

“The Eye in Time: Looking Back”

Scott Fisher Interview for:

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Introduction: Scott Fisher is most well known for his pioneering research in telepresence technologies and virtual environment design. Here, however, he discusses some of his earlier work in which he was researching, using both artistic and scientific methodologies, relationships between stereo images and displacements in time. This research, which he pursued in the 70s at MIT, is the basis for much of his current work on immersive environment design. In turn, Scott attributes much of his inspiration from this period to the Surrealists, Dadaists and the Earthworks movements and particularly to the artists Marcel Duchamp and Robert Smithson. He also acknowledges the influence of composers and researchers such as John Cage and Maryanne Amacher.

Mimi Ito is a Cultural Anthropologist researching the relationship between Media Technology and culture, and is a Ph.D. Candidate at Stanford University.

Joi Ito coordinates work in high-tech and media technology between Japan and the U.S.

Joi: Can you tell us a little bit about the work you were doing in the 70's on time and stereo photography?

Scott: During this period of time I was quite immersed in researching binocular perception and making stereoscopic images in many kinds of media - particularly stereoscopic photography. The main question that I was working with was how to describe a matrix of information through temporal and spatial displacement, by focusing on stereo photographs of a particular location.

One of my first attempts in this area started with a simple but very striking effect that I discovered while making stereo photo pairs. By taking on photograph of a scene and then moving the camera horizontally to match the distance between the eyes, you can make a pair of photos that can be fused, through a viewer, into a 3D image. Usually, it's best to take the images as close together in time as possible if things are moving in the scene. But I found that if I took an image for one eye and then waited for several minutes or even hours to take the image for the other eye, other subtle changes in the environment would produce very interesting effects when the images were viewed in a stereoscopic viewer. After much experimentation, I made a series of photos of trees casting very strong shadows on the ground. But in each case, I waited for a period of time to take the second image of the stereo pair. The images of the trees varied little in the pair while the sun's movement caused the shadows to be cast in quite different locations. When fused in the stereo viewer, the trees appeared in normal 3D, but because of the exaggerated disparity in position of the shadows, the flat outline was transformed into an apparent hole in the ground

In a subsequent project, I followed a demolition crew around for a year in Boston. I got newsletters and schedules from them telling me what buildings would be torn down in that area and I got quite friendly with the wrecking crews. They would inform me what good ones were about to come down. There was a huge storage building from the early 1900's that was near my apartment in Boston that was going to be torn down. It was a huge brick block about 8 stories high and had no windows because it was for ice storage. In effect this was about the most 3D building that you could imagine: opaque and solid [PHOTOS 15, 16].

I decided to focus on the demolition of this building and worked on several projects related to it. In one, I started to take stereo photos of buildings, from many different viewpoints around it. So, for example, I have a whole series of this thing coming down over a period of several months. If you look at the photo, the hole where the arrows are pointing is the first point they started to break in to. Looking down one street at the North End of Boston, where originally the view at the end of the street was completely blocked by this building, a year later there was no building there and you could see all the way through to the harbor. The view completely opened up [PHOTOS 9, 10]. I was trying to deal with how this strong sense of permanence and spatial occupation could change so quickly: that a particular plot of land was inhabited by this pile of bricks for almost 80 years., and all of a sudden, in the space of a year, that solid, opaque presence went away.

I also did a lot of research to find out where all the bricks, stone, and granite that made the building came from, and I traced them back to a couple quarries and plants in the New England area, mostly in Maine. I began documenting these locations with stereo photographs. And went the other way to find out where the demolition debris was dumped. Most of it went in to Boston Harbor or was used for other landfill. I was trying to set up a kind of cycle of how this material came out of the earth, leaving the negative space of the quarries and then was reformed into the solid shape of this building.

The third part of all this was that there was also a large tower next door for this big power plant that was built in 1900. And this photographer had shot a panorama from the top of the tower as it was being built [PHOTO 17]. I got permission to climb to the top of this tower and match the same panorama that he had done. So I had an image set that was taken in 1908 or so, and I had another set of images taken in 1975 from the same location. So that was yet another viewpoint of this space to show how things had changed from then to now [PHOTO 6].

In the stereo photos of this and other buildings, what I'm trying to describe is this matrix of information I was putting together about the spatial occupation and changes in the spatial structure of that part of Boston over the last 80 to 100 years. Now, like the shadow hole images I described at the beginning of this discussion, I had it set up so you could view the ice house building, as it stood for most of its 80 some years to the left eye, and exactly the same shot to the right eye without the building. So everything that still was the same, like the street, sidewalk, some trees some other building next to it, when you fused it in the stereo viewer, would come out in depth. You would get that sort of

crystalline 3-D stereoscopic effect. But the stuff that was no longer there, the building itself, and some cars that had moved, would kind of flicker back and forth between the two eyes. It was just a kind of funny effect on this sort of 2-D mixed in with the strong 3-D background. The basis of this series of photos was this juxtaposition of permanence with impermanence in order to express a feeling of change and temporal shift.

I made many more pictures of that ice-storage building as well as a lot of pictures of houses and other landscapes using this temporal disparity formal. This was exhibited at the Boston Institute of Contemporary Art as a work in progress called "The Eye in Time." I arranged a set of stereo photos in a kind of sideways pyramid. At the far right of the pyramid were 4 pairs of images of the ice storage building [PHOTO 4]. Each pair included a view of the building from a particular street printed next to a view from the same location after the building was demolished about 2 months later. Also emerging from this pair like a ghost was a transparent negative image of the building half demolished [PHOTO 11]. The next column included 3 images of other sites in the area taken from the same viewpoint before and one day after the demolition of a major building there [PHOTOS 7, 8]. In the third column of the pyramid, I mounted two pairs of the panorama images taken from the same power plant tower about 75 years apart [PHOTO 6]. The final photo pair was this one of the glacier and the aerial view of the part of Boston I lived in, and where this icehouse was [PHOTO 5]. The glacier represents what occupied that part of Boston about 20,000 years ago. What I was trying to do was show the very large disparity between the points in time when the two frames were 'taken' and, conceptually, the idea was to be able to fuse these, but obviously you can't. You sort of can in [a stereo] viewer, but it looks kind of funny.

After the exhibit, I continued to develop these ideas and worked on proposals to concentrate on events that could highlight the dramatic changes occurring in these demolitions and resulting spatial evolution. For example, I tried to develop images and events that would only be revealed as the building was torn down. I also talked with architects about the possibility of designing a building with its demolition planned from the beginning as a way to acknowledge and even celebrate it's limited lifetime of permanence and solidity.

I did more installations at various sites around MIT that people might discover by chance. I would take a photograph through a window looking to the outside. The photo was then mounted on the window with a lens so that when you viewed it like you would a stereo pair, one eye would see this photo from a specific point in time and the other eye would still look through the window at the actual scene [PHOTO12]. Again things that remained the same appeared in 3D and things that had moved or been added to the scene appeared in a kind of flickering 2D. I also began shooting series of photographic grids of locations in Boston and in Maine that I returned to over various periods of time to rephotograph from the same point of view. My hope was to start building a visual record of many levels of change in the environment around me by encouraging the rephotographic activity of specific sites for decades and centuries to come if possible.

Joi: OK, what about these watches? [PHOTO 2]

Scott: These images of the watches suspended over a mirror became a symbol for the work I was calling "The Eye in Time." They were originally made for another installation at a museum in New York. This is actually a small stereo pair, and I had some enlargements of these pictures printed, about 2 feet square. I had this huge billboard picture of some politician that was about 10 feet high. The two foot square photos that you see here actually had real string continuing from the string in the photo and going on to his eyes and the big mural was on a wall about 20 feet away. So when you went into this huge warehouse space, you would see this big face, and these pictures representing snapshots for each eye [PHOTO 1].

So this was a pretty glib, very non-literal image, but it's an image that I used over and over as a symbol of this whole project series. That whole decade of work that I was doing, everything I started thinking about or the images I was making seemed to fall under that idea of time and change and myself in time, the "I," the ego in time, and also the "eye," e-y-e as it relates to depth perception and temporal changes. And again these matrices of information that I started to describe were different approaches for me to this idea of the eye in time. These projects were expressing a very different attitude about solidity, about objects occupying space, and in fact, really celebrate the idea of an object going away, opening up the space, and a new object being built. The underlying objective here was to try to get people to think more about longer periods of time and change over time.

Mimi: Can you describe a little bit more about how stereo images express the sense of temporal change?

Scott: In a typical stereo image, the degree of depth and solidity is almost unbearably solid and immersive. I like to describe this as a "crystalline" or "hyper-solid" quality. In our day-to-day experience, we usually don't experience visual space this intensely, but rather we distance ourselves by adjusting our immersion in and out of it. In contrast, the 3D image of the stereo photo is so solid that it is almost frightening to look at it. It's a concern still with the VR environment, that when you're there, you're almost too much in there.

If we look at the metaphor of the sunglass as virginity, we can work backwards from this idea of immersion in a very strong sensory sense, using this kind of sexual relation, a similar whole-body, multi-sensory, immersion. It's kind of frightening to be that close to things, to someone, that immersed in an activity. It's time standing still.

The disparity between the pair of images in a traditional stereo photo is only the spatial separation of the lenses. By adding a temporal disparity to the images, that is, taking the images at different times, a time-lapse quality becomes apparent. As this separation in time is increased, the depth and solidity remaining in the image dissolves and gives way to a different kind of depth of information. The underlying objective here was to see if it was possible to use this effect as an aid to perceive and understand longer periods of time

and change over time. Because the stereo image is so crystalline and solid, it's dissolution is an eloquent and convincing expression of impermanence.

Mimi: So you're trying to create a sense of destabilization of solid reality by giving conflicting images to each eye?

Scott: Yes. But they're never completely conflicting. I tried to make the images so there were always things that were the same in each image and still had spatial occupation and a sense of permanence. So the photos expressed different rates of change or both permanence and instability. I was trying to point to his idea of overlapping cycles of existence; so different things have different time spans. Like you could start building a matrix of permanence and solidity where most of the stone structures seem to last a long time. Plants would change by the seasons. A person occupying a space would change in a matter of seconds. So I was trying to figure out how all that stuff fits together, and again understand for myself what that meant in terms of depth and how things relate to each other.

Joi: You're saying, then, that when you see depth with two eyes, rather than moving around an object with one eye, you get a whole new 3-D level of understanding, right? Are you making a correlation with the 4th dimension of time, where instead of experiencing time as a sort of day-to-day single-viewpoint, if you look at it from two or more viewpoints, you create this matrix of information? You get a sense of depth in time, like depth in space from a stereo pair.

Scott: Absolutely. That's exactly the objective here. I also discovered at this time, a science fiction writer by the name, Olaf Stapledon who wrote an amazing book called *Starmaker*. In his introduction he actually uses the metaphor of stereoscopic perception, or depth perception to represent time. I kind of stumbled across this in the middle doing this work and I just couldn't believe that it fit so perfectly. He would talk about, for example, how things get flat out towards the horizon. You know, the farther away things are the less depth perception you have, the less parallax or disparity. In this book, *Starmaker*, he equates that with time, the farther away it gets from you. In that book he covered millions and millions of years in the galaxy. He had jumped above and described these cultures on the planets in the galaxy, starting with our planet, and detailed these huge changes -- what would be huge changes to us were compressed as in a time lapse movie. This culture would pop up, this one would go away, and it would have all these interconnections that we would never see from our viewpoint in day-to-day participation in a culture.

Mimi: Scott, at this time, were you throwing the I-Ching ever day? And how much did the Eastern notions of impermanence have to do with this work?

Scott: It's pretty much what generated most of this because on a personal level, I worked for several years with a very traditional calendar that was based on the I-Ching where originally, each line of each hexagram represented a day in the calendar. What I tried to do was look at the meaning of each particular line of the hexagram within the context of

that day and try to understand what the meaning of that line was within the larger hexagram, that is within the 6-day period. There are 6 lines in a hexagram. I was trying to make myself more aware of changes over time on a much larger scale rather than just on a minute-by-minute, hour-to-hour basis. I was trying to pop up above my normal day-to-day time, just like I climbed up this tower to match this original panorama of Boston and see what that told me about change in the landscape around me. Personally, I was trying to understand my temporal landscape and yet try to train myself to have a better appreciation and understanding of how things were changing around me. What I would do was try to make a diary of my days, of my very specific actions that were important for that day, relate them to that line of the hexagram representing that day, and at the end of every six day period try to summarize how that period related to the hexagram as a whole. In this I-Ching calendar system, there was yet another hexagram that represented that whole season, and at the turn of the season I would try to summarize all the events and hexagrams within that period. So you can see it's this kind of spiraling upward, a challenge for me to pop above the day to day stuff and try to look at things in a much bigger time scale. To me, that necessarily is tied to depth and to spatial occupation and, as Mimi asked, this idea of transience and permanence. So effectively all I'm doing is from a very traditional Western approach, trying to understand, in my own way, some of these concepts that have been around in other cultures for thousands of years.

Mimi: You mention in the catalog photo description the idea of resonance and how when one gets attuned to the larger changes as opposed to more fast paced changes in the environment, somehow individual perception resonates towards introspection. That reminded me of Buddhist notions of contemplation where, when you're trying to deal with a time scale of eons rather than minutes, then all of the sudden the smaller fluctuations in your life become less relevant.

Scott: Right. Those are the kinds of things I was trying to understand, to play with, and to somehow visually represent with these disparate stereo photos. But more importantly, this constant attention to the stream of change going on around me seemed to have the effect of generating a personal inner solidity, a constancy over time that probably relates to development of some sense of self.

Joi: There's also a really interesting thing I heard. It may be an urban myth, but I heard that they published a calendar that had a thousand years on one poster, and they said several people tried to commit suicide because of it, because you saw how insignificant your life was in the context of a thousand years, it was just this little blip. So I thought that was also this interesting thing, the fact that you have these blind spots that keep you from seeing any kind of large temporal space because of the fact that we're not that large temporally, and we make it feel like our lifetime is a long thing because we want to feel that. But with your icehouse and all these other things, the way that things change in that setting makes us become very very small.

Scott: I think it has to do with the sense of immersion [PHOTO 14]. I'll try to make another analogy using stereo images. Most people seem to like walking through a gallery quickly scanning the pictures on the wall. But for stereo photos, it takes a much greater

effort to fuse the images, and a much longer time is required for the eyes to explore the depth of the 3d space. In general there seems to be some aversion to this kind of deep immersion. Perhaps it requires too much commitment. The same seems to be true of time as you suggest. When confronted with these vast temporal spaces, the historical response has often been avoidance or denial rather than pleasure in the temporal immersion. I found it strange that the architects I talked with seemed to assume that their buildings would last forever - there was no acknowledgment of their transience. If the thousand year calendar generates feelings of insignificance, it makes me wonder if we could instead celebrate this immersion - and find better ways to explore these depths of time.

Mimi: You mention memory in one of your photo descriptions, and this idea that we can, through memory, access disparate points in time and juxtapose them. It's interesting that your images are not about "lived" experiences of temporal disparity, but rather they're pulled out of experience and represented and juxtaposed as in memory.

Scott: All I was trying to do was to define this idea of temporal disparity as opposed to spatial disparity. I mean, spatial disparity is just taking an image of this viewpoint, and then moving the camera two and a half inches and taking it from that viewpoint, and hence getting this uniquely immersive stereo image. And this idea of temporal disparity that Stapledon seemed to be talking about, and that personally I was trying to get at, seemed, after all, to really be about memory. What I'm doing constantly in thinking about the world around me is comparing a rich matrix of images, thoughts and perceptions of things with constantly evolving newer input. And that somehow fusing those has the same effect as fusing a stereo image. Memory has this kind of unreal stereoscopic 3-Dness that takes on a meaning above or outside of just those two thoughts or concepts on their own. Just fusing them, you get some third thing, some additional synthesis out of it. You get this very personal, subjective experience that no one else will have. You are the only one fusing them and having that sort of floating image, the stereo pair, and I was trying to say the same thing about memory.

Joi: I just remembered you telling me about those guys on the boat who used to have the special binoculars where you could make the distance between eyes wider so that you would get an exaggerated sense of depth and objects would look miniaturized, like a model [PHOTO 13]. So, if we look at time, by stretching the distance between two temporal reference points, we can get a better sense of relationship between events in short and long term memory. By taking a picture and dilating that space, you're creating something like those special binoculars for looking at ships far away.

Scott: That's a really good way to describe this. As with both kinds of binoculars, there are interesting improvements or additions to your perception, that is the depth increases. But sometimes there is this other effect that everything looks like a little model. In a way you're shrinking it down and it has a very different feeling about it. It feels like a toy or something. I think you're right in that there's something funny about this memory process- that maybe we have to have a separation in time to understand the stuff. That's still a big question for me.

Mimi: Well, can you explain a little how all this relates to your current work? Because really the ideal is to be able to fuse these two temporal dimensions.

Scott: You mean, my work in the seventies and my work now?

Mimi: Yeah. Because there is continuity within discontinuity, right (laughter).

Scott: I think it's hard for me to understand what I do now in the same way in the same way as the seventies because I'm too close to it. It's hard for me to see the depth here. I know there are lots of little bits and pieces in my work making virtual landscapes, virtual environments, that very much derives from my thinking about the natural environment that informs the work I'm doing now. But I don't think I can articulate it yet. Maybe we have to do this again in another fifteen years (laughter). I think you need to get above it and, as Joi talked about, and have this sort of separation where it starts looking like a little model. I'm still too close to the model, like I'm one of those objects in the space. In order to articulate what is happening, you have to have an overview of this little model, but the depth is kind of increased. You can understand the relationships. I mean, stereoscopic perception is about relationships. It's not an absolute thing. It's about how objects relate to each other in space, and for me, even more so, how those relationships evolve over time.

1. Eye in Time Installation, New York, 1975
2. Eye in Time, Boston, 1975.
3. Demolition documentation.
4. Eye in Time installation at ICA Boston.
- 5 - 11. Detail of Eye in Time installation at ICA Boston. Stereoscopic Photographs.
12. Eye in Time installation at MIT.
13. Illustration of special Binoculars for depth improvement.
14. Illustration of Immersion.
- 15 - 16. Photograph of Ice storage Warehouse in Boston.
17. Photograph of Ice storage Warehouse also showing adjacent tower that panorama was taken from. .