MAKING

A HUMAN MARK

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BRIDGING THE GAP BETWEEN TRADITIONAL AND NEW MEDIA

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THESIS ABSTRACT

This thesis is submitted in partial fulfillment of the requirements for the degree of Master of Fine Arts, and is approved by the MFA Design Review Board of the Massachusetts College of Art in Boston.

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My interest in the field of new media, and the subject of my thesis investigation, is to attempt to synthesize tactile, material objects and electronic technology into discrete new media objects using sound, light, video, and the human form as mediating tools.

The principles of new media design are discrete representation, numerical representation, automation, and variability, and these precepts make manifest the human condition. Coming from the field of traditional graphic design, where static images deliver a two dimensional message, I have been encouraged to explore space, volume, time and dimension using tools that take advantage of, and emphasise all of our human senses. Communication design has become a hybrid of complementary technologies and media, and designers are uniquely positioned to create work that reflects life, and humanity.

In this thesis investigation, I have tried to bridge the gap between traditional graphic design and new media design, bearing in mind that while the visual dialect and idiom may change, there is always unity across diverse fields.

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INTRODUCTION

Graphic designers, traditionally, have worked in the arena of material objects – the written word, the printed page, the bound book – recently expanding their horizons to include dynamic design, usually, although not always, confined to the screen of a computer monitor. The emerging field of new media design, incorporating everything from film to performance art, is being simultaneously approached by people from the worlds of the arts and the sciences, and we are offered a rare opportunity to synthesize those offerings into compelling and stimulating communications between two sometimes polarized dichotomies.

The computer, once held in the domain of scientific research, but now ubiquitous worldwide, has democratised the dissemination of information, and challenged old hierarchies. Humankind is constantly evolving, and the means by which we communicate is always in flux: we have developed from an oral tradition, to a visual culture, and now new media offers us further, and perhaps more profound, transformations. As a global community we have the opportunity to become more aware, more conscious, more responsible about humanity. Almost forty years ago, Marshall McLuhan suggested that if we are to have any understanding of social and cultural change, we must first have a more complete knowledge of the way media work as environments.

Our visual culture is fast becoming a media culture. Computers and digital equipment are affordable, compact and easy to use. There is a generation of children who have grown up on a visual diet of television, movies, the internet and video; for them, these technologies are as flexible as a sheet of paper. We have limited our interaction with technology to one of passivity; there is a simple give and take relationship, with little evidence of influence either on, or by the viewer. As graphic design-

ers, I believe that we can learn to bring our audience closer, and to introduce our context to them by allowing their responses to inform our decisions more carefully. We can learn to consider transition and interpretation, sense and nonsense; we can shuttle back and forth between order and disorder, form and content.

We can, with a simple command, produce countless copies of seemingly flawless documents. We have been persuaded to create an endless supply of ephemera, but none of what we make reflects us, our fundamental humanity, our fallibility. The element of chance is a magical, and essentially human warp in any narrative fabric; abstraction, and the beauty offered by serendipity are the weft. I believe that by introducing corporeality and materiality to the electronic media, we can introduce a new richness to this evolving language that will remind us of those things.

Prior to the advent of new media, graphic design was two-dimensional and static. We now have the opportunity to incorporate into our work the elements of time, motion and sound. Communication design is now a discipline of numerous, hybrid media. We are able to take advantage of all of our senses, and create work that, like life is four-dimensional. There has been a coincidental change in our tools of communication; where once all the work we did was haptic, now everything we do is mediated by technology.

Coming, as I do, from a traditional graphic design background, I seek to invest my work in new media with the same qualities that make a print campaign successful. There is a wealth of information contained in the physical construct of a printed article, and we respond to it based on those qualities. The size, the shape and the weight of an object inform our response to it. The quality of the material from which an object is fabricated – whether it is soft or hard, smooth or sharp – all inform our response to the object. The sound a printed object makes when you turn the pages, or unfold it, or tear it. Opening the pages of a newly printed book, we smell the ink used to print the pages; an old book being opened for the first time in years greets us with the smells of it's storage. Before we begin to look at the content of a book, we understand its meaning within our lives; we know where it has been in a human context. We use our human senses to inform us. This quality especially, is one which I would like to bring to new media: how does the work I produce relate to us as humans. Can I, using the tools of new media, create objects that facilitate and promote enhanced understanding and meaning.

Lev Manovich defines new media as, "new cultural forms, which depend on computers for presentation and distribution: Web sites, vir-

tual worlds, virtual reality, multimedia, computer games, computer animation." There are four basic principles of new media: new media objects are made up of numerous discrete media elements, like sound, image, video and text; each can exist separately, but they can be repeatedly combined in numerous, different iterations. This variability is another important characteristic of new media objects. Media can be described and manipulated mathematically; for example, the data of a photograph is recorded and saved in the computer's database as a series of numbers, and the contrast, size, and shape of the image can be automatically altered by applying an algorithm to it. This automation of tasks is the fourth principle of new media. Software that allows the user to delegate tasks to the computer are all around us: word processing, or image manipulation programmes assemble information from the computer's database and formats documents based on that information. The computerisation of culture does not, however, suggest that we discard everything we have learned from traditional media. Instead, it affords us the opportunity to reconsider and redefine existing media.

Unlike the paradigm of traditional graphic design, the electronic media are inherently mutable and immaterial. We are successfully freed from a uni- or two-dimensional space, and from the specificities of time and place. We can explore the relationship between language, image and viewer; it's not so much about multiplicity as it is about that synthetic space in between. That space exists only because of electronic media. By exploiting these unique qualities, we are able to fragment texts, link image and sound, and make possible new designer/viewer interactions, new temporal unfoldings.

In traditional graphic design we talk of texture, both visual and tactile, and of the value of these to a good design solution. In a well-designed print object, visual texture is created by using type in a sensitive, and informed way. Everything is considered; the weight of the font, the type size, leading and tracking, the line measure, the figure and the ground. In new media, typography is no longer harnessed to the page, nor is it necessarily revealed all at once. Type, and all the related typographic elements are allowed to move freely, and occupy space, utilising all the expressive qualities of both traditional and dynamic design. Time, and the manipulation of time, is in the hands of the designer. We have, with the tools of new media, the opportunity to dynamically transform type, and in so doing, manipulate meaning, and responses.

Although reading may give form to time, it does not have any influence in time. Book designers consider pacing, and rhythm when designing a book, but how the book is used is beyond their reach. Just as there is no trace of speech when words have been spoken, so too there is no evi-

dence of the time spent when a book has been read. Gesture, and the personality of the writer are removed from the experience of reading. The product of reading is invisible, and intangible. Typography, the set of conventions by which we make language visible, is one of the means by which we communicate. It is the mechanism by which we give form to the fluent inflections and rhythms of speech, but it removes the immediacy of the spoken word. In this way, typography becomes the trace of our experiences, a means of marking our humanity. We use the density of letters and sentences and paragraphs, pages and chapters and books to communicate. The relationship between letters, and words have as much ability to communicate as the letters formed into words do. These spatial relationships that refer to boundaries and divisions are just as important in an environment as they are on the page. The relationship of objects, to each other and to the viewer are reciprocal, and need to be understood and examined.

In traditional graphic design we produce vast quantities of useless information that has no durability. We fill up landfills around the world with printed materials that have no significance, and no impact on the way we think or behave. In many cases, there is no trace of these objects; once they have been discarded, they are generally forgotten. They might return to us in a recycled form, but we do not recognise them, and we use them without much regard. There are, however, many printed objects that do endure, and do have a significant impact on humanity. and the course of civilisation. These we protect, and, in many cases, regard with reverence and solemnity. They have an enduring influence on us individually, and collectively.

When computer use became more widespread late in the twentieth century, there was a great deal of discussion about the expected increase in productivity and efficiency, and the preservation of natural resources that would result from using these new tools. These new technologies have, indeed, made communication so much easier; as we saw in the sixteenth and seventeenth centuries when book printing became mechanised, technology has democratised literacy and information, and as time goes by, more and more people, even those living in places that were previously inaccessible, have access to more data than they could ever use.

The means by which we are all communicating, however, are by their very nature, transient and ephemeral. Products that are produced using new media technologies exist only if there is a supply of energy, if the hardware exists, and if we have the computer switched on. This quality militates against new media being meaningfully impactful. While the ability to continually modify and alter these objects means that the new

media environment can respond dynamically to the world environment, the lack of permanence suggests that the changes and responses are useless.

In many ways, new media technologies are uniquely suited to reflecting the human condition. Human lives are in constant flux; we change, and adapt and transform ourselves in response to our environment on an almost daily basis. New media has all the elements to correspondingly demonstrate those changes: we have multiple channels through which the process of communication can occur. We can layer sound and image in endless configurations, increasing the potential of connection with our viewer. Meaning and understanding are formed in the viewer's mind, based on the ways in which we have framed the content. I believe, however, that without an organic, tactile, or material basis, the reflection is flawed. Our interaction with new media need not be only physical, it must be emotional and intellectual as well, but in order for communication in new media to be resounding and profound, I believe that we must incorporate all three.

The goal of this thesis investigation is to demonstrate that by taking advantage of human behaviour, and our senses we could give physical form to digital information and create work that is physically and emotionally engaging, and visually elegant. In making this investigation into new media, I have tried to refer to traditional media, believing firmly that there are historic continuities between the old and new, and that many of the principles of new media are to be found in traditional arts; avant garde cinema in particular, explored many of the same techniques we are currently studying. The projects I have worked on while building this inquiry have all attempted to make the viewer/participant aware of themselves in the space, to discover the construct of the space and to build an experience that can be recognised, shared, recollected. Ann Hamilton wrote, "You feel through your body, you take the world in through your skin." In my work, I have tried to create experiences that are credible and honest, and that affirm the continuity of the skin, by enclosing the viewer in a unified form that allows for physical and conceptual immersion. During the process of my investigation, while I have simultaneously been building objects by hand, coding electronic components and learning new software programmes, I have wondered what it means to make by hand in a world where our ability to virtually project ourselves extends far beyond our physical reach.

THE LANGUAGE
OF INSTALLATION DESIGN

Installation design refers to new media works that occupy space. The work may be created using sound, light, video, text and image either separately, or in various combinations. In some cases, the space may even be empty, with the space alone providing the expressive content. The environment that is created offers the viewer an experience that is visual, auditory and perceptual. There is a real awareness of objects in space, and of the relationship between those objects; viewers are not only witnesses to the installation, but become collaborators with the space, (and hence the designer), dynamically redefining it as they move through the installation. This dichotomy of viewer and performer, sound and silence, handmade objects and computer generated expressions is characteristic of this type of work.

My interest in installation design grew from an interest in spatial organisation. I am interested in the relationships that exist between objects and the environment, and in the continuum of connections between maker and object, object and space, and object and viewer. I have tried in my work to focus on the material and temporal qualities of new media design. As a communication designer, I am interested in the dialogue that exists between the designer and the reader, and in that collaboration being a fundamental part of community. I have isolated three principles that I think are important in the context of new media communication – interactivity, projection and experience. While these do not address all aspects of new media design, they are central to the work I have made during my thesis investigation.

INTERACTIVITY John Dewey in *Art as Experience* stated that, "Communication is the process of creating participation, of making common what had been isolated and singular; and part of the miracle it achieves is that, in being communication, the conveyance of meaning gives body and definiteness to the experience of the one who utters as well as to those who listen."

The Merriam-Webster Dictionary defines the verb, to interact, as "to act mutually; to perform reciprocal acts." Interaction can take place between objects that are in motion, or between objects that move based on the motion of other objects; for example, the solar system is made up of several bodies whose interaction, based on gravitational forces, is axiomatic and automatic. In order to understand the behaviour of one of these solar bodies, it is essential to understand the behaviour and influence of each relative to the others.

Interactivity can also be defined in social, or human terms, and in computing or scientific terms. In a social sense, interactivity is the continuum of communication in which simultaneous and continuous exchange and feedback occurs; these reciprocations carry a social, binding force. If we consider examples of interactivity in our daily lives – conversations, playing games, reading, watching a theatre or musical performance – all of these acts teach us something about the nature of interaction. Each requires cooperation and coordination. Inherent in these interactions are tacit negotiations and agreements that allow for a natural progression of the activity. There are multiple signals to be aware of – spontaneity, interruption and patterns of sequence to be considered. In these examples, interactivity is a complex, dynamic coupling between two or more parties.

In computation, interactivity is the dialogue that occurs between a human being and a computer program. The computer accepts input – data from a keyboard, clicks from a mouse, audio input from a microphone – from the human, and responds to that input by displaying images and text, motion video sequences, creating sounds or doing actions ie: printing. This sort of action/reaction allows only a limited degree of interaction; the pathway through the system is pre-determined, and the system does not influence the interaction. However, as computer programmers incorporate greater opportunities for more anthropomorphic responses by the system, with increased consideration of the coordination between planning and improvisation, users become more engaged in learning the computer environment, and are actively responsive to dynamic changes in the interactivity. Computer games are considered to be immersive environments of interactivity in which the user is emotionally, intellectually and physically engrossed in the narra-

tive structure.

In order to understand interactivity a little more, we are obliged to consider perception. Perception is the sensory mechanism we use to understand our environment. For example, when we enter a new environment, we move about the space, looking around, touching objects, gathering sensory information about the space. Our movements, and our senses work together to give us an integrated experience. Understanding these initial explorations gives us an important insight into designing interfaces: interactive projects must give the user an immediate sensory feedback so that an understanding of the structure and functionality of a software environment can be quickly learned.

Interactivity in the context of new media allows designers to recreate that primitive place where storytelling, singing and acting were our means of transferring information, and communicating. Using electronic sensors, we are able to programme computers to respond to human behaviour in a manner that closely resembles, and is easily recognisable as our own. Designers create a context where users can explore, discover and pose questions; but they should also be able to change their minds in an adaptive and responsive way, depending on how information is delivered and encountered. The interactivity that is built into a new media environment should consider the goals of the user, and should direct the user meaningfully and intentionally. This direction of the user, encouraging their participation allows them to understand the space on their own terms, and to make sense of it in a personal way. This comprehensive experience of interaction, equivalent to a conversation, or a performance in which the user is both a spectator and a performer results in a richly rewarding experience.

PROJECTION When, in 1895, the Lumière brothers presented their new cinematographe, they believed film to be a medium without a future. They suspected that people would quickly grow tired of images that they could just as easily see by walking out into the street. During their first public film screening they presented several films, one of which was of a train speeding directly toward the audience. The resulting panic as the public rushed to empty the theatre is one of cinema's most enduring myths.

Cinema engages us in the image of the world. We react as if what is represented on the screen actually exists in front of us. We express real emotion by laughing, crying, applauding, all in response to the play of projected light and shadow. Roland Barthes said that in the closed space of cinema, there is no circulation, no movement, no exchange. In the darkness, spectators sink down into their seats as though slipping into bed. The cinema becomes a cocoon, inside which a crowd of relaxed,

idle bodies is fixed, hypnotised by simulations of reality projected onto a single screen. It is our ability to invest in the fantasy of cinema – somatically, sensorially, conceptually – and to simultaneously comprehend and engage with it as theatre, that forms the contours of a complex reaction between sense, memory and technological mediation.

When we go to the movies, we have an understanding of the grammar that exists for that medium. We are not obliged to learn a new vocabulary each time we visit the cinema. We understand the parts that make the whole: the cinematic technologies, the cinema space, our position – seated and facing forwards – within that space. We recognise our complicity as passive observers actively engaged in the construction of a sensory space where our investments of illusion, trust and passion take place in full and brilliant technicolour. This is the cinematic experience; a multimedia event at which our expectations of entertainment, engagement in a narrative, and immersion in a fantasy that sometimes feels real are realised. We have expectations of the movie, but no influence over it; in the context of a movie theatre, we cannot change the film's duration, we cannot stop to consider the narrative, or replay something we especially liked, or didn't understand. We understand implicitly that we are the variable in the equation; in cinema, and in television, the audience is always generalised; before we walk into a cinema or turn on the television we are already virtual. We, and not the movie, are artificial.

Roland Barthes described our fascination with cinema by saying, "the dancing cone which drills through the darkness of the theatre like a laser beam. This beam of light seems to bore a keyhole for our stupefied gaze to pass through." Optical devices – cameras, telescopes, microscopes – give us images to dream with, and the flickering of cinema's light constitutes the most abundant and engrossing example of an interface for dreaming. Fable and fantasy, fact and fiction, imaginary and real, flat and dimensional, material and ethereal, pretense, passion, and visceral response, are all tropes common to audiovisual recording devices. The recognition and interpretation of these tropes is important to us as designers, and as viewers. They will advise and guide us in both the making, and in understanding the narratives we describe and experience. The philosopher, Walter Benjamin, wrote that, "the camera introduces us to unconscious optics as does psychoanalysis to unconscious impulses." And John Berger, in *Ways of Seeing* writes, "It is seeing which establishes our place in the surrounding world; we explain that world with words, but words can never undo the fact that we are surrounded by it. The relations between what we see and what we know is never settled."

In experimental film-making, and in installation art where light is projected, we see a shift from the traditional viewer experience in which the point of view is determined by the director, mediated by the camera. The viewer's gaze is drawn away from the screen to the surrounding space in a more accurate and natural representation of the inherent mobility of the camera itself, and by extension, of the human body in general, and the eye, specifically. "Our organs are no longer instruments; on the contrary, our instruments are detachable organs. Space is no longer what it was in the dioptric, a network of relations between objects such as would be seen by a witness to my vision or by a geometer looking over it and reconstructing it from the outside. Rather, it is a space reckoned starting from me as the zero point or degree zero of spatiality. I do not see it according to its external envelope; I live it from the inside; I am immersed in it. After all, the world is around me, not in front of me." wrote Maurice Merleau-Ponty in *Eye and Mind*.

The experience of projected images in an installation is different than in a cinema. The projections can be split, they can overlap and intersect, they can be multiplied, serialised, rotated, made significantly smaller or so large that we cannot appreciate what we see. Images can be simultaneously black and white, and colour; we can isolate frames from a movie making what was dynamic, static. In contrast to the mesmerising fascination effected by the darkness of the cinema, within which the single bright screen focuses our minds in its immutable grip, the gallery engages the viewer in a wakeful state of perception. In this environment, we are invited to not only look at the screen, but to search beyond it, to the surface onto which light is projected, to the relationships established between one image and the next. We are invited, even obliged, to explore and discover the nuances of the space. This multidimensional viewing suggests a transparency of vision. The viewer's attention is re-directed from the illusion on the screen to the illusion of the surrounding space – to the physical mechanisms and properties of the moving image. We have the opportunity to appreciate the projected beam of light as a sculptural form, to examine the fabrication of the screen, to understand the camera as an extension of the body's own intellectual, emotional and ocular recording device, to investigate the formal structure of the film frame, (film dimension, frame rate, use of colour), and to experience the seriality of the image sequence and the juxtaposition of multiple images.

In installation art, the multi-dimensional space becomes an important element in the experience of the installed work. Here, we encounter a combination of architectural perspective, volume and temporality. In disassembling the space of conventional cinema and introducing multiple viewpoints we produce a volumetric form which in its ephemeral yet
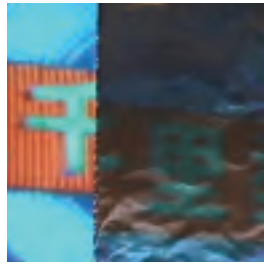
tangible solidity fuses the properties of film, sculpture, performance, and conceptual eloquence and manifestation. The surface of the film screen has been breached, freeing the viewer to experience an infinite range of viewpoints and planes by physically moving through the space and around the screen. Artists and designers have made a conscious and concerted effort to dismantle the traditional definitions of the object in space, and our, the viewers, relationship to that object.

In this described model of film and projection, the viewer no longer shares the space of the gallery with the artwork, but is enclosed by it. This envelopment which creates a profoundly corporeal experience is also strongly sensory. Creating environments that wrap our viewers in rich and lush sounds and images that provoke strong somatic responses, and metaphorical associations allows designers to weave a complex fabric of meaning.

Projection installations either rely on, or manipulate, the established traditions of observation. The semiotics of media – the foundations of communication, objectivity, mediation and aesthetics – all inform the work of projection installations. They form a porous membrane surrounding technology and constituting an intervention between the spaces of the cinema, the gallery, and the public arena with their respective histories, hopes and aspirations. They are an interface. The body and its disposition as both subject and object make it an interface.

Interface is an ambiguous term; it can be used as a noun, a verb and as an adjective with a wide range of meanings and understanding. It is usually referred to as the surface forming a common boundary between two spaces, or to the point where interaction between the two systems occurs. Interface, in modern technological usage refers to the visual representation of a computer's operating system, and the applications of that system. It's secondary meaning refers to how humans interact with that technology. Since we understand interface to relate to surface, both physically and conceptually, where two or more bodies meet, it has also come to mean a connection, a hierarchy or a relationship of some description.

In a projection environment then, all the elements constitute an interface. The architecture of the space, the objects within it, the projected light, the surfaces, the viewers, and the designer all interface with each other. They share common boundaries on which sense and reflex, simulation and cognition, history and psyche interact. The environment offers a changing interface where viewers engage as either active or passive actors within a layered, dynamic construct. These environments are not closed or insular, neither purely analytical nor aesthetic, nor idiosyncratic. They are unified in a continuous skin that binds the site and
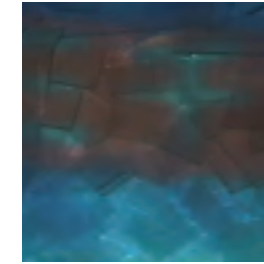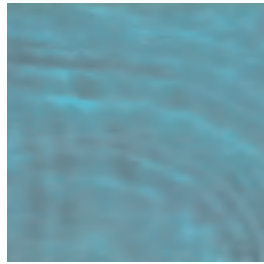
the viewer. They present to the designer an opportunity for reflexive contemplation on juxtaposing computer-generated imagery and auditory stimulation with our somatic, carnal reactions to those stimuli.

Projection installations are hybrid technologies; designers can direct and guide the experience of the viewer using sound, light, time, and dynamic and static images. The emphasis in installation design is on a sequence of events in visual and acoustic space. There is a simultaneity of the present and past, mediated by the experience of the installation. The designer sculpts the space, creating light, video and acoustic works that create an environment in which the viewer is immersed in the experience. Just as we are responsible for framing the content in traditional media, for presenting information in such a way that the reader understands and appreciates the message, so too are we responsible for the framing the message in an installation. The designer creates the potential for the participant to understand the work on various levels, but it is the viewer who has the responsibility of fusing the scenes into a coherent personal message. This ambiguity means that the viewer must spend time with the work, and their experience will be dependent on how much they are willing to invest in understanding the work. The meaning of an installation comes on a more unconscious level as the images of the space, the relationships between objects in the space, and the interaction of viewers with the space wash over you. John Berger wrote that, "In every act of looking there is an expectation of meaning. This expectation should be distinguished from a desire for an explanation. The one who looks may explain afterwards, but prior to any explanation, there is the expectation of what appearances themselves may be about to reveal." The experience of an installation is shared between the designer and the spectator, and the presentation of a message, and the reading of that message is a dialogue between the two.

There is, in projection installations, a curious synchronicity of present time and an electronically mediated present. Somehow the viewers have become the performers. By moving through an installation, they change the nature of it dynamically. The traditional mise-en-scene of theatre and cinema has shifted to mise-en-abîme, and we are no longer ourselves. We are not the spectators in a movie theatre: we are a dynamic part of the installation, sharing the experience, being responsible for the experience, and being the experience.

EXPERIENCE   I stated in my abstract that new media design that does not truly reflect our humanity is not rich or satisfying. I believe that in order to properly achieve this, to demonstrate the vulnerabilities and strengths of mankind, designers are obliged to consider, to orchestrate and to control authentic, accessible and understandable experi-

ences for our viewers.

John Dewey in *Art As Experience* states that, "Experience is the result, the sign, and the reward of that interaction of organism and environment which, when it is carried to the full, is a transformation of interaction into participation and communication." In other words, when we inter- act in our world, we experience. Life is a series of experiences. The mechanism by which we perceive life is our senses; sight, smell, taste, hearing and touch; they mediate all that we know and learn. Each of these senses is uniquely designed to facilitate life. Usually, all five of the senses work in concert to allow us to experience, and understand an event; sometimes one or more are subordinated while a different one is heightened, also so that we might assimilate the information we gather, and react most appropriately. For example, in a darkened room where it is difficult to see, our sense of hearing and touch will be heightened to compensate for our "lost" sight.

Experience takes place all the time, all around us; life is the material of experience. Experience is all the events that make up the conscious past of a community, or a nation, or humankind. All that we do is mediated by our own experience, our own cultural foundation. It is this experi- ence that leads to a form of knowledge and understanding that has a far richer value and significance than mere codified information. People are inherently fascinated by other people; we spend our lives experienc- ing endless, beautiful encounters with humanity. These encounters we represent and share with our community in many different ways – as conversations, descriptions, narratives – that explain our experiences as empathic and responsive human beings.

Communication is the process by which information is exchanged between individuals using a common system of signs, symbols or behaviour. It is the technique we use for transmitting and expressing our experiences. For communication designers, this is what we do. We gather, organise and edit information; we clarify and modify it in order to add meaning and merit. We manipulate it in order to amuse, per- suade or challenge. In the same way as music in an opera or a movie provides auditory clues about how to think or feel about the action tak- ing place, graphic design informs the viewer about how to respond to the message. Design is about doing; it is the active process of commu- nication.

Before ideas were painted on walls, carved into stone, or printed in books, we relied on mimesis, (a direct, literal telling of a narrative), and diegesis, (an indirect, figurative statement of facts) to communicate ideas and information. Singing, acting, and story-telling were our meth- ods of communication. The aural qualities of the human voice, and the

formal qualities of human gesture served as the delivery system. The exchange was communal and immediate. Without the physical presence of other human beings, there could be no communication. Speech, with its commanding power to order and systematise the worlds of thought and experience leaves no mark in space; like gesture, it exists in its immediate context.

Packaging ideas into printed books allowed information and knowledge to enter the public consciousness, and spread literacy throughout the world. This precipitated a corresponding shift from an oral culture, to a visual culture; one in which gesture was less important. Marshall McLuhan, in *The Medium is the Massage* claimed, "Until writing was invented, man lived in acoustic space: boundless, directionless, horizon- less, in the dark of the mind, in the world of emotion, by primordial intuition, by terror." Communication in the early twenty first century is centered around the aural and visual senses rather than the human form, and as a result, we slip away from the axiomatic orientation of experience in communication. We are no longer required to be physical- ly present to communicate. We do not need to share a common space, or a common time. Marshall McLuhan described this phenomenon when he wrote, "Ours is a brand-new world of allatonceness. "Time" has ceased, "space" has vanished. We now live in a global village... a simultaneous happening."

In this new digital age, we are overwhelmed by the volume of informa- tion at our disposal; there is more information available to us than we can begin to imagine; more than we can assimilate, more than we can understand, more than we can use. This situation forces us to alter the focus of our response to information from action to reaction. We are, in this new world required to rethink the ways in which we learn and teach, no longer approaching investigation and understanding from a single perspective, but simultaneously gathering information from mul- tiple perspectives. Our eyes in this age of visual overload have become as gluttonous as our stomachs.

Many of our experiences are mediated by technological methods. Our sense of community has been disrupted by our self-imposed sequestra- tion; we sit for hours at a time, barely moving, as we control our worlds from the screen of our personal computers. We have come full circle; as in our pre-literate days, communication is immediate, but the exchange does not require that we are sensorially engaged or that we physically participate.

Much of graphic design in today's digital world has lost the element of the physical presence of people and their kinesthetic interactions with the environment. Environment, of course, is integral to all experience,
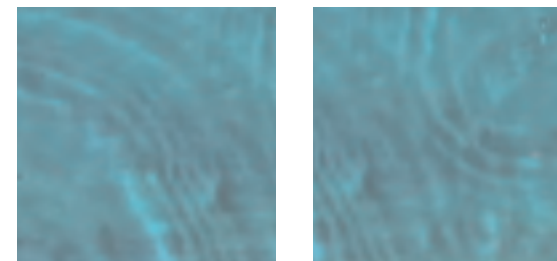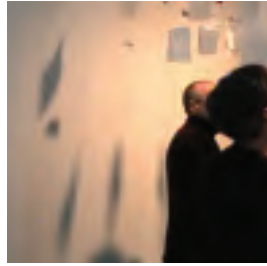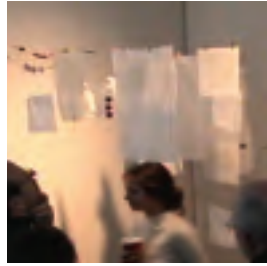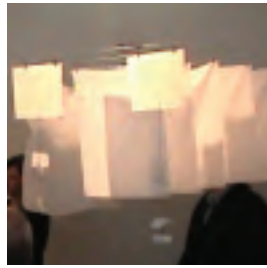
and refers to the intellectual, emotional and physical parameters of an experience. The representation of that experience, using sound and image, allows for interpretation and recreation of the experience by the viewer. To achieve this in graphic design, we employ the tradition of reflexive thought in order to increase the likelihood of a viewer's participation in the design. Reflexive design is characterised by self-reference, and incorporates more of the emotive qualities and relationships that are integral to humanity. It speaks directly to our reciprocal attitudes, and allows the viewer to bring to the encounter their own observations, and simultaneously to question their own experience. The viewer in this circumstance is required to be active, to willfully engage with the message, but this is, fundamentally, a more effective means of creating an experiential communication.

My belief is that if we design systems for collaborative engagement that push the physical world back into the forefront we will achieve a level of experience that accurately reflects life and humanity. We can so easily take advantage of the richness of human senses and skills that have been developed through a lifetime of interaction in the physical world.

NEW MEDIA DESIGN

INFLUENTIAL ARTISTS   Over the past two years there have been numerous artists and designers whose work I have been exposed to, and who have directed my work down a different path from the one I'd been following. Research has guided me in sometimes strange directions, but there are four artists whose work has been quite influential, each for distinctly different reasons. Each of them builds understanding, communication, and meaning, and each achieves unique experiences for the viewer. I have found myself working a little self-consciously, like someone learning to speak a foreign language, and these artists have been my translator's dictionary. Their work has challenged and inspired me.

KARA WALKER   Kara Walker employs the nineteenth century art of silhouette as a narrative device for subject matter that is provocative, unsettling and often difficult to view. Her works convey an uneasy mixture of historical facts and prejudiced fictions that engage the viewer in an unsettling dialogue about the nature of racism and sexism in this culture and in this country's history.

Using only overhead projectors and life-sized silhouettes, she is able to convey intense emotional meaning without resorting to the use of textual or audio information. The work is presented in silence; the kind of silence which becomes very uncomfortable as the viewer confronts their own feelings of racism, distrust, fear, and intense and obsessive love. She is deliberately ambiguous and relishes the juxtaposition of elegance and whimsy embodied in the silhouettes, with the sordid narrative material. It is this juxtaposition that delivers what John Dewey in *Art as Experience* refers to as, "'Revelation' in art is the quickened expansion of experience."

While viewers are experiencing the work, they become aware that they are a part of the vignette; their shadows interact with the silhouettes, and make what is usually a static installation, dynamic. By placing the viewer directly into the art, Walker demonstrates how we stand by watching as crimes are committed, not getting involved, but she insists that we are, in fact, complicit. The viewer is denied the comfort of being a spectator, and they are implicated in the narrative. The simplicity and honesty with which she makes her work, and her candidness in confronting the viewer with a reality that they might not want to acknowledge combine to make compelling and provocative exchanges, and it is probably this willingness to challenge her viewer that I have tried to bring to my own work.

ANN HAMILTON   Ann Hamilton is an installation artist whose work is characterised by investigations into sensory experience, and memory. She makes intimate explorations of bodily experience, and conveys those experiences visually and haptically. She is interested in the exchanges of verbal and written language, and the subordination of one by the other. She is interested in making language visible. Language, for her, is a palpable material; there is a flow of background tone, as subtle and multi-dimensional as any object. She makes connections between spoken words as materials, and typography as the means by which words are made visible. She creates objects out of the traces of language.

In many of her works, she uses the sound of a human voice; sonorous and resonant, surrounding. The voice can be singing, speaking, or humming. She makes us listen to tones and words that are both heard and felt, that envelop and reverberate through the viewer and through the installation space.

She works in a variety of media, often combining elements of the organic world with sound, video, light and material objects. In her earlier works, she often included an element of performance, having a player interact with an object, and changing it over time. She believes in tropos – a concept defined by French playwright Nathalie Sarrante as "interior movements that precede and prepare our words and actions, at the limits of our consciousness." Ann Hamilton's works are defined by tropos, by revealing values of the human person that cannot be revealed using scientific tools. She believes that part of making work is to allow those things that are already there, but not visible, to be given form and to be made experiencable.

Although her work is distinctly art, I have been fascinated by her intimate exploration of the body as a medium for understanding. I have recognised in her work a layering of information and knowledge that I

think is present in mine, and a profound belief in being led by the senses.

BILL VIOLA   Bill Viola is widely considered to be one of the leading video artists of our time. He has used video to explore the phenomena of sense perception as an avenue to self-knowledge. His works focus on universal human experiences – birth, death, self-discovery and transformation – and he uses time to expose emotional expression, revealing the power and complexity of that expression. His profound involvement in Buddhism has been the basis for much of his work; challenging the boundaries of the inner self, and of consciousness. He equates light to the sense of touch, and vision to distance. He treats time as an architectural, sculptural element. He is fascinated by man's ability to make what he considers to be a temporal experience, (time) into uniform units that are the same throughout the day. He believes that by manipulating time, he can manipulate the representation of human emotions, exhibiting their infinite resolution.

DAVID SMALL   David Small is a designer who has managed to successfully merge the fields of art, science and technology. He considers himself to be an information designer, and his mechanism of delivery is dynamic typography. He has built numerous innovative physical, or tangible user interfaces for manipulating and interacting with large volumes of text. He believes that information design has not kept pace with graphics technology, and that in the next decade advances must be made to create a "common visual language." He posits that in this age where time can be manipulated, and information can be accessed in any variety of four dimensions, and in a model that suits the reader, humans will be obliged to learn new ways of reading and to control the new models of self-configuring and organic information structures. My interest in typography, and now in dynamic text have frequently led me to Small's work, and a further interest in the expressive qualities of type in motion.

WORKING AS
A NEW MEDIA DESIGNER
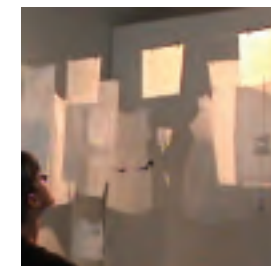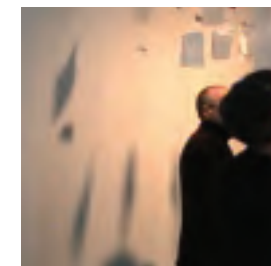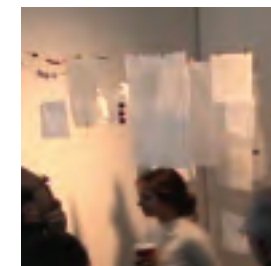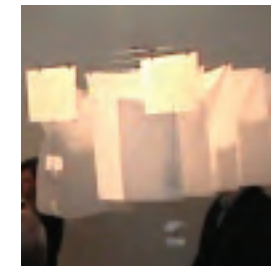
"By virtue of patience, delicacy of touch, and gentle, careful motions, the artist's craft becomes an event of disclosing, a moment when the field of the gesture's encounter gives birth to, or makes appear, a "new thing" and the emotional depth of the field's reserve of enchantment is somehow itself made sensible for our emerging body of emotional understanding." David Levin

I grew up in a country whose name no longer exists, except as a memory. I was born in a country that has undergone huge social and political change in recent years; these transformations – a metamorphosis of self, and place – informs all of my work. I am very interested in identity, and the notion of home. My work is generally revealed as layers of thoughts and expressions, and often examines the polarities of life. I have selected several projects from my investigation that explore these ideas, hoping to verify my belief that orchestrating experience using the tools of new media will enable meaningful communication.

WASHED MEMORIES   This analogue installation was a simple beginning to an exploration of making meaning in a different medium. The impetus for the project came from a short musical composition; we were asked to write in response to the music, and than make in response to the writing. This installation was an interpretation and representation of memories.

The space was small, approximately twelve foot cubed, and suspended from lines at head height were numerous sheets of white cotton. The space was brightly lit, to evoke a sunny day, and the initial visual image is reminiscent of clothes hanging out on a washing line. Even for viewers who may not have experienced their own mother's hanging out the washing, the image is immediately recognisable, and for many of the

viewers, spoke of childhood and innocence.

The sheets of cotton, most of which were the same size and shape, were hung in repeating layers, making a volumetric whole into which the viewer could pass. Viewers could walk in between the lines of fabric, or they could walk through them, letting the fabric drape across their faces. The fabric was simple, honest and unadorned. Each layer of fabric was joined to the next with a thread. With the light shining through the layers of fabric, there was an intricate pattern of shadow and light projected onto the walls of the space, giving the installation an additional element of dimension.

My attempt in this project was to describe my belief that memories are seldom held with perfect clarity. We treat memories, good and bad, quite preciously, and we hold onto them tightly. They inform us as we live our lives, and I believe that we alter them according to our experiences. We gather together happy memories, making connections between them and honestly embellishing them with aspects of joy, pleasure and felicity. Recollections that are less pleasant are segregated, and the details quickly blurred.

The space of the installation represents the place in our mind where we store our memories. The experience of remembering is like going to a stack of photograph albums, and paging through them, making connections that might not have been realised at the event, that might not even exist for anyone but oneself. The space was representative of an instrument the viewer could use to examine their memories from different angles, to explore the threads that linked and bridged different times and places and events.

This first investigation into space, scale and dimension led me to further enquiries, and has directly informed the design of the final thesis project.

NEWBOOK   Books, in the traditional sense, are repositories of text, containers of knowledge, icons of time. They are a means of gathering, recording and extending our memories. In the digital media, text, images, (both static and dynamic,) and sound can all be used to present conceptualised information; this information in turn can be presented on a computer screen, or any object we choose to call a screen.

If digital media are the conveyors of memory, and not of messages, (as suggested by Florian Brody) we are offered insights into how to design for these new media. In traditional books, type is harnessed to the medium; the text and the page are one, and there is a dependency of each to the other. Digital information is released from this yoke; text is allowed to move in an electronic matrix. Since the matrix is flexible, it
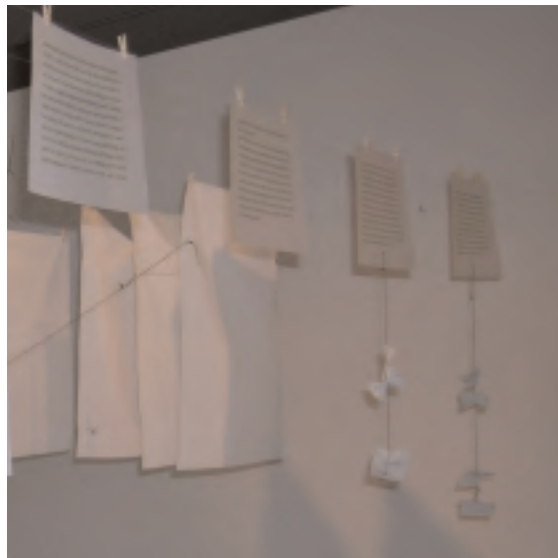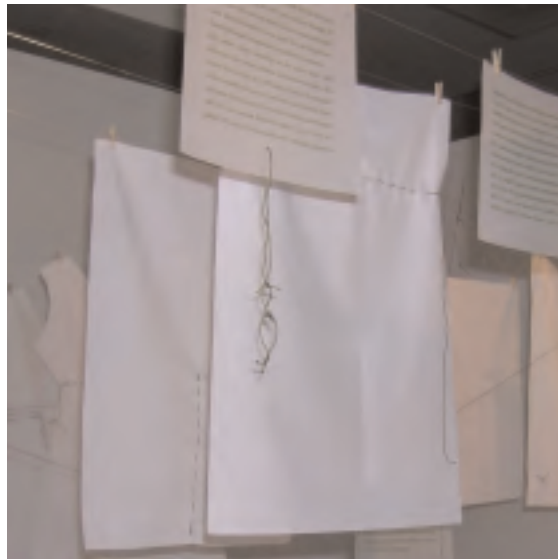
is possible to layer information, and create variations in the dimensionality of a display. The NewBook is an integration of spatial, temporal and interactive media; it is the fusion of memory, message and technology. The presentation of information becomes a performance; the parameters of time, space and context as they affect and are affected by the material, and the structure were explored. In building this project, I tried to explore the structure, and the presented information on a poetic, metaphorical level, understanding how these elements integrate to present a cohesive, synthesised and compelling message.

The NewBook project is an attempt to tell a story, in which we all play a part, using a series of projected still images, and a screen of rotating panels. Each of the panels measures 7' x 2', (total screen dimension 7' x 10'). The wall of panels is installed 18" in front of a permanent wall, allowing enough space for the panels to rotate, but not enough for a person to walk behind them. Each panel has a motion detector built into it, and until a viewer approaches, and stops in front of the screen, there is no movement. Once there is a group of people in front of the screen, the panels would start rotating, and the "performance" would begin. Having the performance start only when someone approaches the screen was meant to suggest that they are not only a part of the performance, but perhaps also that they share the responsibility for the events they are watching.

The "performance" is a sequence of events in time, told through the medium of projected still images. These images represent the viewer's memory of this conflict, but they are borrowed memories. They are the images we are fed via the news agencies, either in still photography, or in movie footage on the six o'clock news. We do not experience the conflict, but we carry the memories nonetheless. The screen of panels is made of frosted plexiglass, and the projected images are diffuse, with soft edges. This softness corresponds to our distance from the conflict described in the images.

As the panels rotate, the image is projected simultaneously onto the panel, and onto the wall behind, and there is a sharp contrast between the quality of the image on the screen, and the one on the wall. The wall image is sharp and crisp, having all the definition that the image on the panels lacks. The images projected onto the wall represent the memory of the principle players in this conflict: the people who own these memories, and live this ordeal every day. This juxtaposition of fragments of the same image, with differing qualities of hard and soft light is compelling, and serves to strengthen the concept of our versus their memory. It is important to note that the image being projected is the same, but it is the projection onto different surfaces that renders

each version discretely different. The viewers catch a glimpse, as the panels rotate, of the wall behind, and they see the sharpness of the images projected; in this way I hoped to suggest a need to look deeper; a need to search more carefully for the truth.

The images being projected are from the Israeli/Arab conflict, and I used them because I wanted to talk about opposition, about how this conflict belongs to two civilisations who, at a fundamental level want the same things for themselves, even for each other. Although they are so polarised, they are the same. At the beginning of the performance, the panels on one side represent the Israeli opinion, and the reverse side represents the Palestinian version. In this way the screen becomes the voice of each group; each of their points-of-view is represented. They have an equal chance to persuade the audience. The panels, however, rotate at different speeds, so that eventually there is a combination of Israeli and Palestinian panels, reinforcing the concept of this issue being about similarities rather than differences.

The screen is a physical metaphor for the wars that cleaves the human soul; it is a representation of the border between Israel and the West Bank and Gaza Strip, and of the borders that Arabs have to pass through, and that Israelis have to protect. The screen can also be seen as a metaphor for the wall currently being constructed along the Israeli border. It is a euphemism for desperation.

Despite the numerous mechanical difficulties experienced while building this project, it was a successful exploration of an integrated physical structure, with a poetic, metaphorical narrative.

VISUAL POETRY   This project was designed to investigate sound, light, and gesture as tools of communication. It grew from a course in which we were asked to design a visual representation of sound. We were asked to create a cinematic experience, and to explore the rhythmic and synchronous relationships between sound and image. The course was divided into two parts: in the first we made and edited a soundtrack, and in the second, we made a visual representation of the sound. I decided to build an object that I call the visual harp. It consists very simply of several strings installed in parallel between the floor and ceiling. Parallel to the line of strings is a blank wall.

When a string is plucked, two things happen. A short video loop is projected onto the wall, and a recorded sound is played. The system is not random; each string has an assigned sound, and video loop. The loops are all approximately fifteen seconds long. The opacity of the projected movie is related to the degree of tension placed on the string: for example; if the string is plucked gently, the resulting image will have low

opacity, but if the string is pulled back as far as it can stretch, and then released, the image will be entirely opaque. Pulling, and then holding a string will not influence the behaviour of the environment. If a participant, or group of participants plays a melody fluently, the projected images combine to create visual poetry.

This was the first project I designed that I think meets the criteria for being a discrete new media object. All of the elements of this project are synthesised and integral to the performance of the instrument; none could stand alone and have meaning. Although projection alone is not new media, the means by which the projected images are produced, ie: computation, is. The active participation of the viewer directly influences the behaviour of the system of the harp. There is an awareness, (by both designer and participant,) of the participant as the artist.

This project speaks to my interest in ephemerality; the projected image only exists with interaction; the movie only plays for as long as participants are playing melodies. Light, because of the varying opacities in the projected images, begins to be more material, more plastic. The participant can create endless variations of projected images, creating a new object with each movement of music played. But the effect is transient, and has no durability.

Prior to the final thesis project being designed, the element of human interaction in this project was the most integrated of any of my attempts at new media object building. Without the human element, there is no projection. With collaboration, the projected images begin to have meaning, and substance. My hope was that people who played this instrument would become engrossed in it, and become performers. My intention was that they would respond to one another, and to the projected images, urging one another to play more strings, or more rapidly, or with more or less vigour.

The strength of this project was that I achieved my main objective: to build an integrated new media object that would be engaging both physically and conceptually. People who played the harp were fascinated, and thoroughly engrossed, and enjoyed the experience. Viewers also tested the system, and discovered, serendipitously, that the system was sufficiently sensitive to react to other loud noises. For example, loud applause made all of the videos and sounds play simultaneously, and this discovery initiated a charming playfulness in the audience who then took every opportunity to verify the reaction of the system.

The weakness of this system was it's "once-ness". Once people have learned the system, there is nothing to maintain their interest. Possible solutions would be to randomly change the projected material so that
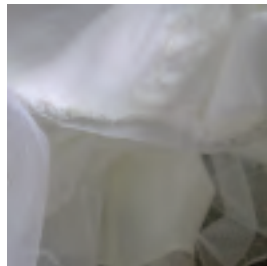
movies would be replaced by text, and viewers would create haiku.

VISUAL UTTERANCE   This installation is composed of four discrete projects, but the space is structured so that each component is meaningful in its relationship to the other elements, and to the context at large. The content for this work is all drawn from recent, personal experience, and describes my separation, and subsequent divorce from my husband of seventeen years. The decision to use my own experience seemed a natural one, given that it consumed so much of my time and energy. I wondered whether, and how, I could express the experience in a way that was comprehensive and axiomatic, rather than exclusively intimate. After all, I believed, the issues of loss and repair, hurt and recovery, love, trust and hope were universal. Although the divorce is the termination of a relationship, it is also a beginning; despite the rupture, injury and severing of years of attachment, there is a corresponding mending, resolving and closure. I wanted to express the balance of the experience, suggest that even in the rift, there is a bridge.

There are three areas of the installation: public, personal and intimate. In a situation like mine, the boundaries that usually exist between people are erased, and friends and strangers are admitted to places that would not ordinarily be exposed. There is a sense of raw vulnerability, and an inability to keep intimate details confidential. This awareness is addressed in the installation, and explores the dichotomies of closeness and distance, inside and out, noise and silence, knowing and unknowing. These sensitivities are addressed in all four components of the installation.

Viewers of the installation are both witnesses to, and participants in the experience. I wanted the audience to join me in a dialogue, and by having viewers move through the installation, animating the space and interacting with the objects in the space, I believe a meaningful conversation will take place. I have tried to be attentive to the moment, and to set that against an awareness of the passage of time. The viewer, participant and witness are immersed in an accumulation of discovery, and those discoveries are rematerialised both during and after the viewer has experienced the work.

John Cage said, "Find a place you can trust, and try trusting it for a while." This is the place I have created, and trusted.

MY FRACTURED SKULL   This project is made up of a series of seventeen strands hanging from the ceiling. These strands represent daily journal entries; a timeline of seventeen days in my life. Using only sound and this sculptural element, I have created a reflection of my state of mind during the early days of my separation, when confusion and distortion were dominant themes.

Each strand is made up of squares of plexiglass threaded onto a string of monofilament. Collectively, they create a curtain, and provide the entry to the installation. Each square represents an hour of the day, and the number of squares in a strand corresponds to the time the journal entry was made; for example, if a journal entry was made at 3am there are three squares in the strand; if a journal entry was made at 10pm, there are 22 squares in the strand. The strands are lit from above.

Each strand has it's own audio sample: my voice reading the journal entry for that day. If a viewer walked parallel to the curtain, they would hear only snatches of sound, similar to the sound of a tape recorder being fast-forwarded. If they stopped in front of a single strand, however, they would hear the journal entry for that day. The volume, and quality of each recording is different: sometimes the volume is so soft the viewer can barely hear my voice. Sometimes it is so loud, it is startling. If several people simultaneously stand in front of the curtain, it becomes impossible to hear each discrete entry being read, and the sound becomes noise. The sound is distorted, tangled and impossible to understand. It is an accurate reflection of how my experience during this period.

The curtain of strands is a metaphor for the obstructions that we have to navigate at different times in our lives. It is interactive from only one side, suggesting that sometimes, when we are confronted by difficulties, we are so strangely myopic that we can see only one solution, rather than being creative and finding fresh perspectives. This project is about introspection, and self-reflection, perhaps even self-absorption; for a viewer to fully experience the work, they have to be still and quiet. The experience requires the viewer to invest time trying to understand the sounds they hear. That investment is shattered by the arrival of more spectators. This addresses my understanding of the curious paradox that exists in human behaviour: at times of extreme stress, when support from friends and family are most needed, solitude and seclusion are the only way to rediscover calm and balance. All the kindness and offerings of friends serve only as distractions, and reinforce the feelings of fragmentation and dislocation. If a viewer wanted to listen to each entry individually, they would have not only separate themselves from other viewers, but also dissuade other viewers from participating in this
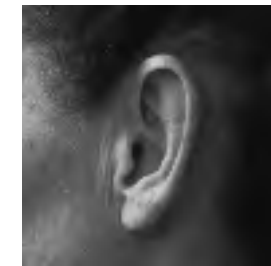
part of the installation. A peculiar collaboration between participants would have to be built.

My intention was to represent an event that was difficult and at times overwhelming, and I specifically wanted the viewer to experience that. But I also wanted to demonstrate that the situation was never hopeless. The curtain of plexiglass strands is lit from above, and when the light and plexiglass interact there is a delicate play of light projected into the installation space. As viewers walk between strands, they help to create dynamic pathways of light that link the plexiglass curtain, the viewers, and adjacent components of the installation.

FROM HERE TO THERE IN SEVENTEEN STEPS   This project comprises the bulk of the installation, both physically and conceptually. It is made up of seventeen sheets of white cotton fabric hanging from the ceiling. Each sheet is nine foot square, and occupies most of the space between ceiling and floor. Each sheet is spaced one foot from the next, and together they create a volumetric whole. One of the sheets is the rematerialised wedding dress, and its position indicates a shift in the marriage, a disruption in the organised layering of years of our lives together. This aspect of the installation is, like the curtain of plexiglass strands, a timeline; a measuring of the years of a marriage. One end of the volume refers to the beginning, to the marriage, and the other to the termination, or the divorce.

Each end of the volume of fabric is lit with a single spotlight, and beneath each spotlight, photographs are scattered on the floor. This serves to direct the viewer to a position where they will experience another part of the installation. When a viewer, or group of viewers gathers under the spotlight at either end of the installation, the video loop that was playing stops, and a slideshow is projected. If one of the viewers moves away, the video loops will resume. This behaviour is used to reinforce the concepts of separation, detachment, alienation and severing. I wanted the audience to collaborate in this project. I wanted there to be a physical connection between each end of the volume. Without their willful cooperation, neither end would be active, and no projection would be shown. My belief was that in all situations in life, even in separation, and divorce, we are obliged to collaborate and cooperate in order to achieve our goal. I believe that collaboration is a natural human behaviour, and that it extends from a need to belong to a community.
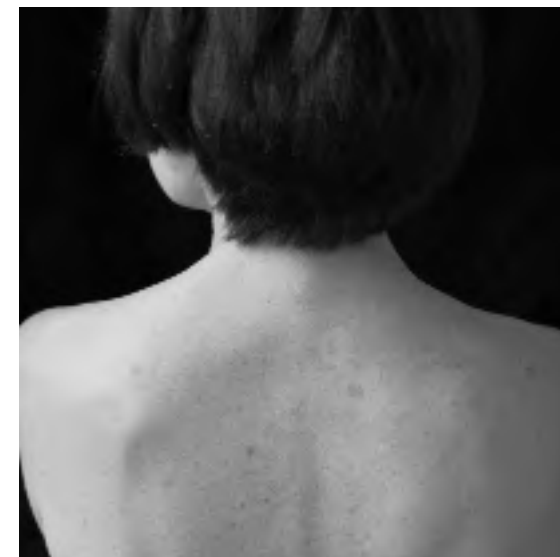
The video loops projected at each end of the installation tell the story of the wedding and of the divorce. At the wedding end, clothing is used as a metaphor for security and refuge; at the divorce end the naked body is used as a symbol of the vulnerability, frailty and exposure of the experi-

ence. At the wedding end, the words of the marriage contract are presented clearly and precisely. There is a sense of calm optimism. Type moves in predictable ways, the message is presented in a linear fashion, and we are quietly introduced to the characters. At the divorce end, the narrative is ambiguous, the type not always legible, and there is a sense of chaos and disorganisation. The two poles of this installation are emblematic bookends. They speak of reciprocal fascinations: together, apart; combining, separating; safety and vulnerability. Although the content is my life, this project explores elements that are present in all relationships. It is about give and take, push and pull, call and response, trust, balance and compromise.

The vertical strata of the layers of fabric speak to a marked interval, not only of time, but also of space, and of the relationships of objects to one another. They are references to boundaries, language and thought. They form an interface between the viewer and the experience, and the viewer and the designer. The form allows for a physical immersion – viewers can walk between the sheets, becoming hidden from view, and are able to observe from an altered perspective. The space between the sheets are symbolic of the interstitial spaces in one's life when you are able to catch your breath, and reflect, before moving on.

Sewn onto the edge of each sheet are small squares of fabric taken from the wedding dress; one square for each year of marriage. Several of the sheets have words or phrases printed on them; these words are taken from the videos, and serve to emphasise the essence of the message. The fourteenth sheet is made up of the rematerialised wedding dress. I have cut each layer of the dress into squares, and then sewn them into a patchwork quilt. This sheet is symbolic of a shift in the relationship between my husband and me; it describes the reshaping, the metamorphosis of the relationship, and of ourselves as new individuals. In certain areas, windows are cut into the sheet so that viewers can look through towards the divorce end. The creation of these portholes suggests a sense of optimism, and hope. An assurance that the continuum will persist.

The project relies heavily on recognition and recollection, on an understanding based in memory and past experience that bypasses, or even precedes intellection. The process for spectators is both conscious and not, conceptual and visceral. This work is about materiality and perception, it is simultaneously imaginary and sensory. The viewer becomes a witness, and is exposed to the strength and the vulnerabilites in this narrative. The process of experiencing an installation like this may be similar for most viewers, but how each viewer uses the space – how much time they spend, how much patience they have to allow them-

selves to experience both physically and conceptually – is an individual pursuit. There are multiple layers of perception, and the discovery of all the nuances is an option for the viewer; investing the time is a personal choice.

CONCLUSION

Communication design, unlike art, is not a private, independent pursuit; it is a public initiative, and we communicate information using form, colour, texture, image and type. We do much more than simply assemble and organise; we clarify, simplify and modify. As Paul Rand said, "To design is to transform prose into poetry." We serve a need for clear, engaging forms of communication.

Our tools of communication have changed significantly in the past decade; design decisions are now mediated by technology, and there is, more than ever before, a need for collaboration and cooperation between designer and user. There is a much greater need for tolerance of complexity as readers learn new ways of reading, and understanding. Our expectations of text, words that can be read and understood, are changing. In contrast to the permanence and materiality of traditional design, readers and designers must now consider temporality and transience. We are no longer looking at a single, fixed frame, but a sequence of frames that may not be consistent, or even visually defined. Digital media have taken us beyond the representation of reality, and into a place where reality can be seamlessly manipulated.

John Dewey in *Art as Experience* said, "Communication is the process of creating participation, of making common what had been isolated and singular; and part of the miracle it achieves is that, in being communication, the conveyance of meaning gives body and definiteness to the experience of the one who utters as well as to those that listen." Participation defines all the exchanges of life. Life is about experience, and experience is about context. Context is environment. If we, as communication designers do not incorporate all aspects of environment and experience in our work, we dilute our communications. John Dewey in

Art as Experience suggests that, "The first great consideration is that life goes on in an environment: not merely in it, but because of it, through interaction with it."

Marshall McLuhan said that, "All media work us over completely. They are so pervasive in their personal, political, economic, aesthetic, psychological, moral, ethical, and social consequences that they leave no part of us untouched, unaffected, unaltered." As communication designers, we are obliged to understand the mechanisms of media, and incorporate that knowledge into our work. Much of the communication design we see today has lost the physical presence of humans; gestural qualities of interaction have been reduced to small hand movements across a keyboard, or touches on a screen, or clicks with a mouse, but there is a great satisfaction of touching things, and of expressing oneself materially. Marshall McLuhan noted in *The Medium is the Massage* that "All media are extensions of some human faculty – psychic or physical."

We are faced in the early twenty-first century with the challenge, both artistic and intellectual, of combining visual, aural, haptic and kinetic elements into a synthesised system of communication. These challenges are not new – in the early twentieth century, the dadaists, modernists, and artists of the Bauhaus were considering similar issues, and attempting to codify cinema, their new media. avant garde cinematographers like Dziga Vertov were boldly manipulating time, creating surprising montage, and building meaning by making connections that ordinarily did not exist. By using different camera angles, they were examining new ways of seeing, and introducing their viewers to new visions and opportunities.

Installation design communicates by actively inviting the audience to be present in a charged environment that offers visual, aural, and tactile immersion. Sound, light, text, objects, video and photography may be present in the installation. Conversely, the installation space may be nothing but itself, a space. The viewer's participation is installation design is integral. Communication that involves the viewer holistically, that engages the viewer's attention physically, intellectually and emotionally, is profoundly compelling. I believe that there are values and energies in the human person that cannot be revealed using analytical tools, or by placing a person in isolation. By framing new media experiences in human terms, using the tools that are extensions of our senses, I believe we can naturally and invisibly integrate computation into the physical environment, and communicate meaningful, unified messages.