

TV Science Programs in Transitional Period in China **A case study: “Scientific Chinese” of CCTV at the Crossroads**

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Abstract

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Even since the end of last century, scientism has become part of state ideology in China. As a strong and dogmatic ideology prevailing in all the walks of life, scientism takes science to be the only privileged knowledge about the world, and views the scientific method as the exclusive way to make progress in all kinds of human enterprises. As a result, traditional Chinese TV science programs neglected the interaction and interlocution between viewers and scientists. Greatly indebted to the new idea deeply influenced by anti-scientism that the public should be not only be the information receiver but also the participants of scientific issues, Chinese TV science programs have changed the form of talk-show from scientists on stage with a host as a partner, to a new one as interactive activities with scientists and the public both on the stage from the beginning of 1990s. This new form of TV science program can attract the viewers' attention and stimulate the viewers' interest so as to keep the rate of TV program viewing above the “dangerous” position. Nevertheless, the attempted reform has provoked a hot debate between scientism-oriented and anti-scientism-oriented Chinese scientists and intellectuals in China. This paper shows how the change in the form of Chinese TV science programs happened with the help of its ideological transformation from “science is always right and people should understand” to “science should be communicated as it is and people have rights to join the discussion.”

1.The Historical Background of TV Science Programs in the Transitional Period

In 1995, two main scientific educational film-producing factories, including Beijing Scientific Educational Film-Producing Factory and Agricultural Film-Producing Factory of China, were merged with CCTV (China Central Television). In the same year, Shanghai Scientific Educational Film - Producing Factory was merged with Shanghai Northern Television Station. As scientific educational films withdrawing from cinema, the three film-producing factories are the most important producers of TV scientific educational programs. At the end of the year 2000, the Channel of Scientific Education and Culture came into being at CCTV. Therefore, we can conclude that TV

scientific educational programs and scientific educational films have a close relationship with each other. First of all, let's review the outline of the history of scientific educational films.

In China, scientific educational films came into being in the year 1918. From 1918 to 1995, they took the responsibility of communicating science, enhancing the intrinsic GDP and supplying materials for science research. During that period, scientific educational films were composed of science popularization films, technology popularization films and science research films. The traditional guideline to scientific educational film is to produce final conclusion films, and the reason was that final conclusion films never make scientific mistakes. Obviously, a fatal mistake appeared. Science development is a process, which overthrows former conclusions constantly. [1] At that time, the film neglected the audiences' interests and acceptability. They adopted the 'deficit model' of science communication. Technically speaking, this is a slight 'spin' on the term 'deficit model'. The original purpose of the phrase, coined by social scientists studying the public communication of science in the 1980s, was not to describe a mode of science communication. Rather it was to characterize a widely held belief that underlies much of what is carried out in the name of such activity. [2]

2. Case Study of the Scientific Program “Scientific Chinese” of CCTV

2.1 The Transition of TV Scientific Programs

In 2001, “Scientific Chinese”, which adopted the form of the talk show, was held by the Scientific Educational Channel of CCTV. It adopted the form of talk show. At the very beginning, most of the topics came from natural science or science history, such as *Cloning Dolly*, *the Secret of Heredity*, *DNA Research*, *Science Behind Disaster-Exploration of Earthquakes*, *Chemical Weapons* and *The Secret of Nature: Tracing the Ancestor of the Hors*, etc. Scientists and experts of the field were invited to the studio to teach general public the knowledge. During this period, themes of the program are very similar with scientific educational films of the 1980's. There is no denying that the program “Scientific Chinese” reflected the leading edge of the science research field instead of general public's daily life. As a strong and dogmatic ideology prevailing in all the walks of life, scientism takes science to be the only privileged knowledge about the world, and views the scientific method as the exclusive way to make progress in all kinds of human enterprises.

At the very beginning of 2004, “Scientific Chinese” began to do the reformation. The themes were outreached to the public's daily life, such as *Body-Fitting Everyday*, *Real-estate*, *Pet Raising and Children's Education*, etc. The general public was also invited to the program to discuss these issues with scientists or experts, and the host is the spokesman of general public.

Table 1 The comparison of two developmental processes of “Scientific Chinese”

	Topic	welcome guest	science communication model	The position of audience	Evaluation standard
before reformation	within scientific research fields	scientists Or experts	deficit model	Neglected by TV makers	Experts Or leaders
	explain problems of daily	scientists Or experts	public participation model	Pay much attention to	Audience ratings And

Present	life from	and	audiences'	The
	science	general		Interests and
	point of	public	acceptability	And
	view			Experts

At present, the audience rating, which is the percentage of all homes with televisions that had the program on., is the most important standard to evaluate TV programs. In the past, the evaluation standard was totally different. Leaders and experts, instead of audiences, have the right to mark the program. Although there are some shortcomings of making the audience rating as the standard, TV makers began to think highly of the audience. Let us have a look at the situation in a western country. Audience ratings have been an important aspect of the television industry in Britain since the launch of commercial television in 1955 and the end of the BBC's broadcasting monopoly. The private companies TAM and AC Nielsen were contracted by ITV to produce sample ratings of audiences. This data was sought by advertisers when scheduling slots for their commercials so as to best reach target audiences. These samples also included audiences for BBC programmes, although the BBC conducted their own research. [3]

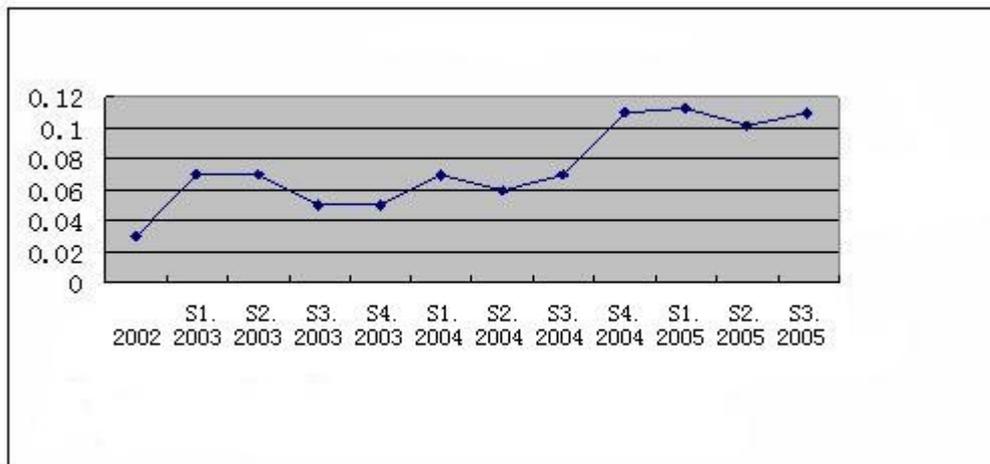


Figure 1. The comparison of audience rating of "Scientific Chinese"

After one year's exploration, the audience rating of "Scientific Chinese" has increased dramatically, according to the survey. At present, every aspect of producing programs, including choosing topics, directing and editing, pay much attention to the audiences' interests, and the topics mainly coming from the public's daily life. Scientific knowledge and scientific thinking are presented in the whole program, although the topic seems no relationship with science. The program is designed to explain the general public's daily life from the science point of view, and at the same time improving scientific literacy of the general public.

2.2 Two Main Aspects of Transition of "Scientific Chinese"

2.2.1 Choose Hot Topics From Public's Daily Life

At present, the topics of "Scientific Chinese" all come from the public's daily life, such as social issues, children's education, health problems, etc. These issues have a close relationship

with the audiences' daily life, and the information is useful for improving their living standard. Although the topics are far away from the forward position of the science research field, they are usually happening in daily life. Therefore, the general public could realize that "science is just beside me." The definition of "science" in the program is outreached.

2.2.2 General public appears in the TV program

At present, "Scientific Chinese" invites scientists/experts as well as general public to the studio to express their opinions about the issue. As is mentioned above, the program adopted the form of the "talk show." In the "talk show", three persons discuss topics together. They are the host, the scientist /expert and a member of the general public.

Bruce V. Lewenstein, who is vice professor of public understanding of science of Cornell University, presents the public participation model, and that is the dialogue model. In his opinion, it is necessary for the public to take part in the scientific issues' discussion. During the process of taking part in the discussion, the public's scientific literacy could be improved, and they will know more things about science research. Besides, they will understand the relationship between science and society.

The program "Scientific Chinese" puts the participation model in use. The audience rating of "Scientific Chinese" increased dramatically after reformation, which manifests the general public paying much more attention to the program.

3. The Market-oriented Transition of TV Industry

3.1 The External Reason of Transition of TV Industry

With China's reform and open door policy to the outside world, the TV industry in China has reconstructed and changed constantly until now. The attention should be firstly paid to the historical steps of the China TV transition. It is economic reform in China, which provides space and the possibility for each step of TV's transition. In the process of social transition, the TV industry in China is also undergoing the market-oriented institutional transition, though TV stations in China are more regarded as institutional organizations instead of industrial enterprises. In terms of the quantity, China has the biggest TV market in Asia, even in the world. It has over 3000 TV stations, 280 million TV sets and over 800 million viewers. It is indeed a giant market with great potentialities. [4] The audience, who had been neglected for a long time, is "the highest judge" to evaluate the quality of TV Programs.

Chinese TV science programs have changed the form of talk-shows by scientists on stage, with a host as a partner, to a new one as interactive activities with scientist and the public both on the stage from the beginning of 1990s. The new form of TV science programs can attract the viewers' attention and stimulate the viewers' interest so as to keep the audience rating above the "dangerous" position.

3.2 The Implications of Transition of TV

As a scientific program, the transition of *Scientific Chinese* has great implications. According to *The Public's Scientific Literacy Report of China in the year 2003* (the latest data), people who are acquiring scientific information through TV, accounted for 93.1%, which increased 10 percent

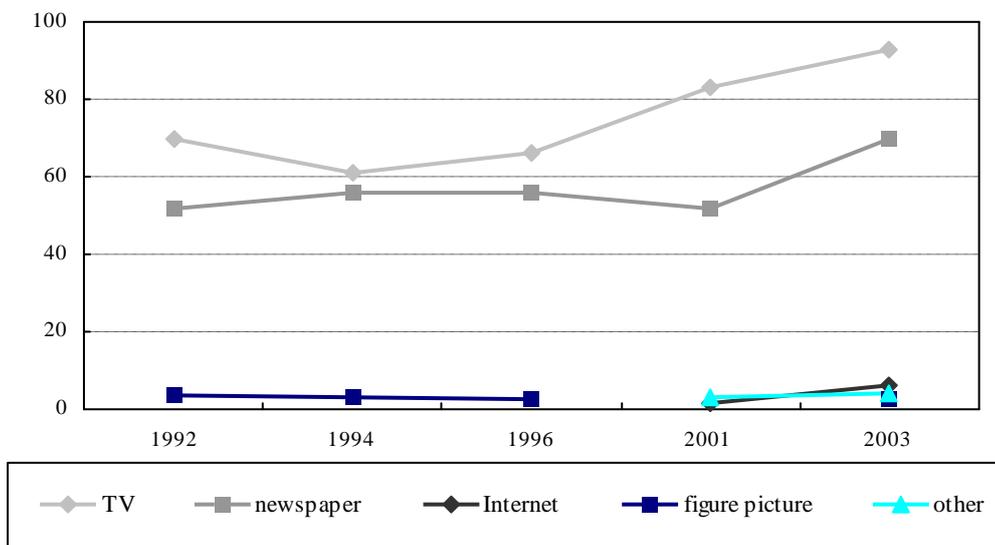


Figure 2. The developing tendency of the channel of public acquiring science and technology information in our country

compared with 2000 (82.8%), and 27 percent compared with 1996 (66.4%). (As shown in the figure above)

There are many factors affecting the public's scientific literacy. As shown in the figure above, TV science programs play an increasing role in various kinds of factors affecting scientific literacy. According to *The Public's Scientific Literacy Report of China in the year 2003*, more than 80 percent of people watch TV each day. However, there is no obvious relationship between the frequency of watching TV and the public's scientific literacy. To our surprise, some persons claim that they acquire scientific knowledge by TV, but the percentage of their scientific literacy (2%) remains the lowest. Moreover, the scientific literacy of people who watch TV one/two days a week is higher than people who watch TV everyday, or three/five days a week.

Table 2. The frequency of contacting media and scientific literacy (%)

	Each day	Three to five days	One/two days	Never
Newspaper	4.83	1.39	2.07	0.74
Book	7.94	3.32	3.85	0.86
Broadcast	2.99	1.87	1.65	1.75
TV	2.00	2.04	2.23	0.00
Magazine/journal	5.87	3.71	3.21	0.53
Internet	13.71	10.22	9.75	1.21
Average	6.22	3.76	3.79	0.85

From the data above we can infer that people who seldom watch TV have a high scientific literacy, and most of the audiences are the general public. Therefore, the themes are chosen from the general public's daily life, and the general public being invited to the program will attract a larger audience to watch TV scientific programs.

4.Theory Analysis of the Transition of the Scientific Program

Even since the end of last century, scientism has become part of state ideology in China. As a result, traditional Chinese TV science programs neglected the interaction and interlocution between viewers and scientists. Greatly indebted to the new idea deeply influenced by anti-scientism that the public should be not only the information receiver but also the participants of scientific issues. Nevertheless, the attempted reform has provoked a hot debate between scientism-oriented and anti-scientism-oriented Chinese scientists and intellectuals in China.

4.1 The Transition of the Understanding of “Science”

TV science programs are a facility of science communication. At the very beginning, the science communication model it adopted was different from today, and the director's understanding of science was totally different. There is something to be gained by thinking about how to communicate science by TV. What are good ways for TV scientific programs to reach people? More theoretical analysis, including the models of science communication for the program, is needed.

This analysis is needed because rethinking that model of science communication can affect what we consider to be "best practices" of TV scientific programs. In Bruce's opinion, we tend to think about science communication as a formal process (Fig. 3). Science happens in the lab. It goes through some meetings and preprints and it is finally published in a formal paper and then it is "science." Only after it gets to "science" does it get out to the mass media and textbooks and policy documents. For TV scientific programs, they took the responsibility of teach the public “science” before the reformation.

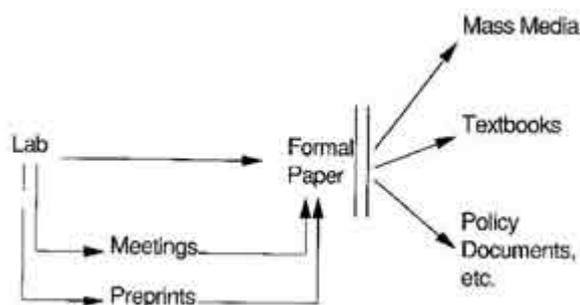


figure 3. The traditional model of science communication. [6]

At the very beginning, scientific educational films and TV programs (for example, “Scientific Chinese”) were obviously understand “science” in this way. Except for the host, the other two persons were all scientists and experts. Luckily, at present, science should be talked by general

public, which is represented by general public be invited to the studio. The meaning of science is totally changed.

4.2 The Application of the Models of Science Communication

There are four models for what we are trying to accomplish with public communication of science: the deficit model, the contextual model, the lay expertise/lay knowledge model, and the public participation model.

Before the reformation, the scientific program “Scientific Chinese” adopted the traditional deficit model, which is the idea that if we simply provide information then things will get better.

The contextual model addresses the issue that there is not a single audience, but in fact there are multiple audiences. We need to think about those audiences in context: For what reason do they need information and in what situation do they need information. This model highlights that we need to provide information in different ways to different groups at different times and to address the contexts in which they use information. [7] At present, the issues of “Scientific Chinese” derive from daily life, which are in the public’s need. The general public could take part in the discussion and understand the meaning of scientific issues.

Somewhat more controversial is the model of lay knowledge or lay expertise - the idea that sometimes, public communication is about communicating ideas from what we would traditionally call "non-experts" into the research enterprise. For example, AIDS activists and cancer activists have shaped the research agenda by bringing to the table their knowledge and their expertise about what issues are salient. They don't change nature itself, but they change what we know about nature, what we think about nature and where we put our efforts in terms of understanding nature. That is a different kind of communication setting than a setting of simply providing information to fill a deficit. [8]

The final model is what Susannah Priest called the public opinion model, what Rick Borchelt called the dialogue model, and what Bruce V. Lewenstein calls the public participation model. They are all essentially the same thing. As a society, we claim we're interested in this issue of public communication because science is important in a democracy. The key thing about a democracy is public participation in all facets of discussion of public issues. The public participation model of science communication highlights the need to create venues and opportunities for public discussion. [9] At present, the program “Scientific Chinese” is application of this model. “Science” here could be talked about and questioned by general public. They are used to discuss with experts in the field and oppose experts. The general public, the scientist/expert and the host discuss the daily life issues from science point of view.

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