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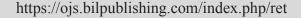
# On the Art Science of Film and Interaction Design

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| ARTICLE INFO | ABSTRACT |
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As one of the most important contemporary art forms, film is a medium to present stories with multi-dimensional stimulation. It seems that movies and interaction design are two unrelated majors, but in fact there are many contents and forms of existence in movies which take interaction design as the design method. In other words, movies and interaction design actually have a lot in common. This paper will analyze and find the interweaving points from the perspective of interaction design and film respectively. Also through some specific interaction or film cases to further explain the relationship between the two.

## 1. Introduction

Film is a series of personal utility and emotional stimuli that interact between enjoyment and pleasure (Eliashberg & Sawhney, 1994) as well as the use of visual and auditory stimuli [1], a story theme or a narrative structure that highly influences the delivery of surprise and pleasure from the film. Interaction design is also a process guided by designers that enables the audience to explore novel products and surprises through certain means and media, especially vision, hearing and touch.

## 2. Interaction Design

Interaction design can be interpreted in simple (but not simplified) terms: it is the design of interaction between the user and the product. The goal of interaction design is to create products that enable users to best achieve their goals. The film is the interaction between the audience and the plot. The purpose of the film is to present the content created by the director to bring a series of thoughts to the audience, so as to achieve the goal of the director/film. So interaction design and film seem to have nothing to do with each other, but because they are both creative arts, there are many surprising similarities.

The first and most direct example is the emergence of INTERACTIVE MOVIE, a concept in the entertainment media industry, which has been formed as early as more than ten years ago. The basic meaning of INTERACTIVE MOVIE is that participants can become the characters in the MOVIE, get involved in the MOVIE environment, and generate continuous interaction. The essence of the so-called interactive film is actually a film that is really decided by the audience. The production process (subject

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matter, script, director and actor selection, etc.) of this film will be determined by interactive means such as online voting, which is a subversion of the traditional film production method [2]. But one of the biggest problems is that interactive movies, although called movies, are primarily a game concept. So the current form is still mainly in the game. However, lumiere brothers defined film as the narrative art of active film in the form of film. Under this definition, contemporary interactive films cannot be called real interactive films in a complete sense. So in addition to the example that most directly connects film and interaction design, how can we find the relationship between film and interaction -- interweaving points?

## 3. Watching Movies from the Perspective of Interaction Design

First of all, from the perspective of interaction design, we will focus on three key points (text, visual expression and time) to see some of the important relationship between interaction and film.

### 3.1 Text

For interaction design — text — especially text used in interaction, such as button labels, etc. — should be meaningful and easy to understand, simple and appealing to the user, convey meaningful and accurate information to the user, and let the user grasp the core quickly through text information. Similarly, language plays an important role in movies. A good movie, every line of dialogue, every word, even every punctuation mark is useful. They play different roles in revealing character expression, character emotion, explaining character relationship and background, linking plot, explaining lens content and promoting plot evolution.

### 3.2 Visual Expression

This involves graphic elements, symbol, color, shape, etc., these are particularly important in the interaction of visual expression, whether the user in the first place can be interactive products attract you, whether the user in the process of interaction using product through visual stimulation to achieve aesthetic experience optimization, so the visual in interaction is used to attract users, and to optimize the user experience and added words convey information to users. Then in the film and television art, the first principle of visual communication is to make the work look pleasing to the eye and attract the audience. This is also the aesthetic meaning reflected in the communication of film and television art. In film and television art works, visual expression content should not only be attractive and distinctive, but also meet the aesthetic needs of the public to achieve twice the result with half the effort [3]. Therefore, visual expression plays a similar role both in interaction and in movies. It guides the audience's visual thinking through visual transmission, thus leading the audience into the movie (interactive) world better.

### 3.3 Time

Although this dimension sounds abstract, in interaction design it refers primarily to media (animation, video, sound) that change over time. Movement and sound in the interaction for the user to provide visual and auditory feedback plays an important role, at the same time, the time here is also refers to the user in the use of products or experience the time rhythm in the process of interaction, the media as the user's experience in a specific time each user was formed by a unique rhythm of time line, the image can be to look for the tracks of audio, each user has its own interactive experience "audio". And time for movies, according to The Russian writer Tolstoy, the only thing that can penetrate the mysteries of motion, time and space, is movies. In this sense, all of the standard in the movie is about space and time, and all the films are in the final analysis is pointing at the "time" the basic proposition - not least because everything occurred in a specific space, is not because things are only the arrow of time, but also because of the film to the audience psychological impact is a process by looking for the feeling of the time as a result of the cause, this is the essence of the movie pleasant [4]. Therefore, although there are different interpretations of time for interaction and film, they all indicate that time, as a necessary factor influencing the audience's experience, brings the audience absolutely different feelings.

## 4. Interaction Design from the Perspective of Movies

Next, we will turn to the film from its features, methods, contents and forms to further explain the commonality between film and interaction. Hirschman & Holbrook(1982) believed that the subjective feature of a film is a non-verbal stimulus, so the communication with the audience depends on semantic content rather than syntactic content. This feature means that the film mainly interacts with the audience through five senses, while the audience's visual perception interacts with the audience through visual senses with biological signals from the senses [5]. Interaction design is also a process of

"visualizing" content, requiring you to present (visual presentation/visual stimulation) rather than inform. Robert McKee, author of Story, a scriptwriter's bible, once said: Stories don't directly communicate emotions to the audience. They tell the audience what's good or bad. The protagonist, for example, is a man in pursuit of wealth. That is, the change of the protagonist's wealth from less to more will naturally give the audience a positive emotional experience. According to Jon Boerstein, the movie's seemingly inexhaustible "freshness" comes from precisely satisfying the audience's latent "needs": the audience's desire to see the unseen in the pictures, to experience the daily difficult emotions in the plot, and to feel the excitement beyond the ordinary life. All these explain the extraordinary significance of film, that is, as a medium, all its exploration and value can be finally embodied only when it finally ACTS on "people". [6]

Same interaction, interaction is not let people glazed and fiddling with your work according to the requirement, also can't simply will you write on the screen told the audience, the purpose of interaction to the audience through different technologies into stylist designed a good plot, plot by the guidance of visual stimulation to the interactive experience real role in the process. Fuse * digital creative studio's interactive work, called Ljos, for example, works by turning potential elements from dreams into visual objects. The dancer's body is a medium to explore the connections between light, sound and movement, leading the audience to a virtual, thin and lost space. The dance movements of the dancers and the design of the timeline in the presentation are designed by the interaction designer in order to drive the audience to be more immersed in the interaction process and to let the audience explore the views they want to express on their own initiative. Therefore, to some extent, some interactive works are like pulling the plot of the film from the 2d screen to the 3d reality, breaking the boundary between the audience and the technical media and leading the audience into the author's world more vividly and intuitively. For example, in the design of financial app, users often choose to give experience money as a gift to let them feel the pleasure of getting income. E-commerce design also often emphasizes the importance of new users' first order. This is to bring users into the "story", so that users can feel the emotions we need to express, such as sense of accomplishment, trust, pleasure and so on. Users often believe not what you tell them, but what they discover. Here interaction design is a science and more like an art.

In the same way, Akira Kurosawa once said: 'If you really want to make a film, write a script. You just need paper and pen.' Only by writing a screenplay can you learn the details of the film's structure and the nature of the film. What interaction design needs most is pen and paper. Only by constantly outputting ideas from your mind can you find out what's wrong with you. It's a creation in itself, and you want to imagine that the user is your reader, that you're telling them a story, not writing a diary to yourself. Robert McKee gives some examples of the way to write a story. In this case, the creation of a film requires the previous writer to think a lot about the script and write every event in the story in simple language. "After weeks or months, the writer finally finds the climax of his story." The author then asks a friend to tell the story in a cafe for ten minutes to see his reaction, to see if he is attracted to certain parts of the story and not interested in certain parts. Once you've done that, don't start formal writing." [7] similarly, interaction design also need our designers in the first place in large quantities by the research method to collect as much information as possible, such as through observation method, questionnaire method, etc. to check people's opinions and views, in the process of interaction design works, the designer will also need to do our utmost to various scenarios, considering comprehensively to want more thought and totally different scheme, racking their brains which may appear problem, go to the end. As Robert McKee says, "A good writer must create more material than he can use and then destroy it. He might sketch out a scene in dozens of different ways and then throw the whole idea of the scene out of the outline. He might destroy some sequences and whole scenes. A truly gifted writer knows there are no limits to his creativity, so he throws away everything he thinks is less than ideal in favor of a pearled story." [7] What we need to do is the same thing, to abandon all the unsatisfactory, to pursue to find the "story" that can make users heartthrob most.

In content, is a good movie to actor's exquisite performance, into the heart of the plot, clever shots and JingBie and suitable with the music and so on to get a good movie content presented to the audience, in interaction design, your scene, material, light, color, icon style and so on as an indispensible part of movie, think about how you want to put your "actor", "drama" perfectly presented to your users. Just as an actor's performance affects the user's emotions, different shapes, colors, and animations also have different psychological implications. For example, an Apple laptop will show a light when it enters the "sleep" state, and the flashing frequency of the light is consistent with the adult breathing rate, about 12 to 20 times per minute.

Formally, first of all, it is necessary to elaborate once more on the concept of interaction design: "Interaction design is the process of designing and defining the be-

havior of artifacts, environments, and systems, as well as the physical elements and interaction processes that convey this behavior. By summarizing the most popular ways of interaction design in recent years, such as voice interaction, touch interaction, wearable device interaction, VR interaction, etc., it is not difficult to see that interaction design has an absolute influence on the development of future technology. So what are some similar forms of interaction in movies? The most typical example is what people immediately think of when they think of interaction design——science fiction movies. The interactive forms in science fiction movies are mostly reflected in the dazzling interactive scenes, cool interface, and pleasing special effects in science fiction movies. Specifically, we can find that there have been interaction modes represented by voice control, fingerprint recognition, identity recognition, virtual reality, augmented reality, natural interactive interface, gesture operation, eye tracking, holographic projection and motion capture in science fiction movies. And these interactions aren't just in movies. Some of them have even been implemented in real life. Very tasks such as virtual reality interface in the film appeared, in which actors keanu reeves plays the role of agents, he wore a virtual reality helmet, access to information is a 3 d virtual Internet world, in the process, he has to wear a helmet on the goggles to casting some ICONS and text messages. From the current research results, the achievements in this field have been applied in reality. For example, the tablet computer Surface launched by Microsoft and the special effects in the movie The Sixth Sense are all realistic expressions of the above research results [8]. So the new way of human-computer interaction has been the science fiction film and dazzling bright spots, Hollywood sci-fi invested a lot of money and effort to film in the details of the design, such as Tom cruise minority report, senior team invited HCI scientists involved in filmmaking, the film's visual designers have visited MIT media lab, watched all kinds of gesture recognition at the forefront of technology. Spielberg has convinced John Underko ffl er (famous gesture recognition experts) and Jaron Lanier (the creator of the word "Virtual Reality") to join the team, formed a think tank, mind the wind burst with man-machine interface in 2048. Through these efforts, the film presents a variety of novel ways of human-computer in-

teraction. Therefore, not only is interaction design directly reflected to the audience in the form of science fiction movies and plot screens, but science fiction movies also flourish more because of the natural connection between future technology means in the form of interaction design and the development of film plots.

## 5. Conclusion

In general, there are similarities and interweavings between film and interaction design in form, content, elements and other aspects, which lay an important foundation for the relationship between these two seemingly unrelated disciplines ("interaction design" and "film"). On this basis, can we further explore the relationship between film and design, especially interaction design, which is not only the superficial common connection described in this paper, but also find a new way to conduct a dialogue between the two disciplines by understanding their common aesthetics?

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