

CREATIVE AND INNOVATIVE TECHNIQUES AND EFFECTS IN THE SERIOUS GAMES ORIENTED TO THE VISUAL MESSAGES

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Abstract: *The production of audio-visual gallery of multimedia products raises questions related to development of creative images and pictures, the purpose of influencing the target audience. The techniques in serious games help to achieve this goal. In some of these techniques are transferred knowledge from other areas of science and art. In other techniques are used authors decisions to achieve the visual effect to influence perceptions of the viewer. The set of techniques used is a useful tool that can be used to create multimedia products and complete gallery of its kind to implement the open creative and innovative multimedia serious game.*

Keywords: CREATIVE, INNOVATIVE, AUDIO VISUAL GALLERY, SERIOUS GAMES, EFFECTS, MULTIMEDIA THINKINGS, SERIOUS GAME

1. Introduction.

The creation of audio-visual gallery of multimedia products raises questions related to development of creative images and pictures. The purpose is influence to the target audience. The techniques in serious games help to achieve this purpose. In some of these visual techniques there are transferred knowledge from other areas of science and art. In other authors products have been used solutions to achieve the visual effect to influence perceptions of the viewer. The range of techniques used is a useful tool that can be used to create multimedia products, as well as complement the gallery of this type for the implementation of open creative and innovative multimedia serious game.

Problem: The creation of a library of serious games requires a set of tools for their generation.

Actuality: Implementation of these effects attracted the attention of the audience a prerequisite for competitiveness of the product and its presentation on the global market.

Objective: Creation of methods and techniques for archiving creative and innovative multimedia serious game. Enriching the library as part of the structure of multimedia serious game.

Tasks: Effects and techniques creating for an archive of creative and innovative serious games.

Some of those techniques and visual effects in this article are:

1. Effect "Playing with Time" in the author movie "The Dreamix";
2. Technique "Inserting an object outside the visual area";
3. Effect "Looking through the audience, tracking point of view";
4. "Leading Lines" in the frame and "frame proportioning";
5. Music pre-visualization.

2. Prerequisites and method for solving the problem.

Library, archive of information.

There are two options for the creation of this library.

The first option is that it can be created by the author or under a predetermined script structure. This structure must accurately describe the relationships and the necessary elements. The audio-visual library can find out audio products - sound, voice, voiceover, sound effects, music, video footage without sound (frames beyond aural environment), video footage with sound (for example speaker on camera, a presenter, replicas of character or participant interviews with people).

In the second option the archive could be updated by the participant in the game. This option has the advantage that every viewer may change the parts of the gallery or to add additional elements. The author can enter the gallery information after evaluating of the element. The disadvantage of this option is that there should be a good evaluation system for selection of quality products.

The storage of this information may be in cyberspace. The disadvantage of this idea is that because of the large amount of information the connection between the user and the information can take longer data transfer time.

Another type of information storage can be done by data storage (CD, flash memory). The advantage of this type of media is that they contain large amounts of data. The disadvantage is that data must be protected.

3. Solution of the research problem.

3.1. Effect "Playing with Time" in the author movie "The Dreamix"

The purpose of this effect is to achieve a visual impact to attract and enhance the viewer's attention through the repetition of the action from another angle of view. The effect approves action that gives importance to the event (the movie scene).

In "The Dreamix" there is a virtually created shot, which used this technique. In the shot with duration about 10 seconds the main character kick a bullet while he was jumping in the air. The camera performed dolly sideways movement around the character. The time turn back a few seconds just before the end of the final movement, then the time goes back towards the end of the scene. In normal conditions this shot is difficult to implement. In the computer environment the time and a camera movements can be simulated as desired manner. How to drive the cameras and their paths, it can be traced and made a scheme. Then this effect can be implemented in a real situation.



Fig. 1 Footage from the described scene of the movie
"The Dreamix"

In the world of cinema and visual effects there are constantly looking for new ways and effects to attract ratings. Some of the innovations that are already popular are the following: "Bullet time" – effects has gain popularity in "The Matrix" Moving the camera in inaccessible places, through walls and locks [3].

The described technique which has been used in "The Dreamix" is similar to the effect "Bullet time", but has been presented differently.

A schematic presentation of the paths of cameras to achieve the desired effect is presented in Fig. 2. The effect can be achieved by using of three cameras. Two cameras shoot the action in the normal time direction but the third camera captures the action in reversed direction of time. The three cameras are limited to follow a path that is split into three parts. The work of the first camera 1 starts from frame 1 to frame 150, the camera 2 captures images from frame 250 to 151 in the opposite direction, camera 3 shoots frames from 251 to 300. After the assembly of the frames by the three cameras, a smooth movement of the shot is derived. The times in the scene is changing. In the static shot, this effect is easy to achieve but dynamic camera is impossible to obtain in the usual way, through a simple setting-up.

The three cameras must be the same object oriented (object 4) to obtain the smoothness of motion.

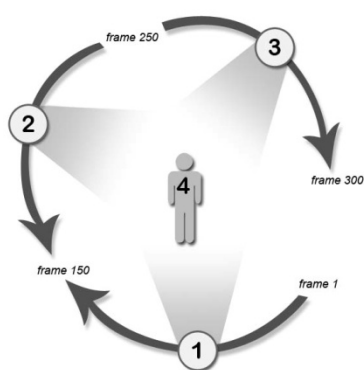


Fig.2 A schematic presentation of the movement of the camera
effect "Play with the time"

A variation of "Play with the time" is the sequence of frames in the short film "Mustela nivalis" in the scene where the protagonist got up from the ground. The same movement has been captured and presented from different perspectives, which in this case has been static.

3.2. Technique "Inserting an object outside the visual area".

Each shot must be composed in such a way that is perceived quickly and easily by the viewer. There are established standards for the area in the frame, such as what limits will the captions to be as readable in any area to be important action in the frame. The history of this area is associated with older TVs. They have distorted the image at the end of the frame or cut into the border of the frame.

In the short film "Mustela nivalis" there is a shot where the safe action rule is disturbed by the purpose (Figure 3). The main character goes through a forest. In shot with the effect, his foot steps in front of the camera and passes. A snake has been appeared, which merged with the background. When the hero steps on the snake starts to move. This can be seen after a few seconds, but not immediately. Leg of character focus the attention to the snake, but on the other hand, the snake is outside of the standard visual field. This brings to sense imbalance, instability, uncertainty and suspense. The snake symbolizes evil in the film, which in this case is not placed at a central point. It remains as an adjunct to the whole idea of the story. In Fig.3 with number 1 is marked the area that remains the action, the field that should be at main objects. In the bright area 2 is located the snake.



Fig.3 A shot using the technique
"Inserting an object outside the visual area"

This technique can be used in some moments in a serious multimedia game. For example, the looking for a symbol can be outside the standard and easy to adopt area of the frame, which would enhance the mystery, if this is intended impact. This is determined by the direction the genre of serious game.

3.3. Effect "Looking through the audience, tracking point of view".

Usually, frames that follow the head of the characters or their body parts are designed to enhance suspense or horror. In this case it is a eye-tracking. The camera is as a attached to the line of sight of the hero into the distance. This creates a dynamic sense, especially in rapid twisting of the eyes. If the head of the character is entirely static, the movement of the eyes is enough to create a fast paced scene. Thereby it creates an artificial dynamics in the scene. If the camera is constantly attached to this view it would leads to excessive dynamic or rapid loss of interest. Therefore this effect should be used to measure only the places where increasing attention. The effect creates a sense of impending bad events or distrust in character or viewer.

In Fig. 4 is presented a shot of the short film "Mustela nivalis", where the using the trick is described.



Fig.4 A shot with the effects „Looking through the audience, tracking point of view”

In this method the movement of the camera depends on the distance between the camera and the eyes of the character. If the camera is about 1 meter from him and he looked away at 30 degrees, the camera will travel about 50 centimeters. If it is at 10 meters the camera will pass about 5 meters, depending on the trajectory. This shows that in real terms it could be difficulties in capturing these images. The options are following: the using of railways for the camera or processed in additional video editing.

3.4. "Leading Lines" in the frame and "frame proportioning".

Using only speech for the transmission of authors messages as a way to communicate quickly tired, boring. Film, television, multimedia games are visual media. The viewer expected to see a visual narrative, visual drama. Essential role in this story is the image that the camera represents. Its main function is to display the action to focus through accents and building an atmosphere and mood. Each aspect has a certain dramatic effect visible or hidden, which helps the suggestion and emotional impact on viewers [4].

The creation proportioning frame can focus the viewer in a more effective way than a frame without proportioning. In that frame there are two types of proportioning - proportioning of the composition or movement, the two are related with the leading lines in the frame. In Fig. 5 is shown research relating with the leading lines in the frame. We can see how these lines can be directed the viewer attention in a "Point - Attractor." This area is the most intense in whole frame area. By pre-proportioning of the movie shot, can help the work of video operator or the animator of the production. In Figure 5. the leading lines direct attention to the hero's face, which together with the body shows power and greatness.



Fig.5. Visualization of the leading lines in the frame.

Some images or frames can be pre-proportioning, and thus can be influenced and the process of shooting. On the one hand of the operator's work could be simplified. Secondly it would help in the stage of training of future operators, artists, designers, animators and people of the visual arts.

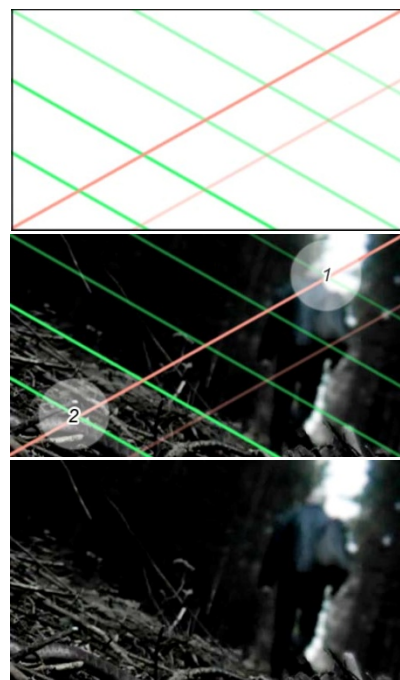


Fig.6 Proportioning of the shot from short film "Mustela nivalis"

In Fig.6. is shown the stages of the proportioning of the frame. Pre-defined guide lines where should be composed frame. One line corresponds to the horizon of the earth. In the resulting intersections 1 and 2 which are located in two opposite edges of the image are placed the two main objects - the main character and a snake.

Proportioning of the frame could shows where there are strong visual areas of the frame. It can separate the main objects from secondary and easily readable frame for impact.

3.5. Music pre-visualization[1].

Film music is typically created for a specific film, subject to certain requirements, preset by the filmmakers. This type of sounding is limited to move within the visual narrative. Often a great part of the musical work should follow the underlying emotions and enhance, not hinder and distract the viewer from the main action. In some cases well known classical pieces or songs that are mixed or processed are used. Thus the effect of interacting with the audience is achieved and this enhances the impression the music makes. There are different methods to music pre-visualization. One of them is using of already created music on raw video footages. The composer should be oriented by the musical themes. This can lead to the influence of old music used on the new music score, to reflect the style and lead to a lack of uniqueness [5].

The creation of interactive audio-visual product is part of the decision task to attract the audience. This GUI can be designed with the option for the user to change the model in such a way that it can affect most of its needs. This model (part of the basics of serious games) might help to realize creative and innovative multimedia projects with the possibility of a complete change of sound depending on the audience's emotional charge.

For the creation of an interactive graphics system - a link between music and visual part of a multimedia product, this research must pass through the following stages:

1. Research the main musical parameters.
2. Selection of musical parameters which have the strongest impact on human emotion.
3. Finding the connection between music and human emotions.
4. Analysis modification of parameters: Tempo (fast and slow) and mood (minor, major) in classical music.

5. Merge the selected parameters in a single graphical interface.
6. Implementation of a graphical interface developed in the author's multimedia product - short film.

Major sound usually brings positive emotions such as joy, love, peace. Minor is associated with negative feelings such as anger, hatred, fear, sadness. Tempo music also has a significant impact. The rapid pace creates a sense of dynamism of the event, either positive or negative - (joy / anger). Slow pace recreates exhaustion, relaxation, sadness.

There are emotions that are difficult to define. In the established schedule of Fig. 1 can be traced certain emotions emerging from musical parameters. For example, surprise may contain in it fast and slow patterns, and positive and negative (pleasant or unpleasant surprise). Suspense can be placed in tempo, but it may contain as major and minor musical motifs. On the other hand, the mystery may be at a slower pace.



Fig.7 Research on the relationship between musical parameters and human emotions.

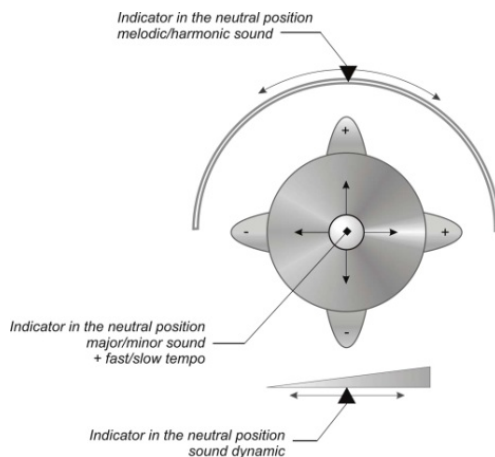


Fig.8 Graphical user interface (GUI) - Presentation of the indicators of musical parameters

In figure 8 is presented schematically developed a graphical interface that connects the musical parameters and human emotions. Designed graphical model could be used in stage of a multimedia production such as advertising, film, TV show, comic, serious multimedia games and other visual formats. The implementation of the interface may be a new way of musical pre-visualization in commercial and noncommercial creative products of this type, on the other hand it can create indirect or direct link between the product authors. This model (part of the basics of serious games) might help to realize creative and innovative multimedia projects with the possibility of a complete change of sound depending on the

audience's emotional charge. This enables the viewer or audience to "play" with music and sound. Interactivity attracts the audience.

4.Results and discussion

By creative and professional point of view of interaction "Author-Audience" is essential how a blazing trail will leave the vision of "author" and whether narrative or message and suggestion and will remain stuck in the minds of his "audience".

To prevent blurring and uncertainty in reasoning the interest may be focused on creative and innovative plan on problems arising in particular for audio-visual communications and presentations, for example: media, serious games, web technology, advertising, film (didactic, scientific, popular and fiction).

At the listed set of tools and techniques to create a gallery for creative innovation serious game can be added and many other author's solutions advanced solutions or to make transfers from other areas of science and art. It should be noted that the library should be open to further and improve. It requires the audience that appreciates innovation solutions and systems improving and innovating products to interested

5.Conclusion.

Creation of interactive audio-visual products is part of solution task to attract the audience. Visual skills and effects depend largely on the technical level and facilities which are designed effects. This requires constant update of knowledge base, improve and monitor the leading trends in these areas of art and technology. Enrichment library of audio-visual products for creative and innovative serious games must be performed by trained men and a team to meet the expectations of the audience, and to surprise them positively.

6.References.

1. Dzhuurov K., N. Orlov, Hr. Beloiev. SERIOUS GAMES FOR CREATIVE AND INNOVATIVE TRAINING PRE-VISUALIZATION IN AUDIO-VISUAL CREATIVE PRODUCTS.// ICERI2011, 2011, No 2, ISSN 978-84-615-3323-7.
2. Huizinga, J. Homo Ludens: A study of the play element in culture. Translated from Dutch. Sofia, "Nauka i izkustvo" Publishing house, 1982.
3. Manov, B., Digital storm, Titra 2003.
4. Orlov, N., Creative thinking, Vol 1, 2, 3, Ruse, University of Ruse 2011.
5. <http://www.cm-gallery.com/wsd02r02.htm> - Elements of sound.