The Multimedia Affection on Stage as Performance Activities Regarding Artificial Intelligence with a Related Applied Sample from Turkey

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Abstract: Live performance activities are events concerning a one by one relation with the audience in the hidden dimensions of the spatial context. The concept of the staging and the application is based on multimedia with the technological evidence in conjunction with each other. The optimal principles are calculated by the artificial intelligence of the artistic feature and the mechanisms based on variable principles with the calculated time. Timing is the basis creator of the concept of the overall. When time is in harmony with the artificial intelligence then the optimal values could be analyzed. The sample from Turkey is being identified as a matter of application process.

Key Words: -Multimedia, artificial intelligence, performance, stage, variable, virtual.

1...Introduction

A multimedia presentation is fundamentally no different from any other form of human communication; ideas and information are being transmitted between human beings, what has been called linear communication. All computer-based interactivity is a form of interaction with other humans, even when none are present [13]. The human essence of the programmers and designers remains resident in the logic of the artificial interaction, even though they are not there. Therefore, to be able to create effective multimedia, we need to consider what constitutes effective human communication, regardless of the medium. A review of the history of those forms of human communication that employ more than one medium can be beneficial for a multimedia developer [13].

People have been communicating with each other for hundreds of thousands, perhaps millions, of years. Whenever possible, the initiator of the communication has employed whatever additional methods were available to enhance the communication and make it as effective as possible. So, for example, modern storytellers, as perhaps ancient ones did, use their hands to illustrate the action and create sound effects to emphasize or portray more realistic scenes [13].

As further examples, stage plays and their derivatives, such as opera and movies, normally include costumes and scenery to enhance and further the communication. The implementation of multimedia capabilities in computers is the latest episode in a long series: cave painting, hand-crafted manuscripts, the printing press, radio and television. These advances reflect the innate desire of people to create outlets for creative expressions, to use technology and imagination to gain empowerment and freedom for ideas. Over the millennia, people have learned much about what constitutes effective communication and what is less effective. This learning constitutes what is regarded as the art and theory of communication. The definition of what is considered "effective" is one of the basic quantities in communication.

Other terms such as "hypermedia," "mixed media," "interactive multimedia," and "multiple media" are sometimes employed as synonyms for multimedia. Many modern presentations include mixtures of two or more media and may in some descriptions be termed multimedia, for example, a poetry reading accompanied by music, a theatre play with photographic slides projected as part of the stage set etc. However multimedia is defined as: an interactive computer-mediated presentation that includes at least two of the following elements: text, sound, still graphic images, motion graphics, and animation [13].

This definition is intended to encompass those computer-based programs that combine text, images, and sound in a manner that permits the user to exercise some measure of control over the flow of information. The word "interactive" is of the utmost importance in this definition of multimedia. Too often, the mere combination of two or more modes of presentation, such as text and images, has been termed "multimedia" for public relations or advertising purposes. The interaction can be achieved by any combination of inputs to the computer, for example, through a keyboard, a mouse, a joystick, a stylus, or voice recognition. To qualify as

interaction, the input must cause the program to select among alternatives for the next material that it presents, not just continue to a predetermined next page [13].

For the successful combination of the various media and technologies, considerable attention must be paid to fundamental principles of effective communication. Given the available technology, it is possible to combine many different types of material, but without careful attention to principles of effective communication, the result will likely be less than optimal, just as when an inexperienced painter mixes several colours without understanding the underlying principles, the result is often an unattractive mess.

Although it is absolutely central to the effectiveness of theatre, the ability of a great actor to seize upon the emotions of the audience and to use those emotions and the audience's responses and reactions to bring about the desired effect will not be considered here. Successful live theatre, as contrasted with cinema or multimedia, for example, is the result of the interaction of the *live* actor and the audience, with the actor responding to and using the audience to achieve the purpose of the presentation. A crucial difference between theatre and multimedia productions is this presence of *live* actors in the theatre [13]. It can be useful for a developer to consider this difference and its implications for multimedia, particularly the forms of interactivity that are facilitated or limited by the presence or absence of live actors. Although multimedia is interactive, the interactions are primitive, merely functional, compared to those between actor and audience, which are on the emotional level. Until such time as computer scientists have achieved infinitely more sophisticated artificial intelligence in multimedia programs, developers will not be able to achieve the actor's control of the audience.

Some other aspects of theatre that have developed over thousands of years and serve to strengthen the delivery of the presentation should be considered. The theatre has evolved through several phases. These phases have occurred at different times in different cultures, and not all phases have occurred in all cultures. The details in various cultures are not significant to the purpose here. What is of interest is the gradual enhancement of the performer's ability to create in the audience the desired transformation by means of the addition of various elements (or media).

As theatre developed, actors invented the stage -- a special space on which to perform, which delineated the presentation and made it stand out from its surroundings. At first, the stage was outside, as theatre was almost always an outdoor activity in its earlier phases. However, the gradual development of sets and scenery that could be damaged by inclement weather, as well as the desire to perform in all types of weather and during the dark hours of the day, led to the creation of indoor performance spaces with their own specialized stages.

The creation of the stage and the introduction of scenery served to further strengthen the opportunity to provide a meaningful experience for the audience. The indoor stage, scenery, and lighting led directly to the development of theatre as illusion. The creation of an experience of illusion became a powerful addition to the actor's ability to create the desired effect on the audience. There is a clear parallel to the creation in a multimedia presentation of a virtual reality.

Although there are notable exceptions in which there is an attempt to heighten awareness of the theatricality of a whole performance, the objective in the theatre for most authors, directors, and actors is to enhance and focus the experience for the audience and to make it as real as possible. For multimedia, the important questions, however, are the extent to which the virtual reality is believable; the extent to which the virtual reality becomes the focus itself, obscuring the desired experience; and the considerably increased cost of creating the virtual reality.

Again, there is a parallel with theatre. Some modern theatre has evolved to rely much less on physical illusion (for example, minimalist scenery) and more on creating the illusion in the mind of the audience. The same "less is more" approach to some multimedia presentations may prove effective in transmitting some messages, as well as being more cost-effective. A number of elements in theatre productions have distinct parallels in a multimedia production, such as the stage, sets, scenery, props, masks, and costumes. A multimedia developer may find it helpful to contemplate the parallels and differences between the use of each of these six elements in the theatre and their use in multimedia productions.

Graphic images constitute a key element in most multimedia pieces. People have been creating images, both two- and three-dimensional, since long before the dawn of written language. Beautiful examples of cave drawings and early statuary have been discovered and still delight viewers with their portrayals of reality and of the imagination. Early pottery and friezes are replete with images. Over the centuries, people have developed many skills and techniques for drawing, painting, sculpting, and photographing images to convey some message to an audience.

Pictorial representations of reality are also a powerful means of communication and the basic medium for a multimedia presentation. Pictures, both still and motion are used for their content; for direct communication and, with special effects, to emphasize some aspect of the message. Pictures and music can be used as symbols to communicate a message in a

powerful but somewhat indirect manner. A key point is the necessity for a symbiotic blending of the various media into a comprehensive whole production. If the different elements do not complement each other but rather tend to compete, the effect will be to diminish rather than to enhance the communication.

Multimedia productions have grown over the last few years from a rather narrow range, devoted primarily to instructional applications, to now encompass almost every conceivable subject. Their range is limited only by the imagination and skill of the developer. The key points are the underlying commonalties and basic theoretical communication foundations that are shared by all multimedia, no matter what the subject matter. Multimedia developers should study the vast experience learned over millennia of what constitutes effective communication in the widest possible range of media to garner lessons to apply to their multimedia productions.

2...New technologies in stage design

Recently, in the field of computer graphics, progress has been made in the creation of lifelike characters or autonomous agents. Autonomous agents are software systems with a set of time-dependent goals or motivations that the agents try to satisfy in a complex dynamic environment (such as the real world).[2] An agent is autonomous in the sense that it has mechanisms for sensing and interacting in its environment as well as for deciding what actions to take so as to best achieve its goals. In computer graphics, autonomous agents are lifelike characters driven by autonomous goals. They can sense the environment through real or virtual sensors and respond to the user's input or to environmental changes by modifying their behaviour in accordance with their goals. Although this approach, called behaviour-based, has proven to be successful for a variety of computer graphics problems, it has not yet been fully understood or exploited for multimedia presentations, digital storytelling, interactive performance, or new forms of interactive art.

The computer vision system is composed of several layers. The lowest layer uses adaptive models to segment the user from the background, enabling the system to track users without the need for chrome-key backgrounds or special garments, while identifying colour segments within the user's silhouette. This allows the system to track important features (hands) even when they are not discernible from the figure-background segmentation. This added information makes it possible to deduce the general 3-D structure of the user, producing better gesture tracking at the next layer, which uses the information from segmentation and blob classification to identify interesting features: bounding box, head, hands, feet, and centroid. These features can be recognized by their characteristic impact on the silhouette (high edge curvature, occlusion) and (*a priori*) knowledge about humans (heads are usually on top). The highest layer then uses these features, combined with knowledge of the human body, to detect significant gestures and movements. If Pfinder is given a camera model, it also back-projects the 2-D image information to produce 3-D position estimates on the assumption that a planar user is standing perpendicular to a planar floor. Several clients fetching data from Pfinder can be serviced in parallel, and clients can attach and detach without affecting the vision routines.

The principles that are being declared regarding 3 dimensional views could both be analyzed in special studios or stages based on these types of presentations or any type of an auditorium turned into the capacity of virtual features [11]. For instance 'The Drury Lane Theatre' is a multidimensional space with the quantity of different usages. It is the fourth built on the site and opened in 1812. It was designed by Benjamin Wyatt with a proscenium arch and stage. Although directors began to experiment with more intimate auditorium designs in the 20th century, the proscenium remains common due to the age of many theatre buildings [11].

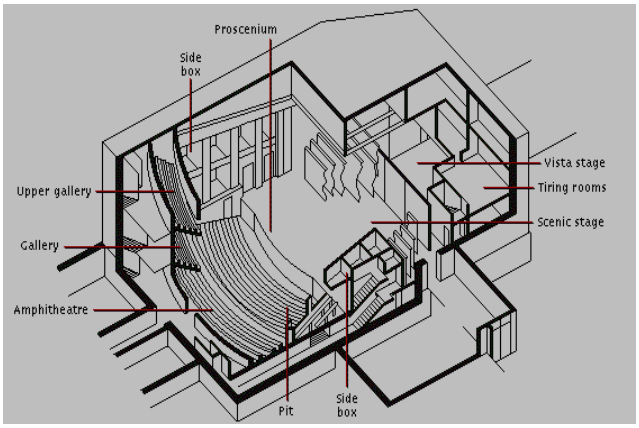


Figure 1 The Drury Lane Theatre

It could be analyzed that

1-Performers are a flexible tool, both in the case of the improvisational (or street) theatre in general, or for classical scripted theatre that the director and the actors need to interpret and, therefore, modify [14].

2-The system is tolerant of human error and actually encourages actors to enrich or change the performance according to the reaction of the audience.

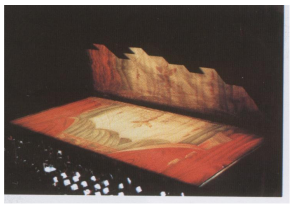
3-The system can scale from a performance

space to an entertainment space. Behaviour-based theatre can allow public participation either during or after the performance without requiring the participants to learn all the script in advance. This approach allows the use of flexible media choreography and contrasts scripted or rule-based approaches [14]. The main drawback of scripted media is that the director and the actor have to rigidly follow a script for the system to be able to work. For instance, it is not uncommon in theatre for both the actors and the director to change the script either during rehearsals or even right before or during the final performance.

3...The Sample chosen from Opera Di Macerata, Italy, 1993

According to the applied work chosen in our study, it could be identified that; set designing for live performance is to be organized with multidimensional aspects.

Picture 1



Picture 2

Picture 3

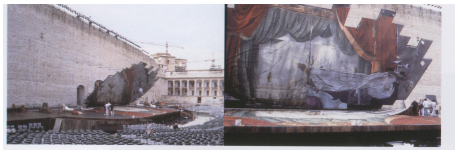
Picture 4

In pictures 1,2,3,4 the same stage with 4 main differences are recognized.

Picture 5

Picture 6

These aspects are as follows:
-The stage with the same approach of background feature, that is the feeling of continuity,
-The multimedia as the expressive power of the activity,
-The uncertain timing concept etc.



Picture 7 **Picture 8**

Picture 9 **Picture 10**

4…The Analysis of Virtual & Real Meanings of the Stages from an Applied Work

The huge scale of the production (up to 120 dancers) includes a synthesis of hundreds of folk dance figures and music from different regions in that vast area. The *Fire of Anatolia* is a unique project that is delivered from the concept of Anatolia's ancient mythological and cultural history [8]. The aim is to introduce to the fire that arises from the ancient mosaic of love, culture, history and peace of Anatolia spanning thousands of years.

Picture 11

Anatolia is the region encompassing the Asian sector of Turkey. In ancient history, it has also been called Asia Minor. Over thousands of years the region has been populated by a host of peoples, including Hittites, Phrygians, Cimmerians, Greeks, Romans, Lydian, Persians, Goths, Kurds, Byzantines, Seljuk, Ottomans, Turks and even Celts. The Anatolian Fire is

based on thousands of years of Anatolian mythology and culture, and it is an original project comprising of hundreds of folk dance figures and folk music collected from almost every region of Turkey. It was dreamed to be a show that belongs to these lands and would perfectly reflect the historical and cultural structure of thousands of years. The performance relies on the dance activity, which is created with historical edit, contribution of own culture, and dance figures belonging to these lands [9].

Information is obtained from archaeological sites. The organizers are being reflecting original archaeological tablets in all performances. Every single scene taken from archaeological tablets creates a special story loyal to original historical facts. The stage performance is supported by a slide show on the white screen behind the stage. For example, when Hittite drummers appear on the screen, drummers in original costume take the stage in the performance. Another one is connected with establishing peace. When two commanders are seen shaking hands in the archaeological piece on the white screen, two groups in blacks and whites give up warring on stage and two commanders are shaking hands loyal to the original story. All of these are organized by a mastermind in the management group of the show.

The other members of the show work different areas like make-up, costume, choreography, music, special dances and masks.

The performance is not only interested in new dance figures, original costumes or embroideries, but also deeply interested in original music instruments shown on archaeological tablets dating back thousands of years from Anatolian civilizations [9]. Furthermore, the aim to get original tunes and melodies coming from the musical instruments seen on the archaeological tablets and is to reflect this original music on the stage. So dancers are learning to how produce the original music from the instruments used in our performances.

Besides of the magnificent dances, costumes attract attention with vivid embroideries, splendid, historical, handmade, colourful, ornaments and glittering accessories. For instance; two friends are charged with researching original village weddings for regional costumes [9]. They collect original samples for handworks, embroideries, ornaments and folkloric costumes. The performances are always changing and renovating with new costumes, interesting figures and dynamic rhythms.

There is cooperation with state costume studios to research original folkloric structures like the meanings of colours, details and accessories. In the break time between two Anatolian tours, dancers are divided to teams for researching regional dances and ritual culture, like weddings.

Contribution from each other in figures, costume design and ideas for choreography is organized. There is nothing left anything to chance about dance figures, embroiled costumes, accessory, history, choreography or the background slides. Every detail has been carefully thought out and discussed before the performance and connected with each other as parts of meanings. For example, if a ram's head is seen as an archaeological piece on the screen, musical structure, dance figures, history, costumes and script are all connected to this ram's head. So there is no obscured meaning in the performance. The importance of artificial intelligence is so important and a great necessity in these procedures and levels of expression. All the system is served to be one with quick change

Picture 12

Picture 13

Picture 14

Picture 15

Picture 16

Picture 17

Picture 18

Picture 19

All the variable usages in the stage is planned from the beginning and programmed by the technical data containing time periods [10].

Picture 20

Picture 21

Picture 22 The show

Picture 23 The cyclorama

In the pictures all the stage is the same spatial value with different usages. The difference is the optimal quantities with artistic images [10].

Picture 24

Picture 25

Picture 26

Picture 27

In the pictures above that we have mentioned it could be identified that set designing is a collective work in performance activities if they are live and active and integrated in an ideal way of relation with the audience with a one by one dynamic organization. This one by one relationship needs to be organized as reliable and exciting. The facilities with the aesthetical concept of the scene is one of the applications of artificial intelligence is set designing.

5...Results and Conclusions

The **results** of the artificial intelligence as the main creators of set designing in performance activities are categorized under two main parts concerning both advantages and disadvantages.

The advantages are:

-Quick changing possibilities in staging,
-The interactivity of spatial organizations,
-The possibility of the unlimited creative and imaginary aspects
-As the sets require the themes as virtual that is the ones that do not exist in real, this situation is the creator to enlarge the imaginary

The disadvantages are:

-Sometimes the reason to cause a synthetic and non-realistic space
-The feature of the space by unnatural vision
-The meaning of the stage by unreliable image that could disappoint the general meaning of the entire surrounding of performance.

The **conclusions** are:

Performance activities are the act of expression on spatial meanings. Expressing underlies a symbolic meaning. So the feature of the stage designing indicates the symbolical qualification of the activity that is the quality of the system by optimal standards.

References:

[1] BİOCCA, Frank. "Communication within Virtual Reality: Creating a Space for Research." *Journal of Communications* 42(4) Autumn, 1992.
[2] EİSENMAN, Peter, *Dijital Dünyada Tasarlamak Örnekler*, Mimarlık ve Sanallık, Çağdaş Mimarlık Sorunları Dizisi, Boyut Yayın Grubu, 2004, pp, 90.
[3] LAUREL, Brenda *Computers as Theatre.* Reading, MA: Addison-Wesley, 1993.
[4] MILLS, D.L, *Nonlinear Optics: Basic Concepts*, Second Enlarged Edition, Springler Books, 1998.
[5] MONACO James, *Bir Film Nasıl Okunur? Sinema Dili Tarihi ve Kuramı, Sinema Medya ve Multimedya Dünyası,* Oğlak Yayıncılık ve Reklamcılık Ltd. Şti., 2005, pp.489-530.
[6] LEVY David, *Computer Gamesmanship: Elements of Intelligent Game Design*, Simon & Schuster, 1983.
[7] WANG, Charles B. *Techno Vision: The Executive's Survival Guide to Understanding and Managing Information Technology.* New York: McGraw-Hill, 1994
[8]http://star-ecentral.com/news/story.asp?file =/2006/4/18/soundnstage/13963195&sec=soundnstage
[9]http://www.turkishdailynews.com.tr/archives.php?id= 30342
[10]http://www.tiad.ro/press_news.php
[11]http://uk.encarta.msn.com/media_461541981_7[12] 81530845_-1_1/Plan_of_Drury_Lane_ Theatre. html
[13]http://www.acm.org/ubiquity/views/r_tannenbaum_ 3.html