

Volume Two

Necro-Techno. Examples from an Archaeology of Media

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Rebecca Cummins:

To Fall Standing and 700 Million Miles an Hour: Journey Through the Centre of the Earth

In a condition of adamant doubt you are asked for explanations when all you want is for someone to explain anything. And you are asked for purposes when you are learning to accept that a purpose is not going to emerge ever. And you are asked for a statement of intent when the head seethes with all your fluctuating statements of the past instantly and meticulously taken down and which you use constantly, with increasing derision, in evidence against yourself

Mark Boyle

If you engage in travel, you will arrive.

Ibn Arabi (1165-1240)

If you're really serious you should be laughing.

Peter Tyndall

How to make a telescope: put your two worst mistakes together and look through them.

Unknown

Photographic artist Joel Peter-Witkin began his Masters thesis at the University of New Mexico with a description of his first memory - walking out of his home in Brooklyn to the sounds of a car crash and the sight of a little girl's head rolling to his feet. This tale is not quite as sensational.

As a student in the late 70s visiting Chicago, photographer Kenneth Josephson told us that if you keep your lens cap on during a long exposure - the image you get is God. The concept still entertains me - the ridiculousness of the proposition combined with the folkloric possibilities it evokes - the enticing suggestion that there could be "ghosts in the machine" and that there are other, almost domestic or intimate ways of interacting with technology. Marey's photographic rifle and other objects from the history of optics (like the 16th century camera obscura goblet which inspired my installation, *Liquid Scrutiny: Paranoid Dinner Table Devices* (figures 21-25) - described by French mathematician Pierre Herrigone in his book *Supplementum Cursus Mathematici*)¹ also embody these possibilities; by enlisting incongruous, unexpected or domesticated items in the service of technology, idiosyncratic

potential surfaces in competition with the impersonal seam-less-ness conveyed by many technologies.

I am intrigued by principles of light and vision: optical illusions, afterimages, reflections, refractions. Most of us have a generally consistent view, although I am legally blind in one eye (with amblyopia or "lazy eye"), some do not see color and I've heard of a man who can see quite clearly in the dark. Due to my virtually monocular vision, perhaps I have a heightened appreciation of the abstract composition of the world. I enjoy how I can be fooled by 3-dimensional space. Scenes can oscillate; my understanding of depth is analogous to being faced with a word like "lead" and trying to figure out how it is pronounced. What meaning should be ascribed; lead as in "pencil" or lead as in "show the way"? Context or surroundings become the key. Fernando Pessoa has said:

The more I contemplate the spectacle of the world and the ebb and flow of the mutation of things, the more profoundly I'm convinced of the inherent fiction of everything, of the false prestige in the ostentation of all realities. And in this contemplation (which must have occurred at one time or another to those who reflect), the colorful march of customs and fashions, the complex paths of civilizations and progress, the grandiose commotion of empires and cultures - all of this, strikes me as a myth and a fiction, dreamed in shadows and ruins.²

Pessoa's observation resonates - and I don't find it pessimistic. Recognizing that theatricality is intrinsic to everything allows further potential for negotiation - and this acknowledgement has been an underlying consideration in much of my work.

Gerhard Richter said, "Art serves to establish community. It links us with others, and with the things around us in a shared vision and effort."³ These links are another aspect of the process of art-making that I value highly: it has certainly occurred during correspondences with people near and far. I have especially enjoyed the long-term, long-distance dialogue with artists Paul DeMarinis and Ellen Zweig, astronomer and telescope maker Gordon Garrard and the energetic

¹ John H. Hammond, *The Camera Obscura: A Chronicle*, (Bristol: Adam Higler 1981) 27

² Fernando Pessoa, *The Book of Disquietude*, (Manchester: Carcanet Press Ltd. 1991) 79.

³ Gerhard Richter in *Gerhard Richter: The Daily Practice of Painting: Writings 1762-1993*, ed. Hans-Ulrich Obrist, trans. David Britt (Cambridge: MIT Press, 1995) 61

exchange with several physicists, including John Ward and Dr Margaret Folkard (which resulted in a productive collaboration, although, and because, they chortle loudly at any catalogue essay I show them, question the role of art and maintain that artists are wankers). And the smaller meetings are also inspiring: with the irrigation expert, the electrician, the repairman who sells lenses and also plays in a band, the surveillance business owner, the gun salesman whose mate the electrician was called upon, the silversmith and his family who live in a former Tibetan monastery in Kathmandu, the Nepalese courier who expedited my shipment, the optics engineer who takes the time to brainstorm optical solutions and to custom make them if need be - and to show me his latest experiments. The list could go on; I hope that our exchanges were enjoyable for them, also.

Many fields of endeavor establish community (this became especially obvious during a visit to the Crossroads Mall in Ft. Dodge, Iowa during the Barbwire Collectors Convention in which hundreds of serious collectors were selling and bartering over thousands of two-foot sections of barbwire in search of the most unique or aged. They were from all across the U.S. Most I spoke to mainly came to swap stories, professional and otherwise, with their community of barbwire collectors). I am attracted to the artistic community for the way people think and for the pleasure in experiencing the unpredictable outcomes of their thinking - and for the ways in which people challenge themselves and each other on a regular basis.

It's been said that contemporary art is becoming increasingly distant from an increasingly disinterested public. Is there still a need for it? Or do works like those presented here simply add to the competition for people's leisure time. Such questions are worth continual consideration. I approach art as a way of mediating and engaging with the world - to illustrate or give focus to issues I am curious or concerned about; in the past it was family, war, representation, identity, the desert - now I am inquisitive about light and media histories.

The activity is important to me. I winced in recognition at Susan Sontag's assertion that American and Japanese tourists are obsessive picture-takers; as products of highly industrialized societies, we always have to be "doing" something.⁴ Perhaps it is a kind of neurosis that drives this continual activity. Susan Sontag also writes

⁴ Susan Sontag, *On Photography* (NY: Noonday, 1973) 10.

that the camera is "the device that makes real what one is experiencing", thus the act of photographing "gives shape to experience"⁵ I think this notion could be extended to art and writing practices generally

I participate in the problem-solving activities, anxieties, expense and challenges involved in cohesively sharing these preoccupations with an audience. I want the outcomes to be of interest to a range of people, including my family among the non-art initiates. Bill Viola also believes this communication is fundamental. "The re-establishment of the broken link between art and the public, the restoration of art to a functional place in people's lives, is a necessity for the practical survival of a living art practice"⁶ In re-reading this quote and in reviewing some of the statements I have made in support of DeMarinis, Zweig, Iwai and Pomeroy, I also want to articulate that this doesn't have to be done on the level of BIG art - and I'm not talking about scale - nor do I believe that these works have earth-shattering, life-changing aspirations. The conversations are smaller; they suggest texture, insights, curiosities, surprise - or other ways of thinking, which is enough. Many of my works are designed to encourage audiences to actively participate, thus allowing another kind of experience or conversation to add meaning.

Continual self-interrogation is part of the creative process, as refreshingly confessed by artist Geoff Kleem. "You know, those moments, late at night with beer in hand, you contemplate your work and ask yourself, is this a sophisticated object of art that sends up the preciousness of gallery practice? Or is it just an oversized cupboard on wheels?"⁷

In an academic job interview recently, I was asked, "So what is your reaction to intuitive ways of working?" - the inference being that my process was not. I knew the interviewer meant that the work I have been doing is project based and each work appears pre-conceived and self-contained, but it surprised me as I do consider my working methods intuitive. I start with a concept or object, but it begins to evolve in sometimes radically divergent forms or directions. This development comes from both a conceptual teasing and from working (or fighting) the materials and techniques; often it is a process of reduction where I've whittled away at the

⁵ Sontag 9.

⁶ Bill Viola, *Reasons for Knocking at an Empty House: Writings 1973-1994*, (London: Thames and Hudson, Ltd, 1995) 169.

more florid initial impulses. Or it can happen the other way around. For a rather oblique example, in my original proposal to Artspace in 1993, I described a semi-circle arch of portable camera obscura boxes on tripods just inside and facing the entrance to the gallery as a rather confrontational, but simple form of direct surveillance. This piece became *To Fall Standing*. When I called Artspace Director Lousie Pether with a question just before the exhibition - I realized from the shocked silence how differently it had evolved. I had asked, "Louise, is there anywhere in the office I can securely lock my gun at night to comply with security laws?"

In this section, I will provide a sketch of the processes and background behind the exhibitions *To Fall Standing* and *700 Million Miles an Hour, Journey Through the Centre of the Earth*. These two projects represent a range of concerns. *To Fall Standing* is an interactive installation that directly juxtaposes a historical optical device (Marey's photographic rifle) with more contemporary imaging systems (video and computer). *700 Million Miles an Hour: Journey Through the Centre of the Earth* represents my interest in the camera obscura, inversion and direct optical mechanics.

Examples of visual documentation follow this section. They are numbered to correspond to the figures referred to in the text and to the exhibition notes, which provide a description of most projects.

To Fall Standing

In 1993-94 I exhibited *To Fall Standing* (figures 31-40), which featured a video camera-gun (in reference to E. J. Marey's photographic gun) in an interactive installation reminiscent of a carnival shooting gallery. A micro video surveillance camera (commonly called a lipstick camera due to its diminutive size) was fitted into the barrel of a 1880s shotgun. Participants were invited to "aim" and "shoot", simultaneously affecting the "sight-line" images that appeared on 8 monitors.

⁷ Geoff Kleem, Artist talk, Sydney College of the Arts, University of Sydney, 17 May, 2000.

When the trigger was cocked, movement in the path of the lens (gun) was strobed and accumulated (the effect created by a Fairlight CVI video computer) in a stop-motion pattern suggestive of Marey's early chronophotographic images. When the operator released the trigger, the accrued strobe images were frozen and suspended. By pulling the hammer release back again, the screen images were wiped and live action again accumulated on the eight monitors simultaneously (6 faced the video-gun operator and 2 allowed the person or persons to watch their movements being strobed and frozen).

Marey's gun camera was based on an earlier photographic revolver developed by Pierre-Cesar Jules Janssen to photograph the transit of Venus in 1874.⁸ Marey's version (1882) was converted from a Colt revolving rifle and was dramatically faster due to his precision mechanics and the use of dry plates instead of the wet plates used in Janssen's model. Marey's camera was capable of repetitive exposures of twelve frames per second with exposure times of up to 1/720 of a second, which provided a convincing sequence of movement (it was considered to be one of the earliest cinematic devices). Marey aimed his gun at birds, bats, horses and people on the streets of Paris - the photographic rifle was one in a series of mechanisms he had developed in his quest to quantify movement. As Marey described in a letter to his mother in 1882, "I have a photographic gun (*fusil photographique*) that has nothing murderous about it and that takes a picture of a flying bird or a running animal in less than 1/500 of a second. I don't know if you can picture such speed, but it is something astonishing."⁹ As Mart Braun observes, "His neighbors, who watched his almost daily forays into the surrounding fields, perhaps found it odd that the good doctor never brought anything home with him after all the hours he spent shooting."¹⁰

In his quest to record movement photographically, Marey influenced artists such as Eadward Muybridge, Max Ernst, Marcel Duchamp, the Futurists and is often credited with the development of cinema; he is also my favorite photographer, along with Frank and Lillian Gilbraith and Harold Edgerton - despite the fact that they were mainly motivated by scientific purposes.

⁸ Marta Braun, *Picturing Time, The Work of Etienne-Jules Marey*. (Chicago: University of Chicago Press, 1992) 57

⁹ E. J. Marey in Braun 57

¹⁰ Braun 61

The photo-gun was a "loaded" object; it was beautiful, powerful, ridiculous and unexpected. The formal realization of Marey's camera, in the guise of a gun, is significant as Paul DeMarinis drolly points out in the catalogue essay for *To Fall Standing*:

The fact that the renowned scientist Marey cast his experimental apparatus into the form of a weapon of violence (machine guns were devised exclusively for warfare) cannot help but make us wonder: how, in a few decades, did the photographic apparatus evolve from the camera obscura - a roomy and passive receptacle for the faint traces of light - into a bizarre phallic weapon without a projectile?¹¹

Technically, the barrel of the machine-gun did provide the requisite long focal length - and the advancing mechanism of the Colt revolving rifle was perfectly adapted to provide rapid and repetitive stop-action exposures on a circular negative. However, as DeMarinis points out, "some gadget that fused the elements of a telescope and a clock might have been equally plausible"¹²

Marey's choice might seem less peculiar with the knowledge that inventors in the 19th century were generally quite fond of chimeras (originally a mythological fire-breathing monster represented with a lion's head, a goat's body and a serpent's tail but more commonly used to describe an object which has the features of two distinct other objects.)¹³ Especially in the 1880s and 1890s, cameras came in many disguises, as Alison and Helmut Gernsheim describe:

The term [detective camera] was originally introduced by Thomas Bola in January 1881 for two disguised magazine hand cameras which he designed for the police to take snapshots of suspected characters without their knowledge. One looked like a wooden box, the other was in the form of a book. The idea immediately caught on, and several makers introduced cameras masquerading as parcels, picnic baskets, Gladstone bags and handbags.¹⁴

¹¹ Paul DeMarinis, Catalogue Essay, *To Fall Standing*, (Sydney: Artspace, 1993) 2.

¹² DeMarinis 3.

¹³ *The Macquarie Dictionary*, 2nd ed. (Sydney: Macquarie Library, 1987) 331

¹⁴ Alison Gernsheim and Helmut Gernsheim, *The History of Photography: From the Earliest use of the*

Camera chimeras were also gendered; for ladies there were opera-glasses, field-glasses, books, watches, and purses. For men: revolvers, walking sticks, parcels, hats, alarm clocks, cravats - beneath the waistcoat and in the hat.¹⁵

Marey's photographic gun could also be seen as the first in a lineage to a modern day chimera - the Gulf War "slam-cam" or missile born camera. With the "slam-cam", the armchair viewer could watch the path of the destruction in real time. Paul Virilio has written extensively about the "armed eye" and the connections between war and cinema¹⁶ - the photographic rifle makes explicit these shared metaphors: "to load", "to aim", "to shoot" or "fire" *To Fall Standing* emphasizes these associations through performances of suspension and collapse and extends them into the shooting gallery context. As DeMarinis observes:

To Fall Standing updates and elaborates the invention of Marey to create an interactive experience in which each viewer takes turn at being observer or observed, hunter or quarry, inside or outside of time. It also places this experience within a context reminiscent of the shooting gallery of a carnival. Traveling side shows, devoid of any central spectacle, were the original purveyors of natural chimeras, and the point of conception of many more. (Footnote: The video game was conceived by the founder of Atari, Nolan Bushnell, during years spent working in carnivals. Steven T Mayer personal communication.) Cummins allows us to shoot at each other that we may each visually experience our own death and reanimation at the hand of our companions.¹⁷

Accompanying the video gun were two tall (10') vertical photographs which featured a diver and a runner in stop motion.

To Fall Standing followed *Descending Metaphors* (1991), a vertical computer video tower twenty feet tall, which evolved in direct reaction to the Gulf War - a conflict I found profoundly disturbing, especially for the rhetoric surrounding it. From the

Camera Obscura in the Eleventh Century up to 1914. (London: Oxford UP 1955) 418.

¹⁵ Gernsheim 417

¹⁶ Paul Virilio, *War and Cinema: The Logistics of Perception*, trans. Patrick Camiller (London: Verso, 1989). Virilio also notes that Marey placed his chronophotographic invention in the service of French military research into movement (10).

¹⁷ DeMarinis 3.

catalogue entry I wrote for the group exhibition catalogue *Frames of Reference. Aspects of Feminism and Art*:

In the recent Gulf War, the implications of the role of the media were staggering. With the advent of the smart bomb, the armchair viewer gained a missile's eye view, in 'real time' of sensing, detecting, targeting and killing. *Descending Metaphors* is my response to this crisis of representation.

We were witness to how the language and imagery of international conflict operate to render invisible the human realities of war.. Ballistically Induced Aperture in the Subcutaneous Environment (in other words a bullet hole in a human being) and Negative Human Response (dead) are examples. No-one died; they were attrited, abased, transferred, neutralized, obliterated, humiliated, non-operationalized, suppressed, acquired, eroded, minimized, rubble-ized, eradicated, intercepted .. in a seamless, bloodless operation.¹⁸

CNN provided live, 24 hour coverage, eschewing more conventional narrative presentations in its continual search for "news", the coverage was often compared to that of a video game. But it was the "missile-cam" or "slam-cam" coverage that was especially disturbing. Through a camera attached to the missile, television armchair viewers followed the path of destruction and were missile-eye-witnesses to the moment of impact. As McKenzie Wark observes,

The irony of missile-cam is that while it appears to aim the vector at the other in reality it aims it at us. As we watch the block-house come closer and closer it is our house as much as that blockhouse that is captured by the vector's gaze and deadly power. As the screen blanks on impact, communication ends, but the channel remains open, broadcasting the white noise of events on the threshold of control.¹⁹

Television itself became a weapon. Wark remarks: "One wonders if it is any accident that the US air strikes seemed to be timed to make the evening news on the east coast of the U.S."²⁰ This crisis was not just evident in the visual presentation

¹⁸ *Frames of Reference: Aspects of Feminism and Art*, cat., ed. Sally Couacaud, Artspace at The Wharf, (Sydney: Artspace, 1991).

¹⁹ McKenzie Wark, "News Bites: War TV in the Gulf" *Meanjin*, (1991): 17

²⁰ Wark 14. Scott McQuire describes another problematic televised conflict, "If the Gulf

of events, but a new level of euphemism and verbal manipulation evolved - designed to create the impression of benignity and order. Notions of precision became aesthetic fetish. smart bombs, surgical strikes, precision bombing and lucrative targets were celebrated in the media, when in fact it has been recently publicized that a very small percentage of the bombs were "smart" - they were mostly your standard "dumb" variety which produced a shocking amount of "collateral damage" and "incontinent ordnance" (bombs which wander astray of the "legitimate" target, to hit "soft targets" [civilians and civilian services] instead).

In *Descending Metaphors*, a silent litany of 50 terms (below) from the Gulf War scrolled from the top monitor incessantly through to the bottom like a waterfall; as one term disappeared on the first monitor, it would immediately appear on the next.²¹

Lucrative Target	Negative Human Response
Attrition Campaign	Unbroken Optical Contact
Surgical Strike	Successful Engagement
Neutralization	Target Rich Environment
Smart Bomb	Automatic Acquisition
Non-operationalize	Incontinent Ordnance (civilian)
Indian Country	Coercive Potential
Post-Crisis Environment	Collateral Damage
Surgical Operation	Useful Erosion
Asset Suppression	Strike Elements
Attractive Target	Significant Terrain Alteration
Ongoing Templating	Destruct Radius
Soft Target	Area Denial Weapons
Surface Engagements	Precision Bombing

In reference to the digital imaging systems used by the American forces in the Gulf War, Timothy McMulty comments,

Laser-guided bombs had nose-cone video cameras; pilots and tank commanders became cyborgs inseparable from elaborate visual prostheses that enabled them to see ghostly-green, digitally enhanced images of darkened

War was notable for the extent to which television cameras stalked each action and searched restlessly for the decisive event, an even more striking threshold (but destined, one suspects, to become banality itself) was the landing US troops in Somalia in December 1992: by the time the marines arrived, the camera crews already had a beachhead, and were beaming the action live to domestic audiences over breakfast. The much-prophesied celebration of a single terrestrial zone of total visibility suddenly seemed very close: the world as global TV studio* *Visions of Modernity: Representation, Memory, Time and Space in the Age of the Camera*, (London: SAGE Publications, 1998) 187

battlefields. There was no Mathew Brady to show us the bodies on the ground, no Robert Capa to confront us with the human reality of a bullet through the head. Instead the folks back home were fed carefully selected, electronically captured, sometimes digitally processed images of distant and impersonal destruction. Slaughter became a video game: death imitated art.²²

As Paul Virilio observed, "US General H. Norman Schwarzkopf quickly made it clear that there would be no announcements of body counts, as there had been in Vietnam, and no images of body bags. Later, as the effects of this style of reporting took hold, that same general felt compelled to complain, 'this is not a Nintendo game' "²³ Indeed, desensitization to the fact that real bodies were being torn apart became related to the destruction experienced by watching video games - and became known as "the Nintendo effect" ²⁴ Fran Dyson's audio essay, *When the Bodies Drop, Part 1 On the Highway to Virtual Reality* alludes to this crisis.

..and so we move from room to room, all the while thinking that the space is changing, one being more real than the other But I wonder now if it isn't our belief that's becoming virtual. That the crosshairs, the threshold, the eternal limbo we seem doomed to inhabit isn't just the smiles of a belief gone awry?²⁵

The crosshairs, the Nintendo effect and the desensitization of destruction embodied in the chimera of the missile-cam and historically, in the photographic rifle, relate directly to *To Fall Standing*. Paul DeMarinis writes:

To touch without being touched. To see without being seen. To know without being known. This series of conundrums describes a complex of one-way ties, once attributed to supernatural beings, that came to comprise the mainstay of patriarchal governance. The age of invention that followed the collapse of the old regimes sought mechanical aids to spread the message of liberty, fraternity and equality But new forms of oppression lurk in the ostensibly two-way street of

²¹ The terms were designed to scroll with 7 Amiga 500 computers. Each computer was started at timed intervals to produce the effect. Scrolling effect designed by Jason Gee.

²² Timothy J. McMulty, "In Gulf War TV Was Both Friend, Foe," *Chicago Tribune*, (Dec. 23, 1991) quoted in William J. T. Mitchell, *The Reconfigured Eye: Visual Truth in the Post-Photographic Era*, (Cambridge: MIT 1992) 12.

²³ Paul Virilio, "Big Optics" *Justifying the Hypothetical Nature of Art and The Non-Identicality Within the Object World*. Ed. Peter Wiebel. (Cologne: Walter Koenig, 1992).

²⁴ Bill Bryson, *Made in America*. (London: Secker and Warburg, 1994) 269.

²⁵ Fran Dyson, "When the Bodies Drop, Part 1 On the Highway to Virtual Reality" ABC Radio, 1991

democracy Many of the old one-way ties percolated through human consciousness to produce a series of cultural artefacts that depict and enforce our brotherly love: the camera, the machine gun, the spy satellite, the bullet.

I elected to reference the carnival/amusement park context, but a stylized one that would introduce other associations. From fax correspondence with Paul DeMarinis (31/8/93), I wrote, "I'm beginning to feel quite apprehensive about people pointing a gun at each other - it will be confrontational. The relationship between shooting with the gun and the camera, and then the realization that it is just a tiny camera - are all neatly encompassed, but the realities of pointing the gun concern me."

I thought visitors to the exhibition would feel threatened, standoffish, or uncomfortable with the inherent violence of the gun, but instead, they became quite animated when given the opportunity to interact. Many were dancing, turning cartwheels in front of the gun, putting it in their mouths, in their ears and holding their babies upside down in front of it. I was braced for a backlash against the use of the gun in a public space; instead our familiarity with guns through popular culture lead to indifference and demystification. It became a plaything.

The use of the gun as entertainment provided an edge - where the passive viewer could consider the strange paradoxical relationship, again, between war and cinema, between violence and play In "Bite the Bullet", Christopher Chapman writes about the work of contemporary artists who use guns (myself included):

While guns have come to represent power and oppression, they also signify resistance. While the pistol and rifle continues to symbolize the phallus, its ironic representation acts to demolish male hegemony When contemporary artists represent guns, in our current age, the strategy must be a deconstructive one. Violence, as philosopher Paul Virilio has pointed out, is implicitly linked with speed By turning down the volume and slowing the picture, the artists can dissect the wounded body, map the impact trajectory and remove the bullet.²⁶

While *To Fall Standing* does not claim to "demolish male hegemony", the animation and suspension of the observed succeeds in "turning down the volume and slowing

²⁶ Christopher Chapman, "Bite the Bullet" *World Art*, (Summer 1994): 62.

the picture" and the vertical photographs depicting fragmented motion both repeat and resist notions of "target acquisition"

Since DeMarinis was writing the catalogue essay, I faxed him often with work-in-progress reports, which has resulted in a significant stack of correspondence tracing the project's development. A few excerpts are included here; rereading reminds me of the infinite details confronted at every stage:

(1 August 1993) On one wall there will be large mural photographic prints taken from video grabs and manipulated by computer (also reminiscent of Marey) of women diving, swimming, and performing gymnastics. They feature women as a contemporary update, as very few medical photographs depicted women in the 19th century except in states of hysteria. Also, I am on the trail of guns, super-micro video cameras (the smallest has a lens 12mm in diameter 35mm in length and 6 g. in weight with a cable that can extend up to 10m in front of the control unit), video scanners, divers, gymnasts, magnifying glasses, chains, etc."

(3 August 1993) In preparation for the large vertical photographs, I did several test video tapes of aerial views of a walker (my housemate Jo as model), then decided I wanted more dramatic movement, so Ann helped me video (she poised on the top of a wall while I 'ran' below in slow motion to keep within her frame), which presented all kinds of problems and looked quite ridiculous. David helped on Friday and we were searching for a nice tall wall when we decided the solution was a cherry picker (now called EPV or Elevated Personnel Vehicle we discovered), so after a couple of phone calls to locate one, we drove immediately an hour out of Sydney, rented a truck and a very sympathetic (and incredulous) driver for \$40 and I ran barefooted under the cherry picker (with David videotaping from the basket) in a full neck to ankle white leotard on a country asphalt road yelling directions, "faster", "slower" Years of training with the high school track team on the Iowa dirt roads finally came in handy. It was very funny (the locals thought so, too; three pulled their utes up to watch) and all three of us, including the driver, were so excited when it worked. (When I mentioned later how nice the guy driving had been - David thought he was just particularly good at keeping a straight face.) And afterwards a friend cleverly suggested that all I would have had to do was go to the local gym and video from above the running machine. But I guess it wouldn't have been as dramatic.

The footage looks weird and great - I've never seen a runner from an aerial view. The torso remains virtually stationary, while the arms and legs alternately shoot out at the sides. Michelle Barker, the technician at College of Fine Arts is helping me do video frame grabs (as we don't have the equipment here) and I should be able to start the compilations on computer towards the end of this week on Sydney College's first computer for Photoshop. The cover image for the catalogue will feature the runner (me) 'falling' down the right side of the page and the image created will be one of two large ten foot photographs included in the installation.

DeMarinis' subsequent observation in relation to the aerial runner reads, "The image of the runner viewed from above portrays the satellite's view as well as the ballistic projectile's view as it approaches impact. Too, it calls to mind the most impossible view of the body - that seen by the soul as it departs."

(1 September 1993) I'm going to Melbourne 8 September to video high tower dives (I videotaped during a diving meet one day 3 weeks ago, then saw VHS recordings of high tower divers and immediately realized the 3 meter boards weren't going to do it for me. There are no indoor high tower facilities in Sydney, only Melbourne and Brisbane). The timing corresponds nicely with the opening of the Sculpture Triennial and the group show I am in, *Luminaries*, will be on. I haven't been to Melbourne for years - it should be fun.

I borrowed the lipstick video camera for the weekend from the video surveillance company I'm renting it from (they've been sympathetic) and worked with Steven Jones, a video whiz technician who is designing the video strobe / collapse effect for the gun. We've been experimenting with a Fairlight video computer and now realize we need to obtain a frame storage unit to work in conjunction. Steven used to be 1/3 of the group *Severed Heads* - he has a sense of humor and an amazing history of science book collection. Saturday I browsed through a 1773 edition of Priestley's theories on perception - terrific illustrations.

(7/9/1993) Of course, I've been having all kinds of computer image hold-ups. I had slides done of the runner frames and was shocked at the pixelation. I'm prepared to incorporate the video / computer pixel, but not brick size mosaic chunks. The problem is with the original video frame grabs. So, I've purchased

a nifty little program that fits on only antiquated Macs but will do only frame grabs, which is all I need. I'm considering the presentation of the gun. A cabinet may work the best, with a hollow tube connecting the gun and cabinet to contain the video camera cords - an arrangement that will allow limited movement of the gun, similar to a shooting gallery at a carnival. The antique gun dealer, Ian, has lined up his mate Tony to alter the gun and fit a microchip into the barrel - he's quite detail oriented, so I trust it will go well. I need to design and construct a mechanism that will allow only a 60 degree swivel. I've repositioned the gun to be more apparent as you walk into the space, but due to the limited movement, knowone will be confronted immediately upon entering the space.

(15 September 1993) From DeMarinis: "Can you calculate the focal length of the lens required to fit one of Marey's single frames with a bird at say, 200 metres?"

(17 September 1993) I'm looking into the focal length and asked a photographic technician, who fowl-y asked 'What kinda bird? What size? An emu, sparrow, BBQ chicken?' He did conclude that at 20-30 metres, it would be 500mm on a 35mm format.

(20 September 1993) DeMarinis. Don't worry about the calculation of the focal length. You can see what I have in mind - it would make an interesting footnote. I suspect that since Marey wanted to study birds that couldn't be raised in captivity and was interested in flight dynamics, that he would have tried to fill his frame with an eagle or some other big flyer. Not an emu or BBQ chicken. Are you gonna have an avian barbie for your opening?

This sampling describes some details of the process, which doesn't include shopping at gun shows for 19th century shotguns (I could have had a Colt for \$11,900, but the \$130 Harrington and Richardson Model 088 shotgun actually looked perfect to me) and cutting the computer cord in half just before the opening. I had to study and pass a gun-licensing test and wait 30 days before I could take possession (in Australia, gun and marriage licenses require a 30 day interval or "cooling off period"). Coincidentally, the high tower diver featured in the photograph, Chantelle Michell, went on to win 4th in the 2000 Olympics. Luckily, the near-misses,

the detail, the brick walls, the anxiety, the sleeplessness, the bank account - are mostly forgotten.

The title is multi-referential. In conversation with an Italian girlfriend, she remarked, "Don't worry Rebecca - you always fall standing" - her filtering of the stock English phrase, "you always land on your feet." *To Fall Standing* felt like an appropriate nomenclature for the show. The image of falling fit the uncertainty I was experiencing while trying to find technical and conceptual resolution with the work; the name was also apt for the bodies suspended in time and space in the photographs. It also fit with the action of the suspended animation the gun produced. As DeMarinis describes in his essay:

The title of the present project, *To Fall Standing*, brings to mind the cat landing on its feet, suggesting the natural harmony with gravity that animal shares with intercontinental ballistic missiles. Or it may be interpreted as a description of the instantaneous death which occurs when a line-of-sight projectile penetrates its human target, a death which is complete even before the corpse has a chance to succumb to gravity's power. Like the many deceased subjects of photographs, the reanimated dead may be thought of as 'the standing fallen' ²⁷

The suitability of the title was confirmed when I later saw images of Marey's in which he'd photographically recorded the classic experiment to determine whether a cat always lands on its feet. His images show the graceful twisting of the feline during its fall from the top of a high structure - to land on its feet. (His images also show that the rabbit doesn't!)

To Fall Standing was the first installation in a series of works in which I explored the relationship between vision and technology, in this case combining antiquated appearance and narrative with computer-video and photographic imaging. Following this exhibition, I began to acquaint myself with the history and construction of pre-cinema optical devices. I had proposed to do a succession of works juxtaposing and extending archaic optical devices with contemporary imaging technologies; however, it felt strident and formulaic to continue in this mode. Also, *To Fall Standing* and *Descending Metaphors* (1991) had necessitated massively accelerated technical learning curves. A level of dependence on technical expertise

and mechanisms threatened to eclipse the process. It occurred to me that while I was busy learning computer skills, I didn't even understand how light functions.

My emphasis shifted from an involvement with photography and electronic arts installations enlisting video and computers to a preoccupation with the direct phenomena of light, archaic optical devices and general optical principles. The camera obscura gave me the opportunity to back up and nurture the metaphor over the mechanism, and while the resulting devices were challenging to conceive and realize, they also released me from an uncomfortable technological dependence. I could relate to Anne Hamilton's proclamation, "I need a craft!", in reaction to the constant administrative tasks involved with electronic technology and installation - too often the telephone becomes the studio.²⁸ For the most part, I was again able to make my own devices - or at least their prototypes.

700 Million Miles an Hour: Journey Through the Centre of the Earth

In the silent darkness of the Australian outback, traffic and crowds appear to surge across a luminous 6 metre disc in the hot desert floor

A live image relay from London's Picadilly Circus is being piped straight through the centre of the earth to Central Australia via camera obscura / optic fibre cabling. As dawn approaches, the disc / projection screen slides aside to make way for a large mechanical mirror and lens system which begins to reflect the dazzling red and blue desert scene. In .043 seconds the image travels 12,740 kilometres in the opposite direction.

Amidst the bustle of Picadilly Circus on a cool wintry evening, Londoners gaze down as a searing summer day in the central Australian desert slowly rotates at their feet.

At sunset, the changeover begins again.²⁹

²⁷ DeMarinis 2.

²⁸ Ann Hamilton, Artist Talk, College Art Association Conference, Chicago, Illinois, February 2001

²⁹ This is an edited version of the original text I wrote for *Ideal Work*, ed. Richard Grayson, (Adelaide, SA. Experimental Art Foundation, 1999) written for "Artist's Pages: Rebecca Cummins" *Photofile #60*, ed. Mike Leggett, Australian Centre for Photography, (Aug 2000):42-43.

This text accompanies two images, representing night-time views of Central Australia and Picadilly Circus; both feature a luminous disc in their foreground.

This work was conceived for a commission and book, entitled *Ideal Work*, curated by Steven Wigg and Richard Grayson as an Experimental Art Foundation project. The invitation to participate was described as such:

You are invited to make a piece of work . for an art event taking place in Australia. The budget provided by the Experimental Art Foundation (the commissioning agent) is unlimited, as are the physical resources at your disposal. For instance, should you wish to use a geostatic satellite this will be possible, alternatively should you wish to use the entire continent, or work at a microscopic level, these options are also at your disposal. There are no material constraints to your project as regards size, locale, materials, etc.

You are asked to submit a proposal for this event. This can take the form of a written description, drawing rationale, plans: to give a clear idea of the nature and appearance of the (ideal) work.

. Each project is to be accompanied with a written commentary on each work by a writer who is familiar with the artists practice or field of practice, written from the point of view that these works exist (which of course they do). The texts are to contextualise, illuminate and expand the works as regards their operations and their place in the artists' practice, as well as to authorize their existence, that is, to operate as critiques and essays do for all types of art works.

Ideal Work will generate a vast and fictive space for the artists to operate within, albeit a space physically determined by the covers of the publication.. 'All description is a matter of mapping the unknown on the known' ..Susan Stewart, *On Longing*.

The resulting piece, *700 Million Miles an Hour: Journey Through the Centre of the Earth* (figures 6-10), represents my interest in optical principles, a preoccupation with notions of inversion and in absurd juxtapositions (also evident in *Simply Smashing* [figures 16-20], *Liquid Scrutiny: Paranoid Dinner Table Devices* [figures

21-25], the *Traveling Camera Obscuras* [figures 54-60], *Lord Nelson on His Head* [figure 9], *Apparatus for Sensational Emotions* [figure 10], *Flash Rate* [figures 29-30], *Centinels* [figures 41-60], *Bird's Eye View: Periscope Birdbath* [figures 26-28] and *The Rainbow Machine* [figures 1-5]).

I am acutely aware of differences in time and season between the Northern and Southern hemispheres. This consciousness was central to a project I've performed since arriving in Australia in 1985. My father and I share the same birthday, and this event epitomizes the difference in our simultaneous experience: one of seasons, activities and time zones. Originally, I planned that we would both take a photograph every half an hour during the waking hours of our birthday (7 June). Dad's Northern Hemisphere version didn't materialize; however, I continued what is now a 16-year old ritual. This exaggerated awareness of time and place, in part due to my newfound geographical position in the world, unconsciously became a subject. As Ellen Zweig points out in the essay for the project *700 Million Miles an Hour: Journey Through the Centre of the Earth*:

Rebecca Cummins was born in Iowa, in a small town in the centre of the United States. From that centre, she might go straight down to the hot core of the earth. In her American childhood, she was told that if she went all the way through she'd reach China.³⁰

The first project in which I consciously explored optical inversion was *Lord Nelson on his Head* (1994), [figure 9]. In this proposed installation (mocked up on Photoshop) for Trafalgar Square in London:

A 150 foot high magnifying glass would be erected equi-distance between Lord Nelson's column and a 180 foot projection screen. With all the peripheral lights off in the square and laser light brightly focused on Nelson's column, its image would simply be inverted by the magnifying lens and projected on the screen opposite - to bring Lord Nelson closer to earth.³¹

³⁰ Ellen Zweig, *Ideal Work* 33.

³¹ From the exhibition notes for the proposed installation (mocked up on Photoshop) for Trafalgar Square in London for *Maximum Exposure Ideas Category Competition* (winner) organized by The Photographer's Gallery and *The Times Magazine*, 1994. When the award for the *Ideas Category* was presented, the juror from *The Times* announced that he didn't believe it would work optically; so I

700 Million Miles an Hour (the speed of light) further extends the absurd scale of *Lord Nelson on his Head*. To consider Australia as a palette, unlimited by scale or budgetary constraints, I again looked to notions of inversion – and to the camera obscura.

The first in a line of camera obscuras I assembled was *Upwardly Mobile Home* (1994)(figure 54), a mobile home converted into a camera on wheels, motivated by my enchantment with the effect and by the knowledge that it was virtually unknown in Webster County, Iowa. I remain enthralled by the pristine beauty of the image it reveals and, although I don't think painting is buried, I significantly empathize with Constance Huygens sentiments in 1622, already mentioned above: "It is impossible to express its beauty in words. The art of painting is dead, for this is life itself, or something higher, if we could find a word for it."³² I worked extensively with ideas of introducing narratives and extending the context for the phenomena, but finally chose to simply and directly present the beauty of the camera obscura effect.³³

But it was in *Centinels* (1995) where the notion of inversion became intrinsic to the concept. For *Artful Park II*, a group outdoor exhibition in Sydney's Centennial Park, I sited a project that would reflect the history of the park. Sir Henry Parkes (father of Federation) dedicated the park in 1888 to mark the Centenary of the Colony (it was also the site of Federation celebrations in 1901 and 2001). The topography had once been one of sandstone cliffs, swamps and sand. The cliffs were dynamited, the swamps mostly filled in and deciduous trees planted - the majority of which died within a decade and were replaced with indigenous trees more suitable to the environment.

consciously and successfully replicated the phenomena on a more modest scale in the installation *Apparatus for Sensational Emotions* (figure 10) in Birmingham, UK. For details, see exhibition notes.

³² Huygens quoted in Martin Kemp, *The Science of Art: Optical Themes in Western Art from Brunelleschi to Seurat*, (New Haven: Yale UP 1990) 192.

³³ I met Ellen Zweig just before my presentation of *Upwardly Mobile Home*. I was impressed by her work and her generosity with knowledge and assistance. As she was also a writer and particularly attune to issues surrounding the camera obscura, it was especially appropriate that she write the essay for *Ideal Work*. See "Abyss Lessons: Ellen Zweig writing around Rebecca Cummins" *Ideal Work*, 32-34.

Portable camera obscuras seemed the appropriate vehicle for “framing” this inverted, artificial landscape. From the catalogue notes I wrote for *Centinels* in *Artful Park II*:

Camera obscuras were featured in 19th century museums and public expos as curios or marvels of science, along with such Victorian chimeras as the photographic hat (a camera made from a derby hat which allowed secretive picture-taking), the Velo-douche (a combination bicycle and shower bath in which faster peddling increased the water pressure), the musical bathtub and the photographic rifle. *Centinels* merge the camera obscura with the flowerpot, the birdhouse, the Portaloo, the television, the mirror box and the garbage bin; appropriate objects from which to frame the park.

Centennial Park was designed in 1888 in the pattern of an English ‘Gardenesque’ park. Its radical reshaping from Australian sandhill, cliffs and swamp was an attempt to correct the landscape ‘down under’ in a sense to turn this small part of Australia ‘right way up’

In *Centinels*, the scrambled intentions reflected in Centennial Park are linked with the spirit of these Victorian inventions. You are invited to take a low-tech stroll with eye and pin-hole to literally turn the park upside down.³⁴

The portable camera obscuras referred to the historical importance of photography in framing landscape, but also allowed a playful approach - in the various ways the audience could interact with the “cameras” and their images - and in the way these objects interacted with the context of the park. A Portaloo was converted into *The Giovanni della Portaloo* (figures 41-42), a walk-in camera that paid homage to Giovanni della Porta, the 13th century Italian who was the first to write extensively about the camera obscura effect. It featured a body size screen inside.³⁵ The wheelie-bin on its side (*Throw-Away Camera*) (figures 46-50), was a panoramic camera. A binocular lens was mounted on the end of the “camera”; by placing their

³⁴ *Artful Park II*, ed. Frances Joseph, catalogue, (Sydney: Centennial Park, 1994) 8. This installation began in collaboration with Laurence Hall, but the collaboration was discontinued during the course of the project.

³⁵ The portaloo was loaned by a branch manager of the company. Coincidentally, the owner of Portaloo lived near Centennial Park. On a walk with his family, they first wondered what a Portaloo was doing in the park, and then why it was painted black. The owner bought it for his mother’s 65th birthday and it is now supposedly displayed in a formal sculpture park next to a Burt Fluggelman sculpture on the South Coast of New South Wales.

heads in the refuse opening, viewers could walk in a 360-degree circle and watch the inverted scene depicted on the screen midway³⁶ *Federation Television* framed the site of Federation Celebrations and *Floral Views* featured a flowerpot, which framed the same flowers on wide-screen that also grew out of its top.³⁷

I could have used lenses that did not invert the landscape, but it was precisely the distancing this mediation allowed, along with associated references (discussed below), that I found compelling. In "Electronic Realism", Matsu'ura Hisaki addresses the notion of inversion,

In a word, one might call this the pleasure of 'being mediated. Here we have the opaque presence of meaning which prevents direct encounter with the sign, the distance and various physical restrictions which prevent direct attainment of a bi-directional engagement with the image, and the play of the raw image and the weighty presence of both physical bodies which also, in the same manner prevent intercourse with the other. And there is pleasure to be found in gradually becoming intimate with the very sense of resistance displayed by this kind of intractable, opaque presence.³⁸

Emphasizing the upside-down nature of the camera obscura image is relevant to any re-visiting of the Australian landscape. As Nick Drayson writes:

A Eurocentric view described Australia as 'a land of contrarities' a term first coined by Barron Field, arising from the natural history of the place and consistent with numerous descriptions of Australia as a place in reverse of the Northern hemisphere in every way: geography (in its global upside-down-ness), morality ('where vice is virtue, virtue's vice'), flora and fauna.³⁹

³⁶ I meet a lot of people during exhibitions and after talks who share their impressions, their inventions or ideas, books or stories, like one told by an elderly man who, after looking through the *Throw Away Camera* at the inverted image in Centennial Park, described his move from England to Australia in the 1940s by boat. For the equator crossing party, he went as an upside-down man, with a cabbage at his crotch for a head.

³⁷ For further descriptions, see the enclosed Exhibition Notes. Some of these works have also been shown in other contexts: *Throw-Away Camera* was installed outside the stately 18th century Sewerby Mansion in Bridlington, UK (figures 48-50). The sight of viewers sticking their heads in a garbage bin provoked much comment from passers-by; and there was a distinct contradiction in using a bin to view the mansion upside down.

³⁸ Matsu'ura Hisaki, "Electronic Realism" *InterCommunication* No. 10, (1994). Website: <http://www.nttic.or.jp/public_mag/ic010/contents_e.html>.

³⁹ Email, Nick Drayson, 28/2/1996 quoting from his unpublished dissertation.

Directly from Barron Field's (Sydney Supreme Court Judge and naturalist) memoirs is this description:

But this New Holland, where it is summer with us when it is winter in Europe, and vice versa; where the barometer rises before bad weather and falls before good, where the north is the hot wind and the south the cold; ..where the swans are black and the eagles white; where the kangaroo, an animal between the squirrel and the deer has five claws on its fore paws. and three talons on its hind legs, like a bird, and yet hops on its tail; where the mole ...lays eggs, suckles its young, and has a duck's bill; where there is a bird .. with a broom its mouth instead of a tongue; where there is a fish, one half belonging to the genus raia [rays], and the other to the genus squalus [sharks]; where the pears are of wood..., with the stalk at the broader end; and where the cherry . grows with the stone on the outside."⁴⁰

This notion is also evident in the oft-quoted preface by Marcus Clark in Adam Lindsay Gordon's 1880 volume of poetry *Sea Spray and Smoke Drift*, where he describes Australia as "this fantastic land of monstrosities."⁴¹ Simon Ryan in the *Cartographic Eye. How Explorers Saw Australia* sites numerous examples of this concept, starting with the mapping of the imaginative *terra australis*, "an antipodean continent which served to balance the Eurasian landmass" centuries before European expansion to the shores of Australia.⁴² Ryan documents a wealth of views in which this difference is described as perverse, as reflected in Sydney Smith's 1817 description, "in this remotest part of the earth, Nature (having made horses, oxen, ducks, geese, oaks, elms, and all regular productions for the rest of the world) seems determined to have a bit of play, and to amuse herself as she pleases." Other accounts describe inhabitants who have feet where their heads should be, that Australia was inhabited by hermaphrodites (from a 1676 French travel fantasy), that women overrule men - and most things were generally contrary

⁴⁰ Barron Field (ed.), *Geographical Memoirs on New South Wales* (London: John Murray, 1825) 461-462.

⁴¹ Clarke quoted in Drayson and in Simon Ryan, *Cartographic Eye: How Explorers Saw Australia*, (Cambridge: Cambridge UP 1996) 105.

⁴² Ryan 105. Pythagoras devised a concept of Southern landmasses counterbalancing those of the northern parts of the world in 5th century B.C.. From William Eisler *The Furthest Shore: Images of Terra Australis from the Middle Ages to Captain Cook*, (Cambridge: Cambridge UP) x.

to nature.⁴³ "In fact, the Tasmanian Society, a scientific society in Hobart, in 1839 had as its motto 'All things queer and opposite' "⁴⁴

While a tunnel dug straight down from the backyard in Iowa led directly to China (?), a somewhat more plausible view in England is that if an adventurous burrower dug through their garden they would end up in Australia (a path directly from Central Australia would actually end up in the ocean East of the coast of Newfoundland, Canada). From Bruce Chatwin:

I also knew, from my great-Aunt Ruth, that Australia was the country of the Upside-Downers. A hole, bored straight through the earth from England would burst out under their feet."

'Why don't they fall off?' I asked.

'Gravity' she whispered.⁴⁵

Edward Tacey speaks of the role Australia has played for the British psyche:

Even the geographical journey to Australia from Britain, the fact that it involved a *descent* to the deep south, to "Down Under", adds to the persuasive metaphor that in founding Australian society Britain unwittingly initiated an undoing of its own consciousness and a development of its imprisoned shadow.⁴⁶

And from chapter 1, "Down the Rabbit Hole", of Lewis Carroll's *Alice in Wonderland* we hear Alice's musings as she falls "Down, down, down. "

'I wonder if I shall fall right through the earth! How funny it'll seem to come out among the people that walk with their heads downwards! The antipathies, I think - (she was rather glad there was no one listening, this time, as it didn't

⁴³ Ryan 107

⁴⁴ Drayson.

⁴⁵ Bruce Chatwin, *The Songlines*, (London: Picador 1987) 6.

⁴⁶ David J. Tacey, *Edge of the Sacred: Transformation in Australia*, (Blackburn, Vic: Harper Collins, 1995) 115.

sound at all the right word) - but I shall have to ask them what the name of the country is, you know Please, Ma'am, is this New Zealand? Or Australia?'⁴⁷

The choice of Picadilly Circus and Central Australia as oppositional geographical points to be connected by camera obscura emphasizes their historical connections, their cultural extremes - and the obvious contrast of time and season. In her essay for *Ideal Work*, Zweig writes:

It is this balance between what is on the surface and what is deep that makes Cummins' work potentially subversive. She uses references to the technology and ideas of earlier centuries (most often the 17th and the 19th) to re-evaluate and re-present ideas that still persist. To move Australia, her adopted home, the land 'down under' into balance with England, to upset the power of colonial history, she has to move at the speed of light, falling down, down, down..⁴⁸

In the 17th, 18th and 19th century studies by philosophers, theologians, geographers and fossil collectors speculated on the earth's history and included imaginings of what might occur in the earth's center, based on observations from nature and physical principles or sheer fantasy

In *Journey Through the Centre of the Earth* (1864), Jules Verne created the classic adventure story that reflected ongoing interests in what lay beneath the surface of the earth.⁴⁹ Along with H. G. Wells, he is credited for starting the genre of science fiction. However, according to James Gunn, neither enjoyed these comparisons. In the introduction to *The Time Machine* by Wells, James Gunn quotes Verne on Wells:

'It occurs to me that his stories do not repose on a very scientific basis. No, there is no rapport between his work and mine. He invents. I go to the moon in a cannon-ball discharged from a cannon (*From the Earth to the Moon*). Here there is no invention. He goes to Mars. (Verne meant "to the moon," in Well's *The First Men in the Moon*) 'in an air-ship, which he constructs of a metal that

⁴⁷ Lewis Carroll, "Alice's Adventure s in Wonderland" *The Complete Works of Lewis Carroll*, (The Modern Library, 1958) 19.

⁴⁸ Zweig 34.

⁴⁹ The movie of the same title based on Verne's tale made a huge impact on me when I was a kid although even then I could not reconcile that the scenes were depicted as if illuminated by daylight.

does away with gravitation. That's all very well, but show me this metal. Let him produce it.⁵⁰

This comparison relates to my desire to conceptually bore through the center of the earth. While my destination is akin to Verne, the technique is more like Wells in that I have ignored the impossibility of finding a material that would protect the optical cable on its journey through the molten core.

I conceptually struggled with the piece, stuck on the fact that while the image transfer was technically possible (even though the scale was absurd), a material did not currently exist which would protect the fibre optic cable from heat of the earth. But, I was bolstered by the fact that Leonardo da Vinci designed the airplane before the necessary lightweight materials existed - and the Transatlantic cable project was underway, but paused for years awaiting the development of the bitumen and copper combination that would insulate it, yet provide the flexibility to allow it to lie submerged in the Atlantic Ocean.

In 1994, at the recommendation of Zweig, I had visited the Mining Engineering Department of the University of Minnesota, where a periscope camera obscura relayed a live image via a series of lenses four stories below the ground from a vantage point three stories above ground. My initial interest in visiting this installation was that I was proposing to design a tower camera obscura for the clock tower at Sydney College of the Arts' new Callan Park, Rozelle hospital site (the idea was halted when the tower was condemned as unsafe). The visit confirmed that passive image transfer could occur over large distances.

It was important that the concept represent a technically feasible approach to collecting and conveying a coherent image over a vast submerged distance. I consulted with several scientists and an astronomer (Dr Peter Elliston, John Ward, Dr David Thorncraft, astronomer Gordon Garradd, Dr Karl Kruszelnicki) in relation

⁵⁰ James Gunn, Introduction, H. G. Wells, *The Time Machine*, (Berkeley: Berkeley, 1987).

to the design and chose fibre optics as the image relay mechanism and I received input on a variety of possible models from which I construed my final diagram.⁵¹

I remain intrigued by the immateriality of light and the devices that make its mediation possible - by the exquisite clarity, pristinity and direct relation to life provided by optical experiences. In *Wonder, The Rainbow and the Aesthetics of Rare Experiences*, Phillip Fisher describes our relationship to the visible as it draws together pleasure, thinking and the aesthetic features of thought. That delight in the visual could be perceived as an intellectual experience was a notion I intuitively believed, but Fisher's writing effectively articulates these ideas, especially in relation to the subject of wonder (which Descartes described as "a sudden surprise of the soul that brings it about that the soul goes on to consider with attention the objects that seem rare and extraordinary to it." it "makes us learn and retain in our memory things that until then we were ignorant of ")⁵² As Fisher describes:

In locating the extraordinary back within the ordinary explanation breaks open the fabric of the ordinary itself and changes forever both for thought and for perception. The ordinary is not just the dictionary of things that we are used to; it is also the relations among them. The most primitive of these relations is what we find side-by-side in space or adjacent in time. In setting what seemed at first singular back into the ordinary we make a new ordinary only by violating contiguity scale, and the ordinariness of genres within experience.⁵³

Phillip Fisher outlines, through the analogy of the rainbow and its treatment by various philosophers and scientists, the difference between wonder and astonishment and the importance of wonder for intellectual learning, analyzing Socrate's oft-quoted phrase, "Philosophy begins in wonder " Wonder is an experience that prompts curiosity in the beholder Astonishment, however, leaves the perceiver dulled or awed in a state akin to fear and leads to little extension of thought. "Wonder drives and sustains the defective rationality that gives us

⁵¹ Several projects have involved consultation with scientists – a very pleasurable aspect of the process. Even those experts in advanced spectroscopy and optical physics seem to appreciate the direct challenge and absurd context of the optical problems. I enjoyed both the process and the product and plan to do other works that conceptualize installations on an unexpected scale.

⁵² Descartes quoted in Phillip Fisher *Wonder, The Rainbow and the Aesthetics of Rare Experiences*, (Cambridge: Harvard University Press, 1998) 46.

⁵³ Fisher 100.

intelligibility under conditions where we will not even know that we have reached certain knowledge when and if we have."⁵⁴

While "wonder" in relation to my works may be too strident a term, delight in the mechanics, the beauty of optics and the change of scale and juxtapositions do provide new realizations (often audiences are genuinely surprised by the outcomes - for example, in *Liquid Scrutiny*, many were initially convinced that the image in the bowl of the goblet was obtained by video, so unfamiliar were they with simple and direct optical transfers. Or, in *Simply Smashing* few had previously noticed that a common wineglass can become a stunning lens when filled with water.) Fisher has no hesitation in applying the phrase "wonder" to works of art: "The details of thought, of problem-solving, of the analysis of works of art where a slow unfolding of attention and questioning takes place in the presence of the work are all questions within the domain of wonder"⁵⁵ The opening of Aristotle's *Metaphysics* is also relevant to this discussion:

All men by nature have a desire to know. An indication of this is the delight we take in our senses; for even apart from their usefulness they are loved for themselves; and above all others the sense of sight. For not only with a view to action, but even when we are not going to do anything, we prefer seeing (one might say) to everything else. The reason is that this, most of all the senses, makes us know and brings us to light many differences between things.⁵⁶

I read *Wonder* well after *The Rainbow Machine* (figures 1-5) was completed; however, Fisher's argument resonated - that familiarity with the rainbow can be the ultimate meeting point for aesthetic and scientific encounters with novelty, rare experience and the genuinely new⁵⁷ I enclose here the catalogue essay I wrote for *Converge. Where Art and Science Meet*:

"The Rainbow is made in The Sky out of a dripping cloud " (Francis Bacon)

⁵⁴ Fisher 59

⁵⁵ Fisher 6.

⁵⁶ Aristotle in Fisher 58.

⁵⁷ Many of the works have been accessible to children, but *The Rainbow Machine* was especially popular. Most went home wet if you walk into the spray, rainbows form around you which they would quickly discover. I had several extensive discussions with young kids on the merits and creation of rainbows. A 3 year-old friend visited the piece; for several months afterwards, every time she saw a rainbow she would ask her mother if I had made it.

The Rainbow Machine is an outdoor apparatus that enlists light and water to create primary and secondary rainbows while the sun shines - and again after dark.

Undeniably beautiful, the rainbow has been the subject of potent legends on every continent and the inspiration for fundamental studies in optics. The ethereal quality of the rainbow no doubt contributes to the diverse cultural interpretations: no two viewers see the same rainbow - in fact, neither do your two eyes. The spectrums of the rainbow are virtual images, caused by the refraction of light in water droplets at an angle between 40-42 degrees measured from your eye. Each is your own private rainbow; move and it moves with you.

In sunlight, *The Rainbow Machine* produces the dramatic, highly saturated spectrums that we are familiar with; at night, artificial light creates an unanticipated colour band sequence.

While rainbows are generally fleeting and transient, the night rainbow is especially infrequent. Aristotle described its white, ghostlike appearance as occurring only twice every 50 years. As Carl Boyer points out, the lunar bow occurs 1/100th as frequently as the solar rainbow. Most are missed through sleep, making its observation a very rare occurrence indeed.

Along with Aristotle, Descartes and Thomas Young, Isaac Newton is the scientist most closely associated with the rainbow for his explanation of its colours in the 1660s. This profound discovery was not universally celebrated, however. During an infamous dinner party of writers in 1817 the poet Keats toasted: "To Newton's health, and confusion to mathematics". In *Lamia* he wrote: "Do not all charms fly at the mere touch of cold philosophy", bemoaning this ability to "unweave a rainbow" (Boyer, 1959). Keats' words are often quoted to epitomize the split between science and poetry.

While I can't put my finger on it (literally), to describe the rainbow shouldn't diminish its power. To understand the relationship between a drop of rain, the sky and ourselves isn't a loss, but an exciting addition of insight. Every explanation discloses new mysteries: Newton's unweaving only provokes further

questioning about the composition of light and the nature of our vision. Rather than domesticate or 'undo' the rainbow of its magic, *The Rainbow Machine* aims to stimulate curiosity and awareness of our metaphysical, subjective and paradoxical relationship to nature and art/technology

I wanted to make rainbows but was unsure how to create a reliable context for the phenomena. To my great fortune I met John Ward and Dr Margaret Folkard of Sundials Australia, Adelaide. Their experience as gnomists and physicists, their zany, infectious humour boundless curiosity and energy for experimentation and for life made them the perfect collaborators for such a venture.

An initial proposal described a sidereal mount that tracked the sun and enlisted mirrors to reflect light. The final device is more akin to an aestheticized showerhead - but it works! The key was in determining the optimum droplet size and height of the apparatus to create rainbows whenever the sun hits it. Further steps involved experimenting with various sources of artificial light to create rainbows in darkness. Finding a satisfying formal solution was another challenge.

The immediate wonder of the rainbow endures. If anything has changed it is only our belief in the old legends and the challenge to replace them with new ones. The pot of gold at the end of the rainbow (like the horizon) cannot be reached. However if it turns out to be a yellow bucket - it's still intriguing.

Let the light fall on your back and follow your shadow into the rainbow ⁹⁸

As in *Centinels, Liquid Scrutiny, 700 Million Miles an Hour: Journey Through the Center of the Earth* and other works described in the following Exhibition Notes, *The Rainbow Machine* represents the aspiration to provoke pleasure and curiosity in the margins between experience and thought, aesthetics and science.

Following the writing of this paper, I can claim a better understanding of linkages and history (especially related to archaeologies of media) - and a passion for exploring

them. In relation to my creative work, this study has functioned as a guiding factor, a context, an extension of my sphere of activity - which has given me greater confidence as an artist and educator and an infinitely richer field of interest and experience.

Future projects include drawing machines for *In the Library* and an exploration of micro-photography / microfiche in *The Pigeon Post* (see Exhibition Notes). Paul DeMarinis and I are also planning a collaborative piece in which *The Rainbow Machine* will be combined with his *Singing in the Rain* (figures 19-20 in Volume I). *Singing in the Rain* is an interactive water piece in which falling water is encoded with a pattern of wavelengths which, when the water comes in contact with a hard object (in *Singing in the Rain* it is an umbrella carried by participants), are translated into sound (here, the song "Singing in the Rain"). The combination of the two works will result in the *Singing Rainbow Machine* - participants may enter the rainbow with umbrellas - and it will sing to them!

I will continue to explore the potential for involvement with technology as a vehicle to extend curiosity, poetic fantasy and perceptual experience.

⁵⁸ *The Rainbow Machine for Midnight and Mid-day in Converge: where are and science meet*, The 2002 Adelaide Biennial of Australian Art, Adelaide, SA. While the artificial rainbow was tested, lack of evening access to the site and budgetary restraints prevented realization of the night-time version.

List of Illustrations / Exhibition Notes¹

(figures 1-5) *The Rainbow Machine*

•*Converge. where art and science meet*, The 2002 Adelaide Biennial of Australian Art, Adelaide, SA, 2002.

•*The Canberra Sculpture Forum*, Canberra, ACT Australia, 1998.

A steel apparatus suspended three meters above the ground sprays a wall of water 1.5 x 3 metres, which allows viewers to see full-spectrum primary and secondary rainbows anytime the sun shines. With early morning and late afternoon light, the rainbows appear high in the sky. At mid-day, circular spectrums are formed on the ground.

Since the virtual colors of the rainbow appear in an arc measured specifically from your eye at an angle between 40° and 42°: no two people see the same rainbow. Observers may place the burn of the sun on their backs and follow their shadows into the rainbow. Move and the rainbows move. Depending on the viewer's position relative to the sun and water the rainbow may appear to be 2 or 60 meters across.

Assistance provided by John Ward, Dr Margaret Folkard and Misha Neininger

Photography Credit for (figure 5): John Ward.

(figures 6-8) *700 Million Miles and Hour: Journey Through the Centre of the Earth*

•Computer generated images and explanatory diagram commissioned for publication in *Ideal Work*, 1998, curated by Richard Grayson and published by the Experimental Art Foundation, Adelaide, South Australia, 1999. Essay by Ellen Zweig.

•Altered version published in *Photofile*, August 2000.

This proposed installation conceptualizes a live image relay between central Australia and central London (Piccadilly Circus) by camera obscura / fibre optics - through the centre of the earth.

In the silent darkness of the Australian outback, traffic and crowds appear to surge across a luminous 6 meter disc in the hot desert floor.

The live image - from London's Piccadilly Circus - is being piped through the centre of the earth to Central Australia via camera obscura / optic fibre cabling. As dawn approaches, the disc / projection screen slides aside to make way for a large mechanical

¹ Photographic documentation by R. Cummins unless indicated.

mirror and lens system which begins to reflect the dazzling red and blue desert scene. In .043 seconds the image travels 12,740 kilometers in the opposite direction.

Amidst the bustle of Piccadilly Circus on a cool wintry evening, Londoners gaze down as a searing summer day in the central Australian desert slowly rotates at their feet.

At sunset, the changeover begins again.

Assistance provided by Dr David Thomcroft, Dr Peter Elliston, Vicky Clare, Melinda Rackham, Gordon Garradd, Dr Karl Kruszelnicki, Ellen Zweig and John Ward.

(figure 9) *Lord Nelson on his Head*

- Proposed installation, Trafalgar Square, London (mocked up on Photoshop) for the *Maximum Exposure Ideas Category Competition* (winner), The Photographer's Gallery and The Times Magazine, 1994.
- *Maximum Exposure Award Winners*, The Museum of Science and Industry, Manchester, England

A 150 foot high magnifying glass would be erected equi-distance between Lord Nelson's column and a 180 foot projection screen. With all the peripheral lights off in the square and laser light brightly focused on Nelson's column, its image would simply be inverted by the magnifying lens and projected on the screen opposite - to bring Lord Nelson closer to earth.

(figure 10) *Apparatus for Sensational Emotions*

- *In Down the Drain: An Exhibition Which Explores Those Spaces No One Ever Likes to Talk About*, Fine Rats International, Birmingham, UK, 1995. Catalogue.

This installation was designed in reference to a British news article describing the response of a baker in Perth, Western Australia to the French nuclear testing in the South Pacific. As opposed to wine bans in place in the UK, the baker formed his baguettes into the shape of boomerangs.

A wine bottle and a baguette in the shape of a boomerang were fixed on stands at eye level and brightly lit. With the aide of two freestanding enlarger lenses, the reflection of the bottle and the baguette were inverted and projected upon the large white tiled wall still standing on the building site on which the exhibition took place. The news article, printed upside-down on the wine bottle, was also inverted and projected

Photography Credit: Fine Rats International

(figures 11-15) *Australia Live*

•In *Triggered*, First Draft, Sydney Australia. 2000.

In *Australia Live*, visitors may enter one of three polling booths. In the first, they are invited to "Draw yourself in your national costume" in the second to "Record a message to John Howard" (Prime Minister of Australia) and in the third, "Draw a Map of Australia"

Each booth is blackened inside and while the pundit is recording his or her response, their activity is reflected and inverted via several small glass lenses onto a small screen in the back of the booth, allowing them to become more "reflexive" of their actions.

The drawings were immediately placed on the wall for public display and the recordings sent to John Howard.

In collaboration with Leah McLeod.

(figures 16-20) *Simply Smashing*

•Faculty Exhibition, Jacob Laurence Gallery Uni of Washington, Seattle, WA. 2001
 •Bergen Hall, Savannah College of Art and Design, Society for Photographic Education National Conference, Savannah, GA, 2001
 •Gallery Elastic, Sydney, NSW Australia, 2000.

In *Simply Smashing*, water-filled wineglasses become optical devices from which to turn the world upside down. The pristine and delightful lens clarity and inversion is repeated on a preposterous scale in an installation of 768 water-filled stacked goblets in the two large windows of Elastic (in other venues, the window size determined the number of goblets.)

During daylight hours, repeated and inverted moving images of the street could be viewed 768 times simultaneously from inside the gallery. As observers move their heads up, down or sideways, the images adjust. Cars appear to race upside-down around the bowl of the goblet. Images are formed in the goblet, in the glass stems - and on the surface of the water when viewing from above or below. Light reflects off the glass and the water creating a shimmering, sparkling overall effect.

After dark, the inside of the gallery is repeated in each goblet, perceived from the viewer's position on the sidewalk. Light sources and movement were designed inside to capitalize on the effect.

(figures 21-25) *Liquid Scrutiny: Paranoid dinner party devices*

•Bergen Hall, Savannah College of Art and Design, Society for Photographic Education National Conference, Savannah, GA, 2001
 •Australian Center for Photography Sydney 2000.
 •Sewerby Hall, Bridlington, UK (by Hull Time-Based Art, Hull, UK), 1998.
 •*Lawyers, Guns and Money*, Experimental Art Foundation, Adelaide, 1997 Catalogue.
 •*Envisioned: Rebecca Cummins and Rosemary Laing*, Monash University Gallery, Monash University, Melbourne, Victoria, 1997 Catalogue available.

In 1642 a French mathematician, Pierre Herigone, in his book *Supplementum Cursus Mathematici*, described a camera obscura goblet from 17th century Prague. A lens and mirror at the base of the stem projected a real-time image onto the ground glass screen in the cup of the goblet - it was an ingenious device for observing others closely without their knowledge.

In *Liquid Scrutiny*, excavated periscope/camera obscura versions of these small, silver surveillance devices are available on a twenty foot table. By holding a goblet and glancing down into the cup, viewers may watch the proceedings around the room without being noticed. By participating, we are reminded that the desire to observe others secretly is not a 20th century phenomena introduced during the electronic age.

Assistance provided by John Ward, Kenny Thomas, Julie Lawton, Gordon Garrard, Siddhi Purna and family and Dr Peter Elliston.

Photography Credit (figure 23): Alan Cruikshank

(figures 26-28) *Bird's Eye View*

- *From Pinhole to Pixel*, Stills Gallery at Sir Herman Black Gallery University of Sydney, Sydney, 2001 Catalogue.
- *Triggered I*, First Draft Gallery Sydney, 1999.
- *Sculpture by the Sea*, Gaerloch Reserve (Bondi to Tamarama), Sydney NSW, 1998. Catalogue available.
- *Canberra Sculpture Forum*, Canberra, ACT 1998. Catalogue.

A periscope birdbath (in the spirit of 19th century chimeras such as the photographic hat, the musical bathtub and the bicycle shower) perches on the sea cliff. Viewers may gaze down at the real-time scene imaged in the 10 inch lens in the base of the bowl and watch their surroundings through the magnifying effects of the water. The birdbath may be rotated 360 degrees for a panoramic view of the sea and environs.

Assistance provided by Dr Glen Davis (Frances Lord Optics), Misha Neiningner and Henry Gosford.

(figures 29-30) *Flash Rate*

- *In Down the Drain: An Exhibition Which Explores Those Spaces No One Ever Likes to Talk About*, Fine Rats International, Birmingham, UK, 1995. Catalogue.

Flash Rate was influenced by current urban beautification schemes in Birmingham, which feature hanging flower baskets throughout the city. The cover on a 7" deep drain was replaced by a sheet of Veri-light, mounted into a frame of cheap wallpaper-covered wood. A fake green grass placemat alongside the drain concealed a touch-sensor, which when stepped upon sends an electric current through the Veri-light, causing the translucent glass to clear to transparent, thus allowing the audience to view the same flowers seen throughout the city planted in a peach - coloured urinal.

Photography Credit: Fine Rats International

(figures 31-40) To Fall Standing

- Artspace, Sydney, October 1993. Catalogue with essay by Paul DeMarinis.
- Museum of Contemporary Art, Helsinki, Finland, 1994. Catalogue available.

To Fall Standing features a video-gun and stop-motion photographs in an interactive installation reminiscent of a shooting gallery at the carnival. A tiny video surveillance camera has been fitted into the barrel of an 1880's shotgun in conscious reference to the photographic machine gun designed by renowned French physiologist Etienne-Jules Marey in 1882 to capture the sequential movement of birds in flight.

In this "loaded" object, the relationship between guns and the cinematic is made explicit as the viewer is invited to "aim" and "shoot", simultaneously effecting the strobed, sight-line image which appears on a bank of 8 monitors. The video signal is processed through a CVI Fairlight computer, creating a stop-motion effect. By releasing the trigger, the strobed image is frozen and suspended. By pulling the hammer release back, the image is wiped and live action is again produced on the 8 monitors. Two 10'x2' photographs feature a female diver and runner in stop motion (compiled from video / computer frame grabs).

Video effect designed in collaboration with Steven Jones.

Photography Credit: Paul Greene

(figures 41-60) Centinels

- Artful Park II*, Centennial Park, Sydney, Australia 1995. Catalogue available.
- Monash University Gallery, Melbourne, 1997. Catalogue available.
- Hull Time-Based Art, Hull, UK, 1998. Catalogue available.
- The Canberra Sculpture Forum, Canberra, 1998. Catalogue available.

6 camera obscuras entitled *Centinels* merged the camera obscura with the flowerpot, the birdhouse, the portable toilet, the television, the mirror box and the wheellie-bin; appropriate objects from which to frame the park.

Centennial Park was designed in 1888 in the pattern of an English "Gardenesque" park. Its radical reshaping from Australian sandhill and swamp was an attempt to correct the landscape "down under", in a sense to turn this small part of Australia "right way up"

In *Centinels*, the scrambled intentions reflected in Centennial Park are linked with the spirit of these Victorian inventions. Viewers are invited to take a low-tech stroll and literally turn the park upside down.

In *Giovanni della Portalloo*, (figure 41-42) a portable toilet was converted into a walk-in camera obscura. A lens on one wall formed an upside down image on the body-sized screen inside. It pays homage to Giovanni della Porta, the thirteenth century Italian, author of *Natural Magick*, and the first to write extensively about the camera obscura effect.

A terracotta flowerpot (*Floral Views*) (figure 43-44) was converted into a camera obscura by drilling a viewing hole and a hole containing the lens in opposite ends. A small screen was placed inside. The projection had the proportions and feel of a cinema screen. Flowers matching the ones imaged were planted in the flowerpot.

Parke's Mirror Box (figure 45) featured a wooden camera obscura box covered in mirrors, aimed at the empty podium where the former statue of Sir Henry Parkes, founder of Centennial Park (1888) once stood (it was vandalised under mysterious circumstances and placed in storage in 1970). An image of the former statue was painted on the screen upside down, so the projected view included the statue image in position on the existing podium.

In *Throw Away Camera*, (figure 46-50) a large orange wheelie bin was mounted on its side on a rotating pedestal and converted into a camera obscura by installing a lens in the bottom and a screen midway. Viewers saw the image by peering through the refuse opening. The turning pedestal allowed the viewer to swing the bin 360 degrees for an upside down panoramic view of the park.

In *Federation Television* a television set was converted and placed on stilts. The viewer peered into the back of the television, which framed the site of the Federation Day celebrations in 1901 and 2001 – it is a popular place for public media events.

Birdie (figure 53) was located at the Duck Pond surveying the pond, birdlife and the avenue.

Initially in collaboration with Laurence Hall.

(figures 54-60) *The Traveling Camera Obscuras*

- *Upwardly Mobile Home*, Blanden Memorial Art Museum, Ft. Dodge, IA, 1994.
- *The Removalist*, Dubbo Regional Gallery Dubbo, NSW 1995.
- *Tamworth by Bus*, Tamworth City Gallery, Tamworth, NSW 1996.

Large vehicles, such as a motor home, bus and truck, have been converted into walk-in, sit-down, traveling camera obscuras which move about the city or which may be parked in various sites in the spirit of a traveling carnival show

In 1994, a 26' motor home (figure 54) was converted into a pinhole camera traveled to 10 sites in 10 days (*Upwardly Mobile Home* was sponsored by the Blanden Memorial Art Museum, Ft. Dodge, Iowa, USA. June, 1994).

Another conversion took place in a removalist's truck in Dubbo (figure 56) in November 1995 (*The Dubbo Removalist*) and in Tamworth (*Tamworth by Bus*) in May 1996. For the Tamworth exhibition, the bus was also used as a large camera to photograph the city (figures 56-60). A workshop on constructing pre-cinema optical toys accompanied the obscura on wheels.

Assistance provided by Ellen Zweig, Glenn Davis and Gordon Garrard

(figures 61-65) *In Stable Image*

All but 4 of the myriad of naturally occurring holes in the corrugated tin stable (sheering shed) of a sheep station in Birmbi, NSW, Australia were blocked with clay, reducing the overall amount of daylight perceived inside the stable. Small screens were placed a few inches from each of the 4 remaining holes to allow the camera obscura effect to occur. In the stable, light reflecting from the brightly lit scene outside travels through the 4 holes and forms upside-down, coloured moving images on each of the small screens.

By sitting in the middle of the quiet, darkened shed, the viewer may watch a pinhole movie of sorts as the clouds stream across, moving from one screen to the next.

(figures 71-75) *Apparent Line II*

•In *Down the Drain. An Exhibition Which Explores Those Spaces No One Ever Likes to Talk About*, Fine Rats International, Birmingham, UK, 1995. Catalogue.

In *Apparent Line*, photographic duratran images of the Australian landscape are severely reduced to the horizon and inserted into the ground, initially appearing to be suspended in water. Although it is the symbol for achievement in Western traditions (significantly evidenced in photographic convention), the horizon is defined as "the apparent line that divides earth and sky". From a distance the image/landscape appears saturated and intact, but upon closer inspection it disintegrates into a pattern of dots.

In this installation, a 30'x80' geometric configuration of 6" wide drain conduits in the ground of an empty construction site were utilised. Drain covers were removed and single fluorescent tubes were installed in the drains. 7 6" wide photographic duratrans (backlit by the fluorescent tubes) which ranged from 5' to 10' in length were fitted into the drains; drain covers were replaced over the fluorescent tubes between the photographs.

Photography Credit: Fine Rats International.

(figures 68-70) *Apparent Line I*

•First Draft, Sydney, NSW 1991

In *Apparent Line*, 7 duratran photographic light boxes severely reduced the Australian landscape to the horizon. See above.

Photography Credit: Paul Greene.

(figure 38) *Aidslink*

A virtual gallery project co-ordinated by Crusaid and Cambridge Darkroom Gallery in collaboration with the University of London.

My contribution combined the approach of 19th c French physiologist E.J.Marey with video/computer imaging, accessible through the World Wide Web.

This vertical image of a suspended diver was translated for the AidsLINK project (originating from *To Fall Standing*). Our experiences with Aids and medical imaging technologies remind us daily of the vulnerability of our bodies.

(figure 76-78) *Descending Metaphors*

•*Frames of Reference Aspects of Feminism and Art*, Artspace at The Wharf Sydney, NSW 1991 Catalogue.

•*Lawyers, Guns and Money*, Experimental Arts Foundation, Adelaide, S.A., 1997 Catalogue.

In *Descending Metaphors*, new terms which emerged during the Gulf War were isolated, to emphasize the ways in which the language of international conflict operate to render invisible the human realities of war

Terms scrolled silently, but incessantly down a twenty foot tall computer controlled monitor tower 7 Amiga computers were located in the base of the tower Scrolling effect designed by Jason Gee.

The terms (55) included

Negative Human Response	Smart Bomb	Surgical Strike
Soft Target	Area Denial Weapons	Destruct Radius
Indian Country	Scud Missile	Attractive Target
Asset Suppression	Lucrative Target	Attrition Campaign
Significant Terrain Alteration	Surface Engagement	Maritime Interdiction
Post-Crisis Environment	Incontinent Ordnance	Collateral Damage
Sortie	Ballistically Induced Aperture in the Subcutaneous	
Environment		

Photography Credit (figure 76): Paul Greene

Photography Credit (figure 78): Alan Cruikshank

(figures 78-80) *Self Imaging: The Family and the Photograph*

•*Australian Regional Xchange*, Praxis Gallery Perth, Western Australia;

•*Performance Space*, Sydney, NSW 1988,

•*Photospace*, Canberra School of Art;

•*Cambridge Darkroom Gallery*, Commission, Cambridge, England, 1994.

Self-Imaging focused on the family portrait, both as an image and an institution. Initially families from Sydney, NSW and Perth, WA were invited to compose their group portrait with my camera. They determined the arrangement, location and framing - and triggered the shutter with the aid of an extension cable release. The "staging" was recorded on videotape. In the exhibition, an enlarged contact print of each family's session was shown alongside the final edited versions: their favorite image on top; my

choice on the bottom. Three video monitors presented the unedited version of the process.

The visibility of difference between the groups was reduced dramatically from the video documentation to the final selection - exposing the family portrait as both a distillation process and a framing device. This project was also the basis for a Cambridge Darkroom Commission, in which 17 families from the Cambridgeshire area participated *The Family Shoots* was exhibited in conjunction with *Signals: Festival of Women Photographers in the UK, 1994*.

Exhibition Notes on Works-in-progress (not pictured):

The Pigeon Post

This exhibition (in-progress) will reference the operation of the Pigeon Post to and from besieged Paris during the Franco-Prussian War (1870-1871).

The Pigeon Post provided the catalyst for the rapid development of microphotography which allowed messages to be vastly miniaturized (a technique not substantially revived until microfiche in the 1950's) and transported by pigeons (in a small shaft secured to their tail feathers). Amongst the official and ministerial dispatches, 95,000 private messages were also conveyed (in French and English).

The exhibition will suture the compelling chronicles surrounding the Pigeon Post and the technical process / apparatus of microphotography with more contemporary imaging and communications systems (such as the internet), sculptural elements and narratives.

In the Library

July 2002, Odegaard Library, University of Washington Summer Arts Festival, Seattle, WA.

Three writing desks will be converted into drawing machines on wheels. A lens will be installed in the side of the desks and reflected into frosted glass on the desktop. Tracing paper will be available so that participants can roll their table into the desirable position from which to sketch in the library

Small photographs will accompany the trio of desks drawing connections (factual and humorous) between historical technological inventions, optics and the library

Beach Zoetrope (Proposal only)

In the spirit of nineteenth century chimeras, this playground equipment combines the zoetrope with the merry-go-round. A spinning drum would also have seats around its peripheral so that children may ride on it; parents pushing the zoetrope would look through the slits between image panels and watch the chronological movement created through successive positions of the image inside. Since the zoetrope was to occur at the beach, it would have featured flora and fauna of the area.



06

700 Million Miles an Hour... 1999
Camera obscura/fibre optic relay
Central Australia



07

700 Million Miles an Hour...
Camera obscura/fibre optic relay
London Picadilly Circus



08

700 Million Miles an Hour...
Diagram



09

Lord Nelson on his Head, 1994
Silver print, Installation mock-up



11

Australia Live, 2000
Cardboard, lenses, paper lights



12

Australia Live
Installation view



13

*Australia Live: Draw Yourself in
Your National Costume*



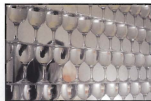
14

*Australia Live: Record a
Message to John Howard*



16

Simply Smashing, 2000
Glass, water, plexi-glass



17

Simply Smashing
Installation view



18

Simply Smashing
Detail



19

Simply Smashing
Installation view



07

700 Million Miles an Hour...
Camera obscura/fibre optic relay
London: Picadilly Circus



08

700 Million Miles an Hour...
Diagram



09

Lord Nelson on his Head, 1994
Silver print, Installation mock-up



10

*Apparatus for Sensational
Emotions, 1995, Installation view*



12

Australia Live
Installation view



13

*Australia Live: Draw Yourself in
Your National Costume*



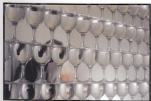
14

*Australia Live: Record a
Message to John Howard*



15

*Australia Live: Draw a map of
Australia*



17

Simply Smashing
Installation view



18

Simply Smashing
Detail



19

Simply Smashing
Installation view



20

Simply Smashing
Installation view



26

Bird's Eye View, 1998
Installation view - Sydney



27

Bird's-Eye View
Lens view



28

Bird's-Eye View
Installation view - Sydney



29

Flash Rate, 1995
Installation view - Birmingham



31

To Fall Standing, 1993
Installation view - Sydney



32

To Fall Standing
Installation view - Sydney



33

To Fall Standing
Installation view - Helsinki



34

To Fall Standing
Detail



36

To Fall Standing
Screen view



37

To Fall Standing
Screen view



38

To Fall Standing
10' C print



39

To Fall Standing
10' C print



22

Liquid Scrutiny...
Detail



23

Liquid Scrutiny...
Detail



24

Liquid Scrutiny...
Lens view



25

Liquid Scrutiny...
Installation - Sydney



27

Bird's-Eye View
Lens view



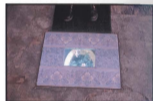
28

Bird's-Eye View
Installation view - Sydney



29

Flash Rate, 1995
Installation view Birmingham



30

Flash Rate
Detail



32

To Fall Standing
Installation view - Sydney



33

To Fall Standing
Installation view Helsinki



34

To Fall Standing
Detail



35

To Fall Standing
Screen detail



46

Throw-Away Camera, 1995
Wheelie-bin camera obscura



47

Throw-Away Camera
Screen view - Sydney



48

Throw-Away Camera, 1998
Wheelie-bin camera obscura



49

Throw-Away Camera
Wheelie-bin camera obscura



51

Federation Television, 1995
Television camera obscura



52

Federation Television
Screen view



53

Birdie, 1995
Birdhouse camera obscura



54

Upwardly Mobile Home, 1994
Traveling camera obscura



56

Tamworth by Bus, 1996
Bus Camera



57

Tamworth by Bus
C print



58

Tamworth by Bus
C print



59

Tamworth by Bus
C print



42

Giovanni della Portaloo
Screen view



43

Floral Views, 1995
Flowerpot camera obscura



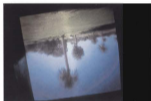
44

Floral Views
Screen view



45

Parkes Mirror Box, 1995
Box camera obscura



47

Throw-Away Camera
Screen view Sydney



48

Throw-Away Camera, 1998
Wheelie-bin camera obscura



49

Throw-Away Camera
Wheelie-bin camera obscura



50

Throw-Away Camera
Screen view - Bridlington, UK



52

Federation Television
Screen view



53

Birdie, 1995
Birdhouse camera obscura



54

Upwardly Mobile Home, 1994
Traveling camera obscura



55

The Removallist, 1995
Traveling camera obscura



In Stable Image
Stable interior

62



In Stable Image
Camera obscura installation

63



In Stable Image
Camera obscura installation

64



In Stable Image
Camera obscura installation

65



Apparent Line II
Installation view diptych

67



Apparent Line II
Detail

68



Apparent Line II
Installation view - Birmingham

69



Apparent Line II
Detail

70



Apparent Line II
Installation view

72



Apparent Line I, 1991
Detail

73



Apparent Line I, 1991
Installation Sydney

74



Apparent Line I
Detail

75



66

Apparent Line II, 1995
Installation view - diptych



67

Apparent Line II
Installation view - diptych



68

Apparent Line II
Detail



69

Apparent Line II
Installation view - Birmingham



71

Apparent Line I
Installation view - Birmingham



72

Apparent Line II
Installation view



73

Apparent Line I, 1991
Detail



74

Apparent Line I, 1991
Installation - Sydney



76

Descending Metaphors, 1991
Installation view



77

Descending Metaphors
Detail



78

Descending Metaphors
Installation view



79

The Family and the Photograph
Silver print, video, 1988