

I am Here – you are There: Let's meet sometime

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Andrew Pepper is an artist and academic who has worked extensively with, and critically observed, the development of creative holography within a global cultural context. His unique view of this development, and the position of holography within contemporary art, is informed by his directorship of two of the major international funders (The Shearwater Foundation Holography Programme & The International Holography Fund), both of which supported a wide range of art residencies, workshops, publications, educational activities and awards for creative activities in the medium. He founded and published The Creative Holography Index, the International Catalogue for Holography and was director and chair of Art in Holography2, a major international symposium which explored the state of, and potential for, holography in the visual arts.

He was awarded the first practice-based PhD in fine art from the University of Reading, UK, submitting works with holography, and has acted as external examiner for several of the subsequent PhD submissions by artists in the field.

His current research activities attempt to interrogate and explore aspects of the unsupported mark, the peripheral view and the location of creative holography within a critical, creative, framework.

I am Here – you are There: Let's meet sometime

Holography has a unique ability to record objects, and the volume surrounding them, in such outstanding hi-fidelity that we believe we are seeing those objects, not recordings or facsimiles of them. This provides us with a spatial and temporal transport system, allowing the movement and display of spaces or objects which are not physically 'there'.

This text explores our comfortable assumptions about being in one place and looking into another. It circumnavigates Heidegger's complex observations related to the philosophical aspects of 'being', using, instead, the subliminal simplicity of our own experiences which help us know where we are and where the rest of the world appears to be.

The opportunities for holography to allow objects to be in two places simultaneously is explored, with reference to pioneering artists who have examined, and made visible, some of these opportunities. The holographic 'window' is acknowledged and work by the author using holography and projected light installations, made specifically for the series of Alternative Document exhibitions, is referenced in connection with these observations and the framework of the alternative, ephemeral, document.

Keywords: Hologram; Holography; perception; spatial; installation; projection; light; ephemeral; performance; document; gallery.

As I sit here writing this text, I have a solid understanding of where I am – not in the complex philosophical sense, explored by Heidegger,¹ but in a practical and more familiar personal one (Heidegger 1962). I know I am here. I can test that by checking my surroundings – observing the recognisable items in the room; my distance from the walls, floor and ceiling; my touch of the keyboard; the movement of my neck to view the screen on which I am viewing these words. I can rest my eye-focus by turning my head to the left and looking out of the wide window, to the trees and buildings which surround me here in a suburban part of the city. I just did that. It reinforces my understanding of being ‘here’ by emphasising that I am inside this building and not outside of it. Not only am I very sure about being ‘here’ but I am equally sure I am not ‘there’ - where you are.

This level of familiarity, the normality of encountering the world around us, is taken entirely for granted without ever needing to engage with Heidegger’s ‘Dasein’, often translated into English as "being-there"². It is not a test to counteract my insecurity about ‘being’. I just do it, as everyone does. We all repeatedly reinforce our knowledge of where we are. In my case, that means being here, NOT there, where you are. We are separated by geography (definitely) but also temporally. We are in different physical and temporal places.

As you read this text, you have, similarly, a very strong awareness of where YOU are. You carry out the same visual and physical checks as I do, but they return very different results because you are THERE. You are not HERE. You are reading

¹ Heidegger refused to use the standard terminology of modern philosophy and attempted to invent a new vocabulary to establish his legendary complex discussion of ‘being’.

² This fundamental concept within existential philosophy can also be translated as ‘existence’, which Heidegger relates to being specific to human beings.

this in a different location to the one in which it was written. The expert reviewing, physical processing, editing, rewriting and publishing of these words have caused a physical separation. There is also a temporal separation; you must be reading this in my future, months or years after I finished writing it. We are, therefore, NOT in the same place; I am here and you are there. This is not ‘rocket science’ or complicated by philosophical expertise, it has a charming and non-threatening simplicity. It is what helps us deal with the world around us. We know where we are, even in an unfamiliar location. We know that we are here and not “over there”.

In a text published as part of the *Nude as the News* exhibition in Berlin,³ artist Dave Ball commented:

And then, a year or two ago, I moved again - this time further afield. I now live neither "here" nor "there", but somewhere completely different. And now for the first time in my life I've become "Dave from here and there and those two other places", and that label, more or less, is what I am now. Except that "here" is no longer "here" (as in "where I am now"), and so the label doesn't actually make sense at all.

The point is, I suppose, that it's impossible to be consistent about where ‘here’ or ‘there’ actually is. It just depends where you're standing at the time, and how long your memory is. (Ball 2010)

This raises two unnerving questions. 1), What if I could be ‘here’ and, at the same moment, be ‘there’, where you are? and 2), What if I could be *exactly* in the space you currently occupy?

³ Text first appeared in a publication accompanying the exhibition *Nude as the News*, curated by Sunshine Wong at Kunstraum Richard Sorge and 91mQ, Berlin, Germany, 2010.

If we take the first part question, we have an approximation for the geographic and temporal movement this entails. We capture images of each other and place them close to us. We can paint, draw and model accurately. We can make these recordings look very similar to the things they represent. We know that they are facsimiles and that the actual objects are not really 'here', but there is a charming poetry and comfort in this approximation. We also accept that the object which had been transported through its recording, is still, probably, 'there', at the location where it was recorded. Take, for example, landmarks or monuments. We can accurately photograph those things, or record them on video and view them on our personal, glowing, devices. The fidelity of these recordings increases exponentially, ever more so as we approach consumable virtual reality delivered through cardboard viewers, holding hundreds of pounds' worth of digital video equipment (our mobile phones), we can almost be 'there' (while remaining 'here').

Here and there are getting closer, even as the distances between them become larger.

The second question – the opportunity to be here and there at the same moment - appears more challenging. We know this cannot happen because of physical limitations. It can, of course, occur in our minds, in our texts and cinematic narratives, free from the physics of matter. But what about in the physical world? We have a very well developed understanding of how that world operates, even if we are unfamiliar with the technical and philosophical reasoning. If things move away from us, they become smaller, they move over 'there'. If we walk towards an object, it appears larger. We understand we are getting closer to it. If we move around an object, we know we will see its back and probably have a good idea what that will look like before

we actually see it. That is partly due to having seen and encountered objects previously. Apparently, we build models in our mind about these scenarios and accept that things are, generally, stable. If we walk around a cube, we know that it will be cube-like when we get to the back of it. It will not cease to exist or change into a sphere. A three-dimensional digital model might do these things, and they fascinate us, but they are cinematic constructs, which we understand to be an illusion. Real things, in the real world, do not do this. They are stable – they are ‘there’.

Holography – the ultimate visual?

Perhaps holography is the solution (and possible saviour) here.

We have lauded the process of holography almost since the moment it became publicly accessible. (Leith and Upatnieks 1965, 24–35). It promised much in the late 1960’s, after the invention of the laser, which made physicist Dennis Gabor’s earlier discovery of holography (in 1947) a practical visual process. (Gabor 1948, 777–778)⁴ This 20th century ‘magic’ was going to do so much. It would revolutionise our visual and perceptual world, and later, when television and cinema were more developed, it was going to revolutionise those as well, turning each into a submersive, three-dimensional, experience. We were going to have whole walls displaying full-colour, three-dimensional ‘windows’ into other worlds and spaces. It was going to seriously disrupt our familiar understanding of ‘there-ness’.

⁴ Gabor was working at research laboratories in Rugby, UK, on the improvement of electron microscopes and first published information about this significant invention in *Nature*.

Then reality hit.

Technical limitations, cost, size, brightness, data transfer (particularly in the area of holographic TV) were all issues that limited its practicality as a visual and social imaging tool. Even as the reality of the limitations was beginning to become acknowledged, the excitement for the process grew.

In 1972, Robert Schinella, working with McDonnell Douglas Electronics Company, produced *Hand in Jewels* (fig. 1), a laser transmission hologram of a hand holding a bracelet worth many thousands of dollars, which was then displayed in the window of Cartier's 5th Avenue jewellery store, New York. It 'caused a stir' and cleverly demonstrated the technical prowess of the holographic process, its ability to record three-dimensional high-fidelity, and to apparently move things from 'there' to 'here', but at the same time leaving what was originally 'there' in its place. In effect, the process of holography allowed the jewels to be in two places at the same time. The originals were locked away in the Cartier vault, but they were simultaneously visible dangling over the pavement of 5th Avenue. Schinella commented: 'Today we are witnessing the development of what may be the ultimate step in visual recording: Holography.' He went on to suggest that: 'The cycle is complete; the charcoal drawn from the fire has given way to the fire itself, and now man sculpts with the sun.' (Schinella 1973, 27-34)⁵ The metaphor was slightly stretched, but in essence it was valid – we were now creating directly with light, albeit coming from a spectacularly

⁵ The hologram is now part of the extensive international holography collection at the MIT Museum, Boston, USA.

expensive laser and only accessible in well-funded optics and physics research laboratories.

[Figure 1 near here]

Creating directly with light is an important premise. We see the world by processing light entering our eyes from the objects around us. A great deal of neural processing takes place on the way to the brain, but there is a direct process here. At the beginning of this text, I mentioned that we generally understand where things are in relationship to where we are, which amounts to our subliminal knowledge of there-ness. If we look at a painting of an object, the light from that painting (not the light from the depicted object) goes into our eyes, and we understand we are looking at an illusion which represents that object. We are not looking at the actual object. If we allow the light from the original object into our eyes (not a painting of it), we know we are looking at the object, not a painted illusion.

In the case of holography, it records (and stores) all of the visual information (phase and amplitude) about light reflected from an object. When the holographic recording is displayed, it emits all of the information (optical data) of the original light which it recorded, and we can allow this light into our eyes, which is the original light from the object. We, therefore, see the object, not an illusion of it. There are philosophical holes in this model, as well as several conceptual, perceptual and cognitive issues, but the basics are firm. If we see the light from the object, its brightness and distance from us, then we are, perhaps, seeing the object.

When Schinella decided to record an image of diamonds, with their faceted and highly reflective surfaces, he helped contribute to the wonder and expectation around the holographic image. Just like the original, if you moved around on the pavement, light from the hologram, from the jewels, flashed and sparkled. It makes for an engaging narrative. The convincing dimensionality of the image, as well as its life-like manipulation of reflected light, gave it the authority of the original object. So, it might be possible for that object to be ‘here’ as well as ‘there’, at the same time.

Media theorists struggled to engage with holography as a viable visual medium during these relatively early stages. As Martina Mrongovius highlights in her PhD thesis *The Emergent Holographic Scene*: ‘...perhaps because when the hologram has been addressed in philosophy, it is used predominantly as a way to describe the deception of an illusionary volume, largely characterising holography as a cheap trick of the real that de-values physical reality.’ (Mrongovius 2011, 16) This issue of the ‘cheap trick’ is a relevant one – we applaud and value originality, yet luxuriate in the cleverness of illusionistic reproduction, but we also question the possible outcomes. (Pepper 1988, 9-13) The clever illusion lacks critical credibility, it seems. A famously vitriolic review by Hilton Kramer, then art critic for the *New York Times*, of holography on show at the International Center of Photography, New York, in 1975⁶, dented the confidence of many artists who were beginning to embrace the medium as a viable creative process. (Kramer 1975)

In the same year, Umberto Eco listed many of the positive scientific and industrial applications of holography and went on to suggest that: ‘...it is now being taken up by artists who formerly might have been photorealists, and it satisfies the most

⁶ Holography '75 International Center of Photography, New York, July 3rd – September 19th 1975.

ambitious ambitions of photorealism.’ (Eco 1998, 4) That speculation has not proved to be the case – those interested in the challenge of photorealism will, inevitably, continue to explore alternatives which require specific skills, whether they are in painting, drawing or other cumulative mark-making systems. What did happen was that a generation of artists, curious about the dimensional world around them, began to adopt the holographic process as a visual vocabulary capable of challenging perceptual, conceptual and physical paradigms.

Making the invisible visible

One of the early pioneers in the field of creative holography, Margaret Benyon (1940-2016), developed a series of coherent explorations which challenged some of our basic assumptions about spatial and physical there-ness. At a time when access to the technology for making holograms was difficult for artists, Benyon produced a collection of laser transmission holograms.⁷ A significant example for this discussion of there-ness is *Bird in Box*, 1973 (fig. 2).

One of the extremely attractive aspects of laser transmission holograms is that they display full visual parallax in all directions. Very much like looking through a window into a building, you can move your position, tilt your head, and view the contents of the room from a variety of vantage points limited by the edge of the window. In Benyon’s *Bird in Box*, the viewer encounters a closed box, yet it is possible to see into its interior, which is occupied by a bird.

⁷ A laser is required to record the original hologram but is also needed to display the finished image. As lasers were fragile, expensive and generally located in physics and optics laboratories, access by artists to make holograms, and the public to see them, was extremely limited.

[Figure 2 near here]

The premise is not unusual. We do it regularly when we look into display cases and through transparent walls. However, in this case, the outer edge of the box, the part closest to the viewer, is not transparent, but we appear to be able to ‘see’ through it to the bird inside. One engaging aspect of this work is the ease with which we accept what we see. We know it is not possible to see inside a box because it has opaque sides. If it is possible, the sides must be transparent. We are ‘here’, looking into the hologram, seeing the three-dimensional box, and the bird is ‘there’ inside the box. We believe that the box has solid walls. The bird appears to be solid too. The bird is in the box, and we can see that, yet this is impossible as the sides of the box are not transparent. The box is ‘there’ and the bird is ‘there’ – they are both occupying the same space at the same time, they are doubly ‘there’. This is clearly possible because our eyes are allowing us to examine what we see in full three-dimensional parallax. It must be ‘real’ and not an illusion because of that visual and kinetic testing.

Generally, in these situations, when viewing or discussing works by a significant artist in the field, it is inappropriate to fixate on the ‘how was it done’ question, unless part of the intention of the work involves an exploration of process. This is only partly true in Benyon’s case, but the ‘how’ offers us an insight into the apparent dislocation of what we are looking at. The box was a physical box and its sides were opaque. You could not see inside the box through its walls. What Benyon did was record two holograms in exactly the same volume.

Firstly, a hologram of the inside of the box, containing the bird (with the front and side walls of the box removed). She then replaced the walls of the box and recorded a second hologram. This resulted in two visually solid objects, each occupying the same space at the same time. They match perfectly, physically, optically

and temporally. And, for this discussion, their relevance is significant, they are both ‘there’, in the same space at the same time. If that is possible, then the ‘here’ and the ‘there’ appear to be porous states and can move between each other (at least holographically). We can be here and there simultaneously.

Holography is not the only carrier capable of this spatial melding, but it is the only one which can perform the visual and spatial overlap with full parallax.

Parallax is the key. It offers the most accurate facsimile of the real world and so impacts on our acceptance of what we encounter.

Vision - seeing in the white cube

Although it is beyond the scope of this discussion to deal, in detail, with the authenticity of vision, there are aspects which moderate questions around where we understand things to be. This relates directly to our possible understanding (or confusion) around holographic images and questions of their authenticity.

Light can be described as either waves or particles, which, as a non-physicist, has always fascinated me. For this example, we will use the wave analogy.

When we see an object, what we are registering, or processing, are the waves of light reflected, transmitted and diffracted from its surface. A very specific model might be: A room with no markings, embellishments or windows. All the surfaces are painted white, the traditional white cube gallery (fig. 3). We walk in through the single door, close it behind us and view the room. In the centre stands a plinth on which is placed an object, in this case a cube. Above the plinth is a single light bulb. It is switched on and emits waves of light which fill the room. We are dependent on this artificial illumination and the waves of light filling the space in which we stand. Unsurprisingly, if the light is not on, it is not possible to see the room.

[Figure 3 near here]

These light waves shine onto the walls, floor, ceiling and contents within the room. Some of that light shines onto the object on the plinth. In turn, the surface of that object reflects light back into the room. If a portion of this reflected light passes into our eyes, we see the object on the table, from a single point of view (our viewing position). If we move to the right, we are in a different location in the room and will be immersed in a slightly different set of reflected light waves from the object, which then pass into our eyes (fig. 4). We see different waves of light from the object and, therefore, the object from a different point of view. In this case, we see more of the right side of the cube.

[Figure 4 near here]

What is intriguing about the waves of light entering our eyes is that they contain information about the phase and amplitude of the point on the object from which they were reflected. In effect, they describe, or code, the brightness of the object's surface and how far away it is from our eyes. With that information, we can then ascertain where the object is within the room and, by inference, where we are in relationship to it. This subliminal measuring allows us to acknowledge that we are 'here' and the object is 'there'.

Once the light enters our eyes, it passes onto the retina; the light-sensitive collection of rods and cones which convert this coded information into electrical

impulses and sends them through the optic nerve to the brain. There is a great deal of information processing going on here. Not only are the electrical impulses collected from different parts of the retina, and from different eyes, but they then pass through the visual cortex, where information from both eyes is combined. This is not the equivalent of a tiny projector displaying a tiny image on a tiny screen in our brain. Visual perception, and the act of looking, are remarkably complex and have stimulated intense research into each of the elements, which make up our visual system. For the non-physicist, what matters is that we can see an object, know what it is, and where it is in relation to our position in the room.

German physicist and physician Hermann von Helmholtz is acknowledged as the first researcher to postulate how visual perception functions by suggesting that the poor quality of optical information from the eye appears to make vision impossible. His conclusion was that vision could only function because of some form of unconscious inference and the act of making assumptions, or conclusions, using incomplete information based on previous experience. (Von Helmholtz 1867) It seems we use this past experience to fill in the gaps, resulting in assumption-based seeing. Helmholtz put forward this suggestion in 1867, and a century later, psychologist Richard Gregory demonstrated just how this might function through his hollow mask illusion. There are many other significant aspects of research in this area, but this particular demonstration by Gregory is striking when exploring the place of holography within our understanding of 'place', particularly where aspects of the pseudoscopic image are concerned.⁹

Gregory presented a hollow mask of Charlie Chaplin, painted to represent the character. As the mask rotates, and we begin to see the hollow (concave) interior of the

⁹ Pseudoscopic images are those involving or exhibiting reversal of the apparent depth of an image. They appear to 'turn' objects (or vision) inside out.

mask, it is almost impossible not to see this inside protruding out as a real face might. In his book *The Intelligent Eye*, Gregory comments on a photograph looking into the hollow of the cast face: ‘...but does it look like a hollow? It is impossible not to see it as a normal face. Here the improbability of this being hollow and not a normal face is so great that the truth is totally rejected.’ (Gregory 1975) So, it seems we reject the truth in order to see! Not only are we apparently fascinated by illusion, but we also seem open to the opportunity of seeing what is not there. Welcome to holography.

Windows with memories – the holographic facsimile

Earlier, while outlining one of the unique properties of laser transmission holograms, and Benyon’s *Bird in Box*, the analogy of looking through a window was proposed. It is a useful comparison which attempts to explain how holographic displays function and has been cited, almost since the invention of the process, by artists, scientists and engineers. It is successful because it connects with the methods we use to look at and comprehend the visual and physical world around us.

If we make a laser transmission hologram of our white cube gallery and replace the light bulb, hanging over the plinth, with a laser, we can explore a similar process of light waves and viewing zones. The only difference here, to our original examination of how the light from the light bulb illuminates the space and objects within it, is that this time we will record that activity and make a hologram of the room (and the objects within it).

Light from the laser is an intense beam of coherent light (the familiar laser beam). Pass this through a lens and it will expand enough to illuminate the table and the cube placed onto it. As with the light bulb, waves of light from the laser will

illuminate the cube, which, in turn, reflects that light around the room and into our eyes, so that we then see the cube (fig. 5).

[Figure 5 near here]

If we place a high-resolution photographic plate between our viewing location and the object, split the laser light to also shine onto that plate, we can record a split-beam laser transmission hologram. (Leith and Upatnieks 1965, 24-35) (fig 6.)¹⁰ Light directly from the laser will combine with light reflected from the cube to form microscopic interference patterns within the photographic emulsion on the plate. The plate is then processed very much like a standard photographic plate. What results is a featureless (imageless) glass plate with a slightly dark surface.

[Figure 6 near here]

Unlocking the world

To view the recorded hologram, the developed plate can be placed at any location, but in this case, and for comparison, we might place it at the point where we originally viewed the room. To enhance the impact, we will remove the plinth, and the cube, and place it in another room, out of sight.

¹⁰ This is a simplified, diagrammatic, view of how a split-beam laser transmission hologram is made – in reality a vibration isolation table and more complex optical and mechanical supports are required as described in Leith and Upatnieks' paper.

To reconstruct, replay and view the hologram, laser light is then shone onto the holographic plate from the original angle used during the recording. The microscopic interference patterns in the photographic emulsion (acting like tiny mirrors/lenses) redirect and manipulate this light (reform it) so that when it passes through, and out the other side of the hologram, it will have all of the characteristics of the light which originally reflected from the object.

If you place your eye in the path of this reconstructed light, you 'see' what is on the other side of the 'window'. You can look through the glass plate and view the cube on the plinth at the exact location it occupied originally (fig. 7). If you move slightly to the right, your eyes move into a different zone of redirected light and you will see the cube from the right. This is an exact dimensional facsimile of the original scene, the volume of the room and the objects which were originally present.

[Figure 7 near here]

When looking through the holographic window, we appear to see the cube. It is very clearly 'there'. We also know that the cube has been removed and is actually in another room, over 'there'. In this case, we have a situation where the cube is both 'here' and 'there'. One aspect of this window analogy in general, and holograms in particular, is that we might assume if the light which originally reflected from the object (in this case the cube) passes into our eyes, allowing us to see the object, it is irrelevant whether it came directly from the original object or from the holographic window. The waves of light are identical. An optical physicist will contest this, as there are many

variables which prohibit the light from being *exactly* the same as that which was reflected from the original object. One of the main differences is that light from a light bulb is white (made up of multiple colours in the visible spectrum), whereas laser light is a single wavelength, and therefore a single colour. The photographic emulsion will shrink during processing and so change the characteristics of the light leaving the hologram. It is not exactly the same but, as artists, we can move aside the optical definitions and embrace the illusion. This, together with our assumption-based seeing, and willingness to embrace illusion, means that it is possible for parts of our world to be both ‘here’ and ‘there’ simultaneously.

Australian artist Paula Dawson established this moment of questioning in her installation *There's No Place Like Home* (fig. 8)¹¹, an actual window made of a large-scale hologram containing the three-dimensional volume of a living room. Viewers stand outside a building (built inside a gallery) and can look through its convincing window, a reality ‘trigger’, because the window is located where a window might actually be and is very much part of our assumption-based seeing. We then use our understanding and familiarity of looking through windows to explore what we see. This is closely linked to our performative role when viewing holograms. Moving left to right, closer and further, we are able to explore the convincing living room and our expectations of that domestic space. Dawson describes this as a ‘...kind of aesthetic force field’. (Coyle and Hayward 1995, 68)

[Figure 8 near here]

One aspect of this piece, which is often overlooked, not least because of the spectacular nature of the illusion, is that our act of viewing this installation, and the room it contains, mirrors our real-life engagement with volumes and the objects within

¹¹ Paula Dawson, *There's No Place Like Home*, 1979-80. Laser transmission hologram.

them. We can walk up and stand close to the window, cup our hands and press our face onto the surface of the glass. There are expectations as we peer into the space behind the window.

Those expectations, referencing our experiences of the world and how we see it, are partially explored within the installation *Three-Nine*, included in the Alternative Documents exhibition and symposium, held at the University of Lincoln during 2016.¹² Here, a reflection hologram becomes the central anchor for a projection and viewing installation.

Three 35mm slide projectors, each standing on their own plinth, project the same image across the gallery onto the featureless facing wall (fig. 9).

[Figure 9 near here]

The horizontal lines from each projection align to 'draw' a single horizon opposite the projectors. In the centre, a white light reflection hologram, located on the wall, exactly fits the illuminated boundaries of the projected square (fig. 10).

[Figure 10 near here]

¹² Alternative Document, Project Space Plus, University of Lincoln, UK, 12th February – 11th March, 2016.

The hologram ‘contains’ (or displays) three rectangular surfaces, each with a rectangular hole in the centre. Viewers can look through the first surface to the surfaces behind. Because of the nature of the volume recorded in the hologram, one surface appears to exist behind the gallery wall, the central surface appears on the gallery wall (a traditional location for an image) and the third surface protrudes into the gallery space (the viewer’s space). To take a closer look, or explore this phenomenon, viewers can approach the wall-mounted rectangle, by walking between the plinths and the gallery wall (fig. 11) and place their eyes close to the holographic surface. By doing so, they interrupt the light from the projector and ‘extinguish’ the holographic image.¹³ The act of ‘looking’ prohibits ‘seeing’.

[Figure 11 near here]

There is a fundamental difference between the hologram used in this installation¹⁴ and that in Dawson’s *There’s No Place Like Home*, but there is a direct connection between the actions of the observers in these two pieces, separated in time by over 30 years.

As with Dawson’s piece, observers become observed. Viewers of *There’s No Place Like Home* can be seen by others in the gallery space, looking into the window and, from the viewpoint of these observers, they may not be able to actually see what the person close to the window appears to be observing. There is also the possibility for

¹³ All holograms require light shining onto, or through, them (in this case white light, to reconstruct the image and volume they contain.) If the light is extinguished, or interrupted, the holographic image is no longer visible.

¹⁴ Each uses a fundamentally different technical recording technique and method of presentation.

visitors to enter the building, which incorporates the holographic window, and walk through the apparent domestic space inside. ‘Viewers could enter the house and view the empty space which the image had occupied when they were on the exterior of the house.’ (Coyle and Hayward 1995, 69)

The content of the view through the window, the domestic environment, is clearly ‘there’, but when you actually enter the building, it is not visible. It continues to be ‘there’ for those outside, looking through the holographic window. Similarly, in *Three-Nine*, when observers approach the central wall-mounted holographic image, and obscure its illumination, the objects stop being visible, yet remain ‘there’, coded deep in the holographic emulsion. Gallery visitors who view the work from a distance experience a ‘choreography’ performed by the viewers who are attempting to look more closely at the holographic image. The conceptual similarities between Dawson’s work and *Three-Nine* became apparent after the work was installed in the Alternative Documents exhibition.

One final consideration within this installation is an attempt to place pressure on our engagement with where things are. Light from the projector passes through the small 35mm slide, with its white rectangle and horizontal line, it travels across the gallery space and ‘lands’ on the gallery wall (also reconstructing another volume/space within the central hologram). Where then is the image? Is it ‘here’, within the projector, ‘there’ flat against the gallery wall, behind the gallery wall in the holographic volume, or some location between these states?

It is, perhaps, ‘here’ AND ‘there’ at the same time.

Holography, in its purest form, offers the opportunity to be ‘there’ and ‘here’. It allows us to occupy the same three-dimensional visual space at the same time. To be ‘here’, ‘there’ and both.

I remain 'here', typing final thoughts. You remain 'there', reading final words, and we continue to be spatially and temporally separated.

Let's meet sometime - in the same space.

There is so much more to discuss.

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Figures

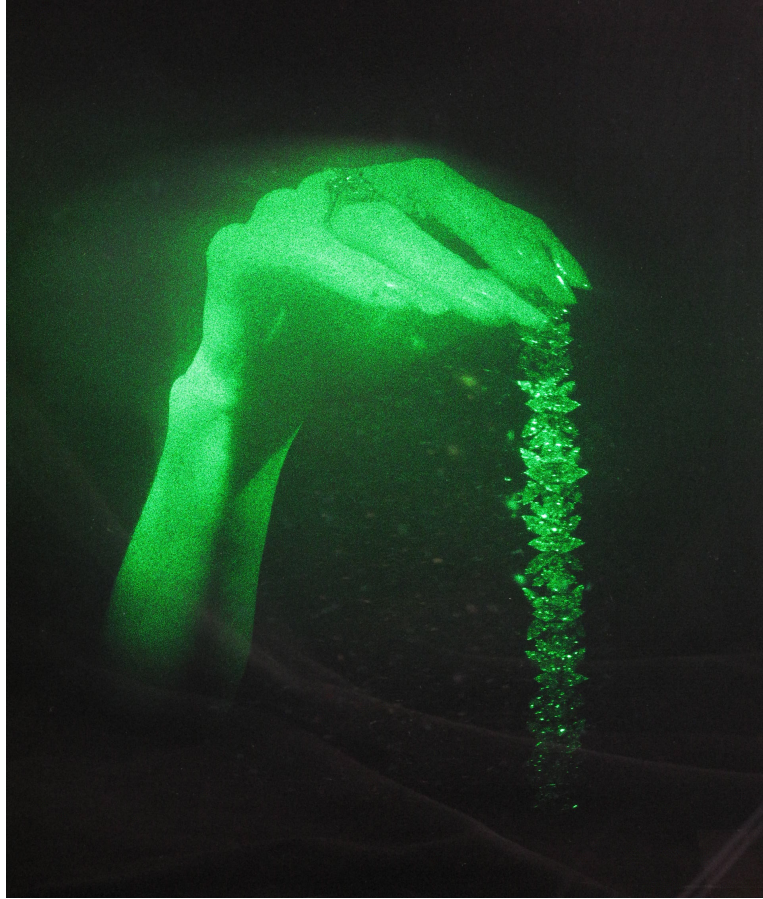


Figure 1. *Hand in Jewels*, Robert Schinella, 1972, Laser transmission hologram: MIT Museum Collection, Boston, USA. Image: Jonathan Ross, London. Used with permission.

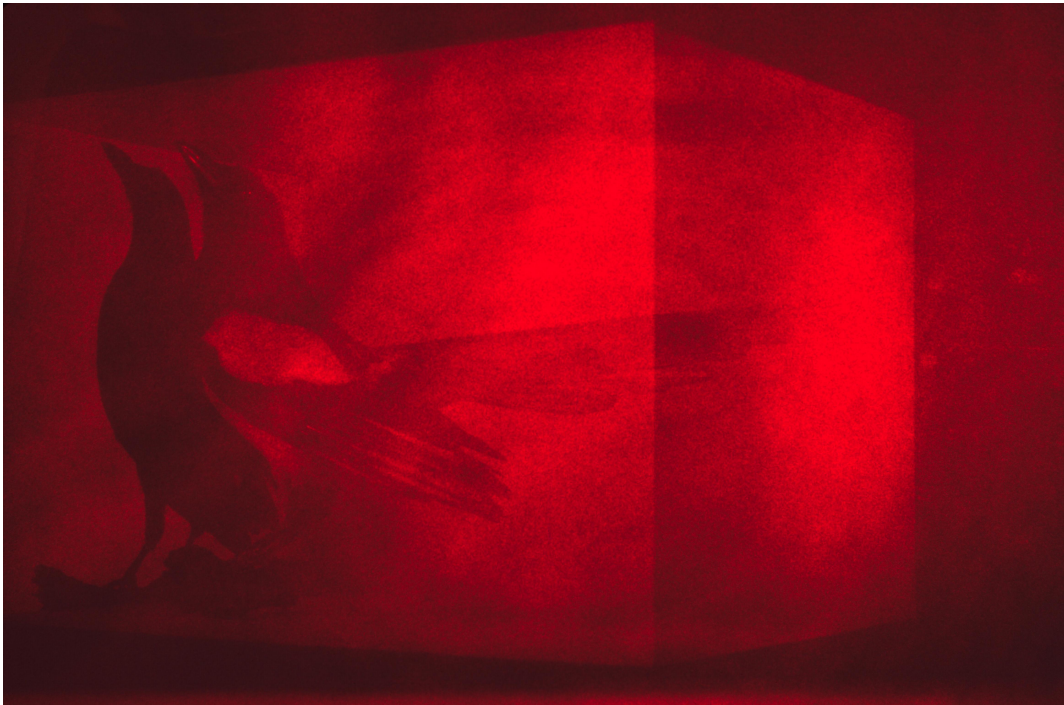


Figure 2. *Bird in Box*, Margaret Benyon, 1973, Laser transmission hologram: MIT Museum Collection, Boston, USA. Image: Andrew Pepper .Used with permission.

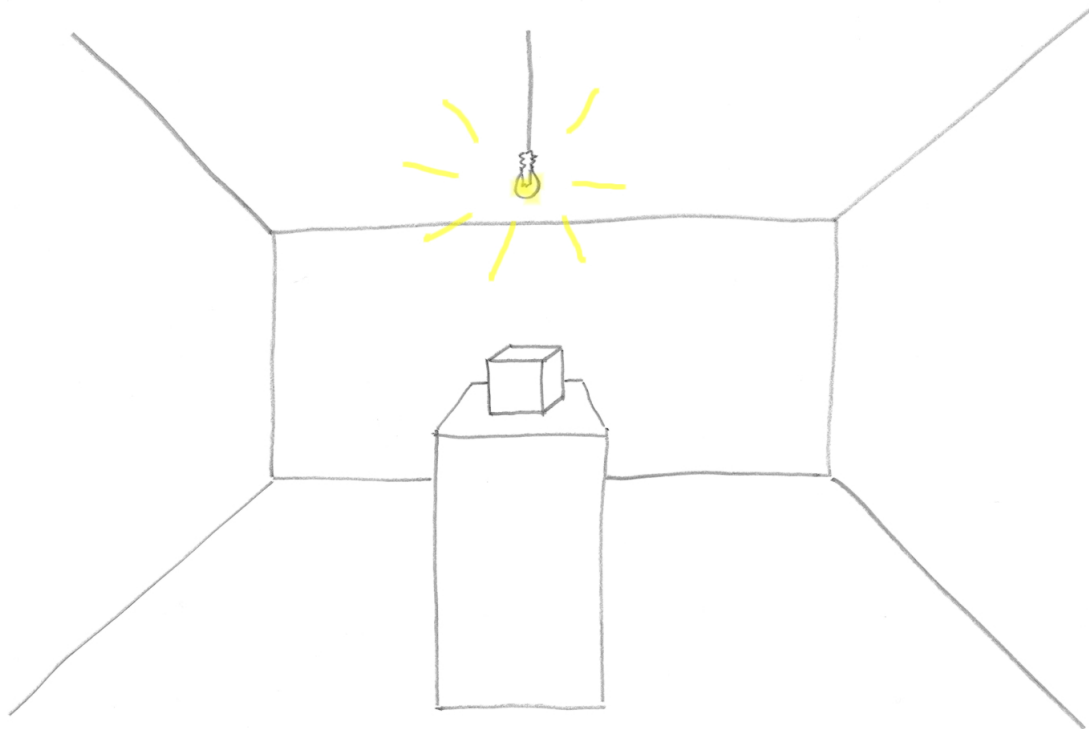


Figure 3. Object in a 'White Cube' gallery space with light bulb.

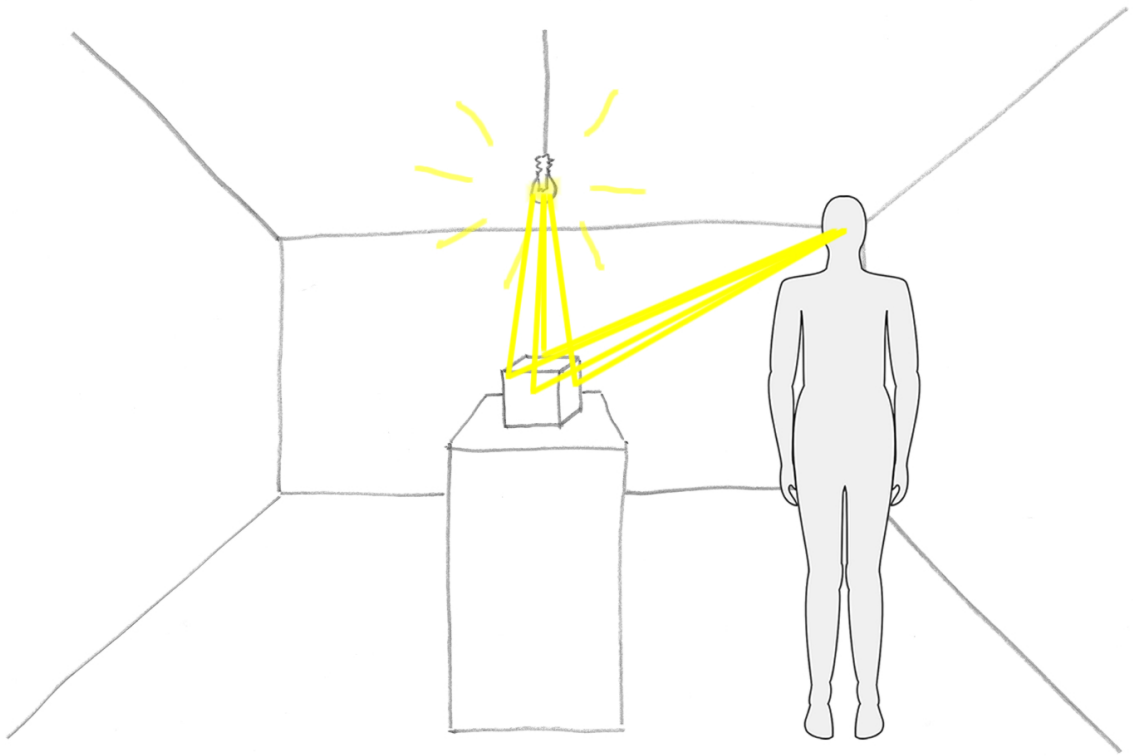


Figure 4. Light reflecting from the object into the eyes of an observer.

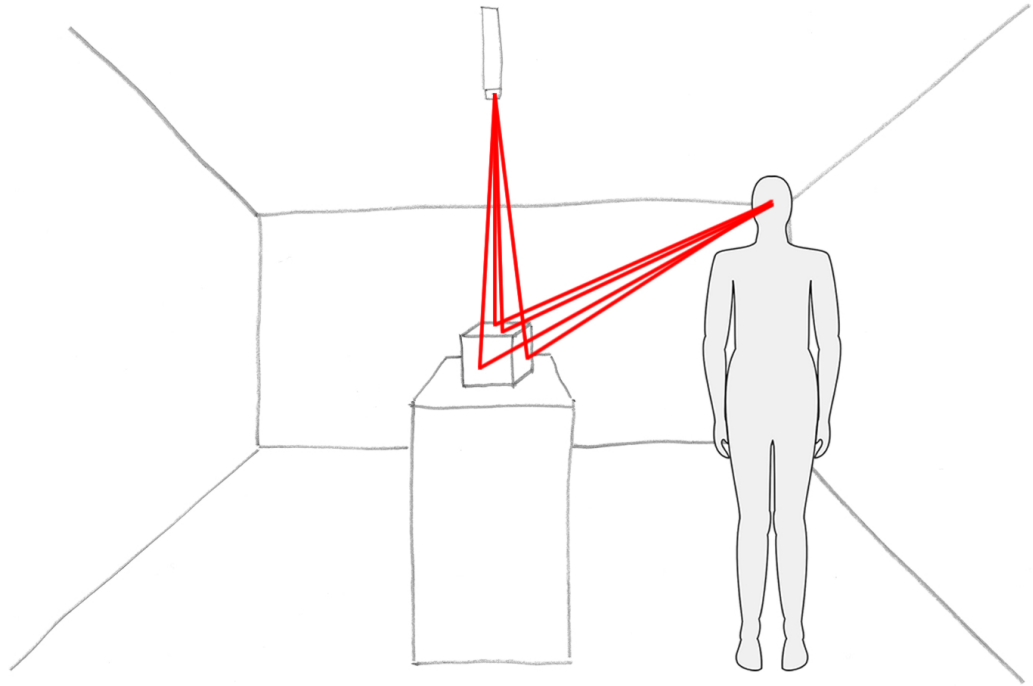


Figure 5. Light from a laser reflecting from the object and into the eyes of an observer.

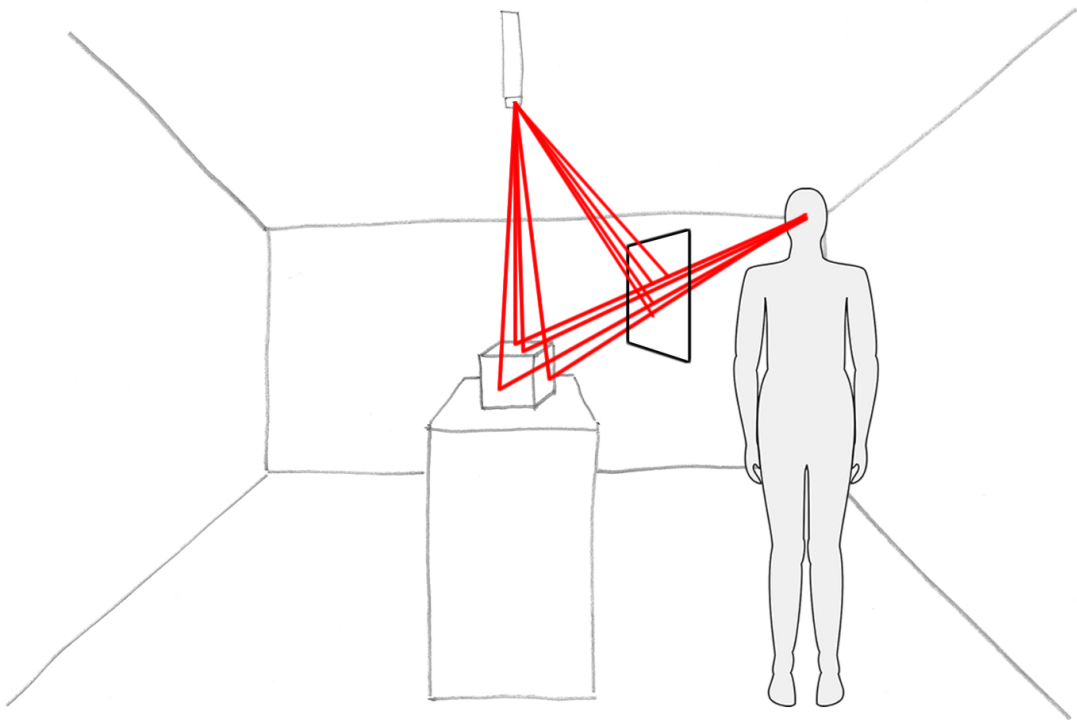


Figure 6. Light from a laser shining directly onto the high-resolution photographic plate and combining with light reflected from the object.

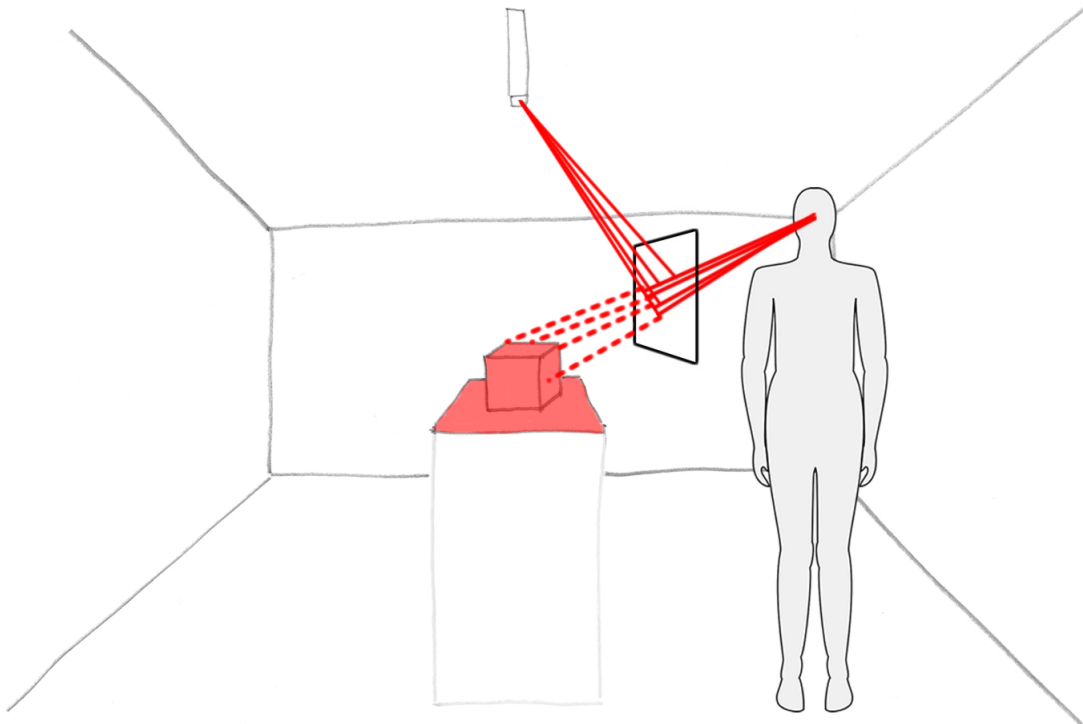


Figure 7. The object (and plinth) are no longer present in the room but light redirected by the holographic plate shines into the eyes of an observer and appears to have come from the exact location occupied by the original object – the viewer ‘sees’ the object.



Figure 8. Paula Dawson, *There's No Place Like Home*, 1979-80. Laser transmission hologram. Image: Paula Dawson, used with permission.

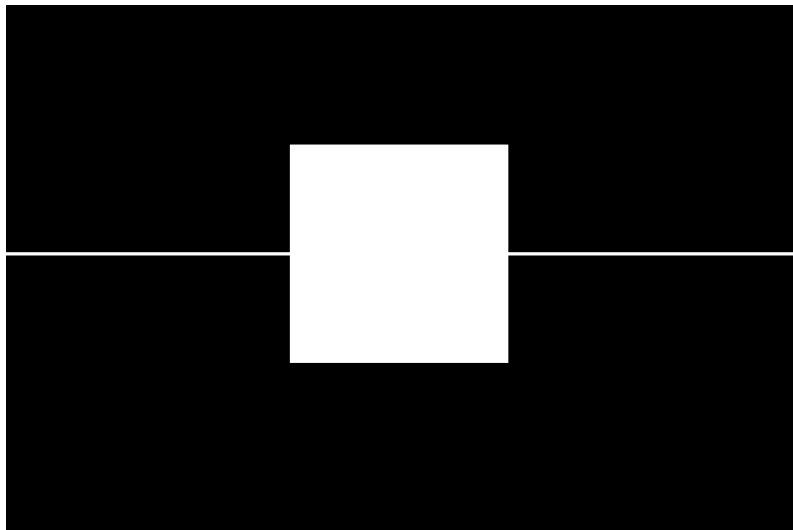


Figure 9. Image used on the 35mm slides projected by each of the plinth-mounted projectors.



Figure 10. Installation testing with plinths, projectors and central reflection hologram. Summer Lodge research residency, Nottingham Trent University, 2015. Image Andrew Pepper, used with permission.



Figure 11. *Three-Nine* installation at the Alternative Documents exhibition, Project Space Plus, University of Lincoln, UK, 2016.