

TRADITIONAL AND INTERACTIVE ANIMATION: FROM PERSPECTIVE OF STORYTELLING AND PRODUCTION PROCESS

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Introduction

Animation since its development till today, due to its usage of diversity of material and development which is parallel and concurrent with technology can not be covered under one complete description. However within its general structure animation can be defined as "the imagery is recorded frame-by-frame and the illusion of motion is created, rather than recorded" . (Furniss 2000:5) In traditional animation which is known as cel animation, animators draw many events e.g. perspective, angles of view, facial expressions of character and body motions manually in paper as loops, and play them again and again. Although traditional animation has very high expression power of bringing story and characters to life "it is highly labor intensive, it is difficult to make changes and see the results rapidly in an iterative creative process, and it requires considerable skill on the part of the animator to control perspective, rendering and animation simultaneously." (Turner 1998:135)

With the introduction of computers to animation business, these kind of difficulties have been cured and artists accessed the tools and possibilities which can never be realised in traditional animation. In this way, when the artist digitizes the frames which composes the animation in computer, can reach every frame in the way it is showed. In other words; it can be said that realtime animation is realized. Display of animation in realtime provides the artist with the opportunities of organizing the frames,

updating and most important of all, programming. This power of computer makes realtime animation possible with prompt feedback. In this medium, motion, light, colour, character, perspective, programming and other narration elements are under direct control of artist which gives him the ability to develop interactive animation in a way he wants.

Although, traditional animation and interactive animation they both are composed of different images playing in screen and aim engaging the spectators to narration, have some differences. These differences are very much related with the nature of its storage media. Interactive animation on the one hand utilizes the rules of traditional animation, on the other hand, determines its presentation properties by combining different forms of interactivity with story and narration elements. The most evident differences between traditional animation and interactive animation emerge in interactive narrative and production process.

Interactive Narrative

A space is given to the spectator for interpretation and response at the traditional animation such like it is given at photography and painting. However that space makes the effect of the spectator impossible on the art and pushes them in a passive position rather than creating opportunities of interaction.

At first sight it can be claimed that the interpretation is an interaction at the same time. However, the subject here is the interaction opportunities aiming the transformation of mental process to physical process rather than interpretation. In the content of this argument interactivity can be defined as "Mutual and simultaneous activity on the part of both participants, usually working towards some goal, but not necessarily." (Lippman 2003). Lev Manovich who claims that the interactive media objectify the mental process in a concrete manner and materializes it, expresses that at the interactive process the user can select what to play and becomes the co-author of the work. (Manovich 2001:55)

However traditional animation which is a good narration for passive observation. is linear and a

controlled experience, it presents the story within a period of time and a linear path; behavior of character, story and events are defined previously in detail by animators, writers, and directors. The story ends with a single conclusion where the formation and the conflict of the former events resolve. This feature of the traditional animation forms a natural part of the presentation.

But the interactive animation is not linear and the narrative does not have to be controlled by the animator. In digital media the narratives can be transferred to spectator either in linear or in circular structure. In the geometric shape of the circle there is neither a start nor an end. Start, middle or end can be any point that composes the circle. In this environment the user reaches to these points randomly. (Longhi 2001:84). He or she can reach sequence of events or return to previous sections and by this way he/she re-visits the narrative sections. On the basis of these explanations we can say that interactive animation sets up the events that enable mutual relationship between narrative and user.

Interactive animation is used in various areas such as; entertainment, web, computer and video games.

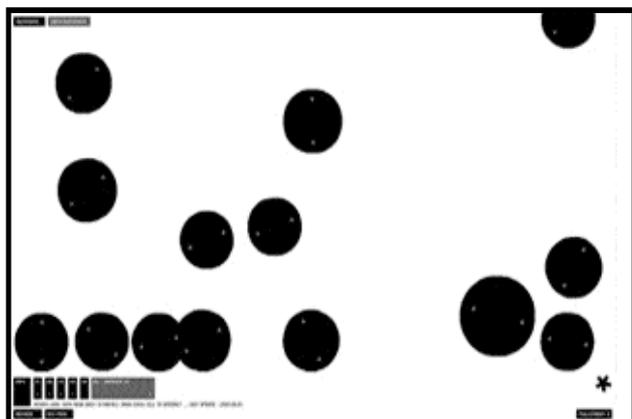


Figure 1. <http://yugop.com>

In the website prepared by Yugo Nakamura, numerous objects which are in interaction with user and with themselves, are used. These objects become visible by each click of the user and move within themselves. This kind of interactive objects

allows the viewer to press a key and create an effect that does not change the story but rather adds to the experience.

Traditional animation and interactive animation have very different narration structures. Especially in 3D character animation based computer and video games, interaction tremendously affects the storytelling. For example, in Quake, the player chooses a character among different ones and control of the character totally belongs to the player. Player can run, walk, crouch, turn, jump, pick items through the corridors moreover can fight various monsters awaiting for assault. The saving feature in the game and various ends enable completion of levels or gaining experience many times.



Figure 2. quake-screenshot 1



Figure 3. quake-screenshot 2

Topic Linear Intelligence	Linear animation The intelligence and behavior of characters are determined by screenwriters, story boarders, and animators prior to the audience experiencing the work.	Interactive animation The intelligence and behavior of the characters are generated by a computer program in real time.
Emotional expressiveness	Animator controls emotional state exhibited by characters in each shot. Each action a character takes is inextricably tied to an emotion.	Animator creates dynamic emotional ranges explored during game play based on a range factors. Emotions may be layered on top of actions, and controlled independently.
Navigation collision avoidance	Characters only run into things when the animator wants them to.	Characters may accidentally collide with others and with objects in their world. Characters need a mechanism for avoiding collisions dynamically and coping if they occur.
Transitions	Since sequence of events is fixed, transitions between small chunks of animation are controlled by the animator, and may be long or short.	Since the sequence of events is variable, cycles must be kept short or they cause a character to take too long to switch to a different action. (If this is solved by animations not running to completion, characters may exhibit discontinuous motion.)
Multi-character interaction	Two characters may be animated simultaneously.	Enabling two characters to robustly engage in expressive close contact (fighting, affection, etc.) is an unsolved problem.

Table I. Summary of Five Major Differences Between Linear and Interactive Animation

As in traditional animation, the character design is one of the most important elements in interactive animation. The player's driving the scenario and the character and sometimes identifying himself with the character is the fundamental unit which creates emotional states. "The definition of characters' roles corresponds to the authoring part of interactive storytelling." (Cavazza 2002:104). Hence, interactive animators should think about not only general behaviours of characters, but also the collision between them, when the user will start interacting with them and how the navigation will be.

Bill Tomlinson, in his article "From Linear to Interactive Animation", who approaches the subject from interactive character animation point of view,

reveals the differences between linear and interactive animation in five main groups as shown in Table I: (Tomlinson 2005:2)

From the point of harmonizing storytelling and interactivity, animators undertake more complex tasks in interactive animation than traditional animation.

Production process

The production process in traditional animation can vary from studio to studio or even it can change due to a different producer or director. There occurs differences in production process in animation forms (e.g. stop-motion animation, cut-out animation and traditional animation) depending on the applied

techniques and the length of the application. The pattern below is a standard sample of traditional animation production process. (Fekete 1995:79)

- Story Board: Splits script into scenes with dialog and music.
- Sound Track: Records dialog and music in prototype form.
- Sound Detection: Fills the dialog column of an exposure sheet.
- Layout: Manages the drawing of backgrounds and main character positions, with specifications for camera movement and other animation characteristics.
- Background Painting: Paints the background according to the layout.
- Key Frame Animation: Draws extreme positions of characters as specified by the layout. Provides instructions for the in-betweeners.
- In-Betweening: Draws the missing frames according to the key frame animator's instructions.
- Cleaning: Cleans up the drawings to achieve final quality of the strokes.
- Paint: Photocopies the clean drawings onto acetate celluloid (cells) and paints zones with water color.
- Check: Verifies animation and backgrounds according to the layout and approves for shooting.
- Record: Shoots frame-by-frame on film or video.

During the traditional animation production process animators, painters, designers, musicians, producers and directors must work in cooperation on different parts of a scene. But the production process in interactive animation is considerably different from the traditional animation. Today, various techniques such as; traditional animation, stop-motion, 2D and 3D computer animation can be combined with interaction and be produced together in a single medium such as CD-ROM and internet. Although production processes are subjected to numerous variations due to complex and computerized techniques, it is possible to apply standard production processes in 3D computer games. In this process, interactive animation is realized by a team which is composed by designers, artists, software

engineers and producers. Software engineers create a game engine that will serve as a computational platform. The animated characters are modeled and rigged by a group of artists, animators, and technical directors. After animators generate the characters' behavioral repertoire, software engineers create the code that controls the behavior of the characters and the dynamics of the virtual world and connects the interface elements (buttons, etc). Then level designers create the levels by using tools. Next, lighting designers, virtual cinematographers, and audio directors contribute additional elements to the game. Finally, a team of quality assurance testers, plays the game thoroughly to find bugs. If there is one, then it is sent back to the software engineers, designers, and animators. Once the game is complete, it is distributed to its players through stores. (Tomlinson 2005:4)

Additionally, the tools which are used in the two different forms of animation are dissimilar. While traditional animators use tools like paper, pencil and paint, interactive animators have to use 2D and 3D animation software and work with the complex systems like procedural animation and motion capture which contain widely computer and mathematical principles to add interactivity.

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