

Chinese Scientific Educational Film Creation:

The Return of the Film Nature

LE RETOUR DE LA NATURE DU FILM SCIENTIFIQUE ET ÉDUCATIF CHINOIS

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Abstract: Two major debates in the 20th century about what scientific educational films belong ended eventually without any conclusion. So far the debate on whether scientific educational films belong to science or to films or to both science and films still has not come to any conclusion, which seems to be an "absurd war" (in fact, "science" and "film" can not be discussed on the same level). However, the problems reflected are worth our careful thought. This is exactly why Chinese scientific educational films are so withered (although there is some development in the new century, it is only just the beginning). Therefore, we start our discussion from what scientific educational films belong to, and then explore the creation of scientific educational films and put forward some thoughts on it.
Key words: Scientific Educational Film Creation; What Scientific Educational Films Belong To; Story Feature Expression; Blockbuster Production

Resumé Dans le 20^{ème} siècle, les deux grands films débats sur la nature du film scientifique et éducatif sont infructueuses. Jusqu'à maintenant, on n'a pas de conclusion finale sur le fait s'il faut classer le film scientifique et éducatif dans la famille du film scientifique ou même dans la famille de film. Ce débat semble être un "guerre absurde" ("film scientifique" et "film" ne sont en fait pas dans un même niveau de discussion), mais le problème qu'il reflète est digne d'un examen sérieux. C'est exactement pourquoi le film scientifique et éducatif chinois est en déclin (bien qu'il a connu un développement depuis le nouveau siècle, mais c'est seulement un commencement). Ainsi l'auteur traite d'abord du problème de la nature du film scientifique et éducatif, ensuite il explore la création du film scientifique et éducatif et propose quelques réflexions.

Mots-clés: Création Du Film Scientifique Et Éducatif; Nature Du Film Scientifique Et Éducatif; Historisation; Grand Film

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Since the establishment of New China, the development process of scientific educational films can be divided into six historical stages: the first stage is scientific educational film period in the 50's of the last century, in which scientific educational films are closely linked with people's production and life. The content is highly technical with the purpose of directly solving the pressing problems of science and technology in people's production and life. The second stage is the transition period from technology based development in the 50's of last century to technology and knowledge

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co-dominant development. The knowledge-based scientific educational film emerged, which began to pay more attention to express scientific knowledge than by means of film techniques than to make clear the practical technology. Thus, some scholars argue that "scientific educational films of the 60's were mainly focused on popularization of scientific knowledge, transmission of knowledge, and enlightenment and development of wisdom" (Liu, 1987, p.46-49). This stage is the first creation boom in the development of New China's scientific educational films. In addition to technical popularization films and scientific popularization films, other types of scientific educational films also developed, such as science animations (*A Pencil*), science feature films (*Diary of the Acquisition Staff*), scientific fairy tale films (*Knowledgeable Old Men*), military educational films (*Tunnel Warfare*) and so on. The third stage is the scientific educational films during the Cultural Revolution. Owing to the impact of ultra-left ideas and lines in the period of Cultural Revolution, the scientific educational films had not much achievement and innovation, although the creators of scientific educational films tried to overcome these problems. The fourth stage is the scientific educational film in the 80s of last century, which has experienced ups and downs during the Cultural Revolution. It still moved forward along the knowledge based direction and developed in depth. On the one hand, it dipped into the newly-emerging science and introduced the latest scientific and technological knowledge to people, on the other hand it went forward into the depth of nature, and explored the more subtle details of science to show the little-known secret of nature" (Liu, 1987, p.46-49). This stage is another period of great development and prosperity in the post-Cultural Revolution. Scientific educational film creators explored the new resumption of development for scientific educational films. In this period are mainly technology popularization films and scientific educational films. At the same time, the scientific educational films of social science subjects also appeared (such "social educational film" existed since the beginning of the birth of Chinese scientific educational film, but it was interrupted in the development process of scientific educational films). However, many scientific educational films that had made much progress before has not been resumed today (such as scientific fairy tale films, science feature films, etc.). In addition, scientific educational films in this period have a relatively large development in the expressing form and technology, such as the emergence of microscopic photography, amplification photography, high-lapse photography, timing photography, underwater photography and other technologies. At the same time at this stage, the emergence of the films, such as *Rise of the third metal - titanium*, *Echo*, and *Population and economy*, indicates that Chinese scientific educational film creation were changing from traditional scientific educational films toward modern scientific educational films gradually in concept, structure, form and so on. The fifth stage starts from the 90s of last century. As the scientific educational films got out of the theater, China's scientific educational films are nearly stagnant, and have no major breakthrough, innovation or development. The sixth stage starts since the new century, along with appearance of the excellent blockbuster production of scientific educational films such as *Cosmos and man*, *Yuanming Garden*. China's scientific educational film gradually ushers in new development (However, it is still in its infancy. In order to usher in the spring of scientific educational films, policy makers, theory researchers and creators need to work hard together.)

So far, the creation of China's scientific educational films is still in the situation of exploration and swing and its development is so slow that can not keep up with the advance of times. The fundamental reason, we believe, is that those who work for China's scientific educational films have not accurately grasped the fundamental problems on what scientific educational films belong to. Thus, we begin our discussion from what scientific educational films belong to, and propose some of our perspectives on scientific educational film creation for discussion.

WHAT SCIENTIFIC EDUCATIONAL FILMS BELONG TO

There are two major domestic debates on what scientific educational films belong to. The first occurred in the early 60's of last century, the representative points of view from this discussion are: in *on features of the scientific educational films –speak section in the national scientific educational film conference*, Li Hongchen indicates that science feature is the primary and art feature is secondary to science feature. The contrary point of view advocates that art feature is the primary and science feature is secondary. Furthermore, some scholars also put forward that in different scientific educational films the order of the primary and secondary is different, which needs to be based on the specific situation of the film. In *on the art processing of scientific popularization films – speak at the national conference of scientific educational films*, Liu Yong pointed out that in the creation of scientific educational films art processing needs to be done according to different topics and contents of scientific educational films, and appropriately expresses the art features of scientific educational films.

The second debate on what scientific educational films belong to occurred in the early 80s of last century. Wu Chunyi put forward in *scientific educational films belong to science*: "the scientific educational film belongs to science, which is its characteristic, and its preciousness lied in its science feature, which is the same as the news film's characteristic is new." (Wu, 1980, p.34, 58-59) In *scientific educational films need to pay attention to artistry*, Hong Kai mentioned "the central task of the scientific educational film is to express science. However, it can not express science in the same way as science textbooks, science press, science exhibitions, science lectures, etc; it needs to reflect the scientific content through the artistic techniques of film. Therefore, scientific educational films must pay attention to artistry and must be fascinating"

(Hong, 1980, p. 52-53). In *on what scientific educational films belong to*, Zhao Likui argues scientific educational films belong to both science and film. He believes: "the scientific educational film has the content of science and uses the form of film to teach for its aim. Science and film each has independent extensive meaning when they are separated. However, only when they are combined with each other, can they become a unique form of art - scientific educational films" (Zhao, 1980, p. 26-27).

As Zhao Likui proposed, the scientific educational film is film in its nature. It expresses the content of science technology, scientific knowledge, scientific culture, scientific thinking and scientific spirit by means of film. It has features of both science and art and neither is dispensable.

In terms of content, scientific educational films belongs to science, while as for the form, scientific educational films belong to film. There two are not in the same system, so the controversy about what they belong to is an "absurd war." However, we must know clearly what we need to think deeply about behind this controversy, which is the basis for the healthy development of scientific educational films. We need to clearly understand that we need to make full use of artistic technique and form to express scientific contents. These are two conscious debates of scientific educational film workers about contention about the creation concept and thought of scientific educational films.

In addition, the point of view that scientific educational films belong to science or film is displayed from another aspect. Many people think of "science" as technical science or natural science, which makes the scientific educational films appear one-sided. Ever since the birth of the scientific educational films, there have been many scientific educational films with the theme of humanities and social science in our country (such as *West Lake Landscape* in 1919, *Beijing Landscape* in 1920, *Nanjing Sights* in 1921, etc.). However, in the development process of scientific educational films after the founding of New China, the pragmatic view of science educational films makes the scientific educational films with the theme of humanities and social sciences declined or interrupted, and they have not returned to their original level of development nowadays.

In the film, *under traffic light* (in 1978), the traffic rules and guidelines are expressed in stories through the setting of the character, plot and breathtaking scene, which makes the film one of extremely good scientific educational films with the theme of humanities and social science in that period. After that, *Horizon of visit to Japan* (in 1989), *Joys and sorrows of red word "xi"* (in 1990) filmed by our country are also extremely good scientific educational films with the theme of humanities and social science. *Yuanming Garden* has also done very well at this point, and it expresses scientific knowledge, scientific culture in view of the historical theme of *Yuanming Garden*. In addition, foreign scientific educational films such as *Next Superpower: China* have also done very well in this aspect.

An overview of China's current scientific educational films shows that we are surrounded by a large number of scientific educational films with the theme of natural science and we even feel a little breathless because they mostly tend to be scientific educational films of pure technical presentation and dissemination. Currently, the important mission of China's scientific educational films is to improve civil scientific and cultural quality, rather than directly solve the urgent technical issues appeared among our life and production and provide science and technology as their most important goal. The scientific educational film with the theme of humanities and social science is what we need most now, which need to attract the scientific educational film worker's great attention.

Next, we mainly will analyze *Yuanming Garden*, the best scientific educational film at the 26th Golden Rooster Award, and *Cosmos and men*, the best scientific educational film at the 20th Golden Rooster Awards. Then we put forward some of our opinions on the scientific educational film creation.

STORY FEATURE OF SCIENTIFIC EDUCATIONAL FILMS

Yuanming Garden (released in China on September 9th of 2006) is a scientific educational film with striking achievements. *Yuanming Garden* is more commonly taken as a documentary. Why we think it is a scientific educational film? First, it applies for scientific educational film production licenses in China; second, experts give the scientific educational film award; third, from many of its expression methods, it is closer to scientific educational films. For example, in this film a large number of three-dimensional animations as a "fiction" means to reproduce and perform the historical events, which is contrary to the real essential attribute of documentary (Whether *Yuanming Garden* is defined as a scientific educational film or a documentary is not the focus of this article, and thus here gives a simple analysis only). The success of *Yuanming garden* is based on comprehensive use of a variety of creation forms, narrative structure, and blockbuster production. As for the aspect of structure, this film consists of two parts. One is the view of Giuseppe Castiglione who was a missionary doing the missionary work from Italy to the Qing government. He narrated the events he witnessed according to his own personal experiences as a royal painter. The other is the process of the eight-power allied force's burning *Yuanming Garden* described by Mackee, a British army chaplain. This shows that the film narrate, organize, form the history story related to *Yuanming Garden* by using the creation techniques of feature films.

Story. The story of scientific educational film, *Yuanming garden*, is a very important factor to attract audiences. In this film, story narrative skills are used to form and process the film so that its enjoyable feature is greatly improved. Detail and plot are the basic elements constituting the story and rich plot and moving detail are the main features of *Yuanming garden*. For example, Yinzhen invited Kangxi to watch the peony. In the peony bosk Kangxi saw Hongli practising his sword. Kangxi thought he was extraordinary intelligent, and thus was very fond of him. This is the foreshadowing technique that stories commonly use, which lay the foundation for narrating the plot that Yongzheng inheriting the throne after. In the subsequence of this in the film, Yinzhen succeeded to inherit the throne as Emperor Yongzheng after Kangxi died. There are many different versions about his inheriting the throne in history. Some people suspect Yongzheng poisoned his father and then usurped the throne by conspiring. Some said that Kangxi passed the throne to Yongzheng because he was fond of his grandson, Hongli. Another example is that the British and French troops occupied *Yuanming Garden*, and went on burning and looting it after capturing Tianjin North Pond; because Emperor Xianfeng was indecisive, he gave up the resistance against British and French troops only by sucking opium for psychological comfort, when the first line of defense collapsed. In the following plot of the film, the story plot with great contrast appeared. This film shows only about 20 eunuchs bravely resisted the French army to defend Yuanming Garden. More than 300 eunuchs and maids of honor were burned alive to death in largest palace hanging the nine portraits of the Qing Emperors. Their behavior is in sharp contrast to that of Emperor Xianfeng, which is ironical and at the same time shows a sense of deep sorrow. The two examples above is just a microcosm of using the many techniques to narrate stories in films; in scientific educational film creation, we should study more story narrative techniques in literary works. To attract and move audiences, films must have stories and plots must have details. *Yuanming Garden* authentically achieves story narration in scientific educational films.

Suspense. Whether the audience's eyes can be attracted by the stories in film products often depends on whether the setting of suspense is successful. As the suspense appears one by one in a film, the audience will be filled with the inner nervousness and expectation. With suspense in the scientific educational film, it can get the audience's recognition more. In *Yuanming Garden*, the use of suspense is extremely skilled, and a lot of suspense is set up. For example, as this film described, Castiglione found that the emperor did not live in imperial palace in Beijing, then where the emperor lived followed; Kangxi, who loved science greatly, had a high level in astronomy, mathematics, however, he did not know how the science would affect the future of the empire; what caused Kangxi's and Yongzheng's death; for what purpose, Yongzheng let his grandsons and himself dress like scholars; when having meals, even if Qianlong liked a dish very much like, he just ate a little of it, and so did he for each dish, which is for what. In a small town of the garden, the eunuchs played a variety of roles (businessmen, soldiers, artisans and thieves, etc.), which is for what; behind the extremely flashy Qing empire, what kind of crisis was waiting, and so on. These settings of the suspense are all for unfolding the story and providing a driving force to attract audiences. In the scientific educational films, *Yuanming Garden*, the setting and use of suspense satisfy the audience for their expectation of the story evolution in the film; at the same time, in the course of watching the film, the audience gain a great sense of pleasure as the suspense is revealed one by one in the evolution of the story.

Yuanming Garden successfully uses the expression technology of film to narrate stories, which "melts the knowledge into the story, makes the scientific content into an integral part of the story, manifests in a vivid popular way" (Kuang, 2006, p. 31). The narrative technique of Chinese documentary has ushered in the spring of domestic and international markets of documentaries. To obtain new development of scientific educational film creation, it is wise and very necessary to apply the narrative technique to the scientific educational films.

BLOCKBUSTER PRODUCTION OF SCIENTIFIC EDUCATION FILMS

Blockbuster refers to the film product, which adopts the film production mode of large investment, large production and high cost and expects a high box office (I think, for scientific education TV programs, it is high return such as high ratings). The scientific educational film, *Cosmos and man* (produced in 2000), was one of Chinese scientific educational films with the most advanced technology at that time. In this 60-minute film, the three-dimensional animation made by computer alone lasts for 45 minutes and the investment reached 2.8 million Yuan (not comparable to feature films, but compared with other scientific educational films, the investment is very high already). The level of this scientific educational film can be comparable to that of world-class films. According to the news from Beijing film distribution and projection units, the box office of *Cosmos and man* in Beijing from early March to the end of May of 2001 reached over 4 million, which ranked first for box office of the films screened in Beijing at that time. Six years later, *Yuanming Garden* (investment cost of more than 10 million), pushed the creation of scientific educational films into another peak. The scene of Yuanming Garden presented in this film took up to 5 years for more than 20 technical staff to complete the three-dimensional animation spectacular of this "garden of all gardens" in *Yuanming garden* at that time. In addition, in this film, the scene that 3000 allied British and French troop advanced on the street of Beijing in 1860 is realized by more than thirty foreign figurants advancing on location of August First Film Studio. In post-production, they were "cloned" as three thousand people, and at the same time the streets of Beijing in 1860 was also virtualized. For the Peony Terrace

where the three dynasties (the three founders of "Kang and Qian Eras" of Kangxi, Yongzheng and Qianlong) gathered, the scene was synthesized digitally and the peony flowers were virtualized. The digital synthesis and virtual technology was used to arrange the unreal background for the first time in our country. The most advanced digital intermediate technology at that time was used in the entire film of *Yuanming Garden*. By September 2006, a month after the release of *Yuanming Garden*, the national box office reached 5 million, which is a miracle in the box office for scientific educational films.

Blockbuster production is a very important direction in the creation of films currently. The scientific educational film writers also follow the trend, and continue to explore the development of scientific educational films. Blockbuster production of scientific educational films also adopts the blockbuster production methods of feature films, to achieve high input and high output. As to the blockbuster production creation of scientific educational films, there are a number of scientific educational films abroad, such as *Dr. Beekman's Science World* (1997), *Hawking's Universe* (1997), etc., in addition to Discovery's *Next Superpower: China* (2006) and the National Geographic's *Inside the Living Body* (2007), etc., which are representative works of successful scientific educational blockbuster and provide the reference mode for our blockbuster production creation of scientific educational films.

CONCLUSION

From the current status of China's scientific educational films, we know that it is because it is not clear for scientific educational films to use art expression to show the science content and there is no good grasp of the law in creating films that scientific educational films lack competitiveness and activity in today's visual culture trend and has no place in the layout of film industrialization, as a result of which there is no major development. Although there are some very good scientific educational films in our country, such as *cosmos and man* and *Yuanming Garden*, they are really nothing for their speed and achievement when compared with feature films documentaries of the same period.

In general, only after we make clear that film expression techniques and forms need to be fully used for scientific educational creation, can there can new breakthroughs and development in the creation of scientific educational films. Our thoughts in the three aspects of what scientific educational films belong to, creation with the story feature, and creation of blockbuster production are only a tip of the iceberg in the field of scientific educational film creation. We hope these thoughts can be of some help for scientific education film creation. At the same time, whether it is scientific educational film or TV program, the above point of view is applicable.

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