The Role of Traditional Shadow Play on Creativity in Interaction Design

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Abstract

Interaction design within the area of Human Computer Interaction has been around at least the last half of the twentieth century. However, some argue that interaction design has been a part of the human experience much longer. Throughout history, different cultures did have different techniques for the art of interactive performance, in parallel with the developing technology. These techniques were quite different from today's computer interfaces and our way of looking at it. It is believed that, today, if we can understand the philosophy behind these techniques of different cultures from different parts of the world, we can make an important improvement in producing designs that go beyond the limitations of two-dimensional interfaces for interactive media design. From this reality, we face the challenge of reinterpreting the early performance techniques by using the advantages of today's technology. This challenge can be developed in such a way that it may be possible to add new dimensions to our concepts of interactive media design by examining the techniques of the art of show of past cultures. There are many examples in history to answer the articulated challenges. One of them is the technique of "shadow play" which is quite parallel to interactive media. In this paper, by looking into the typology of the traditional "shadow play", the challenge of developing these new concepts for interactive media is examined by 10 projects which belong to 40 European Design Students who joint European Interaction Design Summer School funded by European Union ERASMUS Intensive Program. (Please see projects at http://www.khas.edu.tr/idss and please see detailed philosophy at http://idcourse.hku.nl/)

Introduction

"Software designers should be trained more like architects than like computer scientists." [1] There is no coincidence that one of the participating lecturers and supervisors of the course - professor Oguzhan Ozcan - has a background as a trained architect. An architect is the prime example of someone who deals with design problems that range from artistic expressions of exterior and interior, selection of materials, to the construction of plumbing and electricity. The objectives of the course were twofold; to educate young designers and developers within interactive media and to initialise processes for educational coherence and standardisation. During the course students were required to explore and produce conceptual designs for interaction techniques and information appliances inspired by Turkish Traditional Shadow Play. However in the summer course we also considered the cultural aspects of design of new technologies from the perspective of traditional Turkish shadow play. A source of inspiration is the Cultural probes by Bill Gaver et. al.; "We approach research into new technologies from the traditions of artist–designers rather than the more typical science- and engineering-based approaches." [2]

The process of designing and creating interactive media is in itself a creative craft. Malcom McCullough's book Abstracting Craft - the practiced digital hand, reflects on what makes up craft and how it can be applied to interaction design and the creation of interactive media. In McCullough's view the activity of designing digital artefacts is further away from science and engineering - as in computer science and computer engineering - then from craft. The desire within computer science to make the craft of creating software into software engineering is a whole research field. In this field the user is abstracted to a case - usecase - a monolithic box for identifying features and treating the complex factor of humans. This keeping distance of from craft in software science and engineering is similar to how engineers in the eighteenth century Industrial Revolution saw craft. From Diderot's Encyclopédie 1751-80 "*CRAFT. The name is given to any profession that require the use of the hand, and is limited to a certain number of mechanical operations to produce the same piece of work, made over and over again. I do not know why people have a low opinion of that this word implies; for we depend on the crafts for all the necessary things of life. Anyone who has taken the trouble to visit casually the workshops will see in all place utility applied with the grates evidence of intelligence: antiquity made gods of those who invented the crafts; the following centuries threw into the mud those who perfected the same work. I leave to those who have some principal of equity to judge if it is reason or prejudice that makes us look with such a disdainful eye on such indispensable men. The poet, the philosopher, the minister, the warrior, the hero would all be nude, and lack bread without this craftsman, the object of their cruel scorn.*" [3]. Bringing media to life calls for skilled designers and software craftsmen, a skilled media designer working on a problem tries to frame the problem by considering all aspects of it. The designer makes moves drawn from a repertoire which takes her to new situations, she studies these, and in conversation with the situation it talks back to her. Unexpected situations result and mistakes cause reflection-in-action, which leads to new experiences and thus broadens the designer's repertoire [4].

The approach of design media is problem-solving. Logical-deduction and quantitative research methods require controlled environments, clear hypothesis, and quantifiable and measurable metrics. A design problem is often vague, very complex, and has - to a qualitative method - to many unknown qualities (variables). To deal with all these ambiguities the interaction designer has to develop a repertoire of design moves to apply in framing of a situation.

In the process of learning and becoming a interaction designer we look for talk-backs from the design problem in the process of dealing with it. An important aspect of learning in this context is the process of play. According to McCullough: "*Play serves learning though experimentation without risk. Play often lacks any immediately obvious aim, other than the pursuit of stimulation, but functions almost instinctively to serve the process of development. Learning occurs through quick, imprecise actions, conducted within understood rules of a game, and free of threat or consummation. Play does not use up so much as build. One thing it builds is common sense. Play's endlessly variable series of awkward, exaggerated motions seeks out the approximate arena for later development of true competence.*"

We created the "game" referred to in the citation above by the creation of both cross-cultural and interdisciplinary groups, and by exploring and using the topology of traditional Turkish

shadow play. This enabled the students to start out-of-the-box thinking and as such step away from their traditional repertoire of moves and methods, since the task at hand could not be approached in "the way you normally do".

As a guide to frame design dilemmas into this uncharted territory, we provided the ten rules of engagement between design and new technology (2000) for the CHI conference - The Hague - 2000.

1. We cherish the fact that people are curious, playful, and creative. This is one reason technology is not going to go away: it's too much fun.
2. We will deliver value to people - not deliver people to systems. We will give priority to human agency, and will not treat humans as a 'factor' in some bigger picture.
3. We will not presume to design your experience for you - but we will do so with you, if asked.
4. We will not believe in 'idiot-proof' technology - because we are not idiots, and neither are you. We will use language with care, and will look for less patronising words than 'user' and 'consumer'.
5. We will focus on service, not on things. We will not flood the world with pointless devices.
6. We believe that 'content' is something you do - not something you are given.
7. We will consider material and energy flows in all the systems we design. We will think about the consequences of technology before we act, not after.
8. We will not pretend things are simple, when the are complex. We value the fact that by acting inside a system, you will probably improve it.
9. We believe that context matters, and we will look after it.
10. We believe that speed and time matter, too - but that sometimes you need more, and sometimes you need less.

Recently, we can see a strong evolvement for the sixth rule: designers of interactive media today do not provide content; they provide tools for users to produce content. Designers sets a frame for these activities. If we follow the current trajectory of media and software use, we can see that interaction designers - for instance Apple's iLife suit or the Youtube site - create tools for users to create content of their own design. Artists such as Peter Gabriel (in 1994 CD-ROM "Xplora") and Nine Inch Nails (in 2005 "The Hand That Feeds" for Apple Garageband) released pop-songs that users were able to mix and explore in their own way. We think this is one of the major ways that use of interaction technology has changed, from consuming to producing, from experiencing to expressing.

Turkish Shadow Play

Throughout the history, different cultures had different techniques for the art of interactive performance, in parallel with the technology. These techniques were quite different from today's computer screen form and way of looking at. It is believed that, today, if we can understand the philosophy behind these techniques of different cultures from different parts of the world, we can make an important improvement in producing designs that goes beyond the limitations of two-dimensional screen for interactive media design. From this reality, we face the question of reinterpreting the early performance techniques by using the advantages of today's technology. This question can develop more as, if it is possible to add new dimensions to our concepts of interactive media design by examining the techniques of the art of show of past cultures. There are many examples in history to answer the questions above. One of

them is the technique of "shadow play" which is quite parallel to interactive media. [5]

Here is a short introduction to traditional Turkish shadow play which is the bearer of the cultural spine of the course. [5]

Karagöz (Turkish: Black Eyes, or Gypsy), type of Turkish shadow play, named for its stock hero, Karagöz. The Karagöz play was highly developed in Turkey by the 16th century and was adapted in Greece and North Africa. In the 20th century Karagöz have lost popularity to cinema and other entertainment. The origin of the Turkish shadow play is still a subject of speculation, but it probability arose in Egypt. In the early seventeenth century Egyptian shadow puppeteers performed at the Sultan's brother's wedding. In Turkey, the Karagöz (a character, Black-eye) theatre was the prevalent form of shadow play. A standard shadow play has four main elements: 1. an introduction in which a preparatory scene is first shown and then removed to the raw strains of a reed flute, followed by Hacivat's recitation, to the beat of a tambourine, of a mystico-philosophical gazel, and ending with a squabble between Hacivat and Karagöz, who has in the meantime joined Hacivat on the screen; 2. a dialogue between Hacivat and Karagöz, the major characters; 3. the main play itself; and 4. a short closing in which Hacivat accuses Karagöz of having destroyed the screen and goes off to inform the owner while Karagöz begs the spectators forgiveness for all the slips of the tongue committed by the characters.

Karagöz shadow play is performed behind a semi transparent screen, the play's characters, animals and objects cast shadows on this screen. The characters are transparent themselves so their shadows have colours and nicely carved patterns. The artist performs the play in the four phase framework (above), but can alter the performance and improvise according to the response from the audience. The artist controls the characters through horizontal sticks. The puppeteer performs the voices of the characters, while simultaneously making sound effects and playing music.

The interaction design summer school students approached the task of reinterpreting the traditional shadow play performance techniques through today's (and indeed tomorrow's) technology into interaction design of digital artefacts. More generally the students' work indicates how we can bring new dimensions to our concepts of digital artefacts in the view of art of shows of past cultures such as the traditional shadow play.

In sessions of critique we emphasise the students' reflection on their actions and the moves they made to complete their designs.

We can regard interaction design as a design discipline, since there is an active role for a criticiser (a critic) who values the qualities and consequences of a design. Here the critic creates, refines, and disseminates knowledge. The critic's task is to value the interaction design of an artefact from historical, social, and cultural perspectives, to ascertain its analogies, explore its expressions, and discover its ambiguous implications. Löwgren and Stolterman argue that this knowledge is not empirical nor deductive, yet it's available, and usable for a broader audience of users, designers, and developers [6]

Student's projects, three cases.

Show Me
http://www.khas.edu.tr/idss/Show%20Me/website/index.HTM
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Sjors Gerritsen (Utrecht School or the Arts)
Thomas Hohenadler (FH Johannum)

The Idea
The project focusses on the screen at the bus stop, which is an equivalent of the screen in the shadow play. Users of the bus stop are becoming both puppets and puppeteers. When the first person touches the screen he resembles the puppeteer since he invites people at the other side (in a different country) to play with him or become his puppets. At the same time he makes the part of the screen active and he uses his hand as a puppet, inviting the viewers from the other side. The hand is moving just like puppets in a shadow play. It's also entertaining, just as a shadow play, and might become a social event.

Scenario
On a hot summer evening, Alper is waiting at a bus stop in Istanbul around 5 p.m. He is going back home. He has been working a lot so he is tired and bored. The bus is late. Meanwhile in Amsterdam everything is different. It's around 6 p.m. and it is warm and nice. Sanne is having a great holiday. She is going back to the hostel to have a shower and go out for a party. Both of them are alone at the bus stops. First Alper touches the hand moving around on the screen curious about what happens next. He notices that when he touches the screen he sees part of a scenery of another city. He guesses its Istanbul, because of the mosque.
Sanne is watching around, looking at the map, waiting. Alper sees Sanne waiting at the other bus stop and knocks at the screen. Sanne hears some sound behind her and turns around. She notices the hand moving around the on the screen, gets curious and touches the hand on the screen. The bubbles on Alper's and Sanne's hands get bigger and they see each other and the scenery at the back. Alper writes his name on the screen, and later Sanne does the same. They can see what the other writes on the screen when they write a word, but the letters stays there only for a while and then drops. Alper has an idea. He writes a message in his mobile and shows his mobile's screen to Sanne. She reads the message. Then Sanne notices the bus arriving behind Alper. She starts to point at the bus with her finger. Alper notices the bus at his back waves to her and runs to the bus.
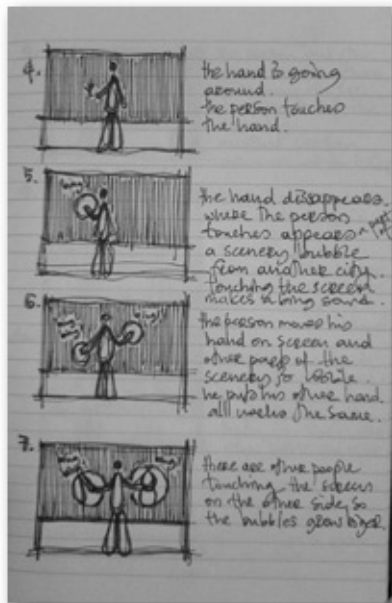
Discussion
This project incorporated both the shadow play topology and the interaction design rules. This team showed how a multi disciplinary team can use design as their common language by designing. Though from four different cultures they collaborated as if they knew each other and worked had together for a long time. They approached many urban key issues such as being alone and detached in the city, the wish for expressing yourself by creating your own content, and the urge to be entertained continually, all in a social cross-cultural context.

Fluid
http://www.khas.edu.tr/idss/Fluid/website/index.html

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Alex Robsahm (Mälardalen University)
Dilara Dagli (Kadir Has University)
Sander van den Dries (Utrecht School or the Arts)

The Idea
Sharing a smile with a stranger!
The goal of Fluid is to connect people using shadows as the medium. Fluid is an experience system that does not require interaction from the user, and the user is not aware of the system from the start. Places where Fluid can be integrated are places like the waiting areas at

train stations or meeting places with bored people overall they should not be so crowded in order to provide the shadows visibility.

Fluid uses lights to take away the user's shadow and then replaces it with an artificial one. The user will not be aware that he/she is participating in Fluid. Immediately after two or more shadow casters are in the Fluid area their shadows will start interacting with each other based on a set of rules described in the technical design. The way the shadows interact is first by moving around the shadow caster they belong to so that they are facing another shadow. After that they starts stretching towards each other.

As the shadows connect they will start glowing in the parts that connect. The longer they stay connected the more will the two shadows morph into an oil-like substance, and the glow will increase and spread in the shadow. If the owners of the shadows moves away of each other their shadows will try to stay connected depending on how long they have been connected and how morphed they are. When the shadows disconnect, they will slowly turn back to normal shadows. When the connection ends, the lonely shadows return.
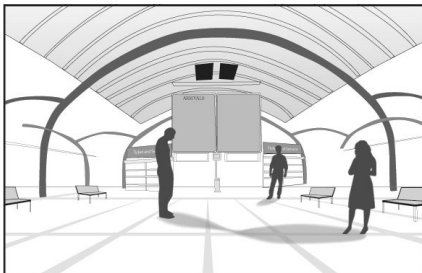
Storyboard/Scenario
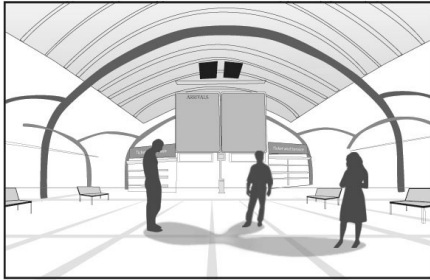Storyboard showing Fluid in action.
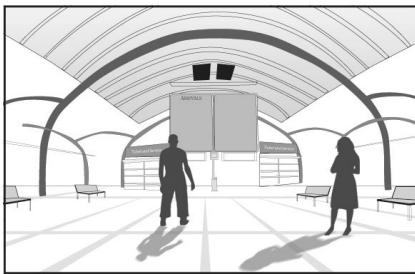
Gunter is waiting for his swedish friend. He is looking at the arrival board.
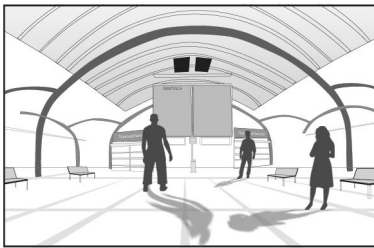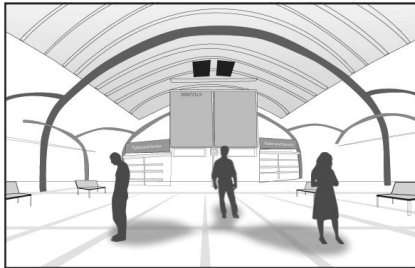

He is surprised when he sees his shadow move.
When he looks around everybody's shadows are moving.

Gunters shadow connects to the shadow of a beautiful
girl and starts glowing. They talk about it and laugh.

Sven wants to join in and as he approaches
his shadow merges with the other two.

After a short conversation they say goodbye and split up.
Their shadows tries to stay connected as long as they can.

Discussion
The students of this project made great efforts in grounding their design idea into reality. They
visited the Istanbul central railway station and realised the cultural limits of their idea in
Istanbul, hence, they moved their play to Netherlands because of the deep importance of the
railway infrastructure for public transportation. They also thought about technical
implementation aspects of this utopian idea, and presented a possible solution. A very
innovative interactive demo though they didn't fully integrate the topology of shadow play.

The Shadow of Istanbul
http://www.khas.edu.tr/idss/Shadow%20of%20Istanbul/istanbulshadowplayweb/index.html
Ahmet Yaldiz (Kadir Has)
Verena Harratzmueller (FH Johannum)
Bram Boot (Utrecht School or Arts)
Bilge Dogan (Mälardalen)

The Idea
When coming to a city like Istanbul and see all the buildings and the greatness of the city, it is
not difficult to get amazed. Thoughts like "What has happened to the city?" or "What was this
building once upon a time?" might come to mind. You might wish that you could go back in
time and experience the cities pre-modern days or even see what it will look like in the future.
But as the world knows there is yet no such thing as a time machine. But just because we can
not go back in time physically does not mean that we can not do it mentally.
The purpose is to create an enhanced awareness for the city of Istanbul by showing and telling
the history of the city.
Using the newest interactive forms of technology you can be part of Istanbul city history.
Karagoz and Hacivat will take you back in time, telling you the story behind the astounding city
of Istanbul. You can choose a specific period of time, choose the city district you want
information about. You can interact with the maps as if you are playing a shadow play, and
gaze through the streets of Istanbul. The journey starts in the 14th century, and you will be
guided through history by Hacivat and Karagoz. It continues up to today and takes you into
the future. You are the one telling the story by shifting the maps in place and place the
buildings in the system.

The interactive prototype screen shot   The context of use

The idea is to make use of maps or combinations of map elements. Depending on the combinations, users create new results, which also will be projected in 3D. This map is a model of Istanbul, and it's past, showed as a reflection of the city´s shadow. Changes that are made by the user affect the 3D-model, thus, it is telling a new/different story. The story is told according to the underlying combination of elements, told by the well-known characters of Turkish shadow play, Hacivat and Karagöz. Mainly everything in this interactive system is controlled by the user.

Discussion
The students of this project were the only group who brought the artistic style the Ottoman Empire with graceful ornaments and strong colours. This project also introduced an interaction technique borrowed from the traditional Turkish shadow play, with the puppeteer's sticks, the narrative characters of Karagöz and Hacivat, and use of shadows to represent the past. This project would have gained a lot from making more "reality checks", both from a user perspective and from a technological perspective. They drew too many conclusions about simple things that need more investigations which could have been done easily and within the time limits of the course.

Conclusion

All the projects destroyed the box: the computer with mouse, screen, and keyboard without us ever telling them to. We believe that the cultural probe perspective - the Karagöz shadow play - have inspired the students to defer from generic graphical interfaces and web design. The experience of this course indicates that interaction design education - especially in ubiquitous computing, context aware computing, and ambient interaction - takes advantage of a cultural frame that tilts students from generic graphical user interfaces and web appliances into exploring new, more creative, and more innovative approaches of interaction design.

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