

# **Spatio-temporal Relations of Experimental Animation Research based on Various Media and Forms**

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## **Abstract**

**The artist's experimental animation creation has a driving force for thinking about ideas and media materials. Due to such unremitting spiritual pursuit, a variety of special space-time relations have been constructed on the screen, leading the audience to experience the time-space leap from reality to the virtual. The paper argues that different media and experimental animations in different forms will build different space-time relations and bring different psychological space-time feelings to the audience. Based on the particularity of the performance of each medium, this paper analyzes the relationship between different time and space to expand a certain perspective for the understanding and research of experimental animation.**

## **Keywords**

**media; form; experimental animation; spatio-temporal relations.**

## **1. Introduction**

Animation, as an art medium, has a characteristic that is different from other art media, that is, to endow inanimate objects with life. It is based on this particularity that the animation shows infinite charm and possibility in its creation. When the medium of animation is expanded to a state with the use of a variety of possible media, its "experimental" nature begins to emerge, full of unknown, uncontrollable and challenging. Instead of shrinking away, the artists fired up imaginations and began to explore the fun of experimentation with enthusiasm. Based on this, the form of animation appears correspondingly subversive and expressive in the space-time visual standard. Therefore, the research on the spatio-temporal relations between various media and forms in experimental animation, the perspective of the spatio-temporal relations behind the visual forms, the analysis and interpretation of deeper internal metaphors, will also bring more abundant viewing perspectives for the study of experimental animation, and open a new channel for the audience's understanding.

In a surprisingly sarcastic lecture, Lepier made it clear that in the modern world, space and time is becoming more and more expensive, while art has to turn itself into international industrial art, such as film, in order to buy space and time "as proof of human capital imagination". [1] based on the "buy" the realization of the possibility that a close relative of experimental animation as a movie, through different media and forms of erect an anytime we are looking for dynamic change of media channels, through the different material properties of the visual presentation on the possibility of various space exploration, so as to form we can get the consciousness of time and space, and work with them. And this is what Gilles Louis René Deleuze said about perceiving things in the space in which they are presented, and recalling them in the time in which they are experienced.

## **2. Experimental Animation and its Diversity**

Experimental animation, according to the modified relation of its words, mainly embodies the modified attribute of "experiment". So-called "experiment", is based on the purpose of scientific

research, as much as possible to eliminate the influence of the outside world, highlight the main factors and use some special instruments and equipment, artificially change, control or simulate the research object, make some things (or process) or reproduction, thus to realize natural phenomena, natural properties, the law of nature. Then, when we put it into the context of animation, it is based on the rich real material world, to try and show one or more media about performance or expression techniques, to present a kind of fresh visual image, and discover its form, giving people a novel or stimulating pleasure. As Zong Baihua wrote, "Things experienced are expressed in a form, such as words, pictures, etc., which are expressed by a kind of material, representing the state of mind of the author and entering into the state of mind of others." [2] Experimental animation is one of the "forms" among them, so it has the same charm.

Yuri Norstein believes that animation "is more likely to achieve the essential performance of a film because animation is more free and independent in terms of materials. That's the strength of animation." [3] Through experimental animation production line by stop-motion technique for a variety of materials in the form of visual exploration and innovation, such as film, pinscreen, sample cutting or photos, magazines, etc., that present a diverse full of simple sense changes in visual experience. In the process of creation, the creator expresses his thoughts, dreams or fantasies in the application and combination of materials by instinct, and everything is mixed in the space and time of materials, so as to give the audience more visual and tactile experience. It is based on the combination form of media properties, more diverse and the architecture of the relationship between time and space. In addition, the "image par" of animation is to process the recording medium frame by frame. Such processing, can reach speed not 24 frames per second, and more likely to be a 24 every day. [3] Experimental animation can give full play to this "frame by frame" technology, which can not only obtain records corresponding to time in life, but also speed up or slow down the frequency of recording, to realize the extension, compression and omission of time. At the same time, the changes of materials, colors, shadows and other forms on the screen create a new space on the screen, express the diversified reconstruction of the real space, and also permeate the composition of the development elements of time, all of which bring different feelings of space and time to the audience. Then, in the relation of the constitution of space-time, there are four different forms: simultaneous identical space, different time identical space, different time distinct space and simultaneous distinct space. [4] Under different space-time nested form the media and the form of experimental animation form important symbol and the relationship between time and space.

### **3. Analysis of Space-time Relation between Medium and Form**

#### **3.1. Different Time with the Same Space and Same Time and Space: Freezing - Extended Space and Time**

Human beings have always played a relatively inferior, low-level role in the process of time revolving around, but they are interested in pursuing the expression of time eternity. Since the birth of the media, it has resorted to a certain form of the media to entrust and express this emotion. Then, based on the frame-by-frame technique, the artists found that through multiple exposures of film, image materials of different times can be solidified in the same space, thereby presenting the changing process of each frame to realize the solidification and extension of the time dimension and the meaning of space.

Experimental animation "Pas DE deuce" was created by director Norman McLaren directly on celluloid, which completed in 1968. In order to avoid the authenticity of the camera, the creator modified and integrated the picture step by step, combined with its chemical material properties through multiple exposures, and finally presented a continuous dynamic image

relationship. Finally, the image of a pair of dancing ballerinas (Margret Maasey and Vincent Wali) varied in appearance on the black stage. After image processing by frame symbols constituting material, which cooperate with each other, and continue to re-image overlapping features, the present time and the solidification space, extending past time and space, with the performance characteristics of these materials from such movement, thereby expanding the dimensions and significance of different times in real space. As Bergson said, motion-image is the material itself. [1] Action of the previous frame pauses and waits, and the picture of the next frame continue. The image decomposition at different times seems to tell the nostalgia state of the past time in a given space, so as to amplify and record the possibility of retaining time in space." Austrian animation director Martin Arnault said: "When I stop the frame to two, three or ten frames, the possibility of grasping the original action and the perception of the actor or the original intention of an action is probably greatly magnified." [5] Two dancers in a mysterious black background break down the action unfold, but also realized the significance of the expression of dynamic space at different times, because "the art of dance space to display an undulating flow pattern in its actions in the swing change at any time." [6] Eventually, the decomposition of the superimposed image will return to the action itself, like telling the flow time must comply with the return to the same position in this world of space.



**Figure 1.** "Pas DE deuce"

Alexandre Alexeieff and his wife Claire Parker jointly created the pinscreen animation "Night on Barren Mountain", which freed the picture from the easel to move. The effect produced by the pinscreen technique is close to watercolor etching. With his invention, what he realized was not cartoon production, but a dynamic sculpture. [3] Sculpture, as a form of space art, its ups and downs reflect the etching traces of time and realize the tactile expression of the same time in the same space. Sculpture art gives us a solid spatial feeling that is round and three-dimensional and can be rubbed. [6] In Alexeieff's "dynamic sculpture", screen is formed by the shadow of a pinhole, forming a space where you can leave, contrasting light and dark images, with fuzzy outlines, giving life to those hazy and unrecognizable figures, like a dream. The alternating light and dark of the pinscreen realizes the change of the spatial level within the same time, the undulating change expresses the sense of the passage of time, and at the same time creates an image between dream and awakening. The hard contours of the pinscreen disappeared, replaced by images with blurred boundaries. This seems to break the boundary between time and space, and formally realizes the extension of the perfect fit between the two at the same time. Ji Feischman once said: "When it comes to eliminating lines in artistic form, the pinscreen should be the most perfect method. It can create a real hazy feeling, which is 'precise blur.' And the degree of precision of this blur is— No one could match it at that time—it was one of the most distinctive personalities of the inventor of the Needle Curtain." [3] It is based on this "precise blur" that brings a different time and space experience to the audience.



Figure 2. "Night on Barren Mountain"

### 3.2. Different Time Simultaneous Space and Same Time and Space: Aggregating and Omitting Time and Space and Time

Alain Resnais believes that there should be some things in the film "around, behind, and even in the image." This is what happens when the image becomes a time-image. The world becomes memory, brain, superposition of ages or fragments, and the brain itself becomes consciousness, the continuity of ages, the creation or production of new fragments, the re-creation of styrene materials. [1] In the time and space constructed by experimental animation, creators can use common materials in life or re-creation with real-life images to build a certain unrealistic time-space relationship according to their own intentions, so that potential objects of audience psychology can conceal or reflect this reality. Object, which is a kind of "aggregation" relationship of psychological time and space exist between the two. [7] Based on this, the creator has created another possibility of time-space relationship in the exploration and discovery of various media in experimental animation.

"Frank's Movie", a work completed by American director Frank Morris in 1973. He stacked and staggered a large number of pictures cut from magazines, and used stop-motion shooting techniques to depict consumer society in the 1960s in the United States. There are a total of 500,000 sample cuttings in the film, and images related to advertising, design and fashion are all moved to the screen for display, with different colors, contrasts and printing quality. The director pasted the sample cutting on the celluloid, and shot them in a "single picture with two frames" method. In a pile of windows on one screen, he expressed a concept that "the essence of things can be stifled when the number reaches the limit." [8] I believe that this is just a different way to kill time and space. A group of pictures appear in a very short time interval. Through the "extremely fast" playback, the gaps in time have been filled, and layers of cut samples have concealed the independent living space that each image should have. Each image overlaps all previous partial images, creating a constantly changing time relationship. [8] Indeed, the cascading appearance of newspaper cuts realizes the flow of past time and the aggregation of multiple complexities in the current space. At the same time, it is coupled with extremely fast playback frame rates to achieve the greatest degree of compression in the external form of time. In addition, the large number of stacked newspaper clippings in the picture promotes the formation of potential objects of the audience. They are outside the spirit and exist in time. The repeated superposition creates a sense of time and time. In addition, it also declares the real object in consumption from the side. The space chaos and denseness caused by the prevalence of material pursuit and enjoyment in the era of socialism. "It is not so much that it produces an indirect image of time on the basis of motion, but it is a combination of coexistence of order or non-sequential relationship in direct time-image." [1] Newspaper clipping images by superimposing movements gathered in the same space. It is difficult to distinguish has not only confused the order of present time to achieve a different time in the same space in the disorder, but omitted the audience reaction time, brought the audience constant gathering and anxious spatial experience psychologically.

In addition, the work has a relatively special existence in terms of sound processing, using two sound tracks to achieve different sounds at the same time. One is to tell an autobiography in French, and the other is to continue to pronounce words starting with "f". The mixture of two-

track sound and multi-layer images renders visual interlacing and psychological spatial depression, directly revealing the spiritual impact of consumerism on people.



**Figure 3. "Frank's Movie"**

The classic Polish experimental short film "Tango" directed by Sabigny Rubikkinski, through the combination of animation and real-life video film, it shows a kind of almost terrible infinite time "black hole" in the limited space, and realizes the thinking of film medium. The fixed house space becomes the reality carrier of time, sucking more and more people back and forth, and the behavior of these characters is just a small event in our life, which expresses the cycle of time and the compression of space. Just like "by searching for the smallest cycle that is the inner limit of all other cycles and can connect real images with instant, symmetrical, continuous, and even simultaneous forms of replication." [1] In the film, from the little boy picking up a ball, to the young man standing upside down on the stool, to the old man praying on the bed, the characters have independent "small" action cycles in the enclosed space. At the climax of the plot, a total of 23 people are in this small space at the same time, making it impossible for first-timers to find the central point of view of the screen, leaving viewers with endless anxiety and confusion. If people follow this circular tendency, they think that the actual image itself has a corresponding potential image, that is, a copy or reflection. [1] For this reason, our feelings and memories, reality and imagination, body and mind, are duplicated and superimposed again and again in the director's processed real person images, thus creating the cohesion of the same space and time. It is this convergence that forms the "black hole" of time, attracting the repeated occurrence of human events in space and thus linking the past with the future for the present point in time. Although it progresses at a constant speed, it keeps superimposing characters, which constructs the complexity of visual space and writes the circularity of psychological time. This kind of film realizes the aggregation of the real object and the audience's inner potential object, constructs the coincidence of the real and potential image space in time, realizes the aggregation and comparison of different characters in the same space at the same time, and brings infinite thinking space to the audience. At the end of the film, the old man picked up the ball and walked out of the room, presenting an empty house space in front of us. It seemed that every moment of time was both the past and the beginning, telling the eternal entanglement between spiritual space and physical existence, leaving endless possibilities for the audience to think about space and time.



**Figure 4. "Tango"**



### 3.3. Different Time and Space Reconstruction-compressing Time and Space

Lei Lei's work "Photo Recovery" won the Best Experimental Animation Award at the 2013 Czech Anifest International Animation Festival. This work groups the collected old photos and displays them on the same screen while simultaneously switching between different backgrounds, showing people's time changes in the past space-time dimension, and shaping "the past space in the present time, the present time in the past space". The film as a whole is like a moving scroll painting. Overlaps, shuttles and changes of photos at different times and locations, as if unfolding the elapsed time one by one, reconstructing a group of "pasts" in different time and space on the screen, which may imply that people are appropriate stay away from forgetting, and should not chase the so-called "advanced" too much, and prevent drowning in the torrent of time full of rapid changes and anxiety. In the picture, we rely on the photos that appear in the media of sensory experience to form a sense of space far away from us psychologically. It also shows that "the past itself appears in the present, but it is independent, alienated, unbalanced and even immature personality forms appear as unusually active, radioactive, and incredible pseudonyms." [1] This "immature past" moments of time have turned into a dynamic photo stream, reflecting the reflection of the current state of oneself. Although the "past" will no longer return, it will soon become the "past". We should record in a group of photos find your own spatial position in the "past". However, the rapid transition of pictures without interruption can be thought of, which has compressed the "past" to a large extent. This seems to be accusing time's ruthlessness. We have become so powerless and without initiative, we can only accept the traces of time that it has left behind. The author's "hand" holding an old photo also appears in the picture. The contrast between the photo and reality, we can think that "some times sink, while others rise, just like the superimposed age structure in archaeology." [1] Superimposition is a deep reflection on the meaning and value of life by human beings in this world. "The image must be the present and the past, while still being the present and the past." [1] Human sense of space changes with the sense of time. The realization of time and space travel through this reconstruction also establishes a space-time train leading to the "past" for us. In addition, the film's almost magical soundtrack permeates the rhythm of the past, which in a certain sense helps to shape the extension of the audience's psychological space.



Figure 5. "Photo Recovery"

## 4. Conclusions and Implications

In a general sense, each independent media and form itself does not contain multiple temporal and spatial relationships. But it is precisely because of the fusion of experimental animation, and art medium full of infinite pioneering challenges, that it presents its diverse dynamic space-time relationships, even multiple nested space-time relationships. It is realized by means of the joint application of the media. Itself and the "frame-by-frame technology", which is completely different from the real-life film editing that relies on the lens to realize the transformation of time and space. As objects in three-dimensional space, films, photos, cut samples, etc. can be used to distinguish time, pinscreens and lines are used to divide space; as two-dimensional planes, they can be used to record pictures; as images presented in animation, you can used to construct the picture space and provide visual metaphors. Such recognition depends on their

properties as media. The direct frame-by-frame processing of transparent images on film, it is not a real-life imaging, without any mechanical assistance (except film celluloid). The changes in the film medium show the flow appearance and final alignment of time and space in historical time and space; the concavities and convexities on the pinscreen are displayed with the unique visual image of the needle screen, which makes people want to touch, which is exactly the same as the sculpture. People's psychological feelings are the same, but the creator transforms the tactile space into temporal and spatial changes in the visual space; the cut-out collage of newspapers is based on the existing time composition and collage in the newspaper image. The change of frame rate constitutes a new time and space full of compression; the movement of photos is superimposed, and each historical photo provides not only the basic time and space, but also the deep symbolic time and space structure: the photos are divided. The two areas inside and outside are the time and space of historical memory and the natural time and space of reality in the minds of modern people. Each part of the image in the film is a unique way of visual perception and a representation of historical time and space. In fact, within the real time and space of our lives, there are more media and forms waiting for creators to discover, so as to create a different time and space relationship in the experimental animation world.

The use of media and forms becomes the representative of the artist's specific style, which is the creator's unique visual vocabulary, and is also the basis for constructing the temporal and spatial relationship of works. The artist uses these media elements to build a new space-time relationship, so that the meaning of the work can be finally realized and generated. The above analysis is based on the expressive relationship between media and form. They break away from their original unity in the process of transforming static to dynamic. Only through the artist's creation and discovery can it highlight the animation as a medium and form of expression to experiment with value literally, so as to play a more profound metaphorical role. If there is no artist's experimentation, discovery, and creative performance of multiple media and forms, but just regular commercial animation production, then what you can enjoy is the time-space relationship realized with the help of montage. [3]

## 5. Significance

The performance of art works, as a kind of life expression and the expression of the creator's life. In the free creative medium of experimental animation, the way that the medium is expressed, the creator can realize the deep extension of the present time, future time and past time in space, and expand the present space, future space and past space in time horizontal coverage. The "classic" passages were not by simply shooting frame by frame or printing film (and digitally scanning pictures), but by changing the image material itself. Experimental animation works expand the scale of expressiveness, discover more possibilities, and express their attitude to reality in the most honest state of mind. Its visual image expression ability is extremely strong, reflecting a kind of longitudinal thinking about the film medium. In fact, for such innovative artists, they are not art for the sake of art, but an attempt to break through all the boundaries in reality and re-establish the connection between time and space through practical actions, thus creating a new world in which those time connections that seem too broken. In the works, the artists unleash their imagination infinitely, and at the same time, they are also pursuing a new spiritual world to increase the possibility that people can understand each other in the present time and space. There is also a certain realistic humanistic care behind it.

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