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Digital imaging : Creating New Realities

by

Mark Datodi

BA (Visual Arts). Grad Dip Ed.

A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of

Master of Arts (Visual Arts)

School of Visual Arts
Western Australian Academy of Performing Arts
Edith Cowan University

Date Submitted: April 1999

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

Abstract

More and more it is becoming increasingly difficult to discern photo reality from digital reality. Digital imagery is revolutionising photography and challenging preconceived notions of this art form. Over the years, photography has been viewed metaphorically as a window on the world and on the past. No longer however, is the creation of photographic imagery reliant upon its intrinsic relationship with reality. Using computer technology, original photographic material can be altered, manipulated and seamlessly combined with other fictional imagery without obvious detection and with relative ease.

The proliferation of digital imaging is producing two apparent crises for photography. The first is the perceived threat to photography, involving the fear that traditional photographic processes, methods and product will be superseded by manipulated digital images passing themselves off as real photographs. Added to these growing concerns for photography's longevity, is the prospect that viewers will no longer believe in photography as a deliverer of objective truth and that the medium itself will lose its power as a 'privileged conveyer of information'(Batchen,1994,p.47). The second crisis pertains to ethical concerns that these digital simulations raise: copyright, moral rights and artistic integrity.

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education; and that to the best of my knowledge it does not contain any material previously published or written by another person except when due reference is made in the text.

Signature..

Date.....4 - 4 - 2000.....

Acknowledgments

I would like to express my sincere gratitude to the following people. To Dr Christopher Crouch and Dr Annette Pedersen for their invaluable support, input and encouragement over the last three years. To Professor Neville Weston for his support and interest during the course of my study.

I would also like to thank my partner Melanie Morgan for her continual support, encouragement and patience.

Table of Contents

Page

Use of Thesis ii

Abstract iii

Declaration iv

Acknowledgment v

CHAPTER

1. Introduction 1
2. What is Digital Imaging? 6
3. The Original and Authenticity 11
4. The Debate 16
5. Reproduction and Copyright 19
6. Reality, Truth(Objectivity) and Ethical issues 22
7. Access to Digital Imaging Facilities 35
8. Conclusion: Fine Art Application 36
   8.1 Application 39

Bibliography 47

Art Images A-D

Image A : Pedro Meyer. (1994), Transparent Women 51

Image B : Alan Cruickshank. (1995), The Parkes Ministry of the 1889..... 52

Image C : Oscar Rejlander. (1857), Two Ways of Life 53

Image D : Henry Peach Robinson. (1858), Fading Away..... 54

Table of Contents

Art Images E-S **Page**

Image E	:	*Time* magazine cover. The Face of America	55
Image F	:	*Time* and *Newsweek* magazine cover. June 27, 1994	56
Image G	:	*Womans Day* magazine cover. June 10, 1996	57
Image H	:	Jeff Wall. (1992), The Giant	58
Image I	:	Yasumasa Morimura. (1991), Angels Descending stair	59
Image J	:	Alan Cruickshank. (1995), The Pioneer Aviator-1919	60
Image K	:	Alan Cruickshank. (1995), Sydney Habour Bridge-1930	61
Image L	:	Alan Cruickshank. (1995), The Horn Expedition-1894	62
Image M	:	Mark Datodi. (1996), Ocean View Identification Kit 6015	63
Image N	:	Mark Datodi. (1997), (Detail) Ocean View Identification Kit 6015	64
Image O	:	Mark Datodi. (1996), Identification by Postcode	65
Image P	:	Mark Datodi. (1996), Medium Price	66
Image Q	:	Mark Datodi. (1996), (Detail) Medium Price	67
Image R	:	Pedro Meyer. (1989), Monumental chair	68
Image S	:	Pedro Meyer. (1987), Fragmented Liberty	69

Introduction

"The camera never lies, but it never tells the truth either."(Bloom,1994,p.19) [1]

Digital imagery is revolutionising photography and challenging preconceived notions of this artform. The camera has been employed as a mechanical device or instrument which has been accepted by many to be a direct reflection of nature and reality, 'evidence in support of facts'. Over the past 150 years, photography has been a medium of representation that in some way, has seemingly reproduced the real. The assumed reality of the photograph invested it with the illusion of 'truth' and gave it much of its power (Scherer,1992,p.33). The factual, informative value of photography would not have been possible without the mass production capability of the photographic print (Sekula,1984,p.9).

Although Terence Wright (1994,p.18) suggests in his essay 'Photography : Theories of Realism and Convention', that the 'reality' of the photograph has been considered largely unproblematic, photography's reference to reality is an issue that has provoked much debate [2].

[1] Bloom, in his article 'Art of the possible', suggests that the camera operates as a 'gadget', a means to capture an image, a photographic image to which non-photographic people have in the past regarded as pure truth. As Bloom argues, the photograph "is nothing more than a photographers interpretation of an event" (Bloom,1994,p.19).

[2] In Wrights essay, he makes reference to Segall, Campbell and Herskovit, 'The influence of culture on visual perception' where they argue that there is nothing at all realistic about the photographic image and that the photograph can be regarded as an "arbitrary linguistic convention not shared by all peoples".(p.33) Also see Andre' Bazin 'The Ontology of the Photographic Image' in Allen Tranchtenberg's 'Classic essays on photography'

As Siegfried Kracauer(cited in Trachtenberg,1980,p.246) points out in his essay 'Photography' that, upon the photograph's invention "there was general agreement that photography reproduces nature with a fidelity equal to nature itself." The objective nature of photography has been argued on the basis that the image is formed automatically, without the creative intervention of humankind and that the personality of the photographer is only evident in the selection of the object that has been reproduced. One of Andre Bazin earliest critiques, 'The Ontology of the Photographic Image'(cited in,Trachtenberg,1980,p.241) deals with the realism - artifice debate, he states;

> In spite of any objections our critical spirit may offer, we are forced to accept as real the existence of the object reproduced, actually, re-presented, set before us, that is to say, in time and space. Photography enjoys a certain advantage in virtue of this transference of reality from the thing to its reproduction.

The academic realism - artifice debate in photography has always been around, as Scherer(1992,p.33) states, "The search for 'meaning' and 'reality' in photographs is a subject that has been tackled by philosophers, art historians, social historians, aestheticians, semioticians, psychologists and sociologists, as well by visual anthropologists." Generally, photographs appear to be extremely realistic and are accepted as an authentic representation of 'subject-matter'. Wright(1994,p.18) describes two convincing reasons why this should be. The first being, "*Instrumentality* : the authenticity of the photograph based on the causal connection by which the photograph

is directly 'transcribed' from nature." The second being the " 'instrument' itself, the camera, is frequently called on to explain the mechanics of visual perception."

Wright(1994,p.18) also suggests that "the language of the image is regarded as conventional, highly constructed, its understanding determined by Western culture." Bede Morris supports this belief in an exhibition catalogue essay; 'Images : illusion and reality', where the relationship between science and the arts helps further explain the link to reality that photography seemingly represents. Morris(1986,p.14) deals with the idea of what is reality and what is illusion by establishing two points of reference, the first being developed by 'culture' and the second point by 'experience'[3].

Outside academic debate (elite/high art practice), who questions the truth of a photograph or the reality that is seemingly represented by a photograph? How do 'lay people' interpret these images? Do we question every photographic image that appears before us? We are bombarded by photographic representation through the mass media; we cannot escape this visual medium, whether it is trying to sell us something, entertain us, inform us of a new discovery or attach itself as a visual document to a news article. The photographic medium has visually represented a perceived reality and truthful account.

[3] Morris's issue of 'culture' and 'experience' is dealt within Reality, Truth and Ethical issues later in this paper.

The global inception of digital imaging and the widespread introduction of computer imaging processes, have enabled original photographic material to be altered, manipulated and combined with other fictional imagery without obvious detection and with relative ease. Digital imaging has generated new issues that further challenge the realism-artifice debate. Are we all up to date with new computer technology and the possibilities digital imaging is capable of achieving? Digital technology has superseded traditional aspects of mechanical reproduction which consist of analogue information[4]. The proliferation of digital imaging is producing two apparent crises for photography. The first is the perceived threat to the medium itself, involving the fear that traditional photographic processes, methods and product will be superseded by manipulated digital images passing themselves off as real photographs. The second crisis pertains to ethical concerns that these digital simulations raise : copyright, moral rights and artistic integrity.

Mitchell(1992,p.28) predicts that the creation of photographic imagery will no longer be reliant upon its intrinsic relationship with reality. According to Batchen(1994,p.47) the prospect is increasingly that, "viewers will discard their faith in the photographs ability to deliver objective truth, and that the medium itself will lose its power as a privileged conveyer of information."

[4] Analogue refers to any device which represents a variable by a continuously moving or varying entity. In the case of mechanical reproduction, what is being reproduced will vary in quality from the original.

I support the implementation of computer graphics into current artistic practice and enjoy the academic debate, however my main concern lies in the reading of new technologies imagery. Do we require a new visual language? If so, how accessible will this new language be to the lay person.

My research has brought together a number of consequential issues which have evolved through the way in which digital technologies are being thrust into computer graphics systems. Current issues that are being debated revolve around traditional aspects of photographic representation. Which have lead to a re-evaluation of the authenticity and origins of an image and the perceived threat to photography's delivery of a perceived objective truth, which encompasses the questioning of reality, truth and importantly, ethical issues.

I believe this research has been necessary to develop an understanding of current issues which in turn have developed and given support to my art practice. I use digital imaging technology within the process of making art; the origins of my artwork invariably begin with a photograph or series of photographs. The computer has been adopted to speed up the technical process in the production of resolving an image. I deal with the application of digital imaging (as tool) in the realm of fine art practice in my conclusion. Here I discuss my own application, illustrate examples and make reference to artists' work: South Australian artist Alan Cruickshank; and Mexican artist Pedro Meyers.

To deal with the current issues being debated and address the possibility of a new visual language (reading), I have broken this paper into chapters, that is to say, bytes or blocks of information.

What is Digital Imaging ?

Digital imaging consists of recording or capturing a picture, usually with a video camera, digital camera or scanner, and encoding the signal so it can be altered as data into a computer graphic. Images are encoded digitally by uniformly subdividing the picture plane into a 'finite Cartesian grid of cells' known as pixels (Mitchell 1992,p.5). Once a picture has been encoded into pixels of information or digital bits, the image will be represented on the computer screen with photographic qualities. A traditional photographic print consists of analogue information in so far as the photographic image represented has continuously varying quantities or varying entities. Mitchell(1993,p.54) makes reference to "analogue information" to help further explain the mystifying differences between digital imaging and its impact on the traditional aspects of mechanical reproduction, encompassing audio visual, photography, or photocopying, etcetera.

According to Mitchell(1993,p.53) autographic works such as paintings or videotapes consist of analogue information which cannot be copied exactly without some minor differences, especially with repeated copying which always introduces "noise and degradation" to the original. Davies(1995,p.382) when describing analogue information makes an analogy to waves breaking on the beach, "breaking over and over but never precisely in the same form." The continuous spatial and tonal variation of an analogue image is not exactly replicable, so such images cannot be transmitted or copied

without a loss in clarity. For example, photographs of photographs, photocopies of photocopies, and copies of videotapes are always of lower quality than the originals, and copies that are several generations away from the original are typically very poor.

Digitisation represents the computer equivalent of the photographic half-tone process. The half-tone process entails the use of "dot-matrix screens" to break photographs into dots that contain the same amount of ink and have the same black value. A good example of this is an image printed in any mass produced newspaper or magazine (Tamblyn,1988,p.8).

The pixels that make up a digital image are the major ingredient in the manipulative control of that image. Once the image has been digitised it can be viewed on the computer monitor, enhanced, retouched, combined with text and other images (montage), and treated with numerous manipulations (Tamblyn,1988,p.8). The difference here between digital and analogue is that a digital image can be endlessly reproduced without degradation, a digital image that is a hundred generations away from the original is "indistinguishable" in quality from any one of its copies (Mitchell,1992,p.6).

The unique computer tools available to the artist, such as those of image processing, visualisation, simulation and network communication, are tools for changing, moving and transforming digital information. Digital information is essentially 'plastic' because the way in which it is stored allows it to be easily changed, with the computer providing many tools for making such changes (Malina, 1990,p.33).

The photographic process has always been open to darkroom manipulations. Artists such as Max Ernst, John Heartfield, Man Ray, and Laszlo Moholy-Nagy, all employed various manipulating techniques (Tamblyn,1988,p.8). Generally, the manipulated photographic images were achieved by cutting and pasting, using multiple negatives, rephotographing, airbrushing, or masking and ultimately producing photographic-like images for their own artistic or political gain.

However, as these methods of manipulating imagery are technically difficult, time consuming, and fairly easily detectable [5], these sorts of manipulations have up until now remained "marginal" to the practice of photography (Mitchell,1992,p.164). This situation has changed dramatically with the emergence of digital imaging. The tools for electronic collage are quick and easy to use, and their application can be almost impossible to detect [6].

The computer's role in the generation of artwork is varied. At the most basic level the computer functions as the ideal tool, combining images from different sources and putting them into visual context with each other. However, at another level, according to Kirchman (1990,p.32) it is capable of "transcending the role of 'tool' to become a creative partner, a conceptual collaborator, interactively lending its unique contribution to the final work".

[5] I believe the ability to detect such manipulations to photographs enables the viewer access to the proposed reading of the image, the cutting and pasting of an image is a language we can interpret.

[6] The application of digital imaging removes any access to detect any alterations to an original image, thus the only reading one may have is to believe what is seen before them. This highlights the possibility of deception through a medium that in the past has seemingly reproduced the real.

The control over the construction of a digital image is clearly identified by the pixels that make up the image, as each pixel can be independently given any value from black to white. Digital images can therefore be lightened, or colourised on a pixel by pixel basis. This distinction may not seem particularly consequential until specifications are cited: skin colour can be easily changed, or a figure can be seamlessly inserted into or deleted from a photograph [refer to art images A and B].

Furthermore, electronic collage allows ready combination of synthesised images [7] with captured ones - to place synthesised objects in real scenes, or real objects in synthesised scenes (Mitchell,1992,p.164). The images used in 'electronic collage' can come from any source: photographs may be combined with photographs, synthesised images with synthesised images, or photographs with synthesised images. As Mitchell (1992, p.4) suggests, "we might choose to regard the digital encoded, computer-processable image as simply a new, nonchemical form of photography or single-frame video".

Basically, once an image has been 'captured' via video camera or scanner and encoded as data into a computer's memory, the encoded signal can then be stored onto magnetic disk or tape, printed onto paper (that is indistinguishable in look and quality from traditional photographs), photographed, transmitted by telephone, or passed onto further processing for print or broadcast media (Tamblyn,1988,p.8). Although a digital image

[7] Synthesised images refer to images constructed (generated) entirely with the aid of a computer graphics software package. The image is constructed entirely within the computer and dose not exist in reality.

may look like a photograph when it is printed from the computer or published in a magazine, it is the cosmetics that make up the digital image that differ profoundly from traditional methods of photographic representation or reproduction.

The cosmetics that make up the digital image can only be identified through close examination (magnification will identify the underlying pixel structure). On the surface the image reads the same as any photographic or pictorial representation. Thus the language to interpret digital imagery (even though the cosmetic structure differs profoundly from traditional forms of photographic representation) relies heavily on convention [8]. New technologies demand new conceptual structures; photographs and computer images cannot be assessed in the same way. The structural difference between a digital image and traditional methods of photographic reproduction has been a major catalyst in the recent debate over the question of authenticity and concerns with locating the origins of a digital image and questioning the original. As Tamblyn(1988,p.8) predicted, "digital image processing is an ideal technique for producing multiple image replications, because there is no "original" in the sense that no photographic negative exists".

[8] This has been argued by Segall, Cambell & Herskovits(1966,p.33), in the belief that there is nothing at all realistic about the photographic image. Wright(1994,p.18) talks about the 'language of the image' which is a "highly constructed language with its understanding determined by Western culture". Goodman(1968,p.38) suggests that "through arbitrary systems of representation, photographs only appear realistic because we have learned to see them as such".

The Original and Authenticity

"Physically and formally chameleon" is how Douglas Davies(1995,p.381) describes a work of art in the age of digital reproduction. He believes there to be no clear conceptual distinction now between original and reproduction in virtually any medium based in film, electronics, or telecommunications. As for the fine arts, Davies suggests, "the distinction is eroding, if not finally collapsed. The fictions of "master" and "copy" are now so entwined with each other that it is impossible to say where one begins and the other ends"(1995,p.381).

For an image to be authentic, one would believe it to be, truly the original (the authentic master(sic) piece!). According to Mitchell(1992,p.49), the question of authenticity suggest that "images are unique, that they are produced by individuals, and that there is a fundamental difference between the originals and copies". The distinction between the originals and their copies is clearly made with the value attached to the original. As Mitchell(1993,p.54) suggests "we usually value the original far more highly - both for their aura as relics of a particular human hand and for their superior status as direct rather than secondary evidence"[9].

[9] A good example of this issue exists in the commodification of massed produced prints, copies made from original artworks. ie. You may not be able to afford an original Monet oil painting but you may be able to afford a full colour copy (print) of a Monet painting.

Walter Benjamin states in his famous essay, 'The Work of Art in the Age of Mechanical Reproduction' (cited in Arendt,1987,p.217-251) that, "the presence of the original is the prerequisite to the concept of authenticity"(p.220). This being the case, Benjamin believed the invention of photography was the first truly revolutionary means of reproduction. Benjamin describes photography as a work of art designed for reproducibility, acknowledging that to ask for the "authentic" print makes no sense (p.224). So, does an original exist within the realm of traditional based photography ? If so, is the negative the original? Is each print an original ? What distinctions are there between photographs of photographs ? I believe an original does exist in traditional based photography where the photographer abides by conventions generally understood by photography practitioners when printing from the negative[10]. When we start taking photographs of photographs the concept of original breaks down before our eyes as the reproduction is analogue, each print from the original will vary in quality from that original[11].

Digital images have been identified as being even more problematic, since they do not even have unique negatives.

[10] Usually the photographer will select an edition number and print that number from the negative. Once the edition has been printed the negative is scored thus preventing another run of prints (each print in the edition has the same monetary value).

[11] Analogue reproduction can be demonstrated very easily, ie. a photocopy of a photograph, then a copy of the photocopy and so on.

The digital image can be endlessly reproduced without degradation. An image file may be copied endlessly, with each copy being indistinguishable from the original[12]. The only difference between an original file and a copy is the tag recording time and date of creation and that can easily be changed. Image files therefore leave no trail, and it is impossible to establish with certainty the origin of a digital image (Mitchell,1993,p.55).

In general, computer files are open to modification at anytime. Unlimited numbers of displays and prints may be made from each copy , an image file may be destroyed within a short time of its creation, but many of its descendants may live on (Mitchell,1992,p.49-50). So how can an original exist within computer generated imagery ? In some cases, digital images are not captured but synthesised. Is the database then the original ? Does each application of a new rendering procedure produce a new original work of art ? Or, is the rendering procedure really the original ? Perhaps the digital montage or synthesised image can be seen as 'aesthetically' if not physically 'unique' ?

As with digital imaging, the notion of "master" and "copy" can no longer be(Davies,1995,p.381). Christine Tamblyn in her article 'Machine Dreams'(1988,p.8) states that, "digital image processing is an ideal technique for producing multiple image replications, because there is no original."

[12] Digital data is stored in labelled files to enable the user to locate particular information. When establishing a file of information, the computer records a tag recording time and the date of creation. An image file is exactly the same as any other file that is created.

Does digital imaging finally confirm Walter Benjamin's proclamation of doom for the aura[13] of originality? Davies(1995,p.384) believes Benjamin saw the logical implications of mechanical reproduction, in assuming that the world would "bow to logic", that the endless reproduction of a painting or a photograph would diminish what Benjamin called the "aura" of the original. This view has been argued by Sidney Tillim(1983,p.68) in his article, *"Benjamin Rediscovered : The Work of Art after the Age of Mechanical Reproduction"* he states nothing like this has happened; "We still bid wildly at auctions and employ armies of scholars to find the "original", the "authentic" "masterpiece"(sic). Davies(1995,p.384) supports Tillim on this issue and argues that, "in an age when copying is high art, when the simple physical availability of vintage masterpieces is dwindling, when postmodern theories of assemblage and collage inform our sensibility, the concept of aura (if not of its material realisation) persists". Benjamin stated ;

> the earliest art works originated in the service of a ritual - first the magical, then the religious kind. It is significant that the existence of the work of art with reference to its aura is never entirely separated from its ritual function. In other words, the unique value of the "authentic" work of art has its basis in the ritual, the location of its original use value. (cited in Arendt,1987, p.224)

[13] Walter Benjamin(cited in Arendt,1987,p.221) stated that, "The authenticity of a thing is the essence of all transmissible from the beginning, ranging from its substantive duration to the history which it has experienced." Benjamin used the term "aura" in describing the attached experience of an object(thing). Benjamin believed that the mechanical reproduction will lead to the "withering" of the aura of the art work, thus its authenticity.

We might best regard digital images then, neither as ritual objects (as religious paintings have served) nor as objects of mass consumption[14] (as Benjamin refers to photographs and printed images), but as Mitchell(1993,p.56) suggests, "fragments of information that circulate in the high - speed networks now ringing the globe and that can be received, transformed, and recombined like DNA to produce new intellectual structures having their own dynamics and value". The issues raised challenge our current language and traditional concepts of art. In a digital art world Davies (1995,p.383) suggests we may need to replace our traditional concepts and language with one that "recognises continual mutation and proliferation of variants". As digital images (Mitchell,1993,p.56) have become increasingly important items of exchange in the worldwide electronic - information economy and as traditional conception of image truth, authenticity and originality have consequently been challenged, ethical and legal dilemmas have emerged. Many of the traditions, standards, and laws developed in the predigital era seem inadequate when they are extended to the new situation created by the new technology.

[14] Photography has been employed as a medium to publicise, sell, educate, and entertain the masses (Langford, 1980,p.134). Prior to digital technology and the global distribution of computer generated imagery, photography has been the most utilised (mass consumed) form of visual illustration.

The Debate

According to Green (1994,p.33); "photographic reality is an expression that has defined our notion of visual truth for the past 150 years". This long-lived concept is now being questioned with the introduction of sophisticated digital computer technology capable of altering actual photographs and constructing seemingly "photographic" images. It is now possible to construct one's own version of reality[15].

Computer manipulated images are now so real, it is very difficult to tell the difference between an original photograph or the digitally manipulated photograph[16]. Pivotal to the debate is the question of authenticity. Authenticity implies (Mitchell,1993,p.54) that images are unique, that each image is produced by one person, and that there is a substantial difference between originals and copies. Digital images challenge the notion of authenticity, because there is no distinction between the original and its copy. The possibilities of creating, manipulating and combining images, which can be erased and altered without record, have been dramatically increased with the proliferation of computer technologies. The likely impact of such photographic manipulations on the authenticity and perceived truth (reality) that photographic images hold, is anticipated by many to be catastrophic.

[15] I am aware of the processes associated with traditional photographic manipulation. With the aid of digital imaging the process to create the same manipulation or construct 'one's own version of reality' has never before been so easy and accessible.

[16] Original in the sense that the photograph has been created using traditional photographic processes.

As Michael(1996,p.8) states; "no longer can any photograph be read as a transparent 'window on the world' "[17]. With the pervading influx of digital imaging photography as a medium itself is undergoing a transformation. Traditional photographic processes are already being referred to as 'post - photography'. The undergoing transformation of photography has been predicted by many to have an 'uncertain future', much as the 'death of painting' was declared with the invention of photography (Michael,1996,p.8). As time has proven that the 'death of painting' has not occurred so traditional photographic processes may have become superseded, but photography as a fine art medium continues to exist.

The global market has produced an overwhelming demand for information in visual form, and the digital image has such an enormous technical and economic advantage as a way of meeting this demand, that according to Mitchell (1992,p.19), it seems certain to "succeed the photograph as our primary medium of visual record - much as the photograph itself succeeded the hand-drawn and painted image". If this proves to be the case, photography as a traditional medium may only exist within the realm of fine arts. The apparent displacement of photography and the undermining issues raised by digital imaging have been embraced by others in a more positive light. Martyn Jolly(1996,p.22)

[17] The photograph by the mid 19th century was used as a recording device to capture accurate records of far away places, famous people and important events. For the first time photography offered to the masses (with the aid of news papers and magazines as its vehicle) images of the world. As Wright(1994,p.18) suggests, "the camera was used by the traveller with anthropological tastes to very great advantage in securing, for exhibition to those of similar tastes who are not lucky enough to be able to travel and see for themselves, accurate records of the appearance, life, and habits of the primitive folk visited."

suggests in his article, 'Photography's Afterlife' that; "The dawn of the digital age will not mean the death of photography, any more than the birth of photography meant the end of painting. ... Particular inventions do not suddenly drop from the sky and kill off entire visual mediums."

In fact it can be argued that with the advent of this new digital medium, a new kind of artform has evolved. According to Druckery(1994,p.5) emerging from digital media, there is a kind of reconfiguration of several traditions: "montage, narrative, a concern with the "space" of electronics, and a rethinking or extension of the issues surrounding the semiotic constitution of the image". Images have never before possessed the potential to sustain so much information or, perhaps meaning. Dorey(1994,p.14) argues that image manipulation is not new to photographers and artists who have in some way either sought the 'truth' in what they found or expressed the 'truth' through constructing or manipulating what they found.

At the present stage of the digital evolution Dorey(1994,p.14) suggests that, "it's inevitable that photography continues to move more towards constructed imagery rather than found, and in doing so can only serve to widen its visual vocabulary." Will this new 'visual vocabulary' suggested by Dorey continue to have links with photography? If so, will the ideas behind the constructed imagery be a development of concepts rather than technology (which seems to be the present case)?

Reproduction and Copyright

Since the development of printing, for example, the concepts of 'fixing' and 'publication' of definite 'works' have played key roles in copyright law. As Mitchell(1993,p.56) states; "Production of copies - either as pieces of handiwork or as industrial commodities-was a difficult and expensive process and that copies are valuable material artefacts existing in limited numbers". The implications of digital technology on copyright law have been an on-going concern since the conception of digital images. The proliferation of digital image production has resulted in difficulties distinguishing between "draft" and "published" versions and between originals and copies; their ease of duplication, their tendency to "proliferate limitless variants" and their unconventional channels of distribution (the Internet), all challenge existing copyright legislation. Photographers have traditionally retained economic control of images by keeping the negatives and selling prints, but this strategy becomes impossible when images are archived and distributed as files of digital information (Mitchell, 1993,p.57).

As Suzanne and Francis Marchese (1995,p.434) outline in their article 'Digital Media and Ephemeralness' , "once digitised, all art is just another form of electronic information stored in well - organised databases for further manipulation." A good example of this is highlighted in the recent release of CD-ROM products containing samples of Museum collections. Marchese notes Microsoft's "Art Gallery", which is a selection of over 2000 works from the National Gallery in London.

Each image selected from the Gallery's collection, has been digitised from a photograph taken from the original work. The selected images are down loaded and put into production onto CD-ROM, with hundreds of copies made, and packaged ready for distribution and sale.

By purchasing the CD-ROM one also purchases the right to copy any one of the images onto one's own database, make as many copies as one likes, import it into a manipulation programme, cut and paste, manipulate and endlessly combine with other images. This brings into question the ongoing concerns with copyright law. For example, should electronic reproduction rights be sold like print rights? According to Mitchell(1993,p.57), if they are, "there are some difficult pricing and contractual issues to resolve, since electronic images are disseminated in different ways and in different quantities from print images." The network distribution of digital images can make it difficult to determine image locations[18] , unlike the case of, say paintings that reside in an Art Gallery. Where does a digital image reside ? If you were to place your artwork on the Network, anyone can and will access your work, download and use it as if it were their own. Garton(1996,p.2) identifies this and states ; "They will sample and resample your ideas; your images; and your sounds." The internet has created further problems of copyright law enforcement, by accessing imagery from other countries, (as

[18] Whilst an artist's imagery remains on the network it is accessible to anyone who has access to an on line computer. The location of an artist's imagery only becomes an issue when they have not copyright cleared their imagery or they are unaware that their imagery has have been distributed on the Network in the first place.

legal rights vary between countries) this generally puts image copies beyond the statutory reach of law-enforcement and regulatory agencies (Mitchell,1993,p.57).

These issues are of concern to the artist, how should the rights of digital images be defined and enforced? How should artists' intellectual property, be protected ? As Garton(1996,p.3) quotes, (from 'Fair Use', an essay by the US based sound collage band, Negativland, who advocated not so much for copyright, but for copy free intellectual property) "Should artists, for profit or not, have the right to freely "sample" from an already "created" electronic environment that surrounds them for use in their work ?" As image files are usually untraceable, there may be no way to determine whether a file is a freshly captured, unmanipulated record or a mutation of a mutation that has passed through many hands. Who is to know where the original image was sourced?, or able to prove that a particular image is subject to copyright law in the first place ? Even if copyright was in place who will enforce these laws ?

Should we, as Mitchell(1992,p.52) suggests, "abandon the traditional conception of an art world populated by stable, enduring, finished works and replace it with one that recognises continual mutation and proliferation of variants." At this point the dilemma of copyright law with digital imagery on and off the net seems extremely problematic.

Reality, Truth(Objectivity) and Ethical issues

According to Bazin (cited in Trachtenberg,1980,p.241), "The objective nature of photography confers on it a quality of credibility absent from all other picture-making. ... we are forced to accept as real the existence of the object reproduced, actually, re-presented..." The invention of photography brought with it for the first time the means to capture a likeness of an object and form automatically an image. The process of capturing the object, is achieved without the intervention of a creative hand, unlike the process of painting and drawing[19].

The relationship between science and the arts may further explain the link to reality that photography seemingly represents. Science and art have been seen as "two cultures" distinguished by ideology and by ethic, technology and process (Morris,1986,p.2). Science and the scientific method deal in rationality, deductive logic and objectivity. Science is concerned with the discovery of facts and developing concepts to bring these facts into an "intelligible theory" to explain the reality of the natural world.

What we know (Morris,1986,p.4) and understand about our natural world is built on images and shapes which are recorded, interpreted and imprinted in our brains as

[19] The process of capturing the object without the intervention of a creative hand refers to the instrumentality of the camera. Bazin(cited in Trachtenber,1980,p.241) stated that, "between the originating object and its reproduction there intervenes only the instrumentality of a nonliving agent. For the first time an image of the world is formed automatically, without the creative intervention of man."

the result of the experiences we encounter throughout our lives. Through our eyes, according to Morris(1986,p.12) "we register, transmit and record within our memory store, tetrabytes of information during a lifetime, each remembered piece being recalled each time as a visual image of something seen perhaps years before and never seen again." Our perceptions of the natural world are both real and illusory.

The certainty of what is reality and what is illusion is only established from points of reference. Morris(1986,p.14) describes two points of reference, the first being developed by "culture" and the second point by "experience" which are then retained within our memory. For example ; "A picture that is perceived and registered as a portrayal of some recognised reality by a person from a western culture might mean something entirely different to someone of tribal origin with a different background of experience".

Unless there are previous experiences stored within the brain from which to imagine the reality, the image will convey either an unrecognisable or an ambiguous meaning. Derrida (cited in Routt,1995,p.58) contributes to this belief in claiming that ; "every referent, all reality has the structure of a differential trace, and ... one cannot refer to this "real" except in an interpretive experience". Take for example the reception of spacecraft images, as Mitchell(1992,p.40) states;

> 'When close up photographs of the rocky surface of Mars were first published in 1976, we simply had to believe them : since none of us had ever been close to the surface of Mars, we have virtually no relevant knowledge(experience) against which to cross check them. At best, we could make comparisons with barren, rocky deserts on Earth.'

In his essay "Understanding a Photograph"(cited in Trachtenberg,1980,p.293-294) John Berger takes the stance that the photograph, whilst recording what has been seen, always and by its nature refers to what is not seen. Berger suggests the most popular use of photography is as a memento of the absent[20]. Photography isolates, preserves and presents a moment taken from a continuum. Photography in its traditional medium has been valued and excepted by many as a means to visually record a moment in time[21]. Morris(1986,p.19) states;

> 'Photography allows a moment in time to be recorded for posterity with astonishing accuracy and detail. A photographic record of an event thus differs from a painting or a memory of the same event in that it does not evolve or change in relation to time, it is not censored in terms of the detail of its content and its accuracy is completely vouchsafed.'

Morris's belief that a "photographic record of an event thus differs from a painting or a memory of the same event in that it does not evolve or change in relation to time..."

[20] Berger(cited in Trachtenberg,1980,p.293) suggests, "A photograph, is effective when the chosen moment which it records contains a quantum of truth which is generally applicable, which is as revealing about what is absent from the photograph as about what is present in it."

[21] Photography became extremely popular in the mid 19th century as a means of visually recording During this period of time (Langford, 1980,p.22) people had their portraits taken to give to their loved ones; the results were considered cheaper, more accurate and more modern than miniature paintings. I believe traditional based photography continues to hold onto its use as a 'memento of the absent', particularly photographs of loved ones who have long passed away.

should be further explained in an analysis of capturing the event. There is a physical difference in the process of capturing the event photographically and painting the event. A painting will undergo many alterations through the process of capturing the image, a traditional based photograph does not evolve or change in relation to time whilst the image is being captured on the negative. Berger(cited in Trachtenberg,1980,p.293) believes: "The power of a painting depends upon its internal references... painting interprets the world, translating it into its own language." I don't agree with Morris's statement, when he talks about the photographs content and its accuracy being completely vouchsafe. We could argue that this is correct in the transference from image to negative, but I believe the problem lies in the 'development' of negative to print.

Morris's statement has been challenged as far back as the early 1920's with the introduction of photo-manipulation techniques; both Edward Weston and Paul Strand supported the modernist argument about the inherent qualities of materials by suggesting that photo-manipulation of any sort was not only difficult, but also unphotographic and fundamentally undesirable. Weston valued the fragile integrity of a photograph's surface and argued that it inherently resists reworking or manipulation (Mitchell,1992,p.6-7).

Earlier still, photographic objectivity was challenged by the invention of combination printing during the mid 19th century. With the application of combination printing a new light was cast over photographic objectivity and its relation to reality. During the

mid 19th Century Henry Peach Robinson was renowned for his practice and writings on photography. Robinson embraced the new technique and justified its application to his own work, believing not only in composite printing, but in the necessity of a subjective element in the artistic photographic process (Trachtenberg,1980,p.91).

Combination printing was developed as a means to accurately record skies in the landscape. Photographers of this era used sensitised glass plates for a negative. The negatives were extremely sensitive to blue light, skies invariably printed white (Trachtenberg,1980,p.91). To introduce clouds into a picture, the photographer would make two negatives, one a short exposure to record sky detail, the other longer for ground detail. These were contact printed one at a time onto the same sheet of photographic paper. The resulting photograph was one that could be manipulated showing different moods of the landscape through many printed variations of the sky.

According to Trachtenberg(1980,p.91);

> "this technique was controversial. The convincing detail and strict perspective characterising most contemporary photographs often caused them to be considered objective pictures of reality. The supposedly mechanical means by which photographs were made added to the belief in photographic objectivity."

Combination printing challenged this concept of objectivity. Oscar Rejlander's use of combination printing to build up elaborate compositions such as 'Two Ways of

Life' (1857) [refer to Image C] and Henry Peach Robinson's 'Fading Away'(1858) [refer to Image D] are two early and very convincing examples[22].

As Mitchell (1992,p.24) suggests;

> 'One way or another a photograph provides evidence about a scene, about the way things were, and most of us have a strong intuitive feeling that it provides better evidence than any other kind of picture. .....the evidence it presents corresponds in some strong sense to reality, and (in accordance with the correspondence theory of truth) that it is true because it does so.'

If we now consider digital imaging and its applications in the realm of photography, it certainly challenges the historical precedence and the preconceived photographic ideologies that have been established since photography's inception. The essential characteristic of digital information is that it can be manipulated easily and rapidly by computer by simply substituting new digits for old. Digital images are much more susceptible to alteration than traditional photographs, or any other kinds of images (Mitchell,1992,p.7).

[22] Used here as an example of how photography in its infancy was embraced as a visual medium to challenge the viewers perception, most photographers during this period employed combination printing to accurately complete the pictures composition and detail (as it was when they took the photograph).

In a traditional photographic practice extensive reworking of photographic images to produce seamless transformations and combinations is difficult and outside the mainstream of photographic practice. As Mitchell(1992,p.7) suggests, "when we look at photographs we presume, unless we have some clear indications to the contrary, that they have not been reworked." Digital imaging further challenges our reading of photographic images. Although the objective nature of the photograph has been challenged in the past, digital imaging destroys photography's meaning and value as documentary or factual evidence.

Photography has always been open to darkroom manipulations as previously mentioned. With the flooding of digital images into the communication industry, in particular the "colour electronic prepress systems", industries such as advertising and publishing have employed this new technology, incorporating digitally retouched or altered photographs (Mitchell,1992,p.16). The possibilities of this new image making facility has raised concern about the intentional misuse of such a tool. From the safe enhancement or retouching to the potentially misleading or intentionally deceptive alteration of the image content.

Manipulative computer tools enable an image to be easily combined , altered, and if desired, transformed completely. The synthesised pixel values enables image fragments from different sources to be quickly and seamlessly combined, in such a way that these interventions in the image construction process are easy to introduce and

difficult to detect. The digital image blurs the "customary distinctions" between painting and photography and between mechanical and handmade pictures (Mitchell,1992,p.7).

In his essay "Understanding a Photograph" Berger (cited in,Trachtenberg,1980,p.294) states, "Photography does not deal in constructs. There is no transforming in photography. There is only decision, only focus." I don't agree with Berger. There is a history where photographs have been used to give meaning to political, economic and social understandings, preconceptions and stereotypes (Scherer,1992,p.33) [23].The correct 'meaning' in understanding a photograph depends on the understanding of the code, the caption and the context. Scherer (1992,p.32) suggests that, "photographs as a body are reliable evidence open to analysis and interpretation as seen through the interrelationship of the photographer, subject and viewer." As Batchen(1994,p.48) suggests, "Photographs are pictorial transformations of a three - dimensional world, pictures that depend for their legibility on a historically specific set of visual conventions". These conventions have not changed, constructed digital imagery is reliant on traditional photographic ways of seeing.

Synthesised digital images reside in the virtual world of the computer where-by they exist as a mere simulation of the supposed reality guaranteed by the photograph. Digital imaging remains an overtly fictional process. As a practice that is known to be fabrication, digitisation abandons even the rhetoric of truth that has been such

[23] For example, "photography was used extensively in the colonial effort to categorise, define, dominate and sometimes invent, an Other, and the representation became a form of cultural and legal power" (Scherer,1992,p.33).

an important part of photography's cultural success (Batchen,1994,p.48). Digital imaging and its apparent loss of the referent further challenges Berger's notions of reality. With images being stored in databases and computer networks, digital images challenge the viewers interpretation of reality.

According to Mitchell (1992,p.17) digital image manipulation has been defined as a "transgressive practice", a deviation from the established regime of photographic truth. Digital manipulation of photographs does not hide the distinction between depiction and their objects, but blurs the boundary between two kinds of depictions - the first which has claims to truthfulness and the second being faced with the uncertainty about the status and interpretation of the visual signifier.

The transformation of an optical and chemical image into a data and pixel image has challenged the optical reality that photography seemingly represents. For example, an image on *Time* magazine cover "The Face of America" [refer to Image E] was made by morphing together in statistical proportion the photographed faces of various ethnic models to create a single portrait. Although this attractive, phantom female portrait exists within the database of a computer , the person portrayed does not exist in reality. The image looks real - presented in a photographic pictorial format, just like any other front page cover of a magazine. Is there an ethical problem with this sort of digital image construction?

I believe the greatest moral and ethical issues lie in the application of digitally altered images being used in an industry where reporting agencies rely on factual images. Under normal circumstances, unmanipulated photographs have been used to visually record that some state of affairs existed, or that an event took place (as evidence). But presentation of photorealistic synthesised images or "pseudo-photographic assemblages" (digital photographs with additions, deletions, substitutions, or rearrangements) as straightforward photographs calls into question something other than valid reporting, which Mitchell(1992,p.219) calls, "either falsehood or fiction."

Would one be surprised to find that a newspaper or a well respected reportage magazine employing such manipulated pictures? According to Jolly(1996,p.23-24), "every newspaper photograph routinely goes through a digital imaging programme." When a credited news magazine or paper is "caught out", for manipulating their photographs, there is good reason to publicly expose such a thing, particularly when the image (photograph) is being passed off as 'real' (unmanipulated) . A good example of this, was during the O.J.Simpson trail, in 1994, when *Time* magazine [refer to Image F] altered its cover image of O.J.'s "mug shot". *Time* darkened Simpson's skin tones, supposedly for dramatic effect. The change was evident because Newsweek magazine used the same photograph, unmanipulated, on its cover the same week. The controversy centred on whether the alteration was racist and exposed the dangers of such photographic manipulation (Squiers,1995,p.96). In the case of *Time* magazine being caught "red handed", they were forced to admit to such manipulations and had no other option than to publicly apologise (Jolly,1996p.24).

Will such traditional reportage photographs, with their fragments of the real and precise moments in time be assessed and protected against such manipulations ? From my research nothing appears to have been done to introduce new legislation. Many of the traditions, standards, and laws developed in the predigital era seem inadequate when they're extended to the new situations created by the new technology. It has been proposed that a universal symbol, named the "not a lens" symbol, be adopted by all publications to indicate when photographs have been digitally altered. This proposal has created a debate as to what symbol is most appropriate to (positively) signify the digitally altered photograph.

Despite the wide ranging support for such an icon, according to Squiers (1995,p.96), "it hasn't yet been adopted by any newspaper or magazine. Everyone thinks the issue is very important, but no one wants to take the first step of using the icon". As this issue is unresolved and there is no controlling body to enforce the identification of such images, many front page covers of gossip magazines such as *Womans Day* and *New Idea* have revelled in eye catching manipulated images.

A good example of such a manipulation occurred on the front cover of *Womans Day*, June 10, 1995 issue, featuring "Fergie's brazen Playboy Shoot" - a photograph of the Duchess of York posing semi-naked for the American Playboy magazine [refer to Image G]. The digital image of "Fergie" is so well executed and with no manipulated digital image warnings, one would (at first glance) take the picture as real. The only thing that may stop us from believing this is our own logic; surely "Duchess Sarah Ferguson"

would not do such a thing! On the other hand, (making reference to Morris's theory), if one had no prior experience of the Duchess of York, then one would believe what they saw, having no reason to doubt the image.

For photojournalists the ethical issues dramatically present themselves as ones of creative control, individual and institutional responsibility for image content, and formulation of codes of conduct (Mitchell,1993,p.57) . This leads us to many unanswered questions : "When does a succession of small and apparently innocent manipulations add up to significant deception? How can this gradual degradation of evidential value be controlled? Who guarantees the integrity of a news photograph, and who checks whether an image of doubtful provenance might be a prejudiced fabrication? And, if that image deceives or defames, who bears ultimate moral and legal responsibility?" (Mitchell,1992,p.55).

The institutions of journalism, the legal system and the sciences with their need for provable reliable evidence, all of whom rely heavily on the camera as a recording instrument, are fighting hard to assert the authentication of the "standard" photographic image (Mitchell,1992,p.8). In the future, readers of newspapers and magazines may come to view news pictures more as illustrations than as reportage, since they will be well aware that they can no longer distinguish between a genuine image and one that has been manipulated. Even if news photographers and editors resist the temptation of electronic manipulation, the credibility of all reproduced images will eventually suffer, photographs will not seem as real as they once did (Mitchell,1992,p.17).

On the other hand, with the erosion of the traditional boundaries between artist and photographer, editor, archivist, publisher, and viewer, the emergence of digital imaging has been seen by others as an opportunity to expose the myth in photography's construction of the visual world, to deconstruct the very ideas of photographic objectivity and closure, and to resist the photographic traditions which have been established over the past one hundred and fifty years (Mitchell,1992,p.8).

Access to Digital Imaging Facilities

The means to capture, process, display, and print photographic-like images, requires access to computer software and hardware equipment. Until recently, the cost of the equipment required to perform these operations was prohibitive to artists, unless they worked in government, corporate, or academic institutions.

In the main, it has been art directors and designers, with big budgets, who have had access to high-end image manipulation computers. Artists, photographers and designers seldom had the finances to pay system designers to interpret their ideas and designs on screen. As a result of this 'poverty trap', new and innovative photographic art forms have suffered (Bloom,1994,p.18). Until recently the most advanced photographic tools in the world have been employed with the sole purpose of selling products, leaving most artists obstructed in their endeavours to be at the forefront of innovative image creation (Bloom,1994,p.18). However, the proliferation of personal computers capable of being connected to various peripherals has made digital imaging, widely accessible and increasingly affordable. The frustration such artists have suffered as a result of their lack of access to such tools is becoming a thing of the past; the general community can now look forward to the future of new and challenging digital images.

Conclusion : Fine Art Application

The manipulative possibilities brought to photography by computer technology are not entirely new to artists who have long accepted the "subjective nature" of the photograph, and its status of reproducing the "real" (Druckery,1994,p.7). With the advanced development of computer realities, a new expression of art has been developed. According to Druckery(1994,p.7), "we now have a third phase of montage[24]." Druckery (1994,p.5) believes this new art is a "reconfiguration of several traditions: montage, narrative, a concern with the space of electronics, and a rethinking or extension of the issues surrounding the semiotic constitution of the image." Druckery (1994,p.5) suggests the 'terms' or symbolic language required in the deconstruction of digital imaging, will be forced to adapt to the 'imperatives' of digitally coded images.

"What is immediately evident is that montage is re-emerging as a significant expression of the extraordinary complexity of technoculture, and that it is capable of confronting a range of issues long considered exhausted"(Druckery,1994,p.7). The conventions of "illusionism and visual unity and resolution are replaced by discretionary space and ever – mutable images, photography's reference to prior reality is being displaced."(Michael, 1996,p.9). Pamela Hansford in her article 'Picture Perfect' (cited in Fereday & Koop, 1995,p.39-48), suggests the displacement of photography's connection to reality has

[24] Montage has been resurrected with the advent of computer digital imaging. Graphic software packages have given the artist new tools in the creation of visual imagery. Digitised photographs can now be combined within the computer system, Druckery(1994,p.7) has labelled this application as a 'third phase of montage'.

been replaced with a world of virtual reality, a term widely used by computer users and software developers to distinguish between "two different but equally 'real' worlds : the world that exists via computer; and the world that comprises everything else." Virtual reality signifies an attempt to duplicate reality so closely that we are placed in the position of being unable to distinguish between reality and unreality.

Dickie (1992,p.14), identifies these technological changes as opportunities rather than threats and encourages artists to take time to understand and exploit the 'new' technologies. Indeed, as numerous artists have begun to take up the challenge and opportunities, they are employing electronic tools to explore form, spatial and temporal relationships, colour, and texture as a precursor towards final decisions being made for traditional based media. Malina (1990,p.33) identifies two kinds of effects that computer technology is having on traditional art practice. The first being, a new kind of artform evolving through the unique capabilities of the computer. And secondly, an effect on preexisting or traditional artforms. The computer is leading to change in both static art forms, such as painting, photography, sculpture, etc., and in time base art artforms, such as kinetic art, film, video, music, and dance.

To help illustrate the issues in this paper and the effect digital technology has had on my art practice, I have made reference to the work of two artists: South Australian artist Alan Cruickshank; and Mexican Pedro Meyers. Whilst using examples of specific artworks, I have deliberately isolated certain aspects of each artist's practice/imagery,

which help depict characteristics relating to my own work. Other prominent artists include Jeff Wall (Canada) [refer to Image H] and Yasumasa Morimura(Japan) [refer to Image I]. All of these have extended their photographic practice by engaging computer manipulative technology. Their separate geographic locations and the issues they are confronting with this new medium is evidence that digital imaging is being embraced worldwide. For these artists, digital technology has created new areas of investigation which are not tied to a relationship with visible reality[25]. These artists have engaged in a new visual medium which not only challenges photography's possible future, but also plays on the realism - artifice debate that has challenged photography in the past.

[25] Artists now have a medium which places the viewer in a position of being unable to distinguish between reality and unreality, thus artists have control (the tools) to manipulate their relationship with visible reality.

Application

The increasing ease of use and affordability of software for "realistic three-dimensional rendering", "animation", and "construction of virtual realities" makes it even faster and less expensive for artists to move from concept to demonstration (Marchese & Marchese,1995,p434). The computer can be used as a sketch pad for trying many variations of a composition or visual design very quickly. The artist then has many options as to how they will implement the final design, whether it be in a traditional medium or developed further through electronic media.

Digital imaging dramatically changes the rules. According to Mitchell(1992,p.31) "it creates a condition in which the image maker may choose among many different devices and procedures". Digital imaging offers the artist total command of everything in the image, a level of control that cannot exist in photography. It is an entirely different way of constructing an image than in painting or photography. Digital cut-and-paste rearrangements of the elements of a photograph can transform one action pattern into another, and another, and in so doing dramatically alter the image's meaning (Mitchell,1992,p218).

For example Alan Cruickshank's images from The Arcanum Museum, (a series of ten images narrating an alternative history, during the operation of the White Australia Policy) are reworked archival photographs "where black heads 'deface' white bodies"(North,1995,p.4). In this series of works, photographs are reworked, substituting

Aboriginal heads on the bodies of white Anglo Saxon Australians engaged in activities which are meant to symbolise iconic aspects of national identity. (An example of these are Images J, K and L)

The seamless substitution of Aboriginal faces for white has a number of effects. According to Lumby (1992,p.15) "it 'reactivates' images which have grown bland and familiar - it forces us to focus on the detail in the image, to review them and more interestingly, it directs us to the question of how archival images function in constructing history and raises the options for reconstruction."

Cruickshank's images give the illusion of historical truth, his reworked archival images are reproduced from the computer screen into large format black and white photographs. The use of a traditional medium (vehicle) such as the photographic print, certainly provides the viewer with an excepted medium and a medium that one would expect to depict such archival imagery. As North (1995,p.4) states ; "Cruickshank makes it clear that such substitution fails to engage the potency of the original images themselves - indeed it falls into the trap of reading photos as historical truth. Instead, his images work to undermine the authority of all potential archives."

Take for example the process of constructing The Parkes Ministry 1889 [refer to Image B], one piece of Cruickshank's work ;

'By scanning the original photograph, the dot screen which denotes the original is lost. By then transferring the scanned image to colour negative, the pixellation

denoting the digital format is erased. And by printing the final product as a sepia toned black and white photograph, the contemporary texture of the image is exchanged for the patina of the original.' (Lumby,1992,p16)

The computer 'tools' available to the artist have aided in the extension and production of fine art traditional based media (painting, printmaking, textiles,etc). It is here that I can locate my use and application of digital imaging in the adoption of the computer as 'tool'. The majority of my artworks have an origin in traditionally based media (printmaking and photography), and at times rely heavily on process to construct the images meaning. An example of this is an art work titled; Ocean View Identification Kit 6015 [refer to Image M and detail image N].

The work was constructed from scanning original colour photographs taken on site. The photographs were scanned into black and white half-tone images. This enabled me to cut and paste my images and substitute them for components in a previously scanned image of a plastic model aeroplane Kit. The half-tone images of house components were scanned and scaled to size to fit into the plastic frame and substituted for the aeroplane components, giving the illusion of an original kit. The final art work was later developed into large screen prints on highly reflective enamel boards. Another example of my use of computer as a component in the construction of specific imagery can be located in the works of 'Identification by Postcode'[refer to Image O] and 'Medium Price'[refer to Image P].

Here the computer was used to generate specific 'bar codes'. In the work 'Identification by Postcode' [refer to Image O] the bar code was constructed from fragments that were scanned from colour photographs of original houses in the suburb of City Beach; the numbers correspond to the suburbs area code. The bar codes for the panels that are used in the work 'Medium Price' [refer to Image P and detail Image Q] were scanned from an original bar code and the numbers from the original were substituted for new numbers which corresponded firstly to, the median price of the suburb, and secondly to the area code of that suburb. In both works the bar codes were further processed into photographic screenprints and later screened onto constructed enamel boards.

The application of digital imaging into the construction of new original works or the deconstruction or reconstruction of appropriated images (such as Cruickshank's, The Arcanum Museum) gives the artist total control from intensities (strength of light) in a scene to intensities in a display or print in which image fragments from different sources may quickly and seamlessly be combined, and in which arbitrary interventions in the image - construction process are easy to introduce and difficult to detect. This sort of application is the underling reason why photography, according to Mitchell(1992,p.31) "no longer has the power to convince us. The referent has come unstuck."

Mitchell's theory may well be correct , however, I question this when the viewer has no prior knowledge of how an image can be constructed using the computer, and particularly when the constructed (manipulated) image is being presented in a

traditional format such as a black and white photograph. Is the viewer expected to work this out for themselves? How are these images supposed to be read? If an audience has no prior experience with digital technology, what impact do these images have? What interpretation is the viewer to make of such a work? According to Green (cited in Aperture, Summer Edition, 1994, p.33), for well over a century there has been an unspoken 'covenant' between photographer and audience, an agreement to embrace the myth of photographic truth. Digital photographs are challenging this 'long-lived' concept of photographic reality and further challenge the essential truths and myths surrounding the 'documentary aesthetic'.

Pedro Meyer's digital photographs certainly challenge this perceived notion of visual truth. Meyer reprocesses discrete bits of photographic information into new photographic "fact" in order to make his point. Meyer, prior to turning his hand to digital imaging, supported himself commercially as a photojournalist. With his huge bank of images available in the form of negatives and photographs, Meyer set out to reconstruct his images in order to present a debate about the contrast between two cultures, and the unresolved conflict between North and South. "On one side, the United States appears as a 'paradigm' of the illusion of abundance and material well-being, on the other, the Mixtec Indian people of Oaxaca, Mexico, appear deprived" (Fontcuberta, cited in Meyer,1995,p.8).

Meyer sees himself as a documentary photographer, in that his interpretation of reality remains his main priority. Meyer believes his way of working with digital imaging is an

'expressive' form which is identical and consistent with his previous life's work[26] (Meyer,1995,p.9). Meyer reconstructs the illusion of 'real space', that is, his alterations are so well executed, that it is extremely difficult to determine which parts of the image have been altered (Fontcuberta, cited in Meyer,1995,p.13). The content in Meyer's work is based fundamentally on paradox. Sometimes this paradox dose not even need to be constructed, because it already exists within the same reality. Meyer plays with this paradox, by including in his exhibited artwork photographs that have not undergone any alterations; they are perfect instances of found 'paradoxical situations'. Take for example two images "Monumental Chair" [refer to Image R] and "Fragmented Liberty" [refer to Image S]. According to Fontcuberta (cited in Meyer,1995,p.13), the inclusion of direct 'snapshots' with altered photographs, "challenges us to remain alert; it trains us to be on the lookout for other possible paradoxes hidden in the world that surrounds us".

Meyer's digitally manipulated photographs vary from total reconstruction to a minute alteration which is very difficult to detect. Although I enjoy this play on truth and fiction, I believe Meyer's photographs are a clear example of how digital imaging is undermining photography's 'long-lived' concept of photographic reality and the challenge this has bought to the essential truths and myths surrounding the 'documentary aesthetic'.

[26] Before employing the computer in the construction of photographic images, Pedro Meyers early photographic career had focused on the documentary aesthetic. Acknowledged for his photographs documenting the streets of Mexico during social uprising and the massacre just before the 1968 Olympics. With numerous exhibitions since 1955. See Pedro Meyer's book 'Truth & Fictions'.

Meyers artwork highlights the grey area between the documentary aesthetic (straight reportage photography) and the shift into the realm of fine arts. I believe this grey area clouds audience readings of the work. How are we to interpret Meyers's photographs? Do we read them as visually pleasing images which are to be engaged on there aesthetic quality or as accurate records of what Meyers has documenting in his career as a photojournalist? Can this be determined in an analysis of where the audience views the work[27]?

This point in question is an aspect I am pursuing in my own artwork. In recent years I have experimented with the manipulative possibilities the computer has brought to the realm of 'fine arts'. The computer used as a 'tool' helps to establish possibilities that have not existed until now. I believe Alan Cruickshank and Pedro Meyer's photographs demonstrate a clear example of one of many applications the computer offers as a 'tool'. Cruickshank's images challenge a constructed social history, one which also forces us to consider the assumptions on which they are based, where as Meyer, has been able to reconstruct his own experiences "that up until know have eluded the camera's eye" (Green,1994,p.34).

Marchese and Marchese(1995,p.193) predicted in 1995 that "computer art will be elevated to mainstream with other media assuming a craft status." In the realm of fine arts, digital imaging has become an accepted form of image construction and

[27] The difference between appearing in an art gallery opposed to the work appearing in a newspaper or magazine.

development. As an indication of just how accepted one only has to walk through any design or fine art institution and see the facilities that are on offer (the new "draw card" for next year's intake). As montage has re-emerged with the evolution of high powered graphics software, the computer has made available a number of tools which have aided in not only the rebirth of photography but also the feasibility of confronting a range of issues that were long considered exhausted (Druckery,1994,p.7). With numerous exhibitions celebrating this new art form, photography has been reborn with the current debate highlighting its possible future, but also the nature of it's past and present (Batchen,1994,p.50).

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Image A

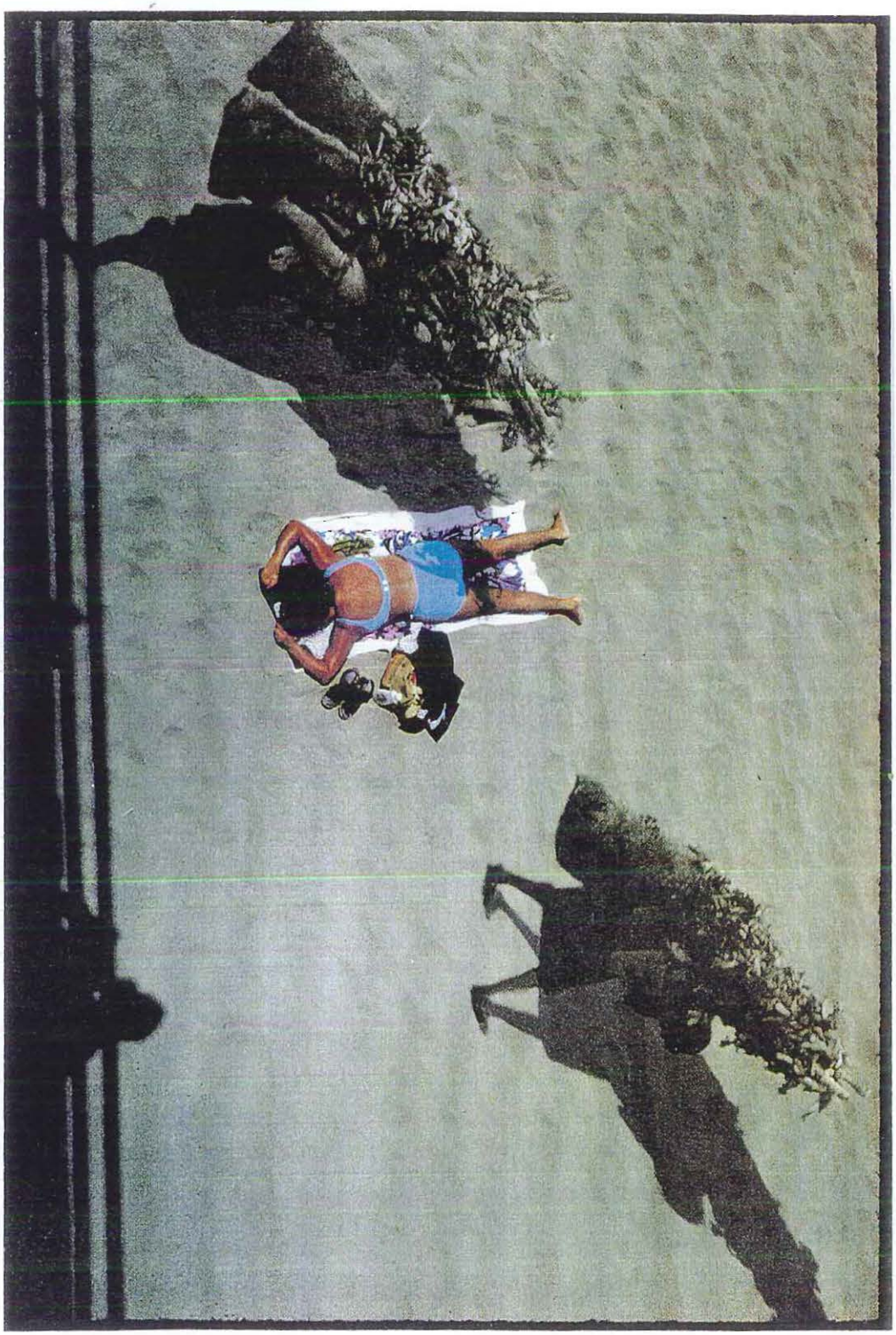
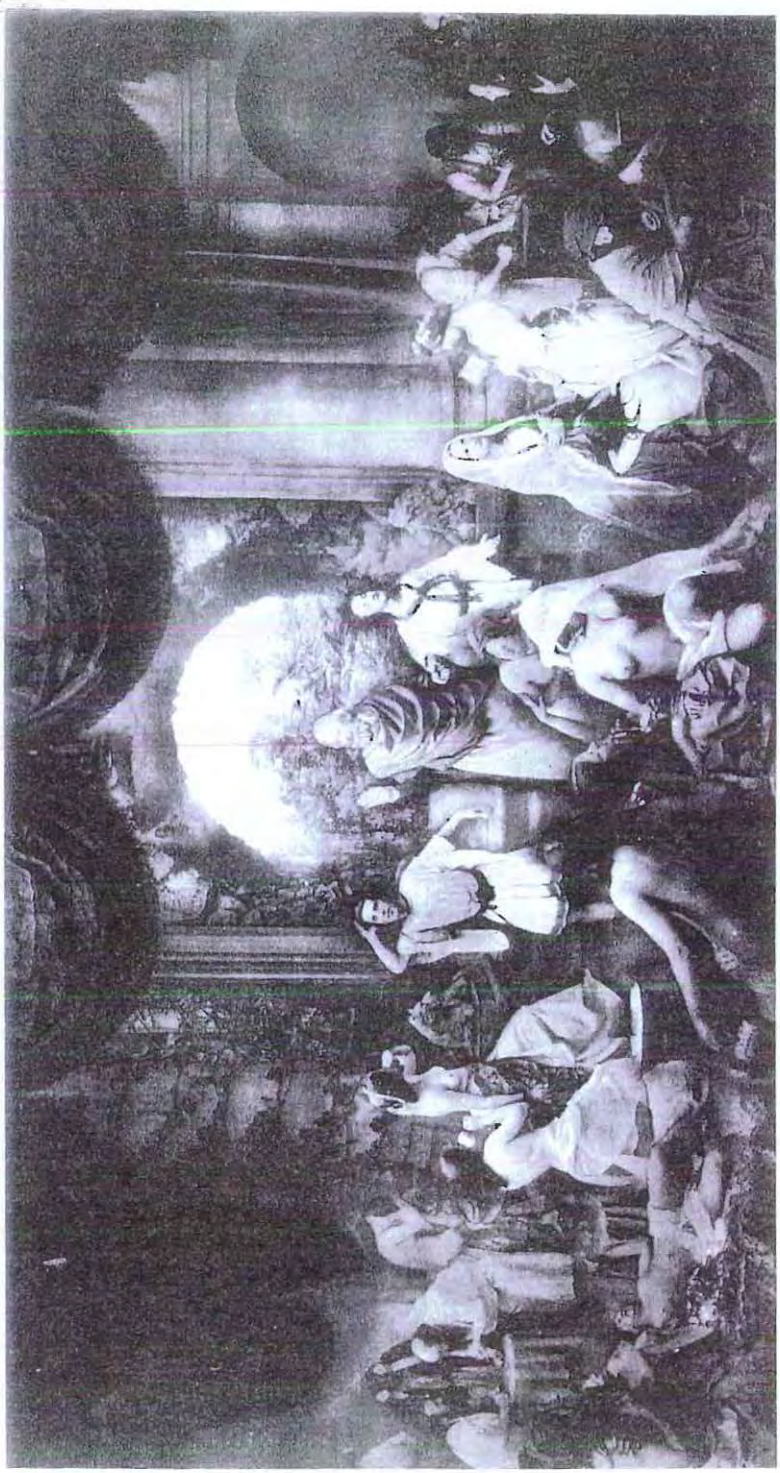


Image **B**

Image C



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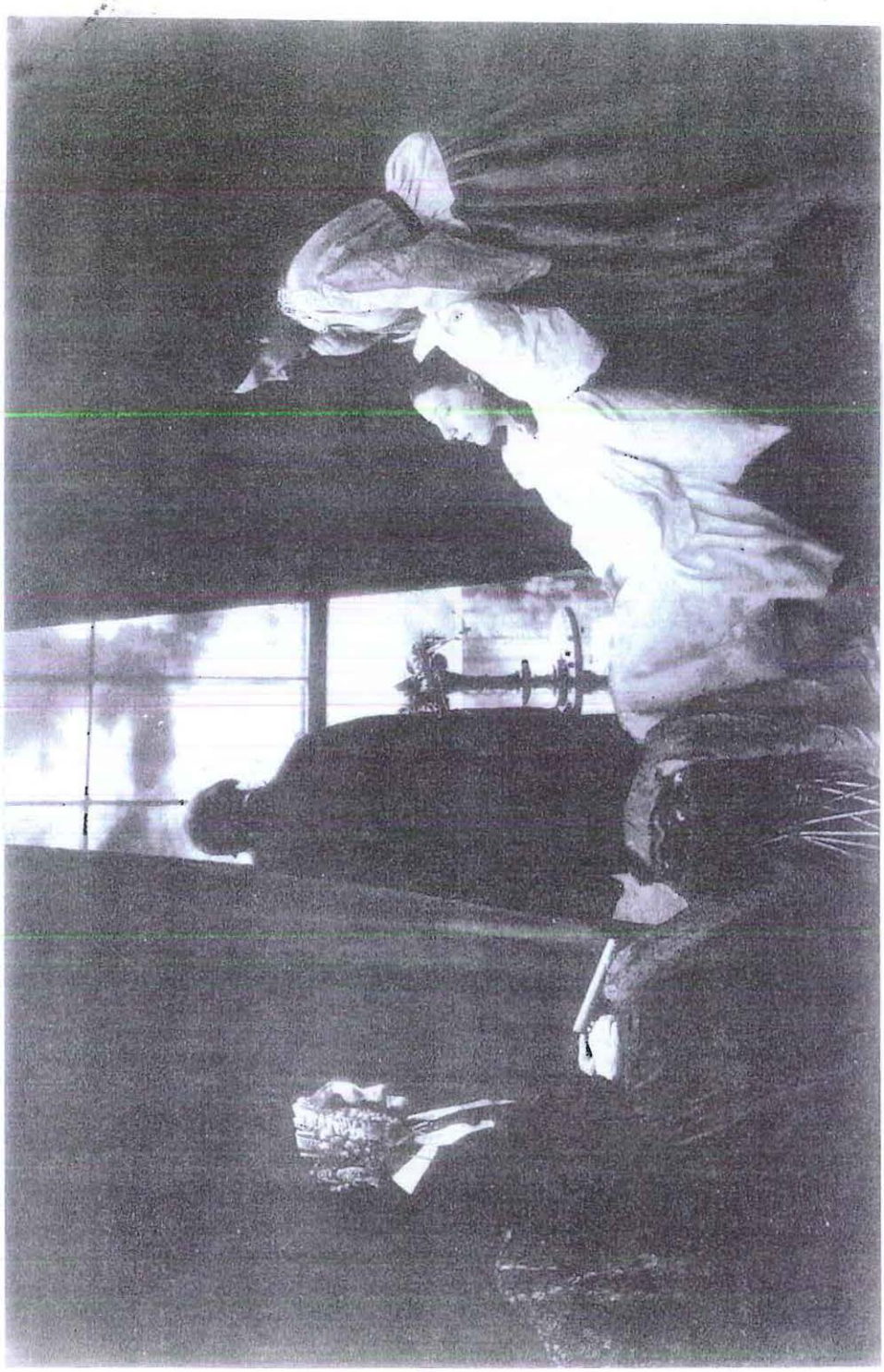
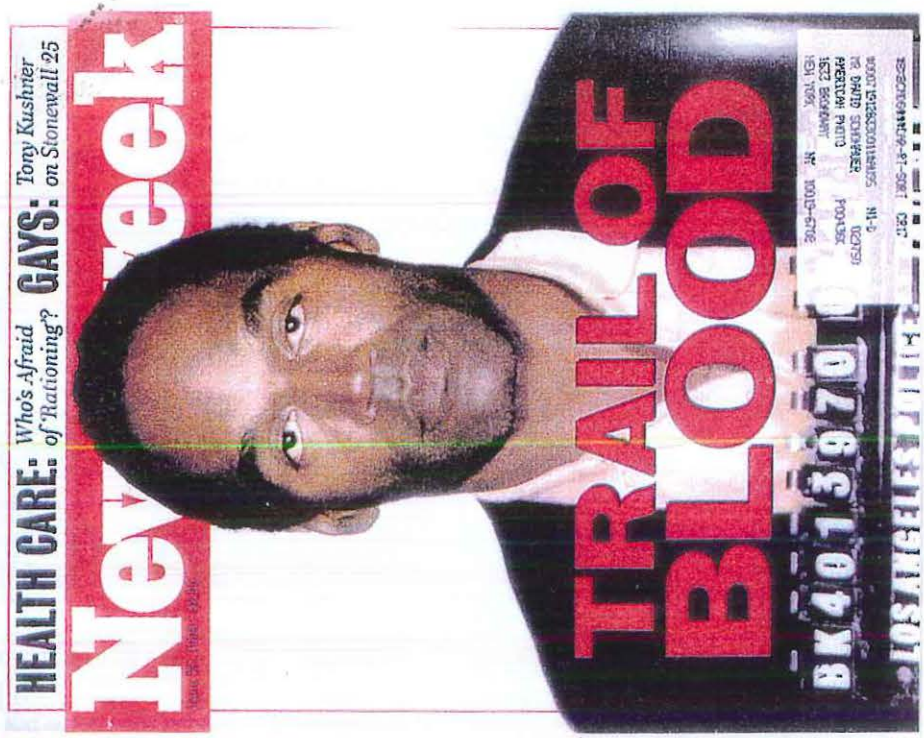


Image E

SPECIAL ISSUE
TIME
Take a good look at this woman. She was created by a computer from a mix of several races. What you see is a remarkable preview of . . .
THE NEW FACE OF AMERICA
How Immigrants Are Shaping the World's First Multicultural Society

Image F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GAYS: Tony Kushner on Stonewall 25
Newsweek
TRAIL OF BLOOD
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LOS ANGELES POLICE

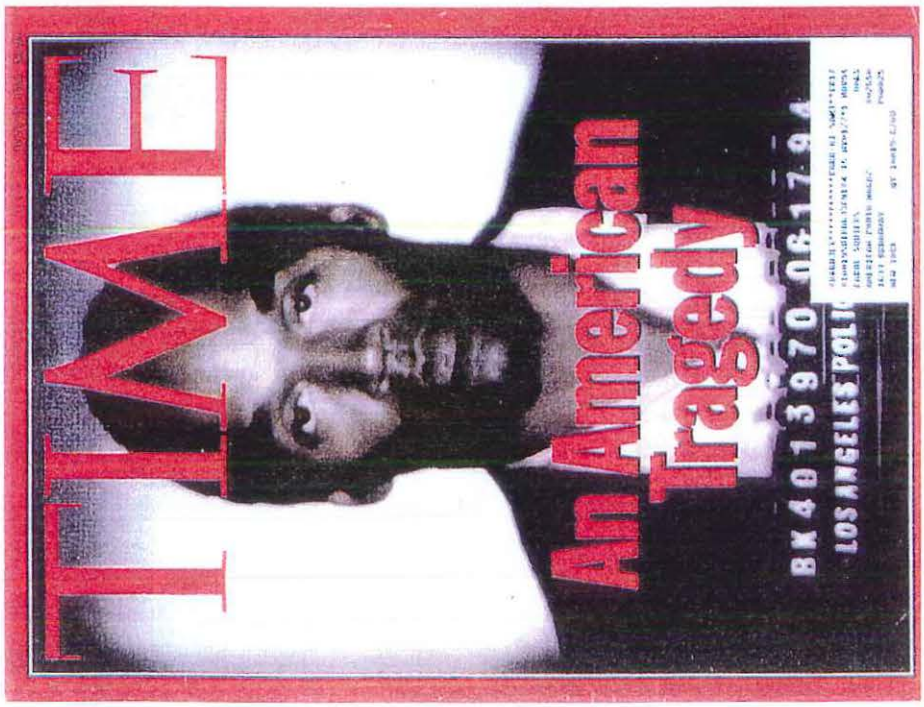

TIME
An American Tragedy
BK401397
LOS ANGELES POLICE

Image G

$2.50* JUNE 10, 1996
PLA
ENTERTAINMENT FOR MEN
SCOOP PICS
Julian's STEAMY kisses with Aussie TV star
FIRST PHOTOS
Jason Donovan CAMPS it up!
CAUGHT!
Melissa and Cindy's party ANTICS
Fergie's brazen Playboy SHOOT
$60,000 IN PRIZES
FABULOUS WINTER GIVEAWAY

Image **H**

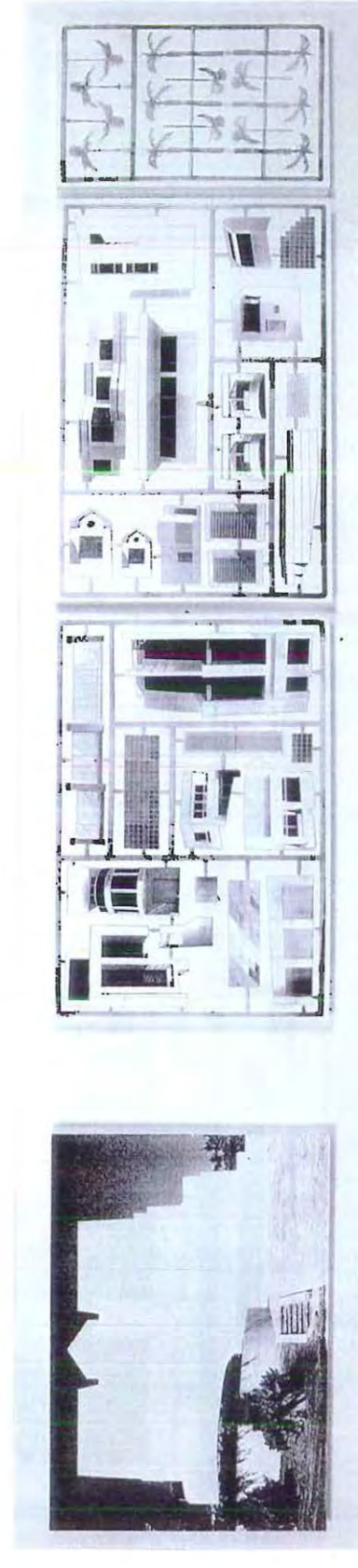
Image I

Image **J**

Image K

Image L

Image M



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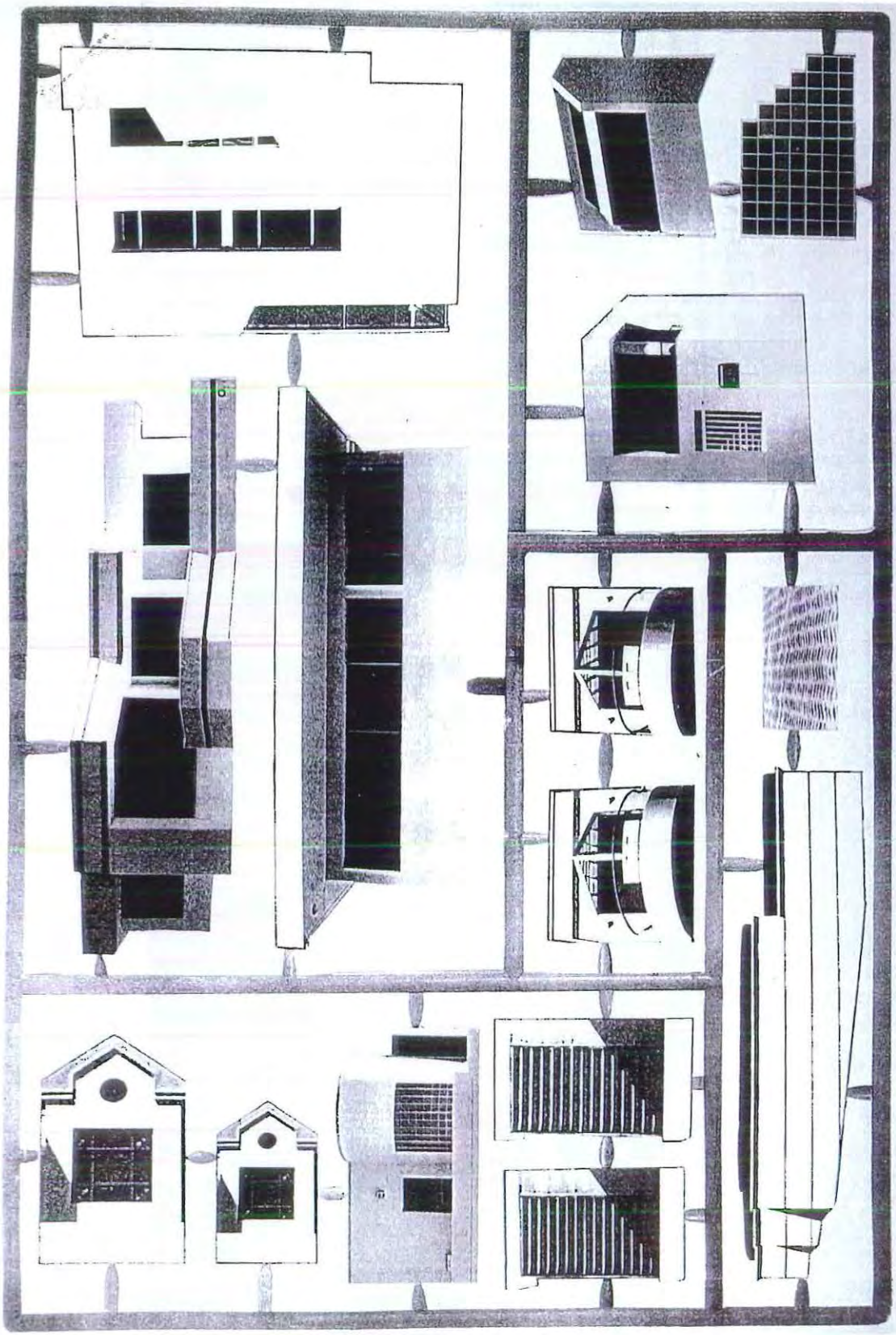

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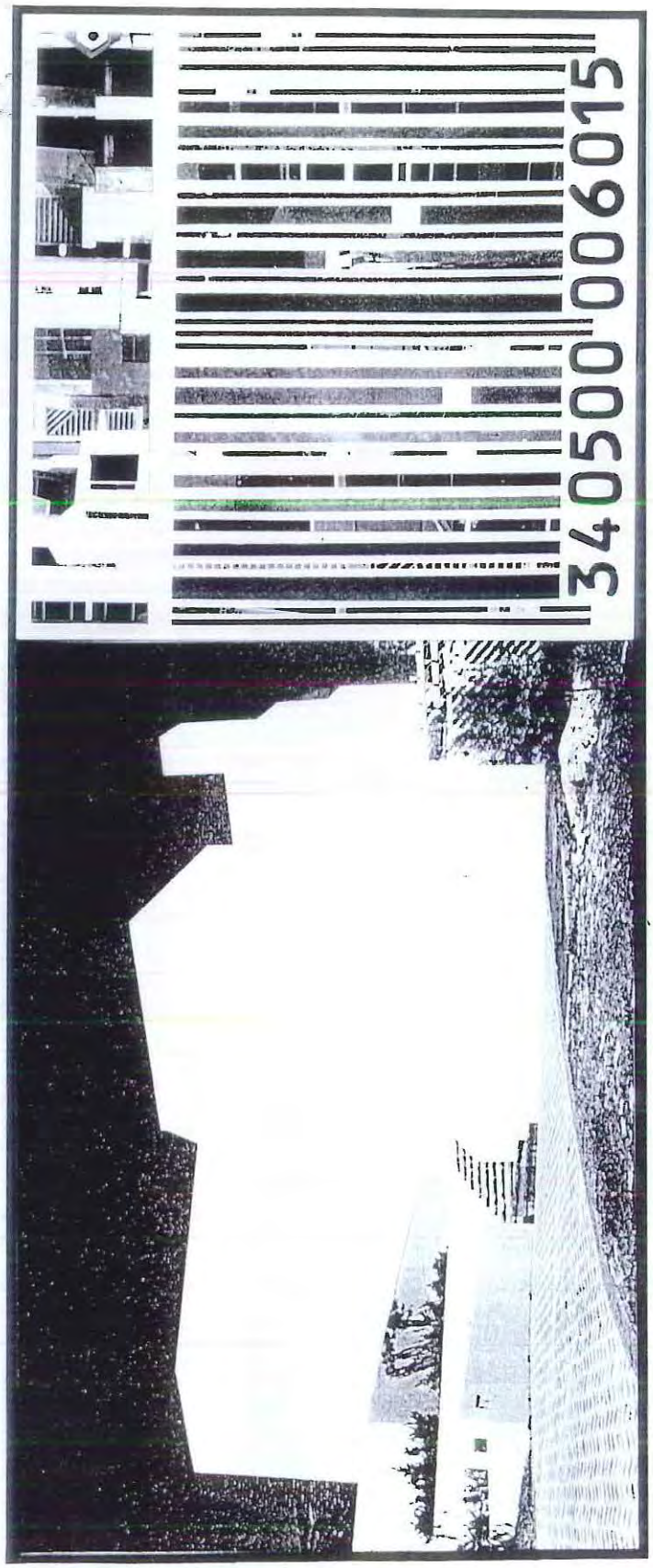

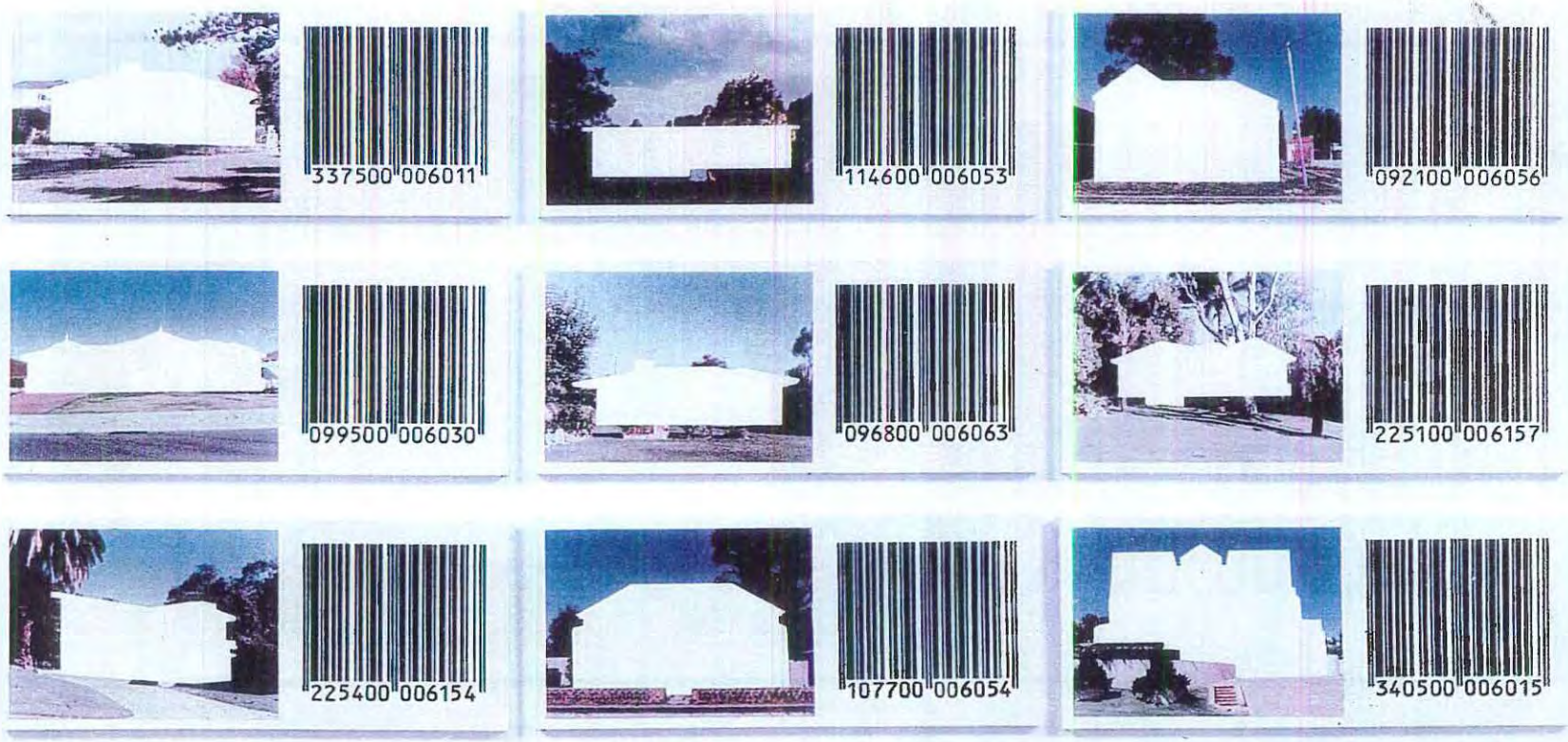
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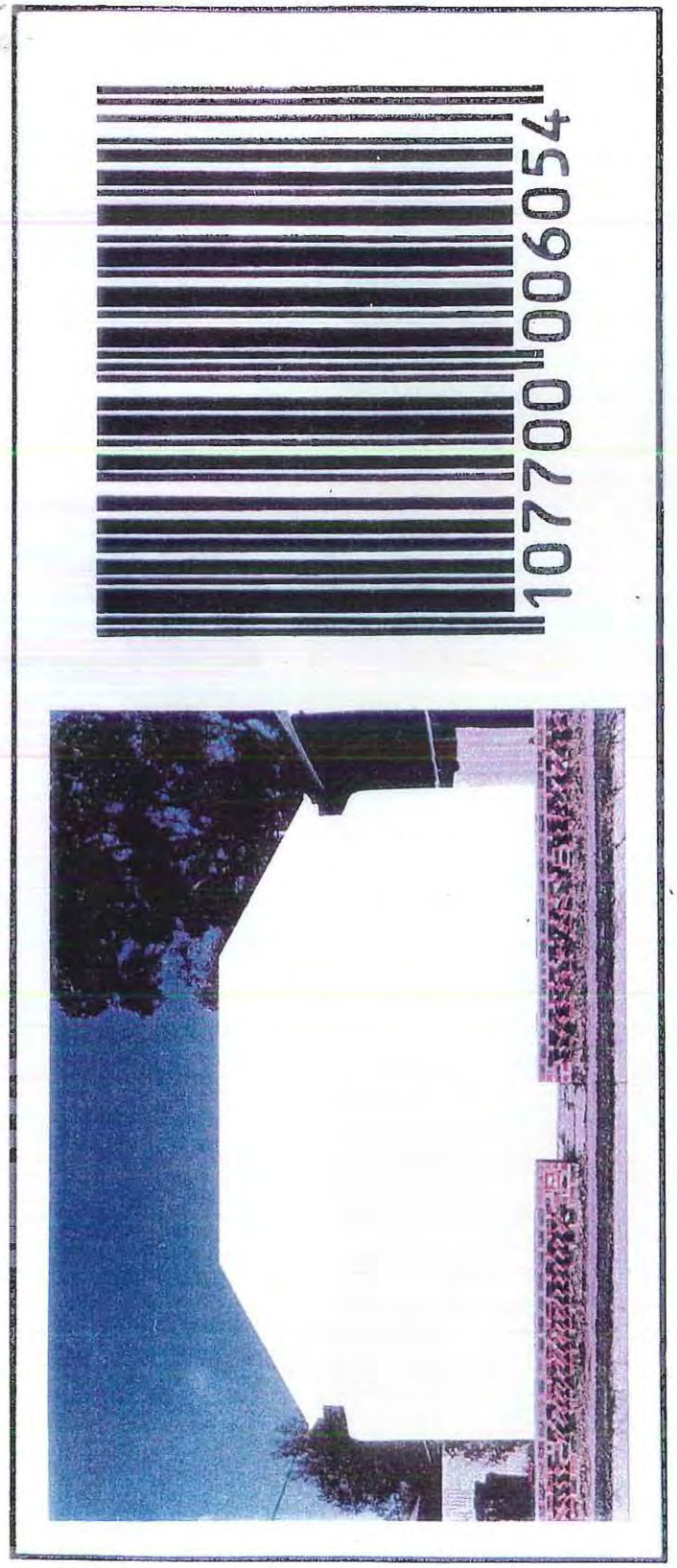
Image P

Image Q



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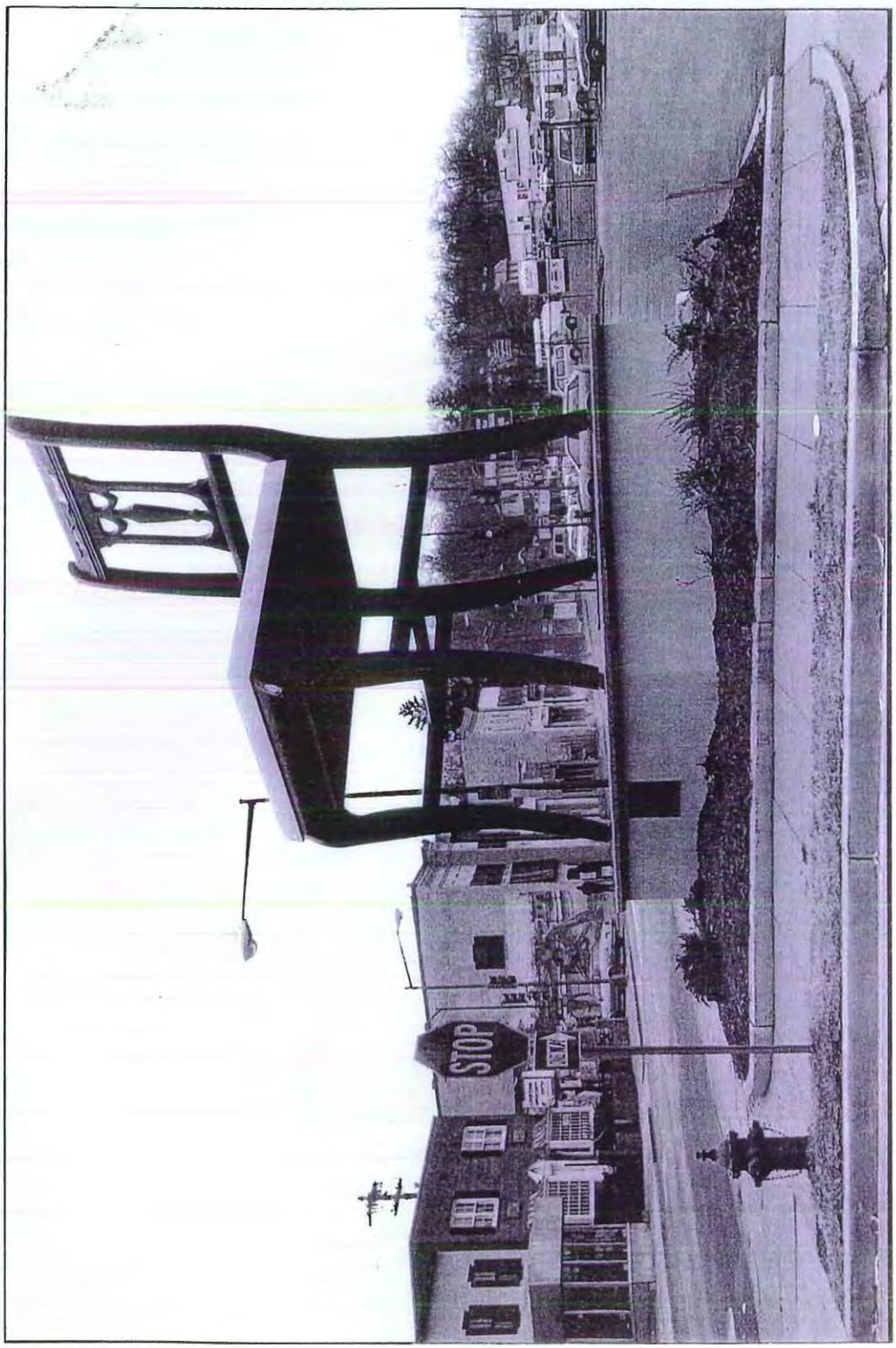
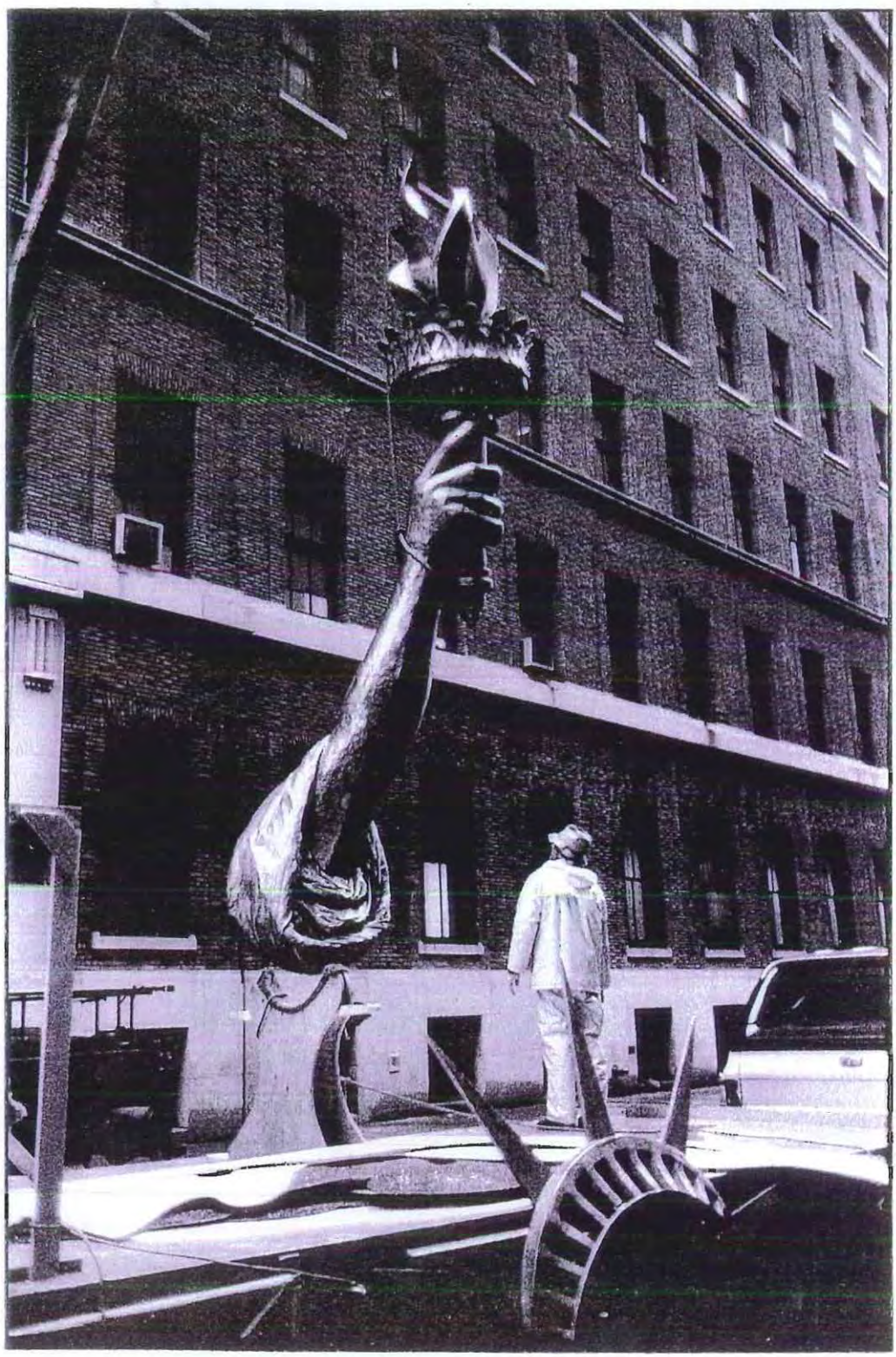
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