

# 4 : 4 8

## Psychosis



Interactive Stage Design Project by  
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## Project definition

This project is about designing an interactive stage for Sarah Kane's play 4.48 Psychosis. The stage will interact with the performer throughout the play according to players' body movements. Technically this project aims to combine sound, video and computational visual design.

## Conceptual description

Theatre is the oldest art medium that humanity worked out. Desire to 'play games' have always been an important instinct for us to express ourselves; to communicate with each other, with the world. Such like other branches of art, it changes and adapts to the era that we are living. In Turkey, for a very long time, theatre did not developed. Same old plays are repeatedly brought to stage with the same techniques and regies. However in 2000, Turkish audience met with in-yer-face. Since then; some private theatre foundations such like 'DOT', 'galataperform' and 'garajistanbul' are bringing in-yer-face plays onto the stage. This innovative theatre movement requires a new method of staging.

First of all, it is theoretically necessary because; in-yer-face takes capitalism and its affect on human psychology as a subject. It is a living theatre and today's people, today's world are the subject matters. Mechanization, alienation are strongly connected to technology. Humane feelings and activities are no more valid. In literature according to the rise of postmodernism, the author is dead and stream of consciousness is found as a technique. People are controlled by several things, environment, technology, other people around them and their brain is affected by all of these. By creating this project, I will be visualizing the concept more accurately. Despite mentioning about them during the text; establishing the system on that kind of interaction technology, will perfectly serve to the aim. It is technically necessary because; interactivity is the most important medium in communication technologies. In in-yer-face theater, players' actions are violent, quick and unpredictable and it is not useful to use the conventional techniques.

4.48 Psychosis is an in-yer-face play which is the innovative theatre in terms of its concept and method. In-yer-face theatre describes the new movement that emerged in Britain in the 1990s. We can call in-yer-face theatre as 90s absurd theatre because of the mode and method of saying things. It bases its concept to absurd theatre which emerged after WW2. Absurd theatre takes degeneracy, lack of communication, alienation as subjects and interacts with the audience by positioning them as passive, miserable watchers to the happenings who lost their compassion. In absurd plays the characters mostly have psychological disorder and they can never overcome it because; the thesis of the movement is: with the wars humanity has already lost its innocence and there is nothing left to do. Existentialism is a strong reference point for most of the absurdist plays. It takes human as a psychotic animal. Both movements aim is to make this reality clear.

In-yer-face was born in 90s, took its name from Aleks Sierz's book *In-Yer-face Theatre*, in England and described itself as shocking, aggressive, provocative, and violent. Its explicit difference from absurd is; its method of positioning the audience. Actors get naked, make love, show physical violence, vomit, spit up, and swear in front of the audience. It aims to disturb audience, by the actions on the stage and also by directly communicating with them. Jez Butterworth, David, Eldridge, Sarah Kane, Philip Ridley, Mark Ravenhill are the young writers of this new wave. In-yer-face is a contemporary theatre with a strong language, exaggerated presence of sexuality, high intense of violence. Themes are; like war, advanced diversity violence, lost people with lack of communication, problems and despair of metropolis, ignorance of people which are so close to/inside our lives but we continue living by ignoring their presence. In-yer-face plays throw these situations into our face. Because of the direct narrative, it is a kind of rape to the private space.

Psychosis is a serious medical condition that reflects a disturbance in brain functioning. A person with psychosis experiences some loss of contact with reality, characterized by changes in their way of thinking, believing, perceiving and/or behaving. For the person experiencing psychosis, the condition can be very disorienting and distressing. Without effective treatment, psychosis can overwhelm the lives of individuals and families. This play is the last play that Kane has written before she committed suicide. She had suffered from psychosis and committed suicide in the hospital and the text is based upon that last period of her life.

Associating the concept of in-yer-face and 4.48 Psychosis, I created the overall concept of the play on normality. The play questions the concepts; illness versus health, abnormality versus normality. The background of that lies behind hegemonic ideology of modernism. The common meaning of 'order' which modernity produces, hides massacres, wars inside. The hegemonic and so-called-normal' system is based upon people's benefits in capitalist system. Thus what is normal in common foresees, accepting the rules of the capitalist play. Thus this metaphor is the base of the thesis of the play. I constructed the actress as the one who can not overcome with the authority that is standardizing everything and can not stand to live in that world. Whiteness, order, authority, normality are hypocrite concepts that humanity hides behind. The play is a questioning of this duplicity.

## Objectives&goals

My aim in this project is to adapt digital interactive design to theatre setting design. This innovative theatre movement requires a new method of staging. Both theoretically and technically, interactive stage design is appropriate to this play.

Overall design is a claustrophobic environment reflecting both hospital and the world. The player is stuck in the place. The videos and motion tracking system is serving this aim. Besides, by the system, I am taking the brain as an environment, and visualize the psychosis. Thus the setting is serving the play in a very different way than it does before. Except being an environment, the setting reflects and visualizes the actress' psychological condition and also includes the actress as a part of the environment.

I am using some videos in terms of creating the atmosphere of 'mind' and this would function in both ways: stage design and time management. Also the videos will function creating several reflections of the self.

According to some parts of the text, the player moves and while she is moving, the environment is following her. Separation of mind and body is an important concept in the play, thus, a patchwork kind of design is being used, the players' movements and her feelings is separated by the help of digitization. Thus, the concept of mind-body incompatibility is shaped by the technique. Thus, the setting also produces meaning.

## Target audience/user

Target audience of the system is the actresses. However if we look at the project as a whole; theatre audience, artists and designers are also the target audience. This project does not have a didactic purpose. Because of its method, it is for followers of innovative theatre and art.

## Background information

In order to create an interactive stage design, I am using motion tracking as a technology. Motion tracking is basically the process of recording real time movement and translating it into a digital model. Motion tracking started as a photogrammetric analysis tool in biomechanics research in the 1970s and 1980s, and expanded into education, training, sports and recently computer animation for television, cinema and video games as the technology matured. Video games often use motion capture to animate athletes, martial artists and other in-game characters. This has been done since the Atari Jaguar CD-based game *Highlander: The Last of the MacLeods*, released in 1995. Movies use motion capture for CG effects, in some cases replacing traditional cel animation, and for completely computer-generated creatures, such as Jar Jar Binks, Gollum, *The Mummy*, King Kong, and the Na'vi from the film *Avatar*. *Sinbad: Beyond the Veil of Mists* was the first movie made primarily with motion capture, although many character animators also worked on the film. These trackings are usually done by using markers to identify the object. Emerging techniques and research in computer vision are leading to the rapid development of the markerless approach to motion capture. Markerless systems such as those developed at Stanford, University of Maryland, MIT, and Max Planck Institute, do not require subjects to wear special equipment for tracking. Special computer algorithms are designed to allow the system to analyze multiple streams of optical input and identify human forms, breaking them down into constituent parts for tracking.

With the adaptation of personal computers in the 1980s, new possibilities for creating performance communications was born. Early use of mechanical and projection devices for theatrical entertainments have a long history tracing back to mechanicals of ancient Greece and medieval magic lanterns. But the most significant precursors of digital theatre can be seen in the works of the early 20th century. It is in the ideas of artists including Edward Gordon Craig, Erwin Piscator (and to a limited degree Bertolt Brecht in their joint work on *Epic Theatre*), Josef Svoboda, and the Bauhaus and Futurists movements that we can see the strongest connections between today's use of digital media and live actors, and earlier, experimental theatrical use of non-human actors, broadcast technology, and filmic projections.

The use of interactive multimedia technics on performances is a very recent thing both in Turkey and in world. Dance and theatre performances are started to be done by creating digital environments by the help of motion tracking programmes. In this project, I am using a motion tracking programme, Isadora. It is an award-winnig graphic programming environment that provides interactive control over digital media with special emphasis on the real time manipulation of digital video. It is used in many interactive platforms; dance performances, theater performances, interactive installations, video effects for post production, videos for club environments. The use of Isadora in this project covers from instant real-time cueing of video and/or audio sequences, to creating virtual sets that can respond to a computer operator's cues (or even a performer's movement), it provides a flexible and reliable environment for integrating new media into theater productions.

The most notable user in the theater world is New York City's famed avant-garde theater ensemble The Wooster Group. They are using Isadora in their most recent theater piece Hamlet. There are some other samples of digitally created theatre setting designs by different methods such as using no reel decoration but supplied with virtual artifacts or creating a variable back-stage concerning the systematical synchronization of time and space or creating a variable stage accordingly to the reflections of through the surfaces of the set by virtual atmosphere. All these methods help interactivity occur in theatre scene in different ways and contribute to its development. I am going to give some examples of stages designed by motion tracking system in the following parts.

<http://thewoostergroup.org/>  
[http://en.wikipedia.org/wiki/Digital\\_theatre](http://en.wikipedia.org/wiki/Digital_theatre)

## Problems that are solved by realizing the project

Technically; in theatre plays, light, sound has to be activated through the movement of players by an electrician and a musician according to stage direction. These changes in the light and music must be perfectly synchronized and this is not always possible. With the help of computational system; interactivity will solve this problem. Adding to this function, with the use of interactive technology, stage design would mean more than it meant in conventional theatre. stage would play a more active role in giving the play's message. Stage itself, becomes another actor talking with the player and the audience rather than just being an environment. Conceptually, the capitalist ideology and its relation with modernism will be interrogated in a different way. The point of view on such concepts like order, hegemony and normality will directly be pointed.

## Challenges

Directing a theatre play is a long process and also a collaborative work but I have done all on my own—dramaturgy, costume and stage design, working with the actress, graphic design and technology application—and thus I am not able to finish the whole play but just a part of it. With the total regie and interaction finished, the meaning and the importance of the project would be more accurate.

## Gains

I am an amateur theatre actress and director for 6 years. I am one of the founders of theatre club-Room Theatre-which we all do things on our own. We find people to do music and light on the last minute and of course they are amateurs. Very little amount of people continues to the club every year so information flow is also very weak. When I manage to finish this project, I will make it being used by Sabanci University Room Theatre. Also I want to continue creating projects on theater plays in my future career. Thus, it would be an important starting point for me.

## Similar projects, art works

### 1- Interactive stage and dynamic costume design for the opera: Marlowe

In 1996 André Werner was commissioned by the Munich Biennale Festival, a festival for modern music theatre, to compose a contemporary opera. The opera premiered in 2002. It's based on the play "The Famous tragedy of the rich Jew of Malta", written by Christopher Marlowe in 1596. The Jew of Malta unfolds as a story of expropriation, revenge and death of the Jewish merchant Barabas set in a power struggle between representatives of three world religions. It is an interactive setting and costume project designed for the opera. It uses motion tracking and infrared technology. The aim was to support the narrative statement and to emphasize the presence of the main character Machiavel. A virtual environment with an interaction concept for the main character was used, in order to make the stage his world. Machiavel uses his body as instrument, an interface to navigate the virtual architecture. Therefore a customized motion tracking system has been developed. An infrared camera with a bitmap-tracker captures the performer from above to detect his position and body center and also his center of gravity. Additionally by computing a vector between the body center and the most distant point of his body (e.g. his arm) it was possible to interpret his gestures. The coordinates of his movements were passed to a real-time-renderer together with the 3D data of the architecture. Combined with mappings and lights the corresponding scene was calculated to match the virtual architecture with the performance of Machiavel.

### 2- Third Universe; by VDST

It is a play about the existence of utopia within a global system which insistently recreates and destructs the concepts of 1st and 3rd world. Characters search for the door of the Third Universe inside a surreal supermarket which they could visit during the one hour they spend in between sleep and awakesness. Interactive visual design is used during the project. Motion tracking is by the help of a special curtain. The actions are reflected through the curtain several times while different images are being shown.



## Detailed project description

Sarah Kane is a British writer who contributed much to the new British theatre. This play is Kane's last play before she committed suicide. Play consists of monologues of a psychotic mind. In that way, it could be taken as the author's self-monologue before her death. For a period of her depression Kane had found herself awoken, every morning at 4.48am. She took this moment the darkest hour just before dawn and found in a moment of great clarity, a moment when the confusion of psychosis seem to evaporate.

David Greig describes 4.48 Psychosis as 'internal landscape of a suicidal psychosis'. Rather than monologue, the structure of the text is a stream of consciousness and does not indicate a single person, there should be more people. Kane, does not only introduce her own psychological condition, according to the aim of her theatre, she describes 'the psychotic minds' of people. That is why, different from her other plays, she does not attribute any cue to any character, it is like a prose.

Associating the concept of in-her-face and 4.48 Psychosis, I created the overall concept of the play on normality. The play questions the concepts; illness versus health, abnormality versus normality. The background of that lies behind hegemonic ideology of modernism. The common meaning of 'order' which modernity produces, hides massacres, wars inside. The hegemonic and so-called-normal system is based upon people's benefits in capitalist system. Thus what is normal in common foresees, accepting the rules of the capitalist play. This metaphor is the base of the thesis of the play. I constructed the actress as the one who can not overcome with the authority that is standardizing everything and can not stand to live in that world. Whiteness, order, authority, normality are hypocrite concepts that humanity hides behind. The play is a questioning of this duplicity.

The idea is to take motion detection and combine it with art in the form of digital. The concept is to allow human interaction to affect physical space, freeing the actor/actress from all traditional setting interfaces. The application works by constantly monitoring a webcam, taking snapshots of each frame every millisecond. The pixels in the current frame are compared to pixels in the previous. The difference in brightness within each section determines whether or not motion had occurred in this area of the screen.

My stage is 2 to 2 meters covered with a white cloth. It is like a box only the upper and the front part of it is open. I placed a webcam on the ceiling and the camera sees the movements of the actress from the top. The stage is divided into rows and columns by the graphic program and according to the rows and columns the movement of the actress is identified. When she is at the determined area, the interaction starts or finishes or changes.

In order to integrate with the concept, I designed three different curtains and used the as layering elements inside the stage. Each curtain is opened and closed through the store mechanism and each is designed in a different way. They are not complete curtains but rather pieces of cloths stuck onto an oilcoat. When they are opened, projection reflects onto the curtains. On the other times It is reflected on the backside of the screen directly. According to the movements of the actress, designed interaction gets activated on the white cottons.



## Scope of the project

Interaction with the actors body movements is essential for this project. Here is the list of what will be covered:

- \* Motion tracking, interactive design
- \* Creating video animation, pictures and sound design
- \* Creating the stage with all its components.
- \* Dramaturgy
- \* Directing
- \* Costume and decor design

## Required know-how and resources

Text of the play

Past projections of the play for understanding the concept better

Past projects which used interactivity on the stage

Past projects with motion tracking

Information on in-yer-face theatre

Background for theatre setting and directing

An actress

Costume

Isadora 1.2.9

SONY VPL-X 7 2000 ANCI LCD Projection ( 2000 ANSI)     **x3**  
Apple MAC MINI (2.53Ghz,4GB Ram)     **x1**  
PIRANHA Web Cam Linux(5mp)     **x1**  
3 m USB Extension Kablo     **x3**  
VGI cable     **x2**  
Speaker Creative SBS 245 4W     **x1**  
3 m. Store     **x3**  
3x3 m. Transparent curtain     **x3**  
3x3 m. Covered White MDF     **x4**  
Spot Lamb     **x1** 1

## Difficulties & risks

- \* 4.48 Psychosis is a 45 paged play which approximately takes an hour if the text is taken completely as it is. Also there are several references in the text to other works and people. Manipulating and analyzing the text is more than the available time.
- \* Although she is ambitious, it was hard for my actresses to perform and because this is my final project I have to motivate her.
- \* My design area is too wide, it was be hard to learn the technical part of the project and control the whole stage and my actress.
- \* I combined different things together. It was be hard to control the interactivity process.
- \* Also the 2-2meters area that I made for the stage was very small and it prevents the motion tracking process negatively. The accurate result is rarely obtained because of the limited space.

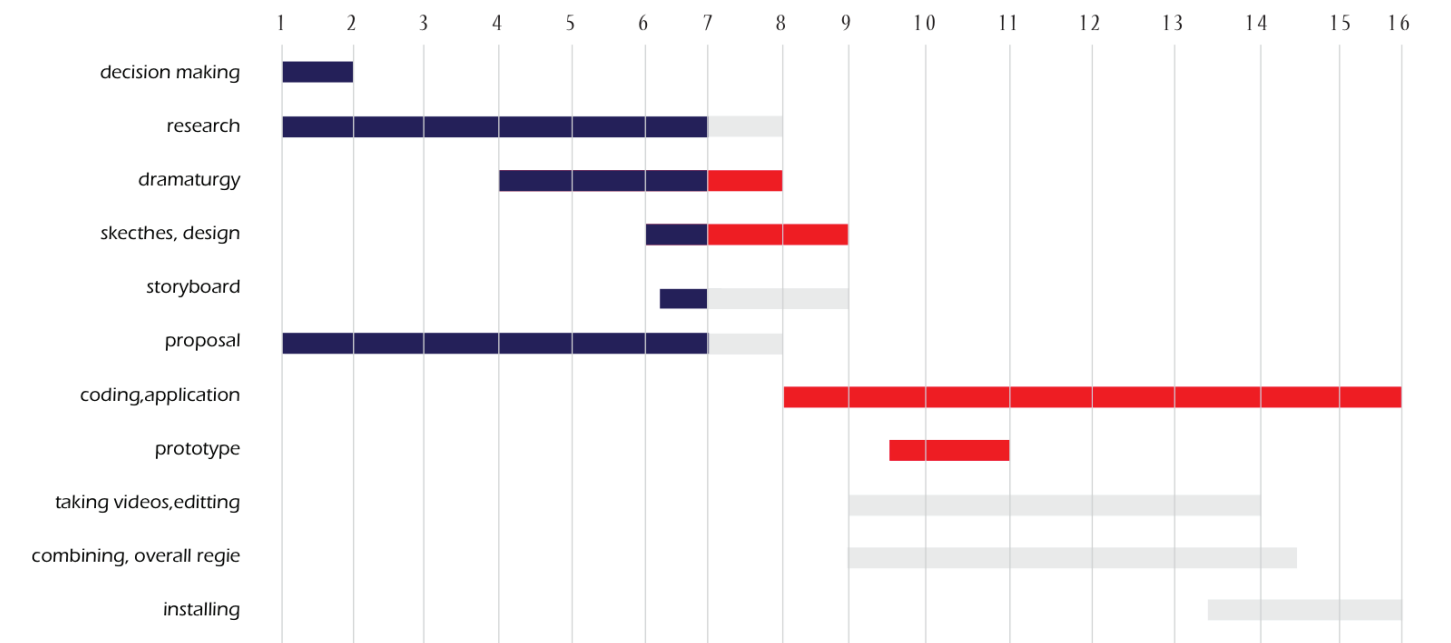
## Phases of the projects

- \* research on theatre stage design history and technology
- \* research on in-er face, translated texts
- \* analyzing the text, dramaturgy part
- \* searching for the technology for the interaction, using Isadora
- \* designing the background videos, images
- \* making some sketches on possible stage designs for the play.
- \* working with the actresses

## Criteria of success

The initial criteria to judge the success of the project are how the interaction serves to the text. Because this project offers a new staging technique, the interaction must contribute to the context of the play. 'Stream Of Consciousness must be visualized through the design and it must compose wholeness with the stage management and the actors. The project must fit into a well-structured in-er-face play. It should emphasize the disordered structure of the mind of a person, living in that era.

## Project schedule



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