions.

> With material of this kind [referring to a particular producer of high quality slides] used in class discussion, the inevitable differences of interpretation can be turned to particularly good account, especially through the control which is possible by adroit organization of the slide sequences. The nimbler imagination will naturally go farther before it runs down from exhaustion, but no two imaginations will run quite the same course.[49]

It would be a rare image which could be so persuasive on its own, without commentary, yet it is exactly this powerful potential which has made the slide so valuable to art historians.

Preziosi writes of the interaction of the narrator and projected images, referring to John Locke's conception of the working of the mind like a camera obscura:

> Images appear at various positions within the dark closet of the auditorium. The task of the apparatuses of voice, music, and spotlights is to cause such "pictures" to "lie orderly" so as to com-pose understanding. In an equivalent manner, the apparatus of the modern discipline composes understanding by causing the history of artworks to lie orderly as a history of aesthetic form.[50]

He pursues the description of the narrator and art history's use of slides, describing how the authoritative "Voice" assumes its power. The "disembodied Voice" is associated by the viewer with the image projected more than with the lecturer him or herself, in a parallel to the art history textbook.

> In short, the invisible Voice animating the progression of imagery is equivlant to the use of the third person in historical writing: a voice of authority and authorization.
>
> In addition, this Voice becomes the exegetical filter of aesthetic signification: It assumes the position of intepretation or analysis lying athwart the transitive conveyance of meaning by the artwork to classes of viewers. This is perforce a coy Voice, emanating from the dark, projected, morover, *into* that imagery (as we project voices from a movie-theater speaker into the lips of characters on the screen) as if to conjure up the Voice of the work. The work speaks to us of its history, circumstances of production, and sense ("what Vincent saw" or "what Manet's *Olympia* meant.)
>
> This Voice coyly speaks in a historical mode in the textural practice of the discipline, fostering an impression of naturalness, authority, and legitimacy.[51]

It is apparently Preziosi's point that the authority and legitimacy are intended to be directly associated with the projected image, but are actually derived from the accompanying narration.

It is worth repeating that lantern slides, in particular, were often sold not only in sets, but with a commentary or even script. Contemporary slide sets are still available, often with supporting documentation but less frequently will they arrive with an accompanying narrative.[52] Of course, the user of the slides is not obligated to follow any one's script but her or his own.[53] Certainly, this is one of the unique attributes of slide projection: the same slide image may be used by multiple individuals to make widely varying points.

This section will conclude with a consideration of the relationship between image and text. For the final time, returning to the opening quote, a slide lecture may be riveting or absolutely boring, based on a combination of slides selected and the

accompanying verbal commentary. Already, in the early twentieth century, debate was developing about whether priority should be given to the reproductions or lecture. Spindler repeats a statement of C.H.Townsend from 1912, "Should we not illustrate our lectures and cease to lecture about our illustrations?"[54] This comment may be a reaction to the characterization given the late nineteenth century by Fawcett:

> The majority of nineteenth-century lecturers had kept a balance between verbal and visual. A lecture was still a lecture, illustrations still illustrations. In the last decade [from 1883] or so the balance started tilting the other way. The image threatened to assume primacy, at its worst relegating the lecturer to a selector of slides and a speaker of captions. The perception of art was altered. Where there was once a dearth of visual evidence there was now a plethora.[55]

It seems maintaining the balance between the two will always be a struggle for some. There would be those who counsel caution in use of the slide image, because it is a reproduction; the implication is that only the original should compete for attention with the art historian's pronouncements. There is a further argument, advising the considered use of slides or reproductions, because art history is literary, a history-based discipline. Lieberman argues that words are more important for art history than the images.

> I would like to end this brief consideration of the nature of photography and its relationship to art history with the observation that despite the dependence on works of visual art for its themes, words are much more important to the discipline than images. In many respects this is as it should be, for art history is, after all, a literary enterprise, but every now and then it strikes me that the image is more peripheral than it ought to be.[56]

For the current discussion, neither words nor the slide image will be given primacy. An eloquent, well developed art historical argument will be complimented with carefully

chosen, high quality images. Similarly, poorly chosen slides, even if of high quality, will be ineffective. The slide can indeed be a major character in art history productions.

CHAPTER II

AN AESTHETIC EXAMINATION OF SLIDES AND PROJECTION

> Despite its illustrious history, for the most part, only art historians, museum curators, and a handful of art librarians and teachers have consistently recognized the slide's unique properties and its importance as a medium of communication.[57]

In truth, the alluded to "illustrious history" is non existent. There are a few recent articles and essays on the lantern slide, but the much used 35 mm film transparency, "slide", is relatively unexamined -- particularly as anything more than a tool for art history. This portion will be a brief recounting of the development of projection and the slide, and describing, possibly for the first time the uniqueness and the aesthetic dimension of the slide.

Just as photography's own history has been linked with coincidental investigations in the assorted areas of optics, chemical phenomena and artistic desire, both the slide and projector have episodic and assorted histories.

The original projector, the magic lantern, has been described as early as the 17th century, commonly attributed to Athenasius Kircher, a German Jesuit. In the book Ars Magna Lucis at Umbrae, he describes many 'optical contrivances.' In one, cited by T.C. Hepworth, the inverted image is illuminated by candles and the device looks like a

variation on the camera obscura. Hepworth disputes the value of the drawing he says is more commonly used to describe Kircher's first magic lantern, which appears actually to be a description for increasing the light shining from a lantern, using a parabolic reflector.[58]

Whether or not the camera obscura can properly be called a predecessor to the lantern projector, the projector does include a projection device, often resembling a lantern, thus the name.

The "magic" is described by Crary:

> Noninstrumental descriptions of the camera obscura are pervasive, emphasizing it as a self-sufficient demonstration of its own activity and by analogy of human vision. For those who understood its optical underpinnings it offered the spectacle of representation operating completely transparently, and for those ignorant of its principles it afforded the pleasures of illusion. Just as perspective contained within it the disruptive possibilities of anamorphoses, however, so the veracity of the camera was haunted by its proximity to techniques of conjuration and illusion. The magic lantern that developed alongside the camera obscura had the capacity to appropriate the setup of the latter and subvert its operation by infusing its interior with reflected and projected images using artificial light....In place of the transparent access of observer to exterior, Kircher devised techniques for flooding the inside of the camera with a visionary brilliance, using various artificial light sources, mirrors, projected images, and sometimes translucent gems in place of a lens to simulate divine illumination.[59]

The magic lantern is variously called also a lantern slide projector, optical lantern, stereopticon (referring to two lens, used for dissolves between images, rather than an association with stereograph.), and Sciopticon. As with the projector, the lighting source also varied from sunlight and candlelight in the first magic lanterns, to oil in the early eighteenth century, limelight in the mid eighteenth century and refined in 1822 , the

electric carbon arc from 1849 on, compressed oxygen or hydrogen gas around 1868, paraffin soaked wicks in 1872, and magnesium lights from the 1870s.

Development of the magic lantern required a light source, optics and an object to be projected. That the object be photographic is not a requirement. The first slides were painted pieces of glass. The first projection of photographs, in this case daguerreotypes, was opaque projection by the Langenheim brothers in the 1840s. In the next decade, they were also the first to project transparent photographic slides too.

> The Langenheims were never satisfied with making and selling individual pictures. While others, such a Plumbe and Brady, overcame the time limits of making daguerreotypes by franchising multiple studios, the Langenheims sought ways of collecting money from the public for the right to look at their productions. Accordingly, they pioneered the 'picture show', in a direct line with the developments which led to the merchandising miracle of Eastman, roll film, and the movies. In 1846 they imported, from Vienna, a projection apparatus similar to an 'opaque projector'. Using oxygen burners for illumination, they projected their daguerreotypes onto the wall, charging admission to view the images. The project was not successful, probably because of the poor reflective power of the light projector.[60]

As with the early opaque projector, reliable, effective light sources were a perpetual problem. There are often repeated dissatisfactions with flickering or unevenly illuminating light sources, even unstable ones where an event would be cut short or canceled because of an explosion. Once a reliable light source was found, then, lantern slide projection could be integrated as a regular aspect of the demonstration lecture.

The name 'lantern slide' comes from the lantern projector, or magic lantern. In his essay on the Langenheims of Philadelphia, Layne points out that "Like the camera itself, the Magic Lantern was invented long before the photographic slide with which it is primarily used today."[61]

What is a slide? Where does the word come from? Without a definitive answer, it seems the word has two possible origins, either from the action of "sliding" an image on glass into a lantern projector, or the simulated motion possible in these panels of glass -- the "sliders". The Oxford English Dictionary groups projection slides with microscopic slides. It is not expressly stated whether one meaning derives from the other, but it appears the photographic slide may be traced to a 1819 reference, while the microscopic slide dates from 1837. Even their definitions are very similar, indeed the definitions are linked in format under the main entry "slide". The slide is a) "A slip of glass or other material on which an object is mounted or placed to facilitate its examination by a microscope.(1837)" and b) "A picture prepared for use in a magic lantern or stereoscope (now chiefly *Hist.*); a photographic transparency for use in a slide projector."[62]

The etymology of "slide" may be derived from the action of sliding a glass plate into the projector, or the sliding manipulation of transparent images to suggest movement in the early lantern projectors. Olive Cook discusses a great variety of slides to be used with magic lantern projectors and their mechanisms for suggesting or creating movement. She begins by noting "Effects of movement were contrived not only by the slides but by the projectors themselves."[63] Types of movement made possible by the projector itself include devices which eased the transition between slides; a "Metamorphoser", "Beard's Eclipse carrier", Terpuoscope" or "Lancaster's Shutter" each were particular means of manipulating two slides or a black, blank screen between slides. There were additional mechanisms which allowed rapid slide changes involving combinations of projectors and lens for multiple slide projection. Finally, there were mechanical slides projecting

animated images, which were described in a 1858 treatise written by Edward Groom, published by Winsor and Newton. The author writes that these slides, the slipping slide, lever slide, rack-work slide and pulley slide, were all in use by public institutions but not in private entertainments. Cook draws the conclusion that they were not "so widely distributed as they were towards the close of the nineteenth century."[64]

Historically, according to use in the United States, a photographic lantern slide is a 3-1/4 x 4" glass plate with a transparent photographic image bound to a second glass cover plate, and often placed in a wooden frame. (In England, lantern slides were and are often 3x3" squares.) The first images used in the lantern projector were hand drawn or painted glass plates. As described in the previous chapter, the lantern slides were used for a range of entertainment and educational purposes.

The Langenheim brothers, daguerreotypists with a thriving business in Philadelphia, patented an albumen coated glass plate to be used as a slide, called a 'hyalotype' in 1850.[65] Following their experience with opaque projection of daguerreotypes of 1848, the Langenheims continued to improve upon the projection of photographs, with the goal of projection for audiences . They began to work transparent material, glass. Their 1848 accomplishment is described by Layne:

> To make best use of the projector, the photographic image needed to be put on a transparent substrate. The daguerreotype, of course, was made of silver plated onto a sheet of copper -- quite opaque. Niepce de St. Victor perfected the use of egg albumen as a binder. The sensitive salts were mixed in the egg whites and the mixture was coated onto glass plates. The resultant image was, like the Talbotype, a negative one, but it could be converted, chemically or by copy printing, into a positive. In 1848 the Langenheims conceived the idea of using the albumen plates in the lantern. By 1849 they were ready to show their first slides, and in 1850 they patented the process, much to the chagrin of Whipple, whose very

> similar 'crystalotype' process was patented earlier. Whipple, however, used the glass plates only as negatives for making positive prints on paper, and never went on to consider using them as lantern slides. [66]

The Langenheims projected their "hyalotypes" (from the Greek 'hyalos', meaning glass) at the Franklin Institute exhibitions, and in 1851 at the London Exposition in the Crystal Palace.[67]

In the chronology of photographic techniques, the lantern slide first appears when daguerreotypes are still common, and wet plate processes are in development. However, it is not until thirty years later, with the refining of the gelatin dry plates that lantern slides become popular, especially with amateurs.

It should be noted that the lantern slide was developed by the Langenheim brothers as a business and marketing tool (to increase exposure to their products, charge admission for the event of viewing, and later in sales of slides and slide sets.)[68] Likewise, their first customers were not artists or photographers, but lecturers and educators. Hepworth encouraged use of the lantern projector as well as any interest in photography, for entertainment purposes -- with a lantern, one is never out of a job. It might be that the first appeal for photographers, interested in aesthetics, is the opportunity for enlargement. During the last quarter of the nineteenth century, most negatives were very small, ranging from 2 to 4" in the largest dimension, and most prints were made by contact, so even if the glass slide or transparency was only to be the same size as the negative, it held the potential to be enlarged many times its initial size.

If the carbon arc was the significant invention for projectors, and roll film for lantern slides, the next revolution came with the color 35mm film transparency which eliminated the need for the bulky double glass lantern slide in the 1930s. Although, as

Fawcett mentions, "it is worth noting that slides based on the autochrome process were available at least by 1912."[69] If the smaller size was appreciated for its compactness, its color capacity was its biggest draw. Betty Jo Irvine cites the less expensive color 35mm as a key factor in the establishment of a many slide collections between 1930 and 1960[70]" The cheaper cost of 35mm slide versus the expense of the hand made lantern slide was a great benefit to the "Microfilm Slide Project" -- an attempt to provide any institution who desired it a set of slides to teach introductory art history. Mary Sunderland, organizer of the proposal describes it this way: "The 2"x 2" slides are to be made from 35mm positive film which can be produced by machine methods. The negatives are made in long strips by mechanical processes. The printing on positive film and all the developing is done by machinery. Thus for the first time there is a possibility of exploiting the cheapness of machine production for the benefit of teaching material in the fine arts."[71]

Despite its greater cost, the lantern slide was not given up easily. The lantern slide had ensconced itself in the affections of art historians. Their larger size was praised, with the assumption that there was more photographic information there. This would be true for any lantern slides made form original photography. But most lantern slides, like 35mm slides today were made from secondary sources, either of book plates or photographic prints[72], where the second generation slide, in either format will have less visual information than the original photograph. Sunderland justifies the decision to go with 35mm slides rather than lantern slides by writing of the consistent quality of the former. "Although the 2" x 2" slides lack a little of the sharp definition (due to film grain) of the best big slides they are better in quality than most big slides existing today. Since big slides are hand made they vary greatly in quality."[73] Aside from the practical question

of space requirements and fragility, reasons librarians favored the smaller 35mm slide; the greater controversy in the switch between formats seemed to do largely with the color capacity of the smaller format. Photographically colored lantern slides have been prohibitively expensive, and the option of hand tinted slides was viewed with disdain. It appears that once art historians had come to accept the 'fidelity' of the photographic slide, reintroducing the hand of another was unacceptable. One librarian justified weeding colored lantern slides out of the collection saying: "Because space was a pressing concern we began by weeding....all colored slides [that] were hand-tinted by 'artists' who used the highest degree of imagination if not good taste or common sense; those on art bore only a distant relation to the original colors of paintings[74].

By the mid twentieth century, the 35mm slide had become the standard. Spindler counted thirty-eight articles "in the Reader's Guide to Periodical Literature concerning application of lantern slide topics, but by 1960 the category of 'Lantern Slides' had been replaced by that of 'Transparencies.' Glass slides had expanded their marketability into scientific applications and sales training programs in the forties and fifties, but the transparencies soon eclipsed the glass slide in popularity."[75]

The 35mm slide is still the visual aid of choice, though digital images are making some inroads as individual study aids. The lantern slide, however, is very little used at the end of the twentieth century[76] and those institutions where collections are located are often de-accessioning their lantern slides; ranging from looking for dealers in lantern slides, discarding them, to selective copying into 35mm format, or in preparation for the next media revolution, digitizing the slides. This version of the projection slide has an historic or nostalgic value. There are fewer and fewer among us who have learned art

history with lantern slides, but if one has, it is remembered. The appearance of the projected images is remembered, accurately or not, as stunning. Likewise, the physical object is also evocative, if not just of one's own history, but because of the signs of handling by one's own predecessors. For example, an art historian who mentioned hand writing on lantern slides by Gombrich and Warburg -- indicating not just the knowledge that others have used these images, but that there is physical evidence of study and handling of the glass plates.

On a less sentimental level, the physical object of the lantern slide itself may have some historic value because of the object which it depicts. Or the value may lay in some combination of historical age and condition of the slide along with the historic image depicted.

> The physical nature of the lantern slide has been a handicap to appraisal as curators seems to shy away from the fragility of this medium. However, the nature of the slide also enhances its historic value. Encapsulation of the photographic image within glass has proven to reduce exposure to airborne contaminants, dirt, and fingerprints, and therefore extend their useful life. As a result the earliest lantern slides are often the oldest surviving images of certain places. The slides produced by the Langenheim Brothers have been recognized as the only surviving images of some nineteenth century subjects. Even though the slides were not original photographs or negatives (they were contact prints), their value as historic evidence has been enhanced by the dearth of original images that have successfully withstood the test of time. Therefore, lantern slides should be appraised in terms of their uniqueness and their picture quality relative to other surviving images.[77]

Leighton also writes of the historic value of lantern slides.

> Some institutions are now disposing of their large lantern slides and this is particularly unfortunate. Many of the 'relics' were made with large cameras having adjustable backs and/or fronts making it possible to obtain detailed distortion-free photographs, especially of difficult architectural

> subjects. Even today, some suppliers use old negatives of architecture and print them on 35mm film. The 'obsolescent' large lantern slides sometimes offer other advantages. Often their views show buildings as they appeared originally, unencumbered by the distractions of subsequently erected structures nearby, signboards, modernised fronts, overhead wires, etc. Similarly, because of the ravages of war, time, and (more recently) air pollution, early scenes of many of the world's great monuments preserved on the old slides have assumed added importance.[78]

With the historical valuing of lantern slides, one wonders whether Benjamin's comments apply to slides: "Even the most perfect reproduction of a work of art is lacking in one element: its presence in time and space, its unique existence at the place where it happens to be. This unique existence of the work of art determined the history to which it was subject throughout the time of its existence."[79] The first impulse would be to say these comments do not apply to copy slides. But as they gain a history, and acquire historic value, it is not so easy to deny that slides have a unique existence. This point will be returned to in the next chapter, with the consideration of the reproduction and original.

Finally, while considering the historic value of the image, the value of the slide itself, along with its condition and uniqueness might also be contemplated. One librarian wrote of the process of weeding out lantern slides, "...lantern slides had become a curiosity....The public enjoyed spending some idle time looking at them in the department..."[80] In this case, the larger size allows an individual the possibility of looking optically unaided at the image pictured in a lantern slide, but the intended purpose of the lantern and 35mm slide is projection, generally for a group. That slides were created and produced to be shown to groups is one of the unique characteristics of a slide. "An often unrecognized aspect of lantern slides is the fact that they were the first photographic medium designed for audience viewing. No longer would the impact of a photographic

image be restricted to a single individual, now that the impact of photography could be shared by large groups of people."[81]

If the intention to show a slide image to an audience was unique, there are also characteristics which describe the slide's aesthetic which may not have been intended, but are no less identifiable. A number of these characteristics are typical of photography in general, but there are also those which are unique to slides and their intended function as projected photographic images.

From the outset, two types of slides must be distinguished -- not the forms of lantern or 35 mm, but rather whether the slide in question is original or copy photography. Statistics are not available, but a significant portion of any teaching collection will contain slides which have been made by photographing images from books. Some teaching collections will be constrained in collection development to grow only through original photography, donation, or purchase from commercial sources (which may often be slide duplicates.) There are also slides which have been created while photographing objects. Unless noted, the following discussion will apply to all types of slide making.

Most discussions of photographic distortion and possible manipulation will also apply to photographic slides. The distortions that photography introduces, vary according to the media characteristics of the original. These corruptions are quite well acknowledged and discussed. Foremost are the manipulations and distortions photography allows.

Fawcett describes the 'choices' Robert Fulton made in photographing objects at the British Museum; "...for the operator could manipulate the image at almost every

stage from initial choice of process, lens, viewing angle and distance, lighting, focus and exposure, through all the procedures of developing and perhaps retouching, down to the final printing and presentation." This would also include "tricks of the trade, eliminating unwanted highlights, for example, by dusting the object with powdered clay."[82] Photographic intervention can come into play not only during the photographic processes, but also in the appearance and presentation of the photograph's object.

As Fawcett has listed, the photograph is subject to alteration at nearly any stage in production. Early slide advocate Wolfflin, along with Hans Tietze, complained about retouching and masking, "the practice of deleting backgrounds from the negative in order to silhouette three-dimensional works like sculpture (but at the expense of falsifying contours and losing context)."[83] This concern about sculpture, in particular, and the loss of its context seems a significant part of the greater concern, that of acceptance of the photograph as a replacement for the original in study. Fawcett pursues this point, "More significant were the growing doubts about the camera's possible effect on aesthetic discrimination, about its tendency to overemphasize the physical nature of art objects, and about the dangers of accepting the all-too-plausible photograph as if it were the real thing and not a highly reductionist copy....Never must the distinction between the archetype and its replicas be forgotten; in no circumstances should a photograph be considered an adequate substitute."[84]

Rather than discuss the blurring of distinction between the photograph and the original, Malraux writes of the blurring of distinction among photographed items, that is the familial resemblance that photography imposes on its objects:

> Thus the angle from which a work of sculpture is photographed, the focusing and, above all, skillfully adjusted lighting may strongly accentuate something the sculptor merely hinted at. Then, again, photography imparts a family likeness to objects that have actually but slight affinity. With the result that such different objects as a miniature, a piece of tapestry, a statue and a medieval stained-glass window, when reproduced on the same page, may seem members of the same family. They have lost their colors, texture and relative dimensions (the statue has also lost something of its volume); each, in short, has practically lost what was specific to it -- but their common style is by so much the gainer.[85]

This blending of distinctions between media is compounded by the loss of relative proportions, where all objects are reproduced in a common size.[86] This, of course, can be said not only of book illustrations, but also of the projected image with its consistent horizontal or vertical screen image. The projection screen shape, furthermore, seems a perpetuation of the easel painting precedent applied to photography, aptly described by Lieberman. "Lenses are radially symmetrical and produce circular images. Although some cameras made use of the natural circle, most, from the infancy of photography, have been designed to make rectangular images, a preference which is surely the heritage of easel painting."[87]

Returning to Malraux's discussion of the familial resemblance that photography imposes, James Ackerman takes a different tact to a similar point, that the translation into photography is never effective, particularly for three dimensional work:

> There is no way to reproduce a work of spatial art. In attempting to do so, one creates either another quite unique work of art (as great painters have done in making what we call replicas of their work), or a mere record that preserves certain characteristics of the work as a reminder of its over-all character. The commonest records of this kind are photographs and architectural diagrams. Though on first thought they may seem comparable to musical scores or printing, they actually are incapable of recording more than a certain restricted range of characteristics of the original work. It is sufficient to note the absence of the third dimension in

> photographs of sculpture and architecture; the elimination or distortion of the color of paintings; the incapacity to differentiate textures; and finally the destruction of scale to a point at which handbooks illustrate the Sistine Chapel at the same size as the miniatures of an illuminated Book of Hours made to fit a pocket. The original and the photographic copy are separated by a distance greater than that separating literary works from translations into different languages.
>
> The validity and accuracy of the photograph as a record of an original work of art is inconstant; it varies according to the medium of the object and, within media, according to style. Engravings and woodcuts suffer least, perhaps, because they are themselves produced for multiple reproduction and are better adapted than other media to the technical limitations of photography. 'Linear' paintings suffer less than 'painterly' ones - Raphael and Picasso less than Titian and Monet. Sculpture and architecture are especially vulnerable to an irrelevant factor: the photographer's taste and knowledge, which is bought to bear particularly on his choice of viewpoint, his use of natural and artificial light, and the degree to which he is tempted to make his photograph a work of art rather than a document.[88]

Ackerman has covered the points cited by most others, the reduction of the objects to a common scale in book reproductions, and slide projection. And, as Ackerman and others have mentioned, the point of view is especially important, particularly for three dimensional work. Freitag discusses viewpoint in this way:

> Anyone who has ever photographed a building has consciously and deliberately influenced the psychological impact of the object of study be it through a foreshortening of some unsightly lines, through a loss of depth and the apparent crossing of architectural lines or through the inclusion of 'mood inducing' elements such as a foreground detail, etc. Clearly, our innate artistic preferences often get the upper hand when we have set out to take a documentary picture of a piece of architecture. These interpretative manipulations can, if worst comes to worst, result in a complete falsification of the artistic message of the original. A work of sculpture photographed from a wrong angle can become distorted beyond recognition, and the photograph of a painting which has been darkened or lightened too much in the process of developing and printing and in which all the tonal values have been altered, certainly is one kind of source that we must approach with the utmost caution.[89]

Partly to accommodate the inevitable losses in photographing three-dimensional work, Professor Clarence Kennedy of Smith College investigated stereoscopic views of sculpture for teaching in around 1930.[90]

Another consideration in the translation between three and two dimensional work is the affect on physical and apparent surface texture.

Finally, in the discussion of the general distortions of photography perpetuated by slides, is the debate between the value of black and white and color slides. Fifty years ago, in the 1943 volume of the College Art Journal, there was an interesting discussion back and forth between Philip C. Beam and James C. Carpenter.[91] While both argue throughout, stressing the accuracy of reproduction as a stand in for the original, the argument against color is made that "First, no matter how perfect the process of reproduction becomes, a color slide can never be regarded as a substitute for an original painting. The danger of this becomes greater, as the slide comes closer to the original. [In fact,...] One of the virtues of black and white slides is their abstractness. There is no question of their taking the place of the originals.[92] Additional points are made about the loss of a sense of media with color. "With color slides, however, the student especially is apt to lose sight of the fact that a work of art is an expression of ideas and feelings in a particular medium, and that when that medium is not present the expression is by no means complete."[93]

Concerning deficiencies in photographic technology, color misses the actual tonal and value relationships of the artwork and cannot replicate the quality of the surface of paint layers. The argument for color is that color is one of the artist tools and black and white or words cannot express fully what color can do. The strongest argument concerns

the technical difficulties of color photography or slides and the relative stability of black and white. Even fifty years later, slide collections are still dealing with color shift and inaccuracy in slides.

It seems that when reliable color images are available, they are preferred, even if, as Carpenter cautions, they run the risk of being confused with the original. In the context of slide lectures, often only black and white images are available for copy photography, and so discussion of choice between the two is a moot point. The slide, however, will vary from the original and even from the intervening book plate in some unique ways. The 35mm slide will occasionally be viewed as hand-held, but information gleaned in this way can only be cursory -- a confirmation that this is the image wanted, that the work in the image is of a particular general shape, etc. But the slide is most useful and informative when projected. As mentioned earlier, this ability was a prime factor in its design or evolution. The projected image is a part of a larger physical or sensate experience.

The experience of viewing a slide is among its most unique features. There are viewers for individual use, but the slide is intended for projection in a darkened room. In many ways, this evokes association with cinema, and certainly there is a shared history in the magic lantern. But image subject matter aside, the implicit drama in the luminous projected image is there in the slide, though it may not be utilized by the lecturer. Fawcett describes the drama in this way:

> Lantern slides, however, introduced a dramatic new dimension. More significant than the heightened receptivity induced by the darkened room and spotlit screen was the metamorphosis of the illustration. Lecture exhibits had always been physical in nature, and to that extent akin to

> works of art themselves and to engraved or photographic reproductions. The luminous picture on the screen was not physical in this sense but disembodied, a transitory arrangement of light and shadow. Moreover it could be manipulated, its size and intensity altered at will. Where a conventional reproduction tended to reduce the original, the projected slide could enlarge abnormally, resulting in those '"fictitious" works of art that Malraux has described.[94]

In a description of a slide from a sequence in a moralizing lantern slide entertainment, this unique aspect of the photographic slide is again alluded to: "The plastic foreshortened form of Annie in Ostler Joe dying on her bed of shame, the photographed face and rounded arms untinted and of ghastly pallor against the indigo wall;...these and many other slides are as memorable as some of the finest paintings and cast an even more potent spell, perhaps because they can spring to full life only when they are cast upon the bright screen in the hushed and darkened room."[95] It may be that this is an aspect of the slide which is seldom exploited. When an object is photographed with the slide intended as its final form, it may be more possible to use the slide's inherent luminosity. A slide which is made through copy work will still have the luminous qualities, but it will be a case of throwing pearls before the swine (so to speak). This singular quality of the slide will not be a necessary part of a lecturer's dissertation.

In fact, this luminosity may even be cited as a disadvantage to the slide lecture. Freitag lists this, along with many of the distortions introduced by photography in general, as cautions in using slides.

> As with distortions of scale, slides have a great potential for transmitting misinformation on color. Even the best color slides, even when they are projected from a correct distance so that the image on the screen is neither larger nor smaller than the original, must corrupt the message of the original simply because they are transparent and the light that passes through them during projection adds the luminosity of a stained-glass

> window indiscriminately to a fresco, a panel, or a canvas. Such intensification can have the serious consequence of making the original appear unexciting and "flat" to the student who has learned about art chiefly from slides.[96]

It seems that dealing with this aspect, particularly associated with the slide, is something with which art history and art historians may have difficulty. Is it possible that the luminosity inherent in slide projection is ignored, if not denied, because this is the characterizing element shared with cinema? If projection of motion pictures is viewed primarily as entertainment rather than education, are slides then thus not appropriate to art history study and instruction?

For a time, from approximately 1895-1910, lantern slide projection was an event in itself. Not for purely entertaining or instructive purposes, but so that effective slide images might be considered. Camera clubs would schedule these slide exhibitions monthly, evidently with great success. Sarah Greenough describes the popularity of the lantern slide and club activities in this way:

> With the perfection of the gelatin dry plate process in the 1880s, lantern slides became extremely popular with amateurs. Their luminosity, size and presence offered new opportunities for displaying sequenced images...lantern slide presentations were ideally suited to camera clubs because they provided a special event -- an occasion of interest and importance -- for showing work yet were easy and economical to arrange. Most clubs had regular monthly, even bimonthly lantern slide presentations of members work.[97]

It would be possible to proceed with an examination of what makes an "artistic" slide, but we are not pursuing such a course. For art history, the slide is the vehicle for another artistic object. The slide which is most useful is that which seems least intrusive. None the less, we are examining here those qualities which in one way or another, to some

greater or lesser extent do inflect, if not notably intrude. For example, the luminosity possible in lantern slide circulated by photographic clubs might have contributed to the effective visual idea in a pictorial photograph. Indeed, in discussing these camera club, lantern slide presentations, Greenough writes, "the discussions that accompanied the presentation of lantern slide exchanges as well as those of members' work served to sanctify and encourage certain styles and subjects, rapidly spreading the aesthetics of pictorial photography."[98]

In this far reaching discussion of slides and projection, it has been debated whether art history is able to embrace those qualities which are unique to slides. There are numerous cautions about using photographs in the aid of art history, including the almost constant reminder that the reproduction is not the object itself, and that photography can introduce distortions and manipulation at almost any stage of its production. When considering the slide in particular, Leighton has summarized the potential problems in this way:

> It has been about a century since art historians began illustrating their lectures with slides, and being subjected to the problems that accompany this teaching method. When one views the projection of a painting slide considerably larger than its actual size, in a darkened room, often with exaggerated tonal contrast or with an overall hue tinge different from the original, and without the characteristic surface texture of the original work, the aesthetic message received is quite different from that gained from viewing the work itself. Moreover, whereas the inclusion of human figures in architectural slides gives the viewer some sense of scale; the projection of a painting gives him none. There are other problems too. Should a slide include the picture frame if it was carved and/or chosen by the artist? Such a frame is, after all, a part of the intended visual message.[99]

The issue of scale or size is one which should be continually pointed out to viewers, it seems.

But, outweighing these problems and issues for cautions use, the great benefit of public, even mass viewing of slides appears to be its saving grace. The slide is an extremely portable object, which can be used or combined in innumerable groupings, by multiple users, and put to use as illustration or evidence of nearly any point one could care or wish to make. The advantage of the photographic slide over the photographic print for group instruction is that, practically speaking, presentation of an image projected in a room or auditorium is more advantageous than passing around a print. Not only is there some degree of protection for the image, all viewers can look at the same image, or detail of an image, concurrently. Also, it is possible to enlarge images to a greater size than is practical in a paper format. While it is true that clarity and crispness of the image decreases with increasing size, this is not limited only to projection, but is characteristic of all enlarging, and is thus not an inherent flaw of the slide.

The luminosity of the slide, unlike discussions of scale, much less whether black and white or color slides are preferable, is less discussed. It may be that potential participants in the discussion feel there is nothing to be won in a debate, that slides are luminous and that is that. It would seem though, that presenting the issue would be a first step, both in allowing the possibility for further discussion among art historians, and in furthering the desire to reinforce the distinction in lecture viewer's minds that the slide is distinct from the object it depicts. The slide has its own aesthetic.

CHAPTER III

THE TENSION BETWEEN THE REPRODUCTION AND THE ORIGINAL

> "The tension between the original and its reproduction requires the constant evaluation of appropriate use."
>
> "There are certain things you can do with a bad photograph [of a work of art], certain things that you can only do with a good photograph, and certain things that you shouldn't do without the original."
>
> "Ideally I don't believe one should make discoveries from photographs."
>
> "I'd prefer to see the original, but I do a lot of things from slides or Ektachromes...or color Xeroxes....One of the problems about people who are in systems is that they get hung up on the issue of faithfulness. In essence that's a kind of purist abstraction....The issue is, you do the best you can because that's what we do in real life."[100]

This series of quotations is from Object Image Inquiry: The Art Historian at Work, and suggests the range of uses made of photographic reproductions, from the ideal of making discoveries only from the original, to the practical, using what is available. The photograph is a particularly appropriate reproduction for art historical purposes for the following reasons. Among reproduction types such as prints, sketches, models and photographs, photography offers the least interference in the translation of the original into a reproduction. As an extension of this, the photograph is thought to be "artless."

The accuracy of these statements will be examined, but their usefulness in practice will also be acknowledged.

To the first issue, Lieberman offers a useful starting point:

> All descriptions of works of art are determined by the dominant attitudes of the describer, and photographs are no different in this regard from any other from of description. It is obvious that the camera records many things in a straightforward manner -- it will not rearrange the windows and it will never reduce a complex cornice to a simpler one as a manual shortcut -- but the assumption that photography is therefore in every respect objective is one of the most deeply entrenched art-historical misconceptions, and leads both to a misuse of photographs and, occasionally, the disparagement of those who make them.[101]

In this case, the visual description provided by the photograph is straightforward, if not objective. Beaumont Newhall phrases it this way, referring to the absence of the photographer's hand, or "facture" in the photograph.

> Photography is the immediate, often instantaneous, record of a vision of the external world, and the fundamental simplicity in securing this record is a factor which must be considered by the critic. The mark of the individual is not left upon the surface of the picture; the photographer does not betray his personality as much by craftsmanship as by the intensity of his vision of the external world. Art historians, accustomed to dealing with "autographic" works of art, may find it difficult to evaluate photographs. *Facture*, draftsmanship and other marks of the individual hand are absent.[102]

Fawcett also refers to "facture" in much the same context, comparing photographs and graphic prints as reproductions.

> At the core of the argument between photography and the graphic arts as reproductive medium lay the question of the status of the reproduction itself, which hinged as much on the ease or difficulty of its creation as on its intrinsic value as a surrogate. The reputation of pure line engraving has always owed something to its sheer laboriousness, and hence its high cost. A print resulting from years of minute effort on refractory material could not be regarded solely as a window through which to view the original

> painting; inevitably it assumed the status of a work of art itself, a subject of connoisseurship in its own right. If in the translation process much of the original had to be sacrificed or revamped, at least there was compensation to be had from studying the art of re-creation, the subtlety of the equivalencies found by the engraver, the overall new monochrome harmony. That was what photography challenged. Relatively without effort it provided a genuine window on to the original...their common employment in education and pattern design [did not] lead to the collecting or appreciation of photographic reproductions for their own aesthetic sake. Unlike an engraving it displayed only trivial signs of its own facture. "There are no *touches* -- no wondrous lines which show that the pencil was held by a master's hand -- no traces of the artist's mind. All is just what might be expected, cold, dry *science*." And this comment from the *Art Journal* of 1866 is self-revealing, for the 'master' and 'artist' it refers to are the engraver, not the original painter whose handling would be apparent only from a photograph.[103]

In this passage, the intervening touch of the printmaker is considered an added value for the graphic reproduction. As discussed in chapter I, the desirability of this intervention varied over the course of the nineteenth century, to the point of being a liability at the end of the century.

Although the photograph as an artistic endeavor is not the current concern, issues related to the artistic value of photographs do extend a discussion of the photographic reproduction. Lawrence Alloway refers to a distinction Max Bense has made in discussing art and photography, "the esthetic process in painting is directed towards creation: the esthetic process of photography has to do with transmission.... Painting reveals itself more strongly as a 'source' art, and photography more strongly as a 'channel' art.'"[104] This seems an appropriate distinction for the present topic; an effective transmission of the original in the photographic reproduction would be more valuable for art historians than a creative reproduction.

Of course, this discussion presumes that the art historian's first preference would be to work from the original, and that if a reproduction is to be of use, accuracy or fidelity to that original is the primary goal in selecting a reproduction. One art historian has indicated that if possible, he lectures only with slides he himself has shot because those images illustrate the specific lecture points.[105] This indicates an awareness that the photograph captures less than the whole of the original, and that a particular slide will be more or less appropriate for making particular lecture points. So, although the same slide may be used to make different points by different lecturers, the same slide will not be able to make all possible points about a particular object.

Lieberman argues forcefully for the value of periodically rephotographing objects.

> The camera intrudes on every aspect of art history: frequently between the scholar and his subject, virtually always between the scholar and his audience. Our ideas are largely determined by photographs, our vision often limited to what we can see in them. While it is universally agreed that, for example, Michaelangelo must be restudied continually because one generation's vision of him does not satisfy the next, it is equally true that his works ought to be rephotographed, which is not usually done. To some extent this is because photography is time-consuming and expensive, but in larger part it is due to the common misconception that sharply focused photographs with good lighting are somehow beyond history, objective, and therefore always current. As a result, in some important respects art history is still dominated by a late nineteenth century view of things because it was then that the great body of classic photographs that formed the foundation of the discipline was made.[106]

For the current consideration of the reproduction and the original, this is important because it introduces the idea that photography somehow reflects aspects of the time of its creation. And this thought implies a separation between a good photograph and a good representation of an original object. Naturally, it seems, the assignment of "good" is related to what identifies a particular generation of photographers and art historians.

As background, it should be restated here that the slides used in art history are often copy photography from book plates. There may be many photographers involved in getting an image to the current form of a slide; from the first person to photograph the original object, through its preparation for publishing iterations, to the copy photographer employed by a visual resource collection. Yet, it is the first photographer who must have had some vision, whether for artistic or technical excellence, a vision to capture an essence or likeness of the object. There is an assumption that the photographic generations of an image perpetuate the original vision.

Estelle Jussim makes a point about the perceived "objectivity" of photography, that it is paradoxically linked to the photographer's skill rather than to any inherent capacity of the mechanics of photography itself:

> What is so paradoxical in the situation is that publishers soon realized that an inept photograph, unsuited to transmission via any phototechnological medium, was no better than an inept illustration. If they wanted accurate, attractive, technologically appropriate photographs, they had to hire a professional photographer, whose subjective eye and professional training made him every bit the equal of the old primary codifier....The choice of the point of view of a photograph, its lighting, its exposure, the kind of lens, the type of film, the printing paper, the length of development, and all the other variables in the production of one photograph, must make us recognize that photography does not represent some miraculously "pure" communication which transmits the textural gradients, chiaroscuro, contours, and colors, of events and objects in Nature in a perfect one-to-one relationship.[107]

There is a further assumption, that the better a reproduced photograph is, the more the copy is technically brilliant and creatively unremarkable. In this way, its artistry does not interfere with the artistic statement or vision of the creator of the original object. This aspect is quite different from what was valued in reproductions in other media, and may

be one of the aspects which characterize a particular generation's photographic syntax. For example, the clearly focused, well lit object, photographed in isolation and with black and white tonal accuracy may be what was prized at the turn of the century, but now the inclusion of site or contextual information, clues to scale and relative color information may be more interesting and valuable.

Now, whether the photograph, or slide in particular, is a mechanical technique rather than creative expression will be a lingering question. One of the reasons to refer to the essay "The Photographic Message" by Roland Barthes is that the press photograph he refers to is used as it is because of its lack of artistry, that is, the photographer's artistic expression. He writes of

> ...the press photograph (which is never an 'artistic' photograph). The photograph professing to be a mechanical analogue of reality, its first-order message in some sort completely fills its substance and leaves no place for the development of a second-order message. Of all the structures of information, the photograph appears as the only one that is exclusively constituted and occupied by a 'denoted' message, a message which totally exhausts its mode of existence.[108]

A large part of Barthes' essay is about the denoted and connoted message carried by press photographs. In the press photograph, Barthes argues, the denoted message is the perfect analogon of reality, and the less easily perceived, connoted message is "the manner in which to society to a certain extent communicates what it thinks of it."[109] The connoted message is not apparent in this instance because of the afore mentioned lack of artistry, or artist's touch, in the press photo. To describe a photograph in this case is to describe the subject represented, not the representation per se. However, Barthes then proceeds to describe ways in which photographs do acquire a second meaning, or

connotation. In addition to trick effects, pose, accompanying objects, Photogenia (embellishment using photographic techniques), aestheticism and syntax as ways of introducing connoted meaning, the inevitable text which accompanies the press photograph is a prime enabler of connotation. It is this point in particular which may ally the press photograph with the slide used in art history.

The slide with its descriptive and classifying information may be seen as a parallel to the press photograph with its accompanying caption and article. As Barthes describes it, the press text is an amplification of the image, varies in its additive connotation according to its proximity to the photograph (caption, headline, etc.), and is never merely a duplication of the photographic image.[110] Likewise, the slide label provides information about a particular object, or image of an object according to the classifying structure of its producing organization or institution. Decisions are made to classify a single object pictured in a given context, according to local procedure; and slides must be classified in a determinate hierarchy in order to facilitate physical placement in a collection. In order for the slide to be retrieved later, this procedure must be consistent and public. Now, does the slide label also imply a second or connoted message? According to Barthes' reasoning, yes. The photographic aspects of the slide may parallel the press photograph, and the connoted label information aids in retrieval of the slide, whether or not the user perpetuates this particular information in lecture use.

This view of the denoted and connoted message is not universally accepted, even by Barthes. Allan Sekula argues that it is impossible to see only the denoted message in a photograph, and further, that whatever the denoted message, it is the connoted one which is accessible:

> The photograph is imagined to have a primitive core of meaning, devoid of all cultural determination. It is this uninvested analogue that Roland Barthes refers to as the denotative function of the photograph. He distinguishes a second level of invested, culturally determined meaning, a level of connotation. In the real world no such separation is possible. Any meaningful encounter with a photograph must necessarily occur at the level of connotation. The power of this folklore of pure denotation is considerable. It elevates the photograph to the legal status of document and testimonial. It generates a mythic aura of neutrality around the image. But I have deliberately refused to separate the photograph from a notion of task. A photographic discourse is a system within which the culture harnesses photographs to various representational tasks.[111]

That Sekula has determined not to base his discussion on "types" of photography, based on purpose, is also a point of interest. For the current discussion, does reproductive photography fit? Is the slide a version of documentary photography or reportage? It seems that in some circumstances it is worthwhile to argue yes. And though there is a broadening base which accepts the non-objectivity of documentary photography, the reproductive photograph is not granted this connotative ability. Is this a remnant of the attitude which accepts the authority, that is accuracy, of the late nineteenth century body of sharply focused and well lit, "classic" photographs referred to earlier by Lieberman?

Sekula also offers a useful reminder of the tendency to judge photographs along a binary scale:

> All photographic communication seems to take place within the conditions of a kind of binary folklore. That is, there is a "symbolist" folk-myth and a "realist" folk-myth. The misleading but popular form of this opposition is "art photography" vs. "documentary photography." Every photograph tends, at any given moment of reading in any given context, toward one of these two poles of meaning. The oppositions between these two poles are as follows: photographer as seer vs. photographer as witness, photography as expression vs. photography as reportage, theories of imagination (and inner truth) vs. theories of empirical truth, affective value vs. informative value, and finally, metaphoric signification vs. metonymic signification.[112]

Once again, it is useful to consider the slide as a photograph in this situation. In the visual resources field, copy photography is debated in terms of the photographer's creative input and whether this has an impact on copyrighted or copyright-able images, or if an estimation of the mechanical technique of copy photography falls under presumed guidelines for Fair Use.[113]

Questions about the nature of photography, in particular the nature of visual expression and communication or reporting have been addressed in a well known book by William Ivins, Prints and Visual Communication, first published in 1953. That photography has no syntax is probably the most frequently cited idea from this book (and may be a lingering attitude toward the slide used in art history lectures), but it is also a point widely disputed in contemporary criticism. The discussion above of Barthes' 1961 essay may be in part a reaction to ideas such as Ivins'. Hamber relates an effective and relatively concise version of the discussion:

> This flaw [that photographs do have distinct "syntactical elements," albeit different ones from those he categorized in defining "handmade pictures"] was examined by Estelle Jussim who reevaluated Ivins' thesis in the early 1970s and, by using a variety of so-called information theory constructs, declared she had simplified his terminology to a sequence which consists of message, channel, code, transmission, distortion and interference. Jussim identified that Ivins' belief that the photograph was a totally mechanically objective image captured by the camera was flawed. Her claim was that her book intended to demonstrate that "the medium can interfere so seriously with the message that the only message which is transmitted is that of the medium itself." This thesis is somewhat overstated since it presupposes a viewer can perceive or effectively evaluate a photograph or a photomechanical reproduction as an objective technical exercise which ignores any subjective element connected with the subject matter depicted. There is no such thing as purely objective examination since visual perception is based around complex structures of identification by analogy which depends on a whole plethora of constituent elements, many of which are still yet to be unraveled.

> Furthermore, although Jussim hints that photography has its own syntax, codification and distortions she does not attempt to identify and qualify them either in terms of their differences from or interrelationship with traditional graphic reproductive processes. This matter is considerably hampered by the problem of accurate identification of the processes by which 19th-century photographs and photomechanical reproductions were produced.[114]

Whether it would be possible to see only the slide, rather than its message or subject, is a critical question which lends credence to Hamber's view that Jussim overstates the issue here.

What is most valuable, as stated earlier, in Ivins' book is his discussion of visual communication. Until the time photography was available, the particular qualities of the medium of a reproduction were an accepted part of the reproduction. With photographic reproductions, there was a greater realization of the extent of the translation through media. "Up to that time very few people had been aware of the difference between pictorial expression and pictorial communication of statements of fact. The profound difference between creating something and making a statement about the quality and character of something had not been perceived."[115] Ivins writes further of the distinction between visual reporting and visual expression made evident by the advent of photography:

> The flood of photographic images has brought about a realization of the difference between visual reporting and visual expression. So long as the two things were not differentiated in the mind of the world, the world's greater practical and necessary interest in reporting had borne down artistic expression under the burden of a demand that it be verisimilar, and that a picture should be valued not so much for what it might be in itself as for the titular subject matter which might be reported in it.[116]

With photography to represent the world "as it is" (with questions of objectivity aside), other media were then freed from the drive to be look like the real world. Richard Shiff makes a similar point in his essay on the photograph as a "copy", titled "Phototropism". In it he writes:

> The fact may seem too obvious and too naively stated but it is important to note that the existence of photographic representation has liberated painting from any responsibility to a "real" model....In sum, a photographic representation is causally linked to a material phenomena in nature, its image is indexical. In photography, however professional the example, we need not presume the action of a skilled artist who has learned from the pictorial representations of other artists -- a pattern of reflected light traces out its own image, the image of the model, on the photographic surface.
>
> This, at least, is what the pioneers of photographic practice claimed. It is how they described the significance of their discovery. The model would figure its own image with its own reflected light. The photographic image was conceived as an impression or imprinting, dependent on the "real" presence of its "subject," the object it represented....It would seem that such self-representation cannot stray far from reality itself. Perhaps we may tentatively say that photography "copies" reality, its "original."[117]

The nature of the photographic copy is here hinted at, and indeed Shiff discusses it at length. Late twentieth century thought has cast doubt on the late nineteenth century view that the photograph is an objective, and absolutely honest or accurate duplication of what is real in its subject. But assuming the photographer has not deliberately falsified the photographic image at some point in the photographic process, Shiff's description of a "commonplace" copy does seem a fair evaluation of the photographic reproduction. "A commonplace is a representation so acceptable and convincing that one takes it as true to the reality of its model or original; it requires no mediating interpretation."[118] It is possible here to remember Jussim's statement (or overstatement) that "the medium can

interfere so seriously with the message that the only message which is transmitted is that of the medium itself."[119] Both Shiff and Jussim are talking about photography, and if nothing else, the divergence of their comments confirms that there is complexity both within the photograph, or photographic image, and in its broader context.

One last quotation from Shiff's essay will return the discussion to Ivins. In the following, Shiff is describing the copy and the nature of its difference from the original, specifically, the difference is the syntax that Ivins said was missing in the photographic reproduction.

> Rather it is to say that no description or picture can copy its model, its original, without differing from that original; and the difference or distancing is created as if through the deployment of a mode of figuration....As a result the effort to expose the truth of the original ironically leads to a kind of falsification or at least to uncertainty. One cannot determine whether features of the copy derive from the original or from the nature of the figuring agent....A figure can be any line, shape, diagram, or drawing that is seen as a representation. In very general terms the representation of the form of an object is its figure.[120]

Although Ivins' ideas about the lack of syntax in photography are generally disregarded, they were the impetus for his comments about the varieties of visual communication, reporting and expressive, which are helpful in consideration of the photographic reproduction, and indeed the slide.

A final comment of Ivins' will introduce another author connected with any discussion of photographic reproduction of works of art, Andre Malraux. Ivins writes of the familiarity with reproductions as a mark of wealth and education in the eighteenth century, for the graphic print, the reproduction of the time, was unavailable, or inaccessible to the poor and uneducated. Ivins continues, "their reproductions had a great

effect upon their vision, which, as today, was based not so much on acquaintance with originals as on acquaintance with reproductions."[121] Malraux writes of the primary use of the reproduction, photographic in this case, in instruction, and their mutually dependent relationship. "[S]ince reproduction, though not the cause of our intellectualization of art, is its chief instrument, the devices of modern photography (and some chance factors) tend to press this intellectualization still farther."[122] Malraux and Ivins both make points which are quite obvious to contemporary minds. Indeed, much of the common knowledge of educated persons is based on experience with reproductions rather than originals, and the photographic reproduction, often the slide, is the means of this "experiential" knowledge.

Some comments from Malraux' essay, "Museum Without Walls", were discussed above in terms of the distortions, primarily of scale, photography introduces into the study of works of art. But, it seems the major point to be made is his claim that photography augments the value of the original work and by extension, of creators of art, through an increased availability both of works by individuals and through a greater total number of works available for study and examination. Mary Bergstein summarizes Malraux' influence in this way:

> At a time when the commercial photography of art was at a post-war crescendo, Andre Malraux recognized that the power of enchantment and historical prestige of the original artifact were typically augmented rather than dissipated in photography. To the modernist art historian Malraux, photographic representation was manifest destiny. In his view, photography forced objects to acquire significance through the denial of visual and cultural relativity: in modernist reproduction, time and place recede so that the beholder's sensations of distance, scale, and the local numen vanish. As photographic timelessness and placelessness would govern the study of "world art," experts could select and reject, reduce, enlarge, crop, and frame cross-temporal and cross-cultural juxtapositions from a homogenous pool of images.[123]

This potential augmentation is in marked contrast to the diminution, or even destruction of the aura written of by Walter Benjamin in his influential essay, "The Work of Art in the Age of Mechanical Reproduction." This latter essay will be the final text considered in any depth. Among the many noteworthy points Benjamin makes in the essay is his discussion of "aura," a broad and encompassing term which refers to, among other aspects, the unique existence of an original art object. He writes, "Even the most perfect reproduction of a work of art is lacking in one element: its presence in time and space, its unique existence at the place where it happens to be. This unique existence of the work of art determined the history to which it was subject throughout the time of its existence."[124]

Benjamin's discussion proceeds with an examination of how the reproduction, specifically, the mechanical reproduction, pecks away at the aura of the original, eliminating the historic traditions evident in the context of works of art, aiding in the displacement of the cult value by exhibition value, and altering the nature as well as scope of a work's viewing public. Certainly, although he does not specifically mention the slide, the slide could be included among those mechanical reproductions which diminish the aura of the original. But the slide is a reproduction of a special order. This particular reproduction is, for instructional purposes, a stand-in for the original, often for those who likely will never see the original. In this case, the value of a particular slide reproduction will reside in the accuracy with which it exemplifies the lecturer's statements, rather than necessarily presenting as complete and accurate a reproduction of the original object.

Maryly Snow argues, however, that Benjamin's argument is not pertinent to the use of slides in instruction. "Benjamin was concerned not with the pedagogical consequences of mechanical reproduction, as we are, but with the impact and authenticity of the original. In contrast, our focus is on the copy as a visual reference to the original."[125] It seems she is arguing that Benjamin is discussing the reproduction as a replacement, while she wants only to address the reproduction (slide) as a reference. Within her essay, she does have an overriding agenda, to diminish the value of the reproduction, the copy photography slide, to preserve perceived Fair Use rights to make the equivalent of a visual Xerox.

It seems reasonable to agree that Benjamin was not concerned with the pedagogical consequences of the reproduction, but for this discussion, it will be argued that the slide is not just a visual referent. While it is certainly this, it is also more. In instruction the slide's primary role may indeed be that of a visual referent, but it is also stand-in for original. With the slide, lecturers are able to illustrate points, often as well as if the original was present. In fact, the point here is that conclusions drawn in art history are not necessarily tied only or uniquely to the original, but served as well by surrogates or reproductions. Generally, the student, or audience member, does not assume the slide is the original. Yet, if the student knows the slide is not the original, but still finds she or he is able to learn the course materials from slides, then the slide has indeed supplanted the original. Similarly, if the student becomes motivated enough by lecture or classroom study to go and see the original, there is the chance that the original, possibly without the expected scale or luminosity of the projected reproduction, will be a surprise or even a disappointment. And here, Benjamin's point about the destruction of aura would likely

be advanced. Benjamin has acknowledged commodity fetishism as a factor which could restore the aura to any object, and it is possible repeated presentation of slide images of "canonical" works of art might mimic the cult of the movie star. None the less, in the ideal situation, a viewer's previous experience in viewing a slide would increase his or her critical visual examination of object irrespective of its aura or cult value.

The preceding discussions of literature on reproductions has proceeded without firmly establishing a definition as such, nor a specific delineation of the nature of the relationship between the reproduction and the original, that is, the slide and the work of art. These descriptions will comprise the concluding section of this chapter.

In the published proceedings of a symposium, Retaining the Original: Multiple Originals, Copies, and Reproductions, sponsored by the National Gallery of Art, Alexander describes a list of synonyms including "reproduction", arranged in a continuum from copy to facsimile, describing increasingly specific terms. Reproduction follows copy, the most generic of the terms, whose meaning and implication or insinuation is largely derived from context.

> The word *reproduction* seems to imply a greater intention to accuracy. There is also a sense of something admired or canonical in the object, which causes it to be copied. It would sound odd to speak of a slavish reproduction. We also commonly imply a more numerous or even serial production when we speak of a reproduction. That is the sense in Walter Benjamin's well-known essay "The Work of Art in the Age of Mechanical Reproduction." Benjamin argued that what is lacking in the mechanical reproduction is what he called the "aura" of the original work of art. A reproduction is inferior to the object reproduced, the original, therefore.[126]

Alexander seems to walk the fence line between Malraux's and Benjamin's contention about the affect of the reproduction on the original. Alexander says here, that

though the reproduction itself is inferior to the original, lacking its aura, the fact of reproduction attests to the value of the original.

As always, the author's choice of a particular word carries its own implications. Throughout the preceding discussions, and in the literature itself, a wide range of terms have been used in place of the more common "reproduction".

Here is a list of words which have been used in reference to photographic reproductions of works of art, grouped rather loosely according to function: (1) reproduction, copy, surrogate, stand-in, replacement, representation, facsimile, replica, image and object. This group may be the most commonly used and possibly the most neutral -- that is not associated with an individual's particular polemic. This would compare to a similar, miscellaneous group comprised of terms which are associated with a particular individual or approach; (2) Albertian window, Barthesian lamination, analog, sign, map, index, signifier, simulacrum and coordinate. A group of essentially "neutral", but in this case implying objectivity or a connotation of scientific authority are; (3) document, evidence, specimen, record and recording; (4) visual referent, visual description, visual aid, aide memoire, mnemonic, reminder, recollection and reference image are terms which seem only to refer to the original, without claiming any great fidelity, or even implying a lack of fidelity; (5) translation and transcription seem to acknowledge at least one layer of remove from the original. And, finally, (6) illustration and diagram are associated with reproductions in printed or narrative formats.

Lawrence Alloway seems particularly interested in delineating the nuances of photographic reproductions of often transitory sculptural projects. In the following series

of quotations, he discusses the distinction between documentation and reproduction and the artist's use of photography:

> Documentation distributes and makes consultable the work of art that is inaccessible, in a desert, say, or ephemeral, made of flowers. The photographic record is evidential, but it is not a reproduction in the sense that a compact painting or a solid object can be reproduced as a legible unit. The documentary photograph is grounds for believing that something happened.[127]

And:

> Some photographs are the evidence of absent works of art, the photographs constitute themselves works of art, and still others serve as documents of documents. (plans, proposals, etc.)....One thing everybody has in common should be noted: there is an anti-expertise, anti-glamorous quality about all the photographs here. Their factual appearance is maintained through even the most problematic relationships.[128]

He later refers to "coordinates of absent works of art" in a discussion of Robert Smithson and his earthworks, making use of the geographic associations in the use of "coordinate" rather than using "evidence" as appears earlier. He continues, "Photographs used a coordinates, or as echoes, soundings that enable us to deduce distant or past events an objects, are not the same as works of art in their operation."[129] Thus, in the course of a few paragraphs over two pages, a single author has referred to photographs of a work of art as documentation, a record, evidence, reproduction, coordinates, and echoes; all in pursuit of differentiating photographic documents from reproductions, and then aspects of photographic documentation.

A series of semi-synonyms is also integral to Freitag's discussion of Jussim's response to Ivin's statement about the lack of photographic syntax, concluding that the

purpose of drawing these distinctions is particularly relevant to the current discussion of reproductions and art history:

> Ms. Jussim convinces us, after a lengthy investigation of the channels and semantic signal-codes of the visual language spoken by photography, "that even today's photographs are simply maps of originals, not duplications of originals." This issue of presentation *cum* interpretation versus the absolute fidelity of copies, or the issue of "maps" versus "duplicates," is what is really at the core of the heated controversies concerning the use of photographs in research, study and teaching of art and its history that divided the founding fathers of the young discipline of art history in the second half of the 19th century.[130]

In her response to Benjamin's essay, Snow advocates for the understanding that photographic reproduction as employed in art history pedagogy is never intended to replace the original. That which is inherent to the copy is an acknowledgment of the original: "The copy image should be understood as a reference image, a signifier, a visual mnemonic -- the viewer acknowledging that the actual, authentic object, in essence, the experience of the real object cannot be copied, that it can only be represented."[131] In his introduction to the volume which includes this essay, Barron recognizes the paradox of the photographic reproduction which Snow seems intent on disavowing.

Barron refers to the intent of a player not often considered in this particular discussion, the copyist:

> The copyist's role, when considering the act of creating copies, or when seen from the vantage-point of the historian of the human mimetic impulse, looks quite different. Technical proficiency turns into a societal code for implanting shared values. Verisimilitude is merely an acknowledgment that such shared values have been perceived. To judge a product by considering the "intent" of its author may be interesting, and always appeals to our natural curiosity about others, but judging through

> "intent" ignores the influences of subconscious and other involuntary forces acting through the artist or copyist. In the language of criticism, to judge results by considering intent is manifestly an example of "the intentional fallacy." And finally, although copies are signs, all originals are signs, too. When an observer looks at an original he sees in it a sign that reflects the participation of that original, as seen by the observer, in the cultural, aesthetic, and symbolic outlook of the observer. The copy fixes the copyist's view of the original in itself, which itself is viewed by another conditioned observer. Copies of the same original made over time sometimes readily reveal the changing dispositions of the copyists. Here is the old dilemma popping up again: is what we see the result of *kunstwillen*? or does the culture, the material, and the technique combine on their own to make the style?[132]

This, then, is Barron's commentary on Snow's earlier statement that the photographic reproduction is at most a signifier of the original:

> ...when viewed from the outside the context of having to provide faithful copies ("signifiers" to use Maryly Snow's word) for educational uses, the above arguments seem to be crafted by an imperative if not a felicitous justification. For when we ignore or diminish the role of the maker of the reproductive image, it becomes obvious that the copy never fully substitutes for the original, even though the purpose of the photo-reproductive act is to minimize any contribution by the process, and that the result is just a signal that evokes the original....As a document, on the other hand, the photograph was always seen as a window through which one viewed the original object; the reproductive photograph was never understood to be an object in and of itself -- it was just a tool, and a poor one at that. The reproductive photograph is a paradox -- neither an object in its own right, nor a *vera icon* of what it represents.[133]

It should be reinforced that the discussion above occurs in a volume dedicated to an examination of the particular issues of Copyright and Fair Use, which are unclear (and untested) in Federal statues and quite hotly debated in the fields of visual resources, image providers and publishing concerns.

The above should indicate, though, that the assorted players associated with reproductions each have a particular, and vested interest in the nature of the relationship

between the original and reproduction. These players include the creator of the original object, the photographer of it, the publisher of that photograph, the copy photographer, the lecturer using a photographic reproduction and all audience members. To each of these individuals, a particular slide could imply something slightly different.

Because of the multiplicity of those involved, it may not be possible to make a blanket statement that the slide is "xxx" to art history. Not only are there many "types" of people associated with the reproduction slide, there are also even among art historians varying ways of using a slide image, according to the users knowledge or experience of the original depicted in the slide image.

Furthermore, although it is not impossible to use the photographic slide for original artistic statements, few artist photographers use it as such. In practice, the slide is primarily a reproductive medium rather than an artistic one. This is especially true for those slides used in art history, where a slide will most often be valued for its accuracy in presenting an original, or aspect of that original. Here the photographer's technical proficiency will be appreciated here more than any modifying artistic vision. This is not to say that the discipline of art history undervalues the slide for its artistry. Rather, what the slide does is often undervalued -- and even largely unacknowledged.

It seems that the tendency is to call the photographic slide some sort of a mnemonic or visual reference to the original. This would be appropriate for those who have some additional experience with the object presented in the slide. It is inappropriate for that person newly exposed to this particular original object. (In this case, the slide itself would also be a new, original object.) The desire to diminish the reproduction in order to preserve if not increase the value of the original is understandable. Whether

through familiarity, or even over-exposure, to poor quality reproductions, there is a frequent perception that the reproduction causes a loss of respect for the original. This is one reading of Walter Benjamin's point about the destruction of the aura of the original.

The slide continues to be used, since for current practices in art historical instruction, it is extremely practical. And despite a relationship fraught with tension, the slide is a "stand in" for the absent original work of art. As such, some of the essential qualities of its photographic transparency appear blended with its pictured object. Thus, as much as a "neutral" or even "unmediated image" might be desired, the slide reproduction represents not only what is pictured, but also how it is reproduced.

CONCLUSION

> These slides have left the carousel never to return, except as a new generation of slide reproductions. As such they bear the vestiges of a past art historical narrative, a new pictorial surface, and the promise of their future reproducibility and inscription in history as well.[134]

Current bibliographic searches reveal very few artists working with slides. There are individuals who use slides as a medium to be further manipulated and transformed, such as Cornelius Heesters, whose work is described above There are others working with projected images, and a few who use transparencies -- but none have been discovered whose finished work is a photographic slide. For unknown (and unexplored) reasons, the photographic slide is not presently used as a medium for an art object. Is this because most artists will have slides which picture their work; slides whose image is the primary object? Do any photographers make slides from their negatives or only from their prints? Without my attempting to fully answer these questions, I think the point to be made is that slides are valued for the images they reproduce. This seems to be true for artists as well as art historians. Though there is no reason why they may not be used as art objects, the slide is primarily a reproductive object.

There is, though, an addendum to this point, for certain slides have acquired a value beyond that of reproductions. There is currently a renewed interest in lantern

slides. In particular, slides from the turn of the century are valued for the historic views they 'document', and also as historic objects themselves. This historic interest may be in the collecting or organization of groups of slides which is the topic of the second half of Spindler's article, or even as objects with some associative value -- that is "X" used and made pencil notations on the label of this slide of "Y." However, valuing a slides as an object with artistic or historic importance will likely interfere with its usefulness as a teaching object.

The projected slide image is tremendously useful for art historians, despite its distortions and particular medium characteristics as discussed above. Aside from its use in group instruction, the slide is also useful for individual study and research. Slides may be visual reminders, or tools for publication. Slides serve multiple functions and assume many roles. And, as mentioned previously, a particular slide will not necessarily be used in the same way by different users, or even the same individual.

Research for this project was initiated to define how the slide has affected art history in actual practice and to delineate the theoretical underpinnings of its use.[135] The goal was to find documentation that indicates how the availability and use of the slide advanced some methodology or critical position. For example, the availability of photography is thought to have aided connoisseurship. Aside from the slide's usefulness in instruction, it has not been allied with a particular event or movement in art history. Indeed, it would be possible to say that the slide is useful to any critical position or methodological approach. There are, however, general comments about art historical practice in which the slide has played a role.

The question remains whether it has had an effect on the discipline beyond its pedagogic value. Others have alluded to the slide's having played a role as a democratizing agent for art history. When the only way to study art is through examination of the original, there are fewer people who would have the resources for travel, even considering personal and organizational sponsorship. The availability of surrogate images permits study independent of the original and its location.

Given the limited access of original objects, using the slide for general instruction means fewer will need to search out the original for study and examination. This may offer some degree of protection for the art object. The slide is available to all, the object to those who seek it out. Those objects with reduced handling and exposure may be available for a longer period of time; and with periodic rephotographing, to a potentially larger audience.

Both of these issues relate to common perceptions of art history as an elitist subject. Robert Barron has made the further point that the maintenance of copies of slides at many locations counterbalances the possibility of encountering a "pay-per-view" scenario with a central collection organization or agency.[136] Furthermore, it is assumed in advanced art historical work that the author has seen the art under discussion. And when this has not been possible, this point itself will often be a topic for discussion.

That argument which is developed based on an examination of surrogate images will necessarily be grounded differently that one based on a consideration in person of an original. Another effect on art history associated with the use of slides is that of expanding the field of appropriate study. For many purposes, the slide is a stand in for the original. And when, following Benjamin, one is not focused on the original, or in

awe of its physical presence, it may be easier to consider more abstract or theoretical issues. For example, this discussion, which has not focused on any particular art work or artists, has considered instead a broad view of art history and its objects, their representation as images and the written word in assorted texts, and mediated presence in the slide image. Of course, the irony remains that the slide, or surrogate image, by distinguishing itself from the original, may serve to heighten awareness of that original. This is a point which both Benjamin and Malraux have pursued.

The mediation of the slide between the art historian and art object must also be considered. Through its transformation (from art work, through photography and creation of slide, apparent finally in projection) the slide may act as a control on our knowledge of the original. It may be argued that there are very few individual points which cannot be made with a reproduction, but it would take a tremendous number of surrogate images to capture the totality of points to be made about a particular object. Also the slide may or may not allow for serendipitous discovery, depending in part on the focus or intent of the photographer of the object.

Ralph Lieberman descripes two points made by Wright Morris which are useful to cite:

> The first of Wright Morris' points, that by not photographing something he remembered it better, corresponds to Susan Sontag's thesis in *On Photography*: that the act of photographing something frequently prevents us from experiencing it. Because most art historians do not make their own photographs, there are few who can't remember the Arena Chapel frescoes, for example, because they saw them only on the ground glass, but [Morris' second point...] that we tend to recollect authoritative images of things rather than our own experience of them -- speaks to every art historian or general reader, for that matter, who has ever opened an illustrated book. In many cases the classic and frequently reproduced

> photograph of a thing... overrides our own experience of it, and even after we've seen the original itself, our recollection of, for example, the Palazzo Vecchio may in fact be our mental image of an Alinari photograph of it. If we try to conjure up a picture of the Seagram Building or the Lever House, the chances are that we will see them in our minds as they appear in one of the standard photographs rather than as we actually experience tall buildings when walking along Park Avenue. We are all... seeing the Seagram Building ourselves but remembering it as an Ezra Stoller photograph.[137]

Lieberman makes reference to Ernst Gombrich and others who discuss forming mental images of objects in their "cleanest and most complete forms," whether that form is frontal, profile or in plan.[138] Like Lieberman, the current discussion must leave aside broader issues regarding the nature of perception, aside from acknowledging that they also pertain to a consideration of the roles that slides assume in art history. Suffice it to say, the camera's function and image does not duplicate the eye's, just as the slide does not duplicate the original object.

As art history has developed as a discipline, it has become apparent that the art object under consideration or discussion need not be physically present. In the appendix are included numerous surveys of the discipline of art history, with those from the years 1912, 1934, 1943, 1966, and 1995 being of particular note.[139] Whether the studies are based on examinations of college and university course catalogs, questionnaire responses or site visits, the various categories mentioned by supporting organizations and equipment will often be listed. In addition, a 1968 study focused exclusively on slide collections.[140] In 1912, for example, the architectural department of the Massachusetts Institute of Technology, for instance is listed as having included 15,000 lantern slides. In all, 57 of the surveyed 95 colleges and universities mention photographic reproduction collections, though not all include lantern slides. A portion of the 1966 survey refers to

1961-62 library holding and budgets that were reported, including statistics on black and white, and color slide holdings. This survey's author finds "A department's vigor can be measured to a large extent by the rate of growth of its library and of its slide collection."[141] A short while later, Betty Jo Irvine and Eileen Fry published a survey Slide Libraries, in 1968. They surveyed the status of slide collections in colleges, universities and museums; describing equipment, photographic processing, classification systems, accession files and authority files. This publication and its 1979 revised publication edition remain the standard text on slide libraries nearly twenty years later.

In 1995, the College Art Association's Art Journal presented a focus issue, "Rethinking the Introductory Art History Survey" with guest editor Bradford H. Collins. The broadest conclusion was that there is dissatisfaction with the current chronological survey of predominantly Western art history, linked to standard survey texts -- Hartt, Jansen, Gardner, Gombrich, and perhaps less so with Honour & Fleming. Generally, teaching faculties are reorganizing around theory and methodology, with less emphasis on covering a canon -- although the idea of a group of "the important works" has not been abandoned altogether. Instructors indicate they will continue to use projected slide images, though there are fleeting intimations of other media (digital) available for the future.

In each of these surveys, where facilities with slide collections are mentioned, the point made is that their quality and quantity reflects the quality of the program which which they are associated. Slides have become an integral part of the discipline of art history itself. Though they may not have a documented causal relationship with respect to an event or movement in art history, their use has helped expand access to study and

involvement in the discipline. Those individuals who have considered the nature of the visual used in instruction, whether slide or art object, reproduction or original (that there are numerous texts relating to the nature of photographs and reproductions indicates this is a topic others have considered) will most likely have considered the nature of the discipline of art history. And this heightened contemplation will not only perpetuate awareness of the roles assumed by slides and other reproductions, but also a synchronous regard for the original object, which could, of course, be a slide.

ENDNOTES

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[1]Wolfgang Born, "Obituary for Heinrich Wolfflin, 1864-1945," College Art Journal V.1 (November 1945): 46.

[2]A comprehensive discussion of the use of slides and art history is lacking, but from a number of articles of slightly less comprehensive scope, and which generally limit their focus to the nineteenth century, it may be possible to piece together a fairly thourough view. Most useful are Howard B. Leighton, "The Lantern Slide and Art History", History of Photography. 8.2 (April-June 1984): 107-118; Carla Freeman, "Visual Media in Education: An Informal History", Visual Resources. VI (1992): 327-340; and Trevor Fawcett, "Visual Facts and the Nineteenth-Century Art Lecture", Art History, 6.4 (Dec, 1983): 442-60.

[3]Though the Lives is among the first art historical writings, its focus is, as the title states, lives of the painters. This literary model may still be followed today, but there is little need for a discussion of photographic reproductions in the context of the Lives. When individual works are cited, the description is rarely particularized enough that the specificity of a photograph would lend any additional substance to the discussion. As crystalizing for the discipline as Vasari's Lives has been, his biographical approach has little to say to the surrogate.

[4]Erwin Panofsky, "Three Decades of Art History in the United States: Impressions of a Transplanted European," Meaning in the Visual Arts. Papers in and on Art History. (Garden City, NY: Doubleday, 1955): 323. For further discussion of Winckelmann, see Alex Potts, Flesh and The Ideal: Winckelmann and the Origins of Art History (New Haven:Yale Unversity Press, 1994).

[5]Michael Podro, The Critical Historians of Art. (New Haven: Yale University Press, 1982): xiv.

[6]See p.81, Appendix. During the course of this research, I came across numerous instances of "firsts" - the first art historian, use of slides in an art lecture, etc. When useful, I have included such citations in the body of the text. The remainder of the list of firsts have been relegated to the appendix.

[7]Michael Ann Holly, Panofsky and the Foundations of Art History (Ithaca: Cornell University Press, 1984): 21.

[8]Donald Preziosi, "The Question of Art History", Critical Inquiry 18 (Winter 1992): 364.

[9]Preziosi, p. 365.

[10]Preziosi, p. 365.

[11]Sybil Gordon Kantor, "The Beginnings of Art History at Harvard and the 'Fogg Method'", The Early Years of Art History in the Unites States. Craig Hugh Smyth and Peter M.Lukehart, eds. (Princeton: Department of Art and Archaeology, 1993): 174

[12]Kantor, p. 165.

[13]David Van Zanten, "Formulating Art History at Princeton and the 'Humanistic Laboratory'" in The Early Years of Art History in the Unites States. Craig Hugh Smyth and Peter M.Lukehart, eds (Princeton: Department of Art and Archaeology, 1993): 175.

[14]Fawcett, p. 442, 444.

[15]Fawcett, p. 446-7.
[16]Helene Roberts, Art History through the Camera's Lens (Gordon and Breach Publishers, 1995): ix.
[17]William Ivins, Prints and Visual Communication, (Cambridge: Harvard University Press, 1953): 136.
[18]Leighton, Howard B. "The Lantern Slide and Art History", History of Photography. Vol 8, No.2, April-June 1984. p. 107-18.
[19]Olive Cook, Movement in Two Dimensions: A study of the animated and projected pictures which preceded the invention of cinematography (London: Hutchinson & Co, Ltd., 1963); Elizabeth Shepherd, "The Magic Lantern Slide in Entertainment and Education 1860-1920", History of Photography. 11.2 (April-June 1987): 91-108; T.C.Hepworth, Evening Work for Amateur Photographers, (London: Hazell, Watson, and Viney, Ltd., 1890; reprinted, New York: Arno Press Inc., 1973); and Hepworth, The Book of the Lantern (London: Hazell, Watson and Viney, 1899; reprinted, New York: Arno Press, 1978); Franz Paul Liesegang, Dates and Sources: A contribution to the history of theart of projection and to cinematography, Hermann Hecht, trans & ed (London: The Magic Lantern Society of Great Britian, 1986); British Lantern Society , London. Also of use are Anthony Hamber, "The Use of Photography by Nineteenth-Century Art Historians," in Art History through the Camera's Lens. Helene E. Roberts, ed (Gordon and Breach Publishers, 1995): 89-121; and Trevor Fawcett, "Graphic Versus Photographic in the Nineteenth-Century Reproduction," Art History 9.2 (June 1986): 185-212.
[20]Hepworth, and Shepherd, p. 92.
[21]Shepherd, p. 99-100. There may be something of a parallel in art historians' reluctance to use slides, where there might have been a similar perception that lantern slides were primarily entertaining rather than educational.
[22]Shepherd, p. 100.
[23]Shepherd, p. 91.
[24]Robert Spindler, "Windows to the American Past: Lantern Slides as Historic Evidence," in Art History through the Camera's Lens. Helene E. Roberts, ed. (Gordon and Breach Publishers, 1995): 134; referencing articles: W.Woodbury, "Science at Home," The Magic Lantern, 1, (1874): 13; and M.A.Root, "The Magic Lantern," The Magic Lantern, 1 (1874): 33.
[25]George Layne, "The Langenheims of Philadelphia," History of Photography, 11.1, p. 46.
[26]Layne, p. 47, and in a continuing article in the 1874 volume of the Magic Lantern Journal.
[27]Leighton, p. 108; Carla Conrad Freeman, "Visual Media in Education: An Informal History", Visual Resources, VI (1992): 332; and Shepherd, p. 105.
[28]Fawcett, "Visual Facts...", p. 445.
[29]Fawcett, p. 448.
[30]Fawcett, p. 449.
[31]Fawcett, p. 457.
[32]Roberts, p. ix.

[33]Trevor Fawcett, "Graphic Versus Photographic in the Nineteenth-Century Reproduction," Art History, 9.2 (June 1986): 189.
[34]Fawcett, "Graphic Versus Photographic...", p. 192-3. In addition, chapter 3 will examine in depth the issues of reproduction and the original.
[35]Anthony Hamber, "The Use of Photography by Nineteenth-Century Art Historians," in Art History through the Camera's Lens. Helene E. Roberts, ed. (Gordon and Breach Publishers, 1995): 113-4. See also: Fawcett, "Visual Facts...", and Leighton.
[36]Fawcett, "Visual Facts...," p. 454; referencing Heinrich Dilly's article "Lichtbildprojektion - Prothese der Kinstbetrachtung", *Kunstwissenschaft uns Kunstvermittlung*, ed. Irene Below, Giessen, 1975, 153-72, and book, *Kunstgeschiscte als Institution*, Frankfurt, 1979, 151-1, 158-9. Note, too, reference to Liesegang limelight sciopticon, a family member who has produced a useful chronology on projection - Franz Paul Liesegang, Dates and Sources:A contribution to the history of theart of projection and to cinematography. Hermann Hecht, trans & ed. (London:The Magic Lantern Society of Great Britian, 1986).
[37]Udo Kultermann, The History of Art History, (Abaris Books Inc., 1993): 127.
[38]Fawcett, "Visual Facts...,", p. 454-5, referencing Herman Grimm, *Beitrage zur Deutschen Culturgeschichte*, Berlin, 1897, p. 276-395.
[39]Wolfgang Freitag, "Early Uses of Photography in the History of Art," Art Journal, 39 (Winter 1979/80): 122, referencing Grimm, "Die Umgestaltung der Universitatsvorlesungen uber neurere Kunstgeschichte durch das Skioptikon," (Berlin) *Nationalzeitung*. 1892.
[40]Michael Ann Holly, Panofsky and the Foundations of Art History, (Ithaca: Cornell University Press, 1984): 48.
[41]Fawcett, "Visual Facts...," p.455-6, referencing HeinrichWofflin, *The Sense of Form in Art*, New York, 1958, preface and Wolfflin's *Gedanken zur Kunstgeschichte*, Basle, 1940, reprinted 1947, p. 137, 155.
[42]Hamber, p. 113-4.
[43]Freitag, "The Indivisibility of Art Librarianship," in A Reader in Art Librarianship, Philip Pacey, ed. (New York: K.G.Saur, 1985): 14.
[44]Beaumont Newhall, "The Challenge of Photography to this Art Historian," Perspectives on Photography: Essays in Honor of Beaumont Newhall, Eds. Peter Walch & Thomas F. Barrow, (Albuquerque: University of New Mexico Press, 1986): 2.
[45]Certainly, something of a digital revolution is underway at the end of the twentieth century with the increasing availability of digital images, but their quality for projection is not yet acceptable to art historians. Access issues for digital images will be considered in the conclusion.
[46]Andrew Carnduff Ritchie, The Visual Arts in Higher Education, (New York: College Art Association 1966): 52.
[47]Carol Martin Watts, "Slide Dissolve as Technique", Journal of Architectural Education. p. 29.
[48]Cook, p. 102.
[49]George W. Eggers, "Dr. Fred Block' Sets of Color Slides", College Art Journal, 8.2, (Winer 1948-49): 96; and Spindler, p. 141, 143.

[50]Preziosi, Rethinking Art History, p. 59.
[51]Preziosi, p. 61.
[52]Spindler, p. 141-4.
[53]Although it is possible there are still sets sold with the stipluation they be used as provided, with a particular script in unusual copyright situations, but this would certainly not be the norm.
[54]Spindler, p. 144, referencing "Misuse of Lantern Illustrations By Museum Lecturers," *Science*, 35 (1912): 532.
[55]Fawcett, "Visual Facts...," p. 458.
[56]Lieberman, p. 245.
[57]Juan Freudenthal, "The Slide as a Communication Tool: A State-of the-Art Survey", School Media Quarterly. (Winter 1974): 114.
[58]T.C.Hepworth, The Book of the Lantern (London:Hazell, Watson and Viney, 1899; reprinted, New York:Arno Press, 1978): 3-4. Hepworth also dismisses the optical affects described by Benvenuto Cellini in an necromancy conjuring incident as part of the history of the magic lantern, saying that it is unlikely that any optical instrument of the time could have produced the described effect of filling the coliseum with devils (p. 1-3).
[59]Jonathan Crary, Techniques of the Observer:On Vision and Modernity in the Nineteenth Century, (Cambridge: MIT Press, 1990): 33, referencing Kircher, Ars magna lucis et umbrae, Rome 1646, p. 173-184.
[60]George Layne, "The Langenheims of Philadelphia", History of Photography. 11.1, (January-March 1987): 43.
[61]Layne, p. 44.
[62]Oxford English Dictionary, 2nd edition, prepared by J.S.Simpson and E.S.C.Weiner, Oxford: Clarendon Press, 1989. vol 15, p. 698. "**1819** M.EDGEWORTH *Let.* 17 Apr. (1971) 199 You know him and his magic lantern of good things. Some new figures on the slides. **1846** DICKENS *Cricket on Hearth* i, He had even lost money..by gettin up goblin slides for magic lanterns. **1858** *Edinb. Rev.* July 207 His history..passes before us like a series of slides in a magic lantern. **1890** ATKINSON *Ganot's Physics* 598 A stereoscope..which will give us, with the ordinary stereoscopic slides, a reversed picture. **1940** P.E.BOUCHER *Fundamentals of Photogr.* (1941) xiii. 200 Valuable slides..which are to be subjected to considerable use should be mounted in glass. **1978** M.J.LANGFORD *Step by Step Guide to Photogr* 176 Before presentation, your slides must be inserted in holders ready for projection."
and c."*Photogr.* A flat case or receptacle within which plates are placed for the purpose of being inserted in a camera. Freq. *dark slide*."
[63]Cook, p. 94.
[64]Cook, p. 87. For description of projector attachments and slides, see p. 94-6, 87-88.
[65]Layne, p. 44.
[66]Layne, p. 44.
[67]Layne, p. 44.
[68]Layne, p. 43-4. It is hard not to draw analogies to the current "digital" revolution at this point - with Bill Gates, Microsoft and their technical advances spurred on by the profit motive.

[69]Fawcett, "Visual Facts...," p. 456-7.
[70]Betty Jo Irvine and P.Eileen Fry. Slide Libraries: A Guide for Academic Institutions, Museums, and Special Collections. (Littleton, CO: Libraries Unlimites, Inc., 1979): 25; and Freeman, p. 336.
[71]Elizabeth Sunderland, "Microfilm Slide Project", College Art Journal, V.1 (November 1945): 20.
[72]"By the mid-1850s numerous photographers throughout Europe were beginning to sell photographs of works of art, though the explosion in commercially available photographs did not take place until the following decade. One crucial point to remember is that these photographs were not always taken directly from the original. Depending on the size, or format, of the photograph, the surface texture of the original to be copied and the traditional reproductive process used, it an be extremely difficult to identify whether a photograph was taken from the original or from a reproduction. A crude etching or engraving could be detected far more easily than a litograph. However, some photographers seem never to have photographeed directly from the original work, perhaps for practical reasons." Hamber, p. 97.
[73]Sunderland, p. 20.
[74]Shirley Ellis, "A thousand words about the slide", ALA Bulletin, (June 1959): 529.
[75]Spindler, p. 140.
[76]Still in use at IFA/NYU, and collections are maintained at a few other visual resource collections.
[77]Spindler, p. 140.
[78]Leighton, p. 113.
[79]Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction", Illuminations, Harry Zohn, trans. (New York: Schocken Books, 1955): 220.
[80]Ellis, p. 529.
[81]Spindler, p. 144.
[82]Fawcett, "Graphic Versus Photographic...," p. 191, referemcomg John Hannavy, *Roger Fenton of Crimble Hall* (London, 1975): 34-5.
[83]Fawcett, p. 206.
[84]Fawcett, p. 206.
[85]Andre Malraux, "Museum Without Walls", The Voices of Silence. trans, Stuart Gilbert. (Garden City: Doubleday & Company, 1953): 21.
[86]Malraux, p. 21.
[87]Lieberman, p. 240-1.
[88]James Ackerman and Rhys Carpenter. Art and Archeology. (Englewood Cliffs, NJ: 1963): 135-6.
[89]Frietag, "Early Uses of Photography in the History of Art," Art Journal, 39, (Winter 1979/80): 122.
[90]Priscilla Hess and Roberta Fansler. Research in Fine Arts in the Colleges and Universities of the Unites States, (New York:Carnegie Coproration, 1934): 60.
[91]Philip C. Beam, "The Color Slide Controversy", p. 35-38; and James M.Carpenter, "The Limitations of Color Slides", p. 38-40; both College Art Journal, January 1943, 2.2.
[92]Carpenter, p. 39.

[93]Carpenter, p. 39.
[94]Fawcett, "Visual Facts...", p. 457-8.
[95]Cook, p. 115-6.
[96]Freitag, "Early Uses...", p. 122-3.
[97]Sarah Greenough, "Of Charming Glens, Graceful Glades and Frowning Cliffs" in Photography in Nineteenth-Century America. Martha A.Sandweiss, ed. (FortWorth: Amon Carter Museum, 1991): 270.
[98]Greenough, p. 271.
[99]Leighton, p. 115, 117.
[100]Object, Image, Inquiry: The Art Historian at Work, Marylin Schmidtt, ed., (J.Paul Getty Trust: Santa Monica, 1988): 11-2.
[101]Lieberman, p. 219-20.
[102]Beaumont Newhall, "Photography as a Branch of Art History", College Art Journal, 1.4, (May 1942): 86.
[103]Fawcett, "Graphic Versus Photographic", p. 202 referencing Lewis Wright, Art Journal (1866): 87-8.
[104] Lawrence Alloway, "Artist and Photographers", Topics in American Art Since 1945, (New York: W.W.Norton & Co, Inc., 1975): 202 referencing Camera, 4, (1958).
[105]Example from electronic mail message, Margaret Webster, 15 Sept, 1997, posted to VRA-List responding to the subject line:"What's Unique about your Collection?".
[106]Lieberman, p. 219.
[107]Estelle Jussim, Visual Communication and the Graphic Arts: Photographic Technilogies in the Nineteenth Century. (New York: R.R.Bowker Company, 1974): 301.
[108]Roland Barthes, "The Photographic Message,", Stephen Heath, trans., Image, Music, Text, (New York: Noonday Press, 1977; orig, "Le message photographique", Communications, 1, 1961): 18.
[109]Barthes, p. 17-8.
[110]Barthes, p. 27.
[111]Allan Sekula, "On the Invention of Photographic Meaning", Photography in Print, (Albuquerque:University of New Mexico Press, 1981): 455.
[112]Sekula, p.472.
[113]For an extensive discussion of just this topic see the special bulletin: Copyright and Fair Use:The Great Image Debate, Baron, Robert A. ed, Visual Resources Special Issue, 12.3&4, (Gordon and Breach Publishers, 1997).
[114]Hamber, p .93-4, referencing Jussim, p. 308.
[115]Ivins, p. 116.
[116]Ivins, p. 177.
[117]Richard Shiff, "Phototropism (Figuring the Proper)," . Retaining the Original: Multiple Originals, Copies, and Reproductions, University Press of New England, 1989, p. 163.
[118]Shiff, p. 162.
[119]Jussim, p. 308, quoted above in Hamber, p. 93.
[120]Shiff, p. 162.
[121]Ivins, p. 172.
[122]Malraux, p. 21.

[123]Mary Bergstein, "Introductory Essay: 'We May Imagine It': Living with Photographic Reproduction at the End of Our Century," Art History through the Camera's Lens. Helene E. Roberts, ed. (Gordon and Breach Publishers, 1995): 9-11.
[124]Benjamin, p. 220.
[125]Maryly Snow, "The Pedagogical Consequences of Photomechanical Reproduction in the Visual Histories: From Copy Photography to Digital Mnemonics", Copyright and Fair Use:The Great Image Debate, ed. Baron, Robert A. Visual Resources Special Issue, 12.3 & 4, (Gordon and Breach Publishers, 1997): 331.
[126]Alexander, p. 64, Center for Advanced Study in the Visual Arts. Retaining the Original: Multiple Originals, Copies, and Reproductions. (Symposium Papers VII at the National Gallery of Art, Washington) University Press of New England, 1989, volume 20, Studies in the History of Art.
[127]Alloway, p. 201.
[128]Alloway, p. 201.
[129]Alloway, p. 202.
[130]Freitag, p. 117, referencing Jussin, p. 274.
[131]Snow, p. 318.
[132]Barron, p. 250.
[133]Barron, p. 250.
[134]Evonne Levy, "The Art History Effect", the storyteller: cornelius heesters, (Toronto:Christopher Cutts Gallery, 1996): 5.
[135]It might have been possible to examine their reciprocal relationship, investigating whether art history has exerted enough of an influence to push the deveolpment of particular film capabilities, but this was not the path or direction taken. And if any judgement can be made from discussion on the Visual Resources list-serve, the dwindling production and availability of certain favored film stocks indicates what might have been revealed.
[136]Robert Barron, e-mail message to VRA-L, 3-27-97.
[137]Lieberman, p.224-5.
[138]Lieberman, p.225 & p.246, note #3 referencing Ernst Gombrich, Art and Illusion: A Study in the Psychlogy of Pictorial Representation, 2nd ed. (Princeton, 1961): 23.
[139]E.BaldwinSmith, "The Study of the History of Art in the Coleges and Universities of the United States." 1912. reprinted in The Early Years of Art History in the United States. Eds. Craig Hugh Smyth and Peter M.Lukehart. (Princeton:Department of Art and Archaeology, 1993): 12-36; Priscilla Hess & Roberta Fansler, Research in Fine Arts in the Colleges and Universities of the United States (New York: Carnegie Coproration, 1934); Robert Goldwater, "Teaching of Art in the Colleges of the Unites States." College Art Journal. 2.4 (May 1943, supplement): 1-31; Andrew Ritchie, et al., The Visual Arts in Higher Education, (New York: College Art Association 1966); and Bradford Collins, Ed., Art Journal Rethinking the Introductory Art History Survey. 54.3 (1995).
[140]Betty Jo Irvine & P.Eileen Fry, Slide Libraries: A Guide for Academic Institutions, Museums, and Special Collections, 2nd ed. (Littleton, CO: Libraries Unlimited, Inc., 1979)
[141]Ritchie, p.36.

APPENDIX: Firsts in Art History, Slides and Visual Education

YEAR	EVENT	CITATION *
1646	First projector "...in 1646, a German Jesuit named Athanasius Kircher published Ars Magna Lucis, in which he gave the first recorded description of his Magin Cataprica, or magic lantern. In an early premiere of the magic lantern, before an assembly of nobles he projected crude hand painted images of devils, demons, and skeletons on the wall of a dark room, using the light of a smoky lamp."	Saettler, p.89
17th C	Hand painted lantern slides available	Irvine & Fry, p.25
1764	First book of the history of art "The first book to flaunt the phrase "history of art" on its title page was Winckelmann's Geschichte der Kunst des Altertums of 1764	Panofsky, p.323
1770-1790s	Early lectures with visuals "From the time of his first series in 1770 to the mid-1790s when his lectures has to be read for him, Sandby [first professor of architecture at the Royal Academy] supplemented his oral explanations with displays of carefully executed drawings. Indeed the illustrations were integral to the explanations."	Fawcett, "Visual Facts", p.444
1804	Early public art lectures "In 1804 the [Royal Institution "Its underlying purpose was to direct scientific research towards the solution of immediate technological and social problems"] decided to experiment for the first time with lectures on non-scientific subjects in the hope that bigger audiences would bring in much needed income. This was a crucial change of policy but one immediately rewarded with success. The new team of lecturers, that spell-binding orator Sydney Smith at their head, drew unprecedented crowds and showed at once that an unfilled demand for a varied programme of public lectures did exist."	Fawcett, "Visual Facts", p.445
1808	Early use of transparencies "[Humphry] Davy, for example, experimented with transparency paintings when he spoke on geology and mineralogy at the Royal Institution around 1808..."	Fawcett, "Visual Facts", p.453
1813	First professorship in art A full professorship was established... [in] 1813, at Gottingen, its first incumbent being the excellent Johann Dominic Fiorillo (in spite of his name a native of Hamburg)."	Panofsky, p.323
1820s	Early projection of microscope slides using limelight ...in the 1820s George Birkbeck tried out a projection microscope illuminated by limelight at the London Mechanics' Institute."	Fawcett, "Visual Facts", p.453
1826	Founding of the American lyceum movement "A direct forerunner of the visual instruction movement was the American lyceum founded by Josiah Holbrook in the villages of Massachusetts in 1826. On these early lyceum circuits, the lantern slide became the most popular medium of instruction	Saettler, p.123-124
1827	Early methodological foundations of art history "...the methodical foundations of the new discipline [of art history] were laid in Karl Friedrich von Rumohr's Italienische Forschungen of 1827."	Panofsky, p.323
1831-1832	First classes in history of archaeology and architecture "It all began at Princeton in 1831-32, when the study of Roman antiquities was introduced and lectures on historical architecture were given. Soon such institutions as New York University, Yale, the University of Vermont, and the University of Michigan began giving courses..."	Leighton, p.107; Hess & Fansler, p.144; & Smyth, p.5
1832	First classes in design "...Samuel F.B. Morse's appointment[ed] to teach "principles of the arts of design" at New York University in 1832	Smyth, p.5
1837	Early reference to microscopic slide a."A slip of glass or other material on which an object is mounted or placed to facilitate its examination by a microscope.(1837)"	OED, p.698
1839	Undergraduate art lectures taught by Colonel John Trumbull at Yale in 1839	Smyth, p.5
1840s	Usefulness of early lecture visuals "The lecture illustration was less a facsimile than a diagram, which is what some nineteenth-century lecturers indeed called it; useful enough for explaining general points of style, iconography and composition but not for subtler analysis and detailed comparison of one work with another."	Fawcett, "Visual Facts", p.450
1844	"...the first art history professorship had been established for G.E.Waagen in Berlin in 1844"	Preziosi, "Question of Art History", p.371
1846	First projections of photographs "The Langenheims were never satisfied with making and selling individual pictures.... In 1846 they imported, from Vienna, a projection apparatus similar to an 'opaque projector'. Using oxygen burners for illumination, they projected their daguerreotypes onto the wall, charging admission to view the images. The project was not successful,	Layne, p.43

* SEE: Bibliography for full citations

YEAR	EVENT	CITATION
	probably because of the poor reflective power of the light projector."	
	Early Charles Dickens reference to magic lantern In Cricket on Hearth , "He had even lost money...by getting up goblin slides for magic lanterns."	OED, p.698
1847	First art history book with photographic illustrations "In 1847 William Stirling's Annals of the Artists of Spain - the book that discovered Greco, Velasquez, and Goya, to the English speaking world - made its appearance. The very rare fourth volume, of which only twenty-five copies were printed, contained a series of calotypes by Talbot after paintings and prints."	Ivins, p.124
1848	First albumen process lantern slides In 1848 the Langenheims conceived the idea of using the albumen plates in the lantern. By 1849 they were ready to show their first slides, and in 1850 they patented the process, much to the chagrin of Whipple, whose very similar 'crystalotype' process was patented earlier. Whipple, however, used the glass plates only as negatives for making positive prints on paper, and never went on to consider using them as lantern slides."	Layne, p.44
1849	First showing of photographic slide	Layne, p.44
1850	Langenheim Brothers of Philadelphia patent photographic lantern slides, Nov. 19, 1850.	Shepherd, p.91; Layne, p.44; Spindler, p.134
	First use of lantern slides in public institution "Starting in 1844, [Superintendent of Pennsylvania Hospital for the Insane, Dr.] Kirkbride presented nightly lectures and amusements for his patients, using the lantern to illustrate the subjects discussed whenever possible. This meant purchasing expensive, hand-drawn slides. By 1850, when the Langenheim slides became available, Kirkbride was quick to see the advantage of the cheaper yet more accurate and detailed photographic slides." The importance of Kirkbride's role in the development of photography was recognized by Root, one of the earliest historians of photography. In the first issue of Benerman [sic] and Wilson's Magic Lantern journal, in 1874, Root said, 'Dr. Kirkbride was the first man to introduce and use photographic slides in the magic lantern, in a public institution, for amusement and instruction.'"	Layne p.46, 47, (note: M.A.Root, "The History of the Magic Lantern and Its Scientific and Educational Uses", Magic Lantern, vol. I #1, (1874) p. 11, Bennerman and Wilson, Philadelphia, PA)
1850s	Early catalog offerings of photographs "From the 1850's when firms like Alinari and Braun began issuing sale catalogues of photographic prints, or bodies such as the Commission des Monuments Historiques instituted photographic surveys of the national artistic heritage, it gradually became feasible to build up comprehensive visual archives."	Fawcett, "Control of Text", p.134
	"By the mid-1850s numerous photographers throughout Europe were beginning to sell photographs of works of art, though the explosion in commercially available photographs did not take place until the following decade. One crucial point to remember is that these photographs were not always taken directly from the original. Depending on the size, or format, of the photograph, the surface texture of the original to be copied and the traditional reproductive process used, it an be extremely difficult to identify whether a photograph was taken from the original or from a reproduction. A crude etching or engraving could be detected far more easily than a lithograph. However, some photographers seem never to have photographed directly from the original work, perhaps for practical reasons."	Hamber p.97
	Early European use of photographic slides "The use of the lantern slde in the art lecture does not seem to have become as popular in England as it did in Germany though it was being used from the late 1850s in the Army Schools in England."	Hamber, p.114
1851	Photographic slides at the Crystal Palace "Samples of the Langenheim brothers 'hyalotypes' (from the Greek 'hyalos', meaning glass)...made a great impression when shown at the great London Exposition in the Crystal Palace in 1851."	Layne, p.44
	"In 1851 the Langenheim Brothers were awarded a medal at the Crystal Palace Exhibition in London for their "stereopticon slides," and full time production began in 1860."	Spindler, p.134
	Early concerns about photographic reproductions "It was around this time that the latent worries about photographic reproduction itself began to surface: less with regard to its technical capacity than about the ways it seemed sometimes to be misused, or encouraged people to study art at one remove. A frequent matter for complaint was the prevalence of retouching. Wolfflin and Hans Tietze, for example, both protested at the practice of deleting backgrounds from the negative in order to silhouette three-dimensional works like sculpture (but at the expense of falsifying contours and losing context). More significant were the growing doubts about the camera's possible effect on aesthetic discrimination, about its tendency to overemphasize the physical nature of art objects, and about the dangers of accepting the all-too-plausible photograph as if it were the real thing and not a highly	Fawcett, "Graphic Vs Photographic", p.206

YEAR	EVENT	CITATION
	reductionist copy....Never must the distinction between the archetype and its replicas be forgotten; in no circumstances should a photograph be considered an adequate substitute."	
1857	Art Treasures Exhibition, Manchester, England	
1858	Early "movement" in slides "...the desire to animate the projected image soon led to the invention of many ingenious mechanical slides, all of which were being made before 1858, the date of a treatise on slides published by Winsor and Newton and written by Edward Groom. He states that such slides were being shown at that time only in public institutions and were not used for private entertainments, so they could not have been so widely distributed as they were towards the close of the nineteenth century.	Cook, p.87
	Early public slides shows in England "The first public display of photographic slides took place as early as 1858, and from then onwards photographic slides were included among the productions of most slide makers.	Cook, p.93
1859	Princeton names Professor of Fine Arts	Hess & Fansler, p.144
1860s	Early concerns about decline in lantern slide quality: "After about 1860 the work began to deteriorate. Engravings and drawings were often transferred to the glasses by photographic means and then coloured...."	Cook, p.89
	Early photographic slides of art objects "The Raphael cartoons in the Victoria and Albert Museum were photographically transferred to slides and horribly coloured in bright blue and crimson by girls specially employed for that purpose who were usually wholly ignorant of the originals of the subjects they were called upon to paint. ...Engravings of all Landseer's animal paintings were made into a lantern-slide set which could be purchased either plain or coloured. Leech's seaside drawings furnished another set; and countless individual engravings and drawings were reproduced, sometimes to be shown singly, sometimes to be used indiscriminately in any sequence where they appeared to fit."	Cook, p.90-91
	First photographic "archive" "By the mid-1860s, the Langenheim catalogue included hundreds of titles in slides and stereo views, with everything from natural history to scenic views and copies of famous paintings. They became purveyors of pictures, forerunners of the commercial archives of today. Indeed, they started out in Philadelphia as newspapermen, and they ended up as publishers."	Layne, p. 51
	First art history courses "...by the time of the Civil War six colleges had instituted such offerings with varying degrees of success."	Leighton, p.107
	Early perception that photography has scientific merit, not artistic "...photography radically altered visual perception.....Photography completely subverted the concept of truth being that which could be seen, since it relied on a complex amalgam of optics and photochemistry rather than a form of comprehensible manual intervention to produce its results. This perception of photography as a scientific pursuit was further underlined by the fact that until the 1860s a very considerable knowledge of chemistry and optics were necessary to those wishing to take photographs. A very different form of manual dexterity was required to draw with the "Pencil of Nature" and many contemporary critics felt that it was devoid of artistic merit."	Hamber, p.34
	Early perception that photography is useful for research, not publication "By the 1860s it would appear that while art historians used photographs for their research and writing they did not feel it necessary to illustrate their books with them."	Hamber, p.111
	Little art education through 1860s "Despite these early attempts (six in all before the Civil War) to give art instruction a definite place in the college curriculum, the position of art education, and more generally, of aesthetic taste, in this country, seems to have been a subject for some slight misgivings on the part of educators and critics of the period."	Hess & Fansler, p.9
1860-1890s	Availability of "temperance" slide sets "Most commercial dealers from the 1860s through the 1900s included slide sets in their catalogues, especially designed for the temperance crusades."	Shepherd, p.100
1870s	Early attempts at half-tones "In the seventies attempts were made to produce what we now call half-tones. This came to fruition in the eighties and nineties with the invention of the ruled cross-line half-tone screen, a device which made it possible to make a printing surface for a pictorial report in which neither the draughtsman or the engraver had had a hand. Its great importance lay in the fact that the lines of the process as distinct from the lines of the visual report could be below the threshold of normal human vision. In the old handmade processes the lines of the process and the lines of the report were the same lines, and the process counted for more than the report in the character of the lines and the statements they made. Until after the two sets of lines and dots, those of the	Ivins, p.176-177

YEAR	EVENT	CITATION
	process and those of the report, had been differentiated and separated and the lines and dots of the process had been lost to ordinary vision, as they are in the photograph and the fine half-tone, there had been no chance of getting an accurate report. Man had at last achieved a way of making visual reports that had no interfering symbolic linear syntax of their own. In the whole history of human communication it is doubtful if any more extraordinary step had ever been taken than this."	
	Early art history lectures with lantern slides "The photographically illustrated art lecture was revolutionised by the adoption of the lantern slide. In Germany Bruno Meyer, professor of art history at the Polytechnic Institut in Karlsruhe began to produce Glasphotogramme from the mid 1870s. Relying on subjects in Prussian museums, Meyer initially met little success and even some reactionary repugnance though Herman Grimm, professor of art history at Berlin, and his successor to the chair, Heinrich Wolfflin, both enthusiastically adopted the use of lantern slides..."	Hamber, p.113-114
	Early realization of usefulness and educational value of slides by scientists and physicians "The educational value of the lantern slide began to be recognized in the 1870s. [up to then, entertainment value] Walter Woodbury wrote in 1874 "The Magic Lantern has become, or is fast becoming, one of our best home teachers the newly established journal The Magic Lantern, Woodbury wrote a series of articles describing optical experiments which could be performed at home with lantern slides. Scientists and physicians such as J.I. Woodward and Dr. Isaac Rhen produced sets of anatomical or microscopic slides for instructional purposes. "Dr. Isaac Rhen was professor of Toxicology and Chemistry at "Pennsylvania Medical University," and he exhibited slides of microscopic subjects at the Franklin Institute in 1856. Dr. Joseph Janvier Woodward was a superintendent in the Surgeon General's office responsible for the creation of a National Medical Museum in Washington, DC. His slides were images of anatomical subjects."	Spindler, p.134, and notes p.147-148 [note 6 -W.W., "Science at Home," The Magic Lantern, 1, (1874), no.4: p.13., note 7-M.A.Root, "The Magic Lantern," The Magic Lantern, 1 (1874) no.1: p.33}
	First graduate courses in art "Mention has already been made of the sporadic offerings of graduate instruction in art at Wisconsin in 1871, and at Harvard in 1877 and 1885.	Hess & Fansler, p. 35-36
1872	Art lectures at the Metropolitan Museum of Art "Momentum was gained with the opening of the Metropolitan Museum of Art in 1870, and their introduction of public lectures two years later..."	Freeman, p.331
1873	First art history conference in Vienna "One of the first to become enthusiastic was Bruno Meyer, professor of art history at the Polytechnic Institute in Karlsruhe. In the belief that slide lecturing would indeed catch on he advocated the technique at the first art historical congress in 1873"	Fawcett, "Visual Facts", p.454
	" As early as 1873 the profession was sufficiently well advanced, especially in German-speaking countries, to allow the holding of the first international art history congress."	Fawcett, "Control of Text", p.133
	Proposal for photographic archive at 1873 Congress "In 1873 the matter of archives of reproductions of works of art was discussed at the first International Congress of Art History held in Vienna, when Anton Springer made the proposal that led to the founding of the Kunsthistorisches Gesellschaft fur Photographische Publikationen.	Fawcett, "Graphic Vs Photographic", p.206, Hamber, p.144
1874	Founding of the Chautauqua Institution "When the Chautauqua Institution, founded by John Heyl Vincent and Louis Miller in 1874, became a dominant movement in American life, the lantern slide was again used extensively for educational purposes.	Saettler, p.123-124
	Journal The Magic Lantern begins publication "The Magic Lantern, a periodical published in Philadelphia by Bennerman and Wilson Lantern Slide Company to promote the lantern slide business, mentioned in its first volume (1874), presumably with regret, that the lantern was not yet widely popular."	Shepherd, p.91
	First art history course at Harvard "...in 1874, Charles Eliot Norton of Harvard began teaching his influential course in the 'History of fine arts and their relation to literature.'"	Freeman, p.331
	First survey of art education "The first extended survey of art education undertaken by the federal Bureau of education was issued in 1874 in the form of a circular. This report was prepared, according to its author, Colonel Isaac Edwards Clarke of the bureau, for the 'purpose of recording for the information of educators of this country the progress of this Boston experiment' and in addition 'sought to give a brief account of such art institutions and collections as were open to the public in the United States...no list of such public art collections existed.... The 1874 circular listed eight colleges interested in the teaching of art: "Of the colleges possessing any special collections or faculties for giving nay instruction in art, even the most general, we find, excepting Yale and Syracuse, with their special art departments, only Harvard, University of Michigan, Cornell, Rochester University, the College of Notre Dame, and Vassar College, out to the hundreds of colleges of the country, that either give any art training or possess any art collections,	Hess & Fansler, p.17-18, referring to I.E.Clarke, "Drawing in Public Schools: The Present Relation of Art to Education in the United States" (U.S.Bureau of Education: Circulars of Information, 1874,

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	however small or incomplete." "Four of these colleges were included for their collections: Harvard (the Gray collection of engravings), Notre Dame (for a collection "especially rich in religious art"), Cornell, and Michigan. But in the case of these four no reference was made to art instruction. Three colleges, Antioch, Oberlin, and Wisconsin might have been included in Clarke's list but were not, perhaps because Clarke failed to question them or they to answer."	No.2
1875	Increasing availability of educational material "By the last quarter of the nineteenth century, the development of new printing techniques, photographic processes, and manufacturing methods revolutionized the production of educational materials. Illustrated texts were no longer scarce in the public schools and were now supplemented by a variety of charts, maps, pictures, and models, all of which were important visual resources in their time."	Freeman, p.328
1877	Sixth edition of lantern slide manual published "Marcy's (Philadelphia optician, inventor of Sciopticon) Sciopticon Manual, which went into its sixth edition in 1877..."	Freeman, p. 332 (note: L.J.Marcy, The Sciopticon Manual, Explaining Projections in General, and the Sciopticon Apparatus in Particular, including Magic Lantern Attachments, Experiments, Novelties, Colored and Photo-Transparencies, Mechanical Movements, etc., 6th ed (Philadelphia: James A.Moore, 1877)
1879	Early use of lantern slides at Yale "From the divinity school he (Professor James M. Hoppin, 1861-79, chair, homiletics, 1879-1899, chair, school of art) went to the school of fine arts where his lectures seem to have been colored by his homiletic training. The omnibus course in history at Yale, illustrated "by means of the hydro-oxygen lantern," for many years remained about the same."	Hess & Fansler, p.14
1880s	Earliest slide collections in the United States "The earliest noted slide collections in the United States date from the 1880s to 1900 and were initiated in the following institutions: American Museum of Natural History of New York City; Bryn Mawr College; Buffalo Society of Natural Sciences; Art Institute of Chicago; Cornell University; Dartmouth College; Massachusetts Institute of Technology; the Metropolitan Museum of Art; Mount Holyoke College; Princeton University; the University of Illinois; the University of Michigan; the University of Rochester; Wellesly College; and Williams College."	Irvine & Fry, p.25
	Early public lectures with photographic lantern slides "There was also a group of itinerant lecturers who saw the possibilities of making still pictures for use in travel lectures. One of the first to launch travel lectures accompanied by lantern slides, which brought him immediate success and fame, was John L. Stoddard, in the 1880s."	Saettler, p.123-124
	Early public school use of lantern slides "Although lantern slides had been used as a form of public entertainment in the United States since the early nineteenth century, they did not appear in art history lectures until the 1880s, when they were also in increasing demand by the public schools.)	Freeman, p.331
	Early adaptation of lectures to includes lantern slides "The most significant early convert to the electric Sciopticon was Herman Grimm, who then held the chair of art history at Berlin. The extrovert Grimm loved lecturing; at the same time he had long been convinced of the importance of photographic documentation for art history. He quickly realised the potential of giving illustrated lectures to large audiences: the increased income from course fees; the attendance of the general public; the visual impact now possible; the fusion of word and image. No longer would he be frustrated by his inability to show adequate copies of what he was discussing or be reduced to passing reproductions around the audience as he spoke. Prints and photographs usually showed works of art much reduced in scale. The slide lantern was able to project them full-size or enlarge small works and fragments to colossal proportions. In the darkened auditorium, with everyone's attention fixed on the	Fawcett, "Visual Facts", p.454-455

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	luminous screen, word and picture were perceived simultaneously and became bonded in a quite new manner. Rapidly succeeding ideas and images flowed together in the mind. A vast amount of visual information could be communicated in a brief sequence of slides."	
	Hermann Grimm's use of photographs and slides "Grimm, however, did not eschew reproductions. He used slides early and extensively in his lectures (and paid for the equipment from his own pocket, since the Controller of the University of Berlin refused to allocate money for such public amusements). He also wrote several articles in which he warmly endorsed the use of slides and correctly predicted the revolutionary impact they would have upon the study and teaching of art history. Grimm used reproductions to prepare his students for the quasi-religious experience of receiving the true message of the work of art, an effect that Norton sought to induce by his nonvisual approach. "The slide projection apparatus,' he wrote in an 1892 issue of the Nationalzeitung, 'enables us to make a clear distinction between that in art which moves the soul and that which is merely of interest from the aspect of art history.' Grimm was interested in the aesthetic and even more in the ethical message of the great work of art and believed that slides were capable of sending those messages."	Freitag, "Early Uses", p.122 [note 27-HG "Die Umgestaltung der Universitatsvorlesungen uber neurere Kunstgeschichte durch das Skioptikon," (Berlin) Nationalzeitung. 1892.]
	Acceptance of use of lantern slides in art history "Moreover, in the 1880's Herman Grimm, Professor of Art History at Berlin, at last succeeded in his campaign to popularise the use of lantern slides in art history education."	Fawcett, "Control of Text", p.134
	First regular offerings of graduate courses in art "...sporadic offerings of graduate instruction in art at Wisconsin in 1871, and at Harvard in 1877 and 1855. Princeton appears, however, to have been the first to offer continuous and consistent graduate work in the field. The early lectures on archaeology which were inaugurated in 1831 and the appointment in 1859 of a lecturer on the fine arts [note 1- "The present department of art and archaeology has been called at various times the department of history of art, school of art (1888-89) and the department of archaeology and history of art."] have already been noted. The creation of a department of fine arts did not take place, however, until 1882 when the Board of Trustees adopted suggestions made by William C.Prime for the founding of a department of history of art...It was in 1886 that Professor [Allan] Marquand gave his first graduate course in Homeric archaeology "as illustrated by recent discoveries."	Hess & Fansler, p.34-35
1880s-1890s	Early slide catalogs "During the 1880s and 1890s the choice of slides became much greater as the demand for high-quality teaching slides increased. The Metropolitan Museum of Art, for example, was an early source for photographs and transparencies."	Freeman, p.333
	Popularity of lantern slides (in England) based on their appeal to an illiterate audience "The public to whom most of this literature was explicitly addressed was still largely illiterate; the older ideal of education based on religion and the teaching of hereditary crafts in the home had vanished with the immigration into the towns; only the most rudimentary instruction in reading, writing, and arithmetic had taken its place, and even elementary education was not compulsory before 1880 or free to all until 1891. Its seems likely, therefore, that the thousands of slides based on these and similar writings, and the lantern readings taken from them, were inspired by the need to communicate to illiterate audiences."	Cook, p.105-106
	First use of double slide projection "...The Swiss art historian Heinrich Wolfflin is said to have pioneered double slide projection in the 1880s, wherein two images might be juxtaposed for comparison."	Preziosi, "Question of Art History", p.366, note 6
	Comparative method not based on Hegel's dialectic "...it was Eduard Wolfflin who first proposed the comparative method that his son was to make so familiar to art historians. Speculation that the comparative method originated in Hegel's dialectic has no basis in fact: neither Wolfflin nor his teachers had a particular interest in Hegel."	Hart, p.293
	Wolfflin's use of slides "Barely a decade later [after Grimm's activities in the 1880s,] almost every art history seminar in Germany had a growing collection of slides and one or more projectors. Heinrich Wolfflin had now succeeded Grimm at Berlin. Deeply impressed by Burckhardt, whom he recalled lecturing at Basle with the aid of a variegated mass of Bildermaterial held up to view and then circulated, Wolfflin resorted constantly to displays of slides. His method was essentially visual, allowing each image on the screen to register with the audience before adding his own seemingly unpremeditated, eye-riveting comments. It was a training in seeing and formal analysis that matched verbal and optical modes to perfection. Wolfflin was perhaps the first to make regular use of twin projection. While he had reservations about overdoing visual comparisons in his books, he admitted 'the juxtaposition of contrasting pictures...may well render good service in a lecture, where it is possible to correct the one-sidedness of the single comparison by means of various other comparisons....' Indeed the illustrated lecture	Fawcett, "Visual Facts", p.455-456 [note 59: H.Wolfflin, The Sense of Form in Art, New York, 1958, preface.]

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	could present an argument in greater complexity than a book because it 'offers the possibility of continuously supporting the spoken word with pictorial demonstration. Not only can more examples be shown, but variants and exceptions can be brought forward without danger of distracting the hearer, since the keynote may be immediately struck anew. Finally, the lecturer has in great measure the freedom to make use of exaggerations for purposes of clarification (and entertainment), inasmuch as it is in his power to retract them at any moment.'"	
1882	First department of art history in 1882 at Princeton	Hess & Fansler, p.144
	Early art lectures with slides Allan Marquand (1853-1924) lectured with slides at Princeton as early as 1882	Leighton, p.108, Hamber, p.114, both referencing Hess and Fansler, p.14
1883	Early concerns about balance of image and text "The majority of nineteenth-century lecturers had kept a balance between verbal and visual. A lecture was still a lecture, illustrations still illustrations. In the last decade [from 1883] or so the balance started tilting the other way. The image threatened to assume primacy, at its worst relegating the lecturer to a selector of slides and a speaker of captions. The perception of art was altered. Where there was once a dearth of visual evidence there was now a plethora."	Fawcett, "Visual Facts", p.458
	Growth of study of art "The growth of the study of art at the college level was certainly rapid, and, according to Daniel Cady Eaton of Yale who called for a 'chair of art history in every college,' it was not hindered by any difficulty in obtaining illustrative material. It had become, so he said, 'so inexpensive and so easy to be had that the valid excuse of twenty years ago no longer exists.' Eaton was, however, more sanguine on this score than was Langdon Thompson, professor of industrial art at Purdue University in 1883. After itemizing the equipment necessary for the teaching of courses in art - models of monuments for architecture courses, plaster casts, electrotype reproduction, stereoscopic and photographic views for sculpture courses, photographs for ceramic art, chromos, engravings and etching for courses in painting and 'ornamental art' - he felt, to be on the safe side of the budget perhaps, that instruction in art history might best be taken over by a professor of another subject. Better even than this doubling up might be to have one traveling lecturer to carry on the lecture courses of several colleges.... "But with or without expensive equipment, art had by 1883 definitely got a strong foothold in our colleges"	Hiss & Fansler, p. 26 [note 2-Daniel Cady Eaton, "The Study of the Art of Design in American Colleges," 1882]
1884	George Eastman patents roll film system	
1885-1899	Beginnings of art history "The 1980s mark the centennial of modern art history. Between 1885 and 1899, the founders of the discipline - Morelli, Reigl, Wolfflin, Warburg, and many others writing at the same time - all elaborated systematic principles of art historical investigation. The past 100 years, to be sure, have witnessed apparent solutions to many art historical problems. Periods, provenances, and patrons have been labeled, the oeuvres of famed artists sorted out, questions of style and content periodically answered. The categories of art historical thought appear to have been established. Secure on the foundations laid by its patriarchs and by such first-generation scholars as Erwin Panofsky, art history has continued to develop into a recognized and active discipline."	Holly, p.21
1886	Origins of visual instruction "Many mistakenly proclaim or assume that the American visual instruction movement began sometime in the early 1920s, but it can actually be traced back to the first decade of this century and even earlier. In fact, the abstract-concrete theoretical rational that was the foundation of the visual instruction movement appeared as early as 1886. Although the term visual education did not evolve until about 1906, many developments and trends were already crystallizing into a distinctly new movement in American education. The technological progress achieved by the invention of a practical stereoscope, a perfected process of photography, and the invention of the motion picture projector aided immeasurably in the birth of the visual instruction movement."	Saettler, p.123
	First graduate studies in art history at Princeton	Hess & Fansler, p.144
1890	Projection techniques improve "However the introduction of simpler projection techniques around 1890 gave a decided boost to the lantern lecture, just as the newly invented roll-film camera did to popular photography in general	Fawcett, "Visual Facts", p.456
1890s	Acceptance of use of lantern slide in education "Until the 1890s most teachers remained unconvinced that the lantern slide could have a serious role in the school room, but with the advent of new electric stereopticon the	Shepherd, p.105

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	outlook began to change, and the lantern slide was introduced into all levels of education."	
	Practical objections to use of lantern slides overridden with electric powered equipment "As to slide lecturing there were practical objections. It required a certain amount of re-education for both lecturer and students. The projection apparatus was still complicated and cumbersome. Lecture rooms had to be darkened The range of slides available was limited and there was no guarantee that the photographic image would be permanent against fading. All this proved a sufficient deterrent until the first electric projecting equipment came into use around 1890."	Fawcett, "Visual Facts", p.454
	Technologic improvements to lantern slides increase their popularity "Technological developments in photographic processes made lantern slides available to a far greater number of photographers in the 1890s. The invention of dry plate photographic processes made photograph available to amateurs, and initiated a renewed interest in lantern slides.... "...The medium of projection and reproduction of original works as lantern slides made an artist's work available to audiences around the country."	Spindler, p.136
1893	"In 1893 Bernard Berenson uttered his famous, and often quoted cri de coeur: "Photographs, photographs, photographs; in our work we can never have enough of them.'"	Roberts, p.ix, originally, "Isochromatic Photography on Venetian Pictures". The Nation, vol. 57, 9 November 1893
1895	Invention of cinema	
1895	Founding of the Fogg Museum "The institution of the Fogg provided for several distinct kinds of spaces designed to make the historical development of the visual arts clearly legible: lecture classrooms fitted with facilities for the projection of lantern-slide reproductions of works of art; a library of textual materials on the fine arts of various periods and places; an archive of slides and photographs of works of art organized according to historical period and genre; and space for the exhibition of reproductions of works of art - photographs principally, but also a few plaster casts of sculptures and some architectural models. Despite its name, the Fogg initially was not a museum in the common sense of the term, and no provision was made for the display of actual works of art, despite many pressures to form such a collection. "The Fogg Museum was in fact conceived of as a laboratory for study, demonstration, teaching, and for training in the material circumstances of artistic production. It was intended to be a scientific establishment devoted to the comparison and analysis of works of art of (potentially) all periods and places, to the estimation of their relative work, and to an understanding of their evidential value with respect to the history and progressive evolution of different nations and ethnic groups."	Preziosi, "The Question of Art History" p.365
	Mission & purposes of the Fogg Museum "The income from the Fogg bequest was devoted to the purchase not of artworks but rather of reproductions, chiefly in the form of photographs and slides, as well as some casts of sculpture. The museum was not explicitly designed for the exhibition of original works of art, unlike the present Fogg Museum (which opened in 1927). The original Fogg, erected some twenty years after the beginning of art history instruction at the university, reflected a paradigm of disciplinary study hitherto unique in the country. Other American university campuses had housed the collections of benefactors earlier in the century (for example the Trumbull Collection at Yale); and some instruction in the history of fine arts had existed prior to the appointment of Charles Eliot Norton at Harvard in 1874. Nonetheless, the original Fogg was the first attempt to house the entire discipline on one space. "The building, designed by Richard Hunt,...provided four distinct apparatuses for making the history of the visual arts legible: lecture classrooms, fitted with projection capacities; space for the display of photographic reproductions in sequence; a library of textual material on the fine arts; and an archive of slides and photographs. Each of these, in slightly different ways, established stances for reading objects and articulating historical and genealogical narrative, relating these, in the words of Harvard historian George H. Chase, to "the history of civilization" such that these monuments "should be interpreted as expressions of the peculiar genius of the people who produced them." "The business of the Fogg, then, could be summarized as orchestrating the domain of study into an encyclopedic and common history. Traces of that history were formatted in several ways - in the bibliographic orders of the Fogg library, in which texts were arranged by subject matter, medium, genre, authorship, period, or artistic biography; in the archive of lantern slides and photographic reproductions, comprising data organized chronologically and geographically; in a collection of plaster casts of sculpture and architectural models; and through changing displays of artworks from an	Preziosi, Rethinking Art History , p.73-74

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	archive that by 1896 included thirty thousand prints as well as engravings, loaned examples of Greek vases, and so on."	
1896	Charles Norton began to use lantern slides to illustrate his lectures.	Freemen, p.,332, Leighton, p.108
1897	First Kodachrome lantern slides "...Later, in 1897, he (Elias Burton Holmes) became the first to present travel lantern slides in Kodachrome."	Saettler, p.123-124
end of 19th C	Art history perceived as reliant on photography "By the end of the nineteenth century it had become recognized that the history and connoisseurship of the visual arts would henceforth depend heavily, perhaps dangerously, on photographs, slides, and photoprocess-illustrated books, catalogues and journals. At the heart of Kunstgeschichte lay the comparison of reliable images. Art history in the future would be the history of the photographically reproducible."	Fawcett, "Graphic Versus Photographic", p.208
	Early use of lantern slides for religious instruction "The Sunday schools were the first to use lantern slides for religious instruction.... "Toward the end of the century, the lantern slide moved slowly out of the Sunday school and into the Sunday evening services. At first, this move was opposed by many ministers, who viewed the 'magic' lantern as a worldly amusement rather than a valid instruction device."	Shepherd, p.99-100
1900	Administration of first slide collections "The majority of the professionally degreed supervisors had a background in library science rather than in art." early collections listed: MIT, c.1900; Princeton, c.1900; Univ/Rochester, c.1900; AIC, c.1904; RISD, 1915.	Irvine & Fry, p.26
	Characterization of first generation of art historians "The development of art history in the United States can be traced in three stages corresponding roughly to three generations; the first was active at the end of the nineteenth century," and were ethical rather than scholarly gentlemen.	Ackerman, p.187
1906	Comment about the widespread use of lantern slides in teaching by Melville Dewey: "'...A generation ago the lantern slide was little known except in magic lantern entertainments, and it required some courage for the first schools to make it a part of the educational apparatus. Today there is hardly a college or university subject which is not receiving great aid from the lantern. No one thinks of it as a course in art or discusses it from an ethical standpoint. It is needed by the engineer, physician, botanist, astronomer, statistician, in face in every conceivable field, but of course, it is specially adapted to popular study of fine arts because they are so dependent on visual examples, and the lantern is the cheap and ready substitute for costly galleries.'"	Irvine & Fry, p.13, quoting Melville Dewey, 1906, in "Library Pictures," Public Libraries 11:10 (1906)
1908	Acknowledgment of threat to popularity of lantern slides posed by motion pictures "A 1908 editorial in Photo-Era supported the continued application of lantern slides by stating that 'Too great familiarity with one of the most valuable and effective means of education - the lantern slide - is no excuse for its neglect or even threatened disuse in favor of moving pictures.'"	Spindler, p.134 [note 20 - "Stereoscopic Effect in Lantern Slides," Photo-Era, 21 (1908): p.134. An unsigned editorial.]
1910	First use of slides at University of Pennsylvania "Art historians welcomed the new medium and D.M.Robb believes they were introduced at the University of Pennsylvania about 1910	Leighton, p.108
1910s	Motion picture presents competition with lantern slides "In the second decade of the century color lantern slides began to appear, utilizing some of the earliest color photographic processes such as Autochrome and Finlay Color. The introduction of motion pictures presented a new source of competition with lantern slides in both the educational and entertainment arenas."	Spindler, p.138
1912	Slides based on the autochrome process were available	Fawcett, "Visual Facts", p.456-7
	Use of slides at Columbia's School of Architecture According to L.Arnauld, such teaching aids were initially employed at Columbia's School of Architecture in 1912, by Professor A.D.F.Hamlin (1855-1926), who made them from a collection of Alinari photographs he had been gathering since 1892.'	Leighton, p.108, [letter to Leighton, fr Robb and to Justin O'Connor from L.Arnauld]
	Use of color slides and art history "...the first documented use being Aby Warburg's projection of a colour slide at Rome in 1912 during a talk on Piero della Francesca."	Fawcett, "Control of Text", p.134
	Survey of College and University offerings in art and art history E. Baldwin Smith, "The Study of the History of Art in the Colleges and Universities of the United States" (orig published as a pamphlet by Princeton University Press, 1912. Survey draws from catalogues, details course offerings, and more generally, faculty, student and department descriptions.] "There are approximately four hundred institutions of learning in the United States	

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	where the Liberal Arts are taught for a period of four years. Of these, ninety five Colleges and Universities give Art History courses, but only sixty eight adequately. For adequate Art courses we assume a special chair in Art History or Archaeology." from listings: "Under the separate Colleges and Universities is given the title of each art course, the name of the instructor given the course, the year in which the course was founded, whether required, elective, or optional, and the number of hours a week that the course is given during the year." each description also contains remarks, detailing support, ranging from comments such as "Small equipment" Alma College, p. 1,16, to p. 1, orig, 16/reprint, to "Books: Art Library 1,910; Avery Collection, 19,066; General Library, 4,560; Arch. Dept. Library, 56; Barnard College, 960; Teachers College, etc, 1030; total, 27,582. Photographs: Avery Collection, 7,000; Architectural Dept., 18,000; Classical Dept., large collection. Lantern Slides, etc: Architectural Dept. has 9,000 slides, 3 lanterns, a reflectoscope, and a large collection of casts and architectural models." In statistics, 57 of 95 specifically mention photographic reproduction collections, slides (lantern slides)-46, or photographs, including University Prints, 11, (photos w/o slides), when size of slide collection is given, ranges from 200 at University of Virginia at Charlottesville, to 15,000 in the architectural department of Massachusetts Institute of Technology	
1912-1913	First art history survey course "In 1912-13, the Fogg organized the first art history survey course as we now know it, which attempted to cover the entire "history" of the arts of the world in a single year."	Preziosi, "Question of Art History", p.367
1914	Publishing of Wolfflin's Principles of Art History, lectures in preparation for which he is said to have innovated the used of double slide projection for the comparative method.	Obituary for Heinrich Wolfflin, 1864-1945, Wolfgang Born, College Art Journal, November 1945, vol. V, #1,p.46
	First offerings of chronological and non-chronological survey course "At some colleges both types of survey courses were given, the chronological course usually being the longer and more detailed of the two. Smith was the first, in 1914."	Goldwater, p.8
	Characterization of early part of the second generation in art history in the United States "The development of art history in the United States can be traced in three stages corresponding roughly to three generations;...the second from World War I to 1930, " established art history as a 'scientific' discipline. "The fact that the science of Berenson and some of his contemporaries took the form of connoisseurship and the compiling of catalogs....was related to, if not motivated by the sudden and explosive acceleration of collecting by American tycoons who were new to the art world, were willing to spend millions, and were in need of expert assistance. A few men bought - and are still buying - for American a background in art by creating some of the great museums of the world, and this had an incalculable effect on the growth of art history. From then on, great art was accessible to all Americans rather than to the few who could travel abroad; it was, so to speak, democratized - a process aided by the contemporaneous developments in photographic reproduction that first made it possible to study art at second hand. As this occurred, the ethical-gentlemanly era began to draw to a close in the universities, though it survived, paradoxically, in the museums themselves, as a result of the enforced fealty of curators and directors to wealthy patrons."	Ackerman, p.187, 189
1914-1918	Nevertheless, the majority of photographic journal articles embraced the entrance of the motion picture, and slide production sagged during the war years."	Spindler, p.138-139
1918	"Reel and Slide [Moving Picture Age after Oct. 1919] was the first journal devoted to visual instruction. This pioneering periodical, which appeared in March 1918, was 'a monthly magazine to make the screen a greater power in education and business.' It was edited by Lynne S.Metcalfe and published by the Reel Publishing Company of New York."	Saettler, p.161
1918-1924	Visual media between the wars "In the area of public education, several important developments in the use of visual media took place between 1918 and 1924. The first formal credit courses in visual instruction were offered for teachers at the college level; the first professional organizations, such as the Visual Instruction Association of America, were established; and the first professional journals devoted to visual instruction for the public school teacher (such as Reel and Slide, Moving Picture Age, Visual Education, and Visual Review) were introduced."	Freemen, p.334-335, and Saettler, p.119-124
1919-1935	Classic age of art history "Intertwined in origin, subject, and approach, art historical and classical studies often illuminate or depend upon on another. Discussing the years of American classical	Eisler, p.557-578, referencing "Die Geschichte de

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	scholarship between 1919 and 1935 - the dates approximately equivalent to the initiation and completion of the first mature, independent era of at history in America, just before the influence in situ of émigré scholars - William M. Calder III has characterized that period as 'A very very American epoch, practical, drawn to the purely objective, above all to archaeological or inscribed data (steine). Those who interested themselves in stones were completely satisfied. Those who interested themselves in facts, possibly; those who were interested in ideas, certainly not.' The art historical parallel to this relentlessly objective, factual trend in classics might be found in the concern with techniques and conservation at Harvard, the tendency toward the list and the corpus started by Berenson extended and deepened by Richard Offner and Chandler Post.	klassischen Philologie, p.255
1920	Founding of Frick Art Reference Library, by Helen Clay Frick "...a wealthy lady in New York had founded a reference library containing thousands and thousands of photographs..."	Panofsky, p.325
1920s	Use of double projection in the United States During his studies at Harvard, Beaumont Newhall refers to his instructor, who used 2 projector for comparative study and lectures, among the first in teaching at this institution	Newhall, p.2
	Decline of the lantern slide "The novelty of the lantern slide was wearing off as evidenced by the decline and eventual disappearance of the popular slide lecture, but it was in the twenties that the educational potential of the slides was most effectively exploited.... "Nevertheless the decline of lantern slide viewing began as a result of more inexpensive motion picture production and the introduction of a new "transparency" slide. These transparencies were made of a film tough enough to withstand the heat of extended projection and could be produced from the newly popular 35mm cameras."	Spindler, p.138
1923	The coming of age of art history "1923, the year often selected as the coming of age of art history in America, with the new eminence of the College Art Association and its Bulletin and with the publication of A. Kingsley Porter's Romanesque Sculpture of the Pilgrim Roads, also saw the printing of Josef Strzygowski's Die Krisis der Geisteswissenschaften."	Eisler, p.559
1928	"In New York City, there were at least a dozen suppliers of lantern slides for sale or loan by 1928."	Leighton, p.115, Freeman, p.336
1930s	Photographic technical advances "In the 1930s, color dye processes were perfected by Leopold D. Mannes and Leopold Godowsky, Jr. in collaboration with the Kodak Research Laboratory. The result of the work was the introduction of the Kodachrome three-color film process. Until the perfection of the particular technique, 35mm or 2x2-inch slides were not widely accepted."	Irvine & Fry, p.25
	Art history in the 1930s, dominated by German scholars "But the fact remains that at the time of the Great Exodus in the 1930s the German-speaking countries still held the leading position in the history of art - except for the United States of America."	Panofsky, p.324
	Characterization of the third generation of art history in the United States "The development of art history in the United States can be traced in three stages corresponding roughly to three generations, the third from 1930 to World War II." showing a European influence, especially of German scholars.	Ackerman, p.187
1930-60s	Increase in number of slide libraries directly related to transition from lantern slide to 35mm slide "Although the period of growth of slide libraries begins in 1880, the most significant number of collections were established between 1930 and 1960. This increase was very likely due both to the added benefit of color slides and to the fact that they were, and still are, less expensive to produce than standard lantern slides. Consequently, it was financially feasible for colleges, museum, schools, public libraries, and universities to have begun their collections at that time. These birth trends might also be indicative of the steady rise of art history studies as more than a mere humanities adjunct to the liberal arts education in the United States."	Irvine & Fry , p.25
	Democratization of art history "Refugee scholars of the 1930's contributed toward the removal of a certain aura of precocity and ever so upper-class dilettantism which had long been assiduously maintained or cultivated in the world of art scholarship in America. The bite and acumen of instructors sharpened by exile proved art history to be more than the scholarly fringe-benefit of gracious living. The increasing popularity of art on all fronts through out the 1940's and 1950's, this 'democratization' of art history, might well have taken place in any event, but it seems probable that the sense of commitment brought over with foreign scholars may have encouraged able but less conspicuously 'social' or socially ambitious students to join a field which might otherwise have seemed uncongenial"	Eisler, p.621
	Art history in the 1930s and 1960s	Eisler, p.624

YEAR	EVENT	CITATION
	"Certainly no specifically 'American School' of art history has evolved with any more definition in the 1960's than in the 1930's. Constantly refreshed by new currents generated here and in Europe, by differing emphasis in the history of art itself, without any uniform philosophical or psychological or political premise, art history is, perhaps fortunately, a rather shapeless conglomerate of individual interests and expertise."	
1933-1937	First offerings of an art history survey course The practice of offering both kinds of introductory courses [chronological or not] was more prevalent in 1933 and 1937, when it was established in some ten of fifty colleges, and it has declined since that time. It was usually designed to meet the interests of different groups of students, the chronological approach being intended primarily as preparation for majors in the history of art."	Goldwater, p.8
1930-1940s	Decline of the lantern slide Glass slides were, of course, displaced by film-based transparencies (whether held between glass plates or not) during the 1930s and 1940s. A romantic aura continues to cling to the old lantern slides, but they are, above all, a rich source of information on contemporary tastes, values and mores."	Shepherd, p.105-106
	Decline of use of the lantern slide "However, the lantern slide was destined to be phased out by new developments in the photographic industry during the next decade. The standard lantern slide was first succeeded by a 2" x 2" format which was easier to handle; but still more significant was the introduction of the Kodachrome three-color film process, which made the 35mm color slide less expensive to produce than a standard lantern slide."	Freeman, p.336
1934	Study of establishing of art history and current status of arts in Colleges and Universities "We have undertaken to describe briefly the early instances of colleges pioneering in the arts, dealing in some detail with one or two of the more striking personalities concerned with the introduction of that nineteenth century newcomer. But the enthusiasts who started that art departments were not in any sense lone voices crying in the wilderness. They were children of their own age - an age in which men and women thronged the Lyceum to hear talks on Roman art; subscribed to the American Art-Union, and when they were lucky received some of the hundreds of pictures which were annually distributed by lot to its members; an age already concerned about "art in industry." In dealing with this period it seemed worthwhile to show how deeply into our Victorian past go some of our most cherished theories of art education." Goals: "Part I of this study is concerned with these beginnings, with the men who gave form to the inchoate feeling of the age that art, though unnatural, was important, and with the further development of full fledged art departments in many of the colleges and universities.: "Part II deals with the growth of graduate work: the fields of research which were first entered, and the situation as it is to-day. The figures of this section of the report are of 1932 as the statistics on courses and dissertations were assembled for that year. The tables in which this material is analyzed, with a list of theses written in the field will be found in the Appendix. "Part III is a handbook of college and university departments which offer graduate work in art or archaeology. Here one will find information as of the academic year 1933-34, on faculty, courses, equipment, museums, expeditions, in addition to some historical data too detailed to be included in Parts I or II. This section is based on catalogues, records, and on material generously supplied by members of the faculty and officers of the institutions." Expanded scope, not just graduate studies "In attempting to sketch the history of graduate study in fine arts in the United States it soon became evident that to extricate from the general background of undergraduate study in the nineteenth century the isolated instances of graduate research would be to give a one sided picture of the growth of interest in this field. In addition we ran the risk of creating a wholly false impression that graduate courses in fine arts were a result of the influence of German scholarship in the late nineteenth century, rather than the natural concentration of an interest which had been strong though diversified in our country throughout the first century of our national life. Therefore, it seemed best to go back to the academic genesis of the subject in the United States."	Hess & Fansler, "Research in Fine Arts", 1934
1934	Start of Institute of Fine Arts of New York University "Thus a tiny apartment was rented on the corner of Eighty-third Street and Madison Avenue, housing such lantern slides as had been accumulated by the individual lecturers and one of those standard sets of art books which could be obtained, upon request, from the Carnegie Corporation. "...And today this Institute, so far as I know the only independent university organ exclusively devoted to graduate instruction in the history of art, is not only the largest but also the most animated and versatile school of its kind, occupying a six-story building on East Eightieth Street, owning a workable library and one of the best collections of lantern slides, attended by well over a hundred graduate students	Panofsky, p. 331

YEAR	EVENT	CITATION
	advanced and enterprising enough to publish a scholarly periodical of their own, and counting among its alumni some of the most prominent academic teachers and museum men."	
1936	Introduction of Kodachrome film for color slides	
1940	First offerings of an art history survey course ."..in 1940 it was to be found at Maine, Harvard, Columbia, Oklahoma, Ohio, and Pittsburgh as well. Columbia even gave threes such courses, one of each kind in addition to the non-chronological course required of all students for the B.A."	Goldwater, p.8
1940s	Decline of the visual instruction movement "Following World War II, a brief period of expansion began in the visual instruction movement, but, simultaneously and ironically, its distinct identity as a movement in American education was eroded by changing perceptions of its traditional function and its role in the instructional process. In the late 1940s, leaders of the movement became increasingly uneasy about the adequacy of the visual instruction label with reference to new media. There was also a growing dissatisfaction with the traditional conceptual rationale that supported their practices....Increasingly, the terminology was changing from visual or audiovisual materials to instructional media; visual or audiovisual specialists were beginning to be called media specialists; and visual instruction departments were becoming instructional media centers. It was also apparent that the visual instruction movement was tending toward convergence with the broad mainstream of educational technology."	Saettler, p.167
	Transition from lantern slides to 35mm slides "By the end of the 1940s miniaturisation began to prevail." "Some institutions are now disposing of their large lantern slides and this is particularly unfortunate. Many of the 'relics' were made with large cameras having adjustable backs and/or fronts making it possible to obtain detailed distortion-free photographs, especially of difficult architectural subjects. Even today, some suppliers use old negatives of architecture and print them on 35 mm film. The 'obsolescent' large lantern slides sometimes offer other advantages. Often their views show buildings as they appeared originally, unencumbered by the distractions of subsequently erected structures nearby, signboards, modernised fronts, overhead wires, etc. Similarly, because of the ravages of war, time, and (more recently) air pollution, early scenes of many of the world's great monuments preserved on the old slides have assumed added importance."	Leighton, p.113
1940s-1950s	Growth of slide collections and increase studying of art history "During the eighty years from 1880 to 1960, only the 1940s and 1950s witnessed a significant rise in the initial establishment of slide collections. The period after 1960 should also reveal a large number of beginning collections which will have matured enough for documentation by 1980. This increase is very likely due to the added benefit of the color slide and the fact that it is far less expensive to produce than the standard lantern slide. Consequently, it was financially more feasible for colleges, museums, and universities to begin their collections after World War II. These trends might also be indicative of the steady rise of art historical studies as more than a mere adjunct to the liberal arts curriculum in the United States."	Freitag & Irvine, p.102-103
1942	Acknowledgment of lack of standardized slide classification "In 'The Photograph Collection and its Problems,' published in 1942, Eleanor Mitchell noted the large number of classification schemes being used for visual material, speculating that it might already be too late 'to bring order out of the present chaos' by working toward a universal system. This issue is still a subject for discussion today, nearly fifty years later. Mitchell's article may also be one of the earliest to use the term 'curator' rather than 'librarian' in print to denote the caretaker of a visual collection."	Freemen, p.336
1943	College Art Journal publishes color versus black & white slide debate; Beam is pro-color, Carpenter con; throughout, both stress accuracy of reproduction, as a stand in for the original; in counter-argument, stressing reminder of reproduction, not to be confused with the original	Beam & Carpenter, p.35-40. College Art Journal, January 1943, 11.2
	Survey of undergraduate art and art history education Aim: "broad and detailed description of our actual practice [of teaching art to undergraduates in liberal arts colleges]...Our intention has been to ascertain, as far as possible, the number and the kind of undergraduate courses given in the past, where these courses place their emphasis, what historical periods and what types of art were singled out for special attention. Among the most debated questions of recent years has been the value of the general introductory, or 'survey' course, and the character and weight it should have in the curriculum; another has been the relation of the courses in the history of art to those teaching the practice of the arts (whether fine or applied), and whether the two really belong together in the same art department; a third, more general problem, is the relation of the pictorial arts to the entire liberal arts program, and how their specific contribution to the program can best be realized." Methodology: gather snap shot views/statistics from eight chosen years between 1900	R.J.Goldwater, The Teaching of Art in the Colleges of the United States, 1943

YEAR	EVENT	CITATION
	and 1940 to "Study the growth and change of art teaching in fifty liberal arts colleges distributed throughout the country, colleges which would be representative in the sense of being leading types of institutions rather than simply average ones."	
1945	College Art Association project of slides for art history to combat perceived elitism "The College Art Association is sponsoring a plan for producing high quality yet inexpensive illustrative material for teaching the history of art. The project grew out of a survey, conducted with aid from the American Council of Learned Societies, of slide and photographic equipment in universities, colleges, museums, architectural schools and art schools. The survey indicated an extraordinary dearth of equipment for teaching the history of art in this country, and also showed that standard size slides in sufficient numbers were too expensive for most schools to afford. It is clear that, unless some means are found for meeting the need for high quality slides at low cost, the history of art will continue to be extremely difficult to teach adequately outside the large or wealthy institutions. The answer to the problem seems to be large scale production of 35 mm strip positives, which can be cut up by the purchaser and mounted into 2" x 2" slides, at a minimum cost to educational institutions." "The history of art as a field of study in schools has only come into being since the development of photography has made possible pictures of works of art for students to study. It is obviously impossible to teach the history of art when the only way to see buildings, sculpture and paintings is to travel to the places where they exist....Rapid development of photographic processes in the twentieth century has been paralleled by expansion in the teaching of the history of art....The main hindrance to greater expansion seems to be the expense of the materials with which to teach." Introductory discussion of CAA slide project concludes: "Hence if the plan works out successfully the knowledge of the history of art may be available to all Americans instead of to the very few."	Sunderland, p.18-22
1951/ 1953	Andre Malraux, "Museum Without Walls" ""for the last hundred years...art history has been the history of that which can be photographed".	Malraux, p. 30
1953	William Ivins Prints and Visual Communication published with comments about photographic syntax "Ivins [sic] book Prints and Visual Communication, first published in 1953, remains a benchmark and a fundamental starting point, a debt which Fawcett and Jussim amply cite. [in their arguments about the graphic Vs the photographic] His thesis was that photography, by producing exactly repeatable visual images made without any of the syntactical elements implicit in all handmade pictures, freed the artist from the confines of journalistic reproductions, and liberated the scientist from the unavoidable imprecision of the artist's prints. Ivins' thesis is flawed by the simple fact that photographs have themselves distinct 'syntactical elements,' albeit different ones from those he categorized in defining 'handmade pictures.'"	Hamber, p.93
1955	Benjamin, "The Work of Art in the Age of Mechanical Reproduction"	
1959	Kodachromes Replace Lantern Slides "More important, lantern slides had become a curiosity....The public enjoyed spending some idle time looking at them in the department..."	Ellis, p.529
1961	Introduction and availability of Kodak Carousel projectors and trays	
1961-1962	Survey of library holdings and budgets Study lists 30 closely examined colleges and universities, here, high & low numbers: Art book holdings [200,000 9,000], art book budget [40,000 500], b/w slide holdings [157,000 5,000], color slide holdings [40,000 800], slide budget [9,700 200], photograph holdings [650,000 1,000], photograph budget [8,500 0]. b/w holdings over 100,000 at Berkeley [107,000], Columbia [122,000], NYU [157,000], Oberlin [99,000], Princeton [90,000], Yale [100,000] Harvard [82,000]. color slides for same: Berkeley [23,000], Columbia [10,000], NYU [6,000], Oberlin [11,000], Princeton [17,000], Yale [22,000], Harvard [15,000]. largest color holdings Wisconsin [40,000, 60,000 bw], UCLA [32,000, 44,000 bw], Texas [30,000, 60,000 bw], Pennsylvania [29,000, 49,000 bw], Kansas [25,000, 25,000 bw]. Williams [20,000 bw, 21,000 color] and Arizona [7,000 bw, 8,000 color] only institutions where more color, Kansas same. "Summing up the evidence available to us, it appears that the high cost of art books, slides, and photographs does not burden the budgets of most art history programs as much as it should. The only exceptions are young and fast-growing departments attempting to overcome serious inadequacies in libraries or slide collections by means of a "crash-program" of purchasing....A department's vigor can be measured to a large extent by the rate of growth of its library and of its slide collection. If a fair-sized department spends less than $200 on slides per annum, this may signify either that it has access to a source of unusually cheap slides, or that the courses being taught in it stay much the same year after year."	Ritchie, p.34-37
late 1960s	Specialized training available for administrators of slide collections "Beginning in the late 1960s, art slide and photograph curators began to develop their own courses and workshops to provide the specialized skills needed to manage the	Freemen, p.338

YEAR	EVENT	CITATION
	collections proliferating in art schools, colleges, and universities."	
1966	Survey of art and art history in colleges and universities Methodology: extensive questionnaire to 30 representative institutions and site visit, abbreviated questionnaire to 700+, "Two hundred and thirty-four of the institutions responded. From these responses, together with the first thirty, our statistics and deductions have been compiled." Study areas: art history (topics include "size and geographical distribution of faculty, size of undergraduate enrollment and majors, graduate study, course offerings, teaching, instruction and equipment costs, library resources, publication travel issues; studio art pre college art education, profession Vs liberal art orientation, academic degree; art museums, museum and art history, curators & scholarship, staff, conservation. Significant finding of survey: "College enrollments are mounting at an alarming rate, but most departments of art history are not attracting or producing a sufficient number of well-trained graduates to meet the present shortage of teachers in the field."	A. Ritchie, "The Visual Arts in Higher Education" 1966
1968-1970	Slide library survey conducted by Betty Jo Irvine and Eileen Fry "In recognition of the lack of published information on slide libraries, a comprehensive study and survey was instituted, covering the history of the problem, the present status of slide collections, practical matters (such as equipment and photographic processing) and more formal library considerations (such as the use of classification systems, source or accession files and authority files). The base of departure for this research was art slide libraries in colleges, universities, and museums in the United States."	Irvine & Fry, p.11
1975	Current use of lantern slide "The glass lantern slide is still a part of many collections in the United States that were established before 1940."	Freitag & Irvine, p.102
1976	Copyright Act establishing general principles of fair use adopted by US Congress	
1986	Estimate of 10 million to 3 billion art objects in world and necessity for reproductions "Since its developments in the mid-nineteenth century, the photographic reproduction has become one of the indispensable tools of the art historian. It provides a solution to some of the problems of studying art works: there are enormous numbers of them, estimated between ten million and three billion worldwide only a small selection of works owned by museums are on display at any one time; the physical arrangement of works in museums prevents the visitor from making his or her own comparisons between related items; and for obvious security and preservation reasons, it is not possible for objects to be handled by those who wish to learn more about them. Art works in private collections are rarely accessible to the researcher or student, and usually never to the public. Many works have been lost, stolen or destroyed and are known only by surrogate images."	Durran, p.15, referencing Roberts, 1986:30
1989	Adobe Photoshop first copyrighted	
1994-1997	Conference on Fair Use (CONFU) meets to develop guidelines for classroom and instructional use of digital and electronic media, potentially updating Copyright Act of 1976. Guidelines developed are rejected by most participating academic and professional associations.	
1995	Art Journal focus issue, "Rethinking the Introductory Art History Survey", Guest editor: Bradford H. Collins.	Art Journal, Fall 1995, 54.3

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