

Memeplicity

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Memeplicity

Memeplicity the media installation

Memeplicity is a new media installation which lets the participant encounter a shadow entity from the past. The shadow entity from the past is predetermined, but coincidentally unpredictable. The participant will be a part of the shadow play between past and present. Consciously or unconsciously reacting to the past shadow's initiations and thereby becoming a link in a temporal chain of events.

What is a meme then?

Like a gene, which is a self replicating molecule, a meme is a self replicating unit of information. The term "meme" was first conceived by Richard Dawkins in "*The Selfish Gene*" (1976, p. 192). The word is an abbreviation of the Greek word "mimeme" which is something being imitated. A meme may replicate itself by propagating from a parent brain to other brains. Like genes, memes will mutate and evolve, and only the most successful incarnations will prevail in the meme's quest for self-preservation.

Shadow memes

So, how is a temporal chain of shadows in any way related to Dawkins' meme theory?

Dawkins states that:

Whenever conditions arise in which a new kind of replicator *can* make copies of itself, the new replicators *will* tend to take over, and start a new kind of evolution of their own.

When a person enters the *Memeplicity* shadow frame, a shadow from the past simultaneously enters from the opposing side of the shadow frame. This past shadow's actions are predetermined, but still

a direct replication of its person reaction to the shadow the participant was then being subjected to. The past shadow's actions will then directly influence the present participant.

Indirectly, it is not only the prior participant's shadow that is triggering a response in the present participant, but it is the combined reactions of all the prior participants that is manifesting itself as the one shadow which the present participant is being subjected to. This can be interpreted as an evolutionary process where fragments of information in the form of gestures, poses or other forms of nonverbal communication will transpire and travel in time through this shadow chain of actions and reactions.

As Richard Dawkins' meme theory suggests, something capable of replicating itself will tend to evolve more and less stable incarnations over time. The less stable memes will perish, and the stable ones tend to proliferate. With this theory in mind, it is probable that some of the shadow memes developing during the installation's life time may live on for an indefinite number of generations.

What's in it for participant?

So much for an interesting theory of evolutionary memes. But what is in it for the participants, the visitors, the audience?

Firstly, experiencing an interactive representation of oneself is mostly always an enjoyable and including experience. Encountering a second shadow without anyone causing it, may at first be an eerie and puzzling sensation which may trigger evasive or investigative reactions as the shadow's presence is quite real.



The shadow of the past to the right is doing some slapping movements downwards which the prototype tester ended up trying to block with his arm.



Prototype tester trying to give a free hug to a shadow of the past.

During *Memeplicity* prototype tests I have observed some initial responses by peers being subjected to the prototype. I have seen a multitude of interactions taking place. Some examples include:

- Testers first exploring their own shadow, then turning their attention to the shadow of the past.
- Playful behaviour like dancing with the shadow of the past.
- Unprovoked 'violence' in the form of slapping or hitting the shadow of the past.

Most of these interactions have resulted in smiles and what must be interpreted as positive experiences.

These different reactions have all arisen in a limited test scenario, and I expect more interesting interactions to come forth in future tests and during the final installation.

Motivation

The modern lifestyle is a temporal jigsaw where a multitude of activities and intrusive media demands everyone's attention. In addition, private and employment responsibilities, tight time frames and overlapping schedules all contribute to make the everyday a stressful and hectic place.

Our short term memory is quite limited in regards to the number of information units being held in attention at any one time (Norman 2002). This is generally seen as a limiting factor in the design process of a particular user experience. A designer should never expect anyone to remember more than five to nine fragments of information at any one time, and this will then again directly influence the finalized design of an object or user experience.

By subjecting individuals to an unexpected involving, playful and positive visceral experience, and thereby utilizing these limitations, might help offset (for a short time) one or more of the stress causing thoughts/concerns. The result of this might give the subject an unexpected but needed mental break during his or her busy day.

Scott Sona Snibbe was quoted in an interview with *Dichtung-Digital* (2006):

I like to create moments that are so powerful that you completely forget your sense of self and literally become the experience. For a short while you forget the past, stop anticipating the future, and become the present.

I find Snibbe's motivation resonating with my own ideas of an experience, that is not as much actively considered at the time, as experienced through serene explorative play. This while at the same time actively contributing to the overall experience.

Implicating the audience

Stoichita (1997, p. 20) looks into how people relates to their own shadows. In this context he quotes Plato's shadow simile.

'Imagine an underground chamber, like a cave with an entrance open to the daylight and running a long way underground. In this chamber are men who have been prisoners there since they were children, their legs and necks being so fastened that they can only look straight ahead of them and cannot turn their heads. Behind them and above them a fire is burning, and between the fire and the prisoners runs a road, in front of which a curtain-wall has been built, like the screen at puppet shows between the operators and their audience, above which they show their puppets.'

'I see.'

'Imagine further that there are men carrying all sorts of gear along behind the curtain-wall, including figures of men and animals made of wood and stone and other materials, and that some of these men, as is natural, are talking and some not.'

'An odd picture and an odd sort of prisoner.'

'They are drawn from life' I replied, 'For, tell me, do you think our prisoners could see anything of themselves or their fellows except the shadows thrown by the fire on the wall of the cave opposite them?'

'How could they see anything else if they were prevented from moving their heads all their lives?'

'And would they see anything more of the objects carried along the road?'

'Of course not.'

'Then if they were able to talk to each other, would they not assume that the shadows they saw were real things?'

'Inevitably.'

In the simile Plato argues that in a given situation, somebody might identify shadows of men and things as the actual men and things, and not just causal representations, as which they are.

As we are not restricted in the same way Plato proposes, we easily differentiate between the shadow of a person and the person itself. Even though a shadow is merely the result of someone or something obstructing rays of light from a light source to some surface, we experience a relation between a shadow and it's caster. We refer to a shadow as "mine" or "your" shadow and thereby consciously link the shadow with the person to which we perceive it belonging.

Even though the setting in which Plato contemplated is particular indeed, the core of the contemplation about the individuality or actuality of the shadow is relevant in the context of *Memeplicity*. The encounter with a shadow without a caster is at first unreal, and as there is no obvious cause of the shadow, it's belonging will be only to itself, and it's actions, the actions of itself. So, may not the shadows being encountered in *Memeplicity* be interpreted as independent entities?

At first this may seem to be the cause, or one might suspect there being someone casting the shadow from behind the screen which the shadow is cast upon. When having witnessed the shadow of the past for some time, I expect it to be evident that this is a recording and the mystery of it dissolves.

By directly involving the participant in the interaction, through their body and their shadow representation both, in the present and in the future I hope to achieve a high level of individual commitment in this experience that is wholly driven by the participants.

Related artists

Regarding the execution of the Memeplicity installation, I have found myself inspired by prior artists. In my state of the arts reviews I have in particularity found prior arts by **Myron Krueger**, **Rafael Lozano-Hemmer**, **Scott Sona Snibbe**, **Golan Levin** and **Philip Worthington** to be inspiring and relating in different ways.



Myron Krueger's *Videoplace*.

Picture from Golan Levin's "Computer Vision for Artists and Designers: Pedagogic Tools and Techniques for Novice Programmers"

Myron Krueger

In the early 70's, artist Myron Krueger (1991, p. 36), conceptualized and proposed an installation framework called *Videoplace*. *Videoplace* is described by Krueger as a place (artificial reality) that is created when two way video is mixed into a shared visual environment.

In *Videoplace* two participants in different physical locations could interact with each others image representation in the form of a coloured silhouette.

Krueger found that two people who saw their images juxtaposed would interact as though they were actually together.

Memeplicity however, does not so much create a new place, as it lets a trace of the past interfere with individuals here and now. As noted earlier about my prototype tests, I have found connections similar to the ones experienced by Krueger to emerge with the images of past and present juxtaposed. Even though in the *Memeplicity* setting, the influence is one way only.



Rafael Lozano-Hemmer's *Body Movies* in Rotterdam.

Photo reproduced with the permission of Rafael Lozano-Hemmer

Rafael Lozano-Hemmer

As Rafael Lozano-Hemmer exhibited his installation *Body Movies* in Rotterdam August–September 2001, similar social interactions as demonstrated by Krueger was evident.

In Lozano-Hemmer's installation, people were moving around in the square of the Pathé Cinema of Rotterdam. They there got to experience their shadows being projected upon the façade of this building. The size of the shadow cast by a person was

directly related to how close they were to one of the two light sources. Their shadows also revealed images of people projected onto the wall. These images then gave people incentives to attain certain poses to reveal people within their shadows.

Strangers who found their shadow projected on this giant wall, also engaged in a form of shadow play where the scale of the shadows suggested a predator/prey relationship. As in *Videoplace*, playful indirect interaction occurred between the participants.

Another shadow based installation developed by Lozano-Hemmer is *Under Scan*. In this installation videos of people are projected onto the ground. Once again it is the shadows of the audience that reveal these videos and make them visible. In contrast to *Body Movies*, these experiences are much more personal as the size of the revealing shadow is quite small and close to the participant.



Scott Snibbe's Deep Walls. Recorded shadows becomes repeated loops creating a mosaic of moving images.

Photo reproduced with the permission of Scott Sona Snibbe

Scott Sona Snibbe

Play is also an important element in Scott Sona Snibbe's social interactive artworks. Snibbe has implemented a number of shadow based installations utilizing inter-personal relationships in temporal and spatial environments. One example is his *Shadow Mosaic: four by five* which is exhibited in Yahoo's quarters in Sunnydale, California. This piece captures peoples shadows as they walk past a white screen. The captured shadow are then being looped back in

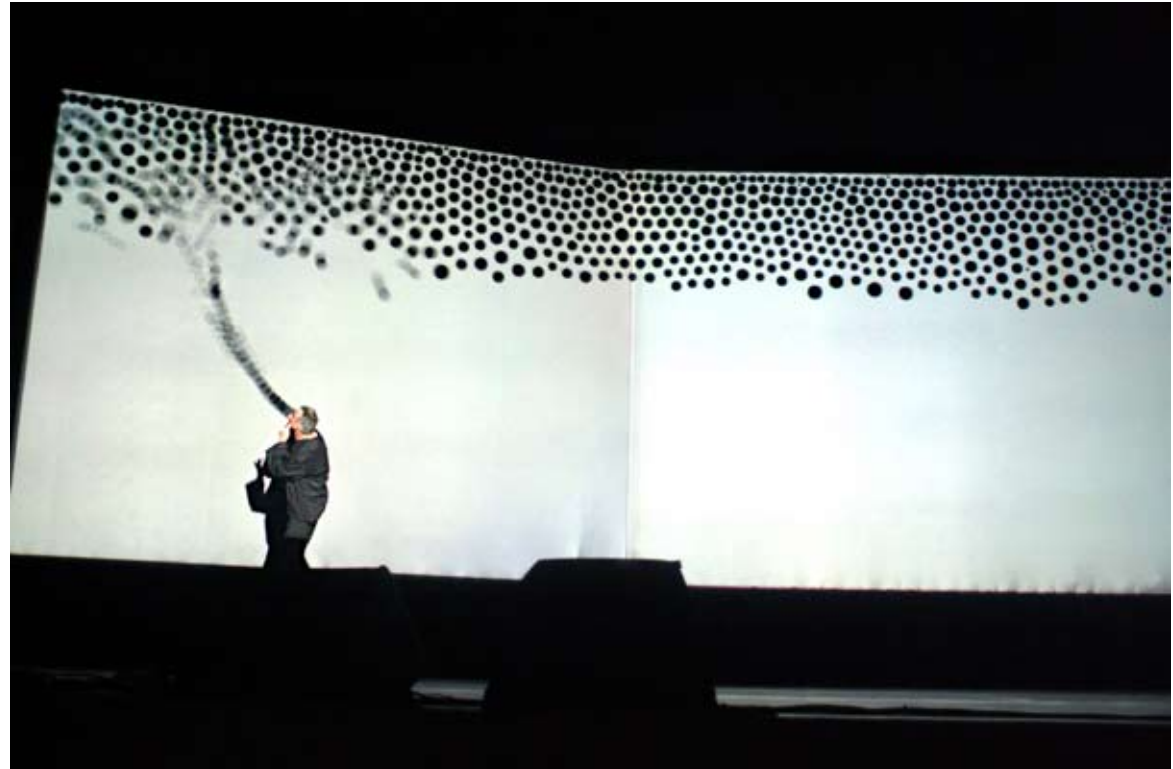
one of 20 video tiles on this same white screen and becomes part of this dynamic ever changing mosaic.

Other Snibbe-installations utilizing the notion of shadows include *Visceral cinema: Chien, Deep walls, Concentration, Fear, Shadow bag* and his latest installation *Social light*. This last installation have been exhibited in the Science Museum of London in 2007.

The shadow is a recurring element in Snibbe's interactive artworks. In contrast to Lozano-Hemmer and Krueger's use of the shadow, Snibbe does not

limit himself to the shadow in real-time but plays with looping, time displacement, and destruction of the shadow.

In an article by Bullivant (2007, p. 71) the author writes that "Snibbe wants people to experience his work 'body first', he explains, with a strong visceral sensation later followed up by thought and reflection".



Messa di Voce by Golan Levin and Zachary Lieberman with Jaap Blonk and Joan La Barbara. The person pictured in the photograph is the vocalist Jaap Blonk. The performance takes on different visual styles, this being one example where the sounds made by the artist takes the form of bubbles.

Photo reproduced with the permission of Golan Levin

Golan Levin

Golan Levin is a former collaborator with Snibbe. Levin's *Messa di Voce* (Levin 2006) is a hybrid performance/installation which tracks the performers head. The sounds uttered by the performer is analysed and visual sound representations are projected as shadows of invisible objects onto a screen, floating from the performers head.

The shadow representations of the sounds get their visual characteristics from the phonetic proper-

ties of the sounds being made. *Messa di Voce* is both a performance tool and a new media installation for the audience to interact with.

Levin's work has not so much directly contributed to *Memeplicity* as it have made me consider auditive elements/interactions leading to the shadow shards now present in *Memeplicity*.



An illuminated back screen makes it easy to capture the outlines of people in front of the screen.

Photo by Eivind Arnstein Johansen



Philip Worthington's "Shadow Monsters". The silhouettes of the participants are transformed and reinterpreted as monsters. Pupils, teeth and hair are added to shadow forms in real time.

Photo by Eivind Arnstein Johansen

Philip Worthington

Philip Worthington created the installation *Shadow Monsters* which I have experienced first hand at the Design Museum in London, 2006. *Shadow Monsters* reinterprets the silhouettes of participants in front of an illuminated screen. This bright screen is not very evident, as all attention is directed toward oneself's shadow monster at a larger screen.

Shadow Monsters was my first encounter with a shadow based interactive installation. I paid no par-

ticular attention to the piece at the time, other than thinking it was a joyful and unexpected experience.

It is however the impressions from my encounter with Philip Worthington's *Shadow Monsters* that have made me commit further investigations into the subject matter of shadow representation and interactive media installations.

Project Aims

- To create a visceral and memorable experience.
- To create the sensation of an encounter with someone not present.
- To facilitate a contained environment in which shadow memes may form and replicate.

The experience

Memeplicity is a new media installation. The installation is based on a shadow capturing prototype created during my Design & Digital Media (core) Module. The installation captures video from an external camera which is then subjected to a background subtraction process, thresholding and softening. The resulting image frames of these processes are then being stored as uncompressed .flv video. In addition the processed video is output via a projector. The installation will initially be situated in a public indoor space.

When nobody occupies the space in front of the 3x2 meter canvas, the screen will be white/empty. When someone steps in front of the canvas wall, two things will happen. Firstly, the participants will see their shadow appear as if there is a point light source somewhere behind them. As the participant notice their shadow, they will notice that at the same time they enter, another shadow enter the canvas from the opposite side. This opposing shadow has it's own storyline/set of actions which in some way will influence our participant's actions/reactions in front of the canvas.

When someone later enter in front of the canvas and our participant's shadow replays from the opposing side, the new participant will react to the reaction of our participant, which was as well influenced by a prior participants reaction.

So, there will come into existence a temporal chain of events, where reactions are turned into actions, which themselves cause reactions. In this chain of events, some form of nonverbal communication will occur between the shadow of the past, and the

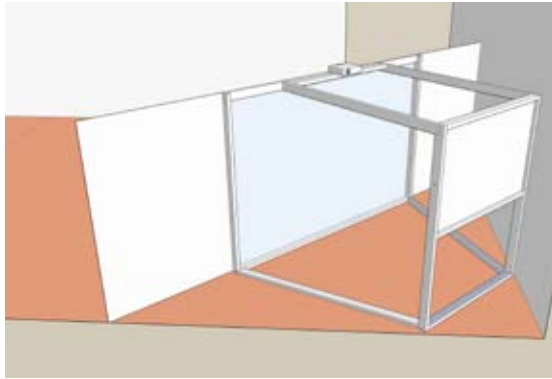
present participant. This communication may consist of gestures, poses and other visual language which will most likely be unconsciously committed.

It is by this temporal communication, or layering of shadow reactions I propose shadow memes will emerge. These may take the form of gestures or actions (with variations) being repeated from generation to generation of participants only connected by the shadow encounters.

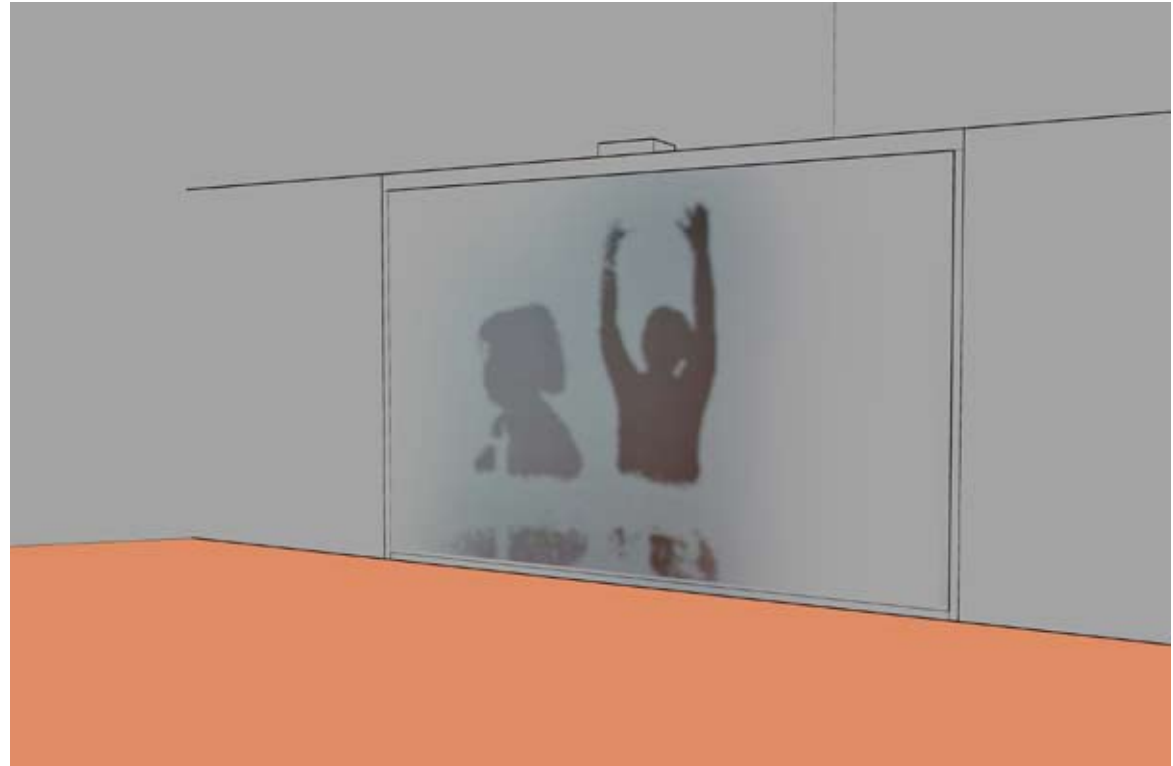
To strengthen the communication path of shadow-to-participant-to-shadow-to-participant, the playback of a particular participants shadow will be delayed by five shadow instances. That is, the fifth participant entering the shadow frame after one particular participant, will encounter this particular participant's shadow. In this way the participant will most likely not have witnessed the interaction causing the shadow which they then encounter. As a result of this, there will be five semi-independent shadow chains developing simultaneously.

The trick of making sure everybody experience an encounter is partly inspired by Chinese shadow puppetry. As the shadow puppets are two dimensional in nature they may easily be flipped to accommodate for the preferred interaction direction. Likewise the recorded shadow is flipped dependent on which side the participant enter from.

As the shadow of the past does not "belong" in the present and is just displaced in time the present shadow has got the power to disintegrate the shadow of the past. This materialize itself as shadow shards flying off when the two shadows overlap. This weakens the shadow of the past until it is not visible any more and returns to it's own time.



The construction consists of a wooden framework, a 3 x 2 meter canvas and a 1,5 x 1 meter mirror as well as some white elements on the side to strengthen an impression of wall.



Memeplicity is an angled wall with the active area occupying a 3 x 2 meter in the centre.

Physical dependencies

- An indoor space with public access
- Participants / Audience
- Computer running Adobe AIR
- IR light sources
- Imaging Source progressive scan monochrome camera with IR filter
- Projector
- Mounting for projector and camera
- Projector framework with back projection canvas
- Long VGA cable
- Power cords
- Memeplicity application

Research for future development

The installation should be as un-intimidating as possible, as it seeks to create a visceral and positive experience based on curiosity, participation and exploration. To avoid creating an aura of expectation/unwanted “consequences” for the participants, no variants of forms/questionnaires will be directly utilized on-site as this may contribute to the experience in a negative way. Feedback will however be gathered through casual conversation with participants having experienced Memeplicity.

Further information about the participants experiences will be gathered through observation and assessment of captured shadow-movies collected by the installation.

Sources

- Bullivant, L. (2007) 'Shadow Play: The partisipative Art of Scott Snibbe.' *Architectural Design* v. 77 no. 4 (July/August), p. 68–77 .
- Dawkins, Richard (1976) *The Selfish Gene*. Oxford: Oxford University Press.
- Dichtung-Digital (2006) Useless Programs, Useful Programmers, and the production of Social Interactive Artworks [online] available from <<http://www.dichtung-digital.org/2006/1-Snibbe.htm>> [10 April 2008].
- Krueger, Myron W. (1991) 2nd edn. *Artificial Reality II*. Wokingham: Addison-Wesley Pub Co.
- Levin, G. (2006) Computer Vision for Artists and Designers: Pedagogic Tools and Techniques for Novice Programmers [online] available from <http://www.flong.com/texts/essays/essay_cvad/> [13 May 2008].
- Lozano-Hemmer, R. (n. d.) Body Movies video [online] available from <<http://www.lozano-hemmer.com/video/bodymovies.html>> [15 May 2008].
- Maslow, A. H. (1943) 'A Theory of Human Motivation.' *Psychological Review* 50, 370-396.
- Norman, Donald A. 2002. *The design of everyday things*. Basic Books. New York.
- Stoichita, Victor I. (1997) *A Short History of the Shadow*. trans. by Glasheen, Anne-Marie. London: Reaktion Books Ltd.