

Inward and Outward Perspectives on a “Cancer Village”[—]

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Abstract: Focusing on the “cancer villages” in the Huai Basin, with the analytical framework of “inward” and “outward” perspectives, this paper comes to the following findings: (1) Pollution in Mengying Village came from the upper reaches of the Shaying River, thus belonging to exogenous pollution although other factors may not be excluded. (2) Although the media reported realistically the anomalies of cancer death inside the village, they put the blame on water pollution outside the village. The “unexpected” interventions from the government and the subsequent massive studies made the “relation between pollution and cancer”, which should have been clarified, unmentionable to the public. (3) Field investigations found that cancer in the village was not only connected with exogenous pollution but also closely related to residents’ life styles and detected some important clues such as “males / smoking / lung cancer,” “hepatitis B / liver cancer,” “drinking unboiled water / high incidences of intestinal diseases / the improvement of water supply / the sharp decrease in intestinal diseases.” (4) Applying the analytical framework of “inward” and “outward” perspectives to compare Mengying Village with Minamata disease in Japan, Tannerstown "cancer community" in the United States, and Dongjing Village in China, the author points out that one-sidedly emphasizing “inward” or

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“outward” perspectives on diseases may lead to biases in practice and in cognition.

Keyword: cancer villages, water pollution, the Huai Basin, health

Introduction

Unlike the term “cancer”, which usually refers to individuals’ physical health, the term “cancer villages” implies problems beyond individuals’ physical health because a “village” means a social community and a physical space where the community lives. In pre-modern China, it was villages that constitute the major part of Chinese society. Today, villages still are an important unit of Chinese society. Recently, the phenomena of “cancer villages” in China were discussed not only by residents of these villages but also by outsiders and the state. “Cancer villages” already became an issue with nationwide significance and a topic of social scientific studies.

Analytically, the factors which lead to “cancer villages” may come from the “inside” and “outside” of these villages. According to medical studies, there are five factors which may increase the risk of cancer: (1) Genes. The probabilities of getting a certain type of cancer are different from one race to another. It implies that genes have something to do with cancer. (2) Nutrition. There is a negative correlation between selenium intake and several types of cancer such as colon cancer, colorectal cancer, prostate cancer, and so on. Also, recent studies show that over-nutrition may likely cause pancreatic cancer and breast cancer. (3) Viruses and bacterium. Although there is no conclusive evidence shows that viruses directly cause cancer, epidemiological surveys find that 15~20% of cancer can be related to viruses and biological factors. For example, hepatitis B has much to do with primary liver cancer cells (Wang 2009:284). (4) Habits. Eating very fast and eating very hot food may increase the risk of esophageal cancer. Moreover, smoking may cause lung cancer. (5) Environmental pollution. People living in an environment where air, water, or soil is polluted may have higher probabilities to get cancer. This research takes a village as an analytical unit and divides factors into “inner” and “outer” ones. Genes, nutrition, viruses, and habits are treated as factors stemming from the “inside” of the village, while environmental pollution is seen as a factor from the “outside.” A perspective which stresses “inner” factors is an “inward” perspective and a perspective which stresses

“outer” factors is an “outward” perspective. With the analytical framework of “inward” and “outward” perspectives, this research tries to have a dialogue with the reports of the media, especially CTV’s influential program “Rivers and Villages” in 2004. This program started from a story of Mengying Village and described it as a “cancer village.” Although the main concern of this program was the water pollution of the Huai River outside Mengying Village, it led to an unexpected result, the issue of “cancer villages.” This issue quickly attracted the attention of the central government and made the government to launch a large-scale survey about the high incidence of cancer. My later fieldwork in Mengying Village found some clues neglected by the media, such as “males / smoking / lung cancer,” “hepatitis B / liver cancer,” and “drinking unboiled water / high incidences of intestinal diseases / the improvement of water supply / the sharp decrease in intestinal diseases.” Therefore, this research wants to show the relations between village residents’ life styles and their diseases, to expose the multiple causes of residents’ cancer, and to mitigate the media’s accusation that the polluted water from the Huai River (the Shaying River) outside Mengying Village led to its residents’ cancer.

This article is a case study of Mengying Village in the Huai Basin. Second-hand data come from CTV’s program “Rivers and Villages” and dissertations about pollution and diseases in the Huai Basin collected by China Knowledge Resource Integrated Database. First-hand data come from fieldwork during two periods of time. The first field investigation was done in April 2009. Mengying Village was treated as a counter-example of a research project, the “Harmony between People and Water.” The second investigation in Mengying Village was done in August 2011. This follow-up investigation was stimulated by the research results of a study of several cancer villages in South China sponsored by the Association of the Social Sciences in 2010. Wang, a village doctor, was the key informer of the investigations in Mengying Village. There were three reasons to believe that Wang was very knowledgeable about the “pollution and diseases” affairs in the village. First, Wang understood basic medical knowledge and had clinical experience for a long time. He had been a practitioner for over 20 years. Usually he had more than 30 patients per day. Second, Mengying Village was a typical “society in which residents were acquainted with each other,”(Fei 1998:20-40) and Wang was born and bred in this village. Wang clearly knew all residents’ history of diseases, marriages, family

relationships, economic conditions, and live styles. Third, Wang was a member of the elite in Mengying Village, he, as a village doctor and a retired village accountant, participated and understood many public affairs in the village. With the assistance of Wang, the list of patients who died of cancer shown in CTV's program in 2004 was updated in August 2011. Besides, in the second investigation, some experts of the county CDC, county EPA, provincial Department of Water Resources, Division of Agricultural Water, and provincial CDC, Institute of Chronic Non-communicable Diseases were interviewed so as to collect background information and acquire knowledge about pollution and diseases.

The regional characteristics: The change of river system and pollution

Mengying Village is located three kilometers south of the Shaying River in East Henan, and 30 kilometers west of the border between Henan and Anhui. The Shaying River is the largest tributary of the Huai River, originating in Funiu mountains in Henan and flowing through over 40 places in Henan and Anhui provinces, including Pingdingshan, Luohe, Xuchang, Zhoukou, and Fuyang. The length of the Shaying River is over 600 kilometers, with the basin area of nearly 40,000 square kilometers. Since the 1990s, the water pollution in the Shaying River has become more notable than other rivers in the Huai Basin.

In order to understand the cancer issue in Mengying Village, a brief introduction to the historical change of the river system in which the village situates is helpful. The Yellow River used to flow into the sea via the lower reaches of the Huai River, so the Huai River system became chaotic and troubled. Moreover, the chaotic and troubled river system prevented economic development and social integration in the Huai Basin. In order to resolve these problems, several hydraulic projects were conducted to form a new river system. Later, water pollution caused by industrialization distributed over the Huai Basin through the new river system.

“No matter how many places you have been to, the two sides of the Huai River are the best.” This proverb points out that the Huai Basin used to be the richest place in China, and that it was noticed for its richness and beauty. In contrast, the Huai Basin today is

noticed for its disasters, poorness, and pollution. Before 1128 AD, the Huai River had its own estuary. It was a deep and wide river, flowing unobstructedly. An ancient hydraulic project, Shaobei, conducted 2600 years ago, irrigated a large area of farmlands. Many other similar ancient hydraulic projects made agriculture in the Huai Basin develop well. Located between the Yellow River and the Yangtze River, the Huai Basin also had developed water transport system. The Han Canal, built in 486 BC, connected the Huai River and the Yangtze River. The Hong Canal, built in 360 BC, linked several tributaries (Danshui, Suishui, Shashui, and Yingshui) of the Yellow River and the Huai River to form a water transportation(Zheng 2004:28). After the Yellow River flowed into the sea via the lower reaches of the Huai River, the Yellow River usually went into the sea via one of the four tributaries of the Huai River, Yingshi, Woshui, Suishui, or Sishui. Sediment from the Yellow River gradually blocked the Huai River estuary. The middle reaches of the Huai River got the problem of flooding (Zheng 2004:29). The climate in the Huai Basin was usually dry in winter and spring, and rainy in summer and fall. Droughts and floods frequently happened in this area. It was said that “a heavy rain causes a heavy flood; a light rain causes a light flood; no rain causes a drought.” The Huai Basin had been an area with a lot of disasters until the new China government started to improve it.

In the 1950s, the government launched a comprehensive improvement of the Huai Basin. Briefly speaking, this project wanted to resolve the problems of flooding and irrigation. After years of hard work, the Huai Basin became a major grain production base of China. Compared with its past, the improvement of the Huai Basin was huge. People in the area were no longer troubled by floods, droughts, and famines. Nevertheless, compared with other areas in China, the Huai Basin was still backward. Take the county where Mengying Village located as an example. Compared with its past, the improvement of the county was obvious. However, compared with other areas, the county was a state-level poverty-stricken county with too many people and too few industrial and commercial production. A large number of peasants in this county became migrant workers.

The improvement of the Huai Basin in the 1950s largely changed the original river system. Later, water pollution caused by industrialization distributed over the Huai Basin through the new river system. Take Mengying Village and the area around it as an

example. Huaidian Gate formed a reservoir which allowed water from the Shaying River to flow into farmlands in Mengying Village and the area around it via several canals and sub-canals. Then, water from these farmlands flowed into the Shaying River again. Such a river system made non-point source nutrients flowed into the river.

According to field investigations and the relevant literature, water pollution in Mengying Village came from three sources:

1. The major part of the water pollution came from factories in the upper reaches of the Shaying River.

The major part of the water pollution in Mengying Village came from the upper reaches of the Shaying River where MSG, paper, and leather factories were located. For example, Maoji is a center of tanning industry (Chen et al 2011). The characteristics of the river system made the problem of industrial pollution worse. The following events may demonstrate this inference.

A heavy pollution incident happened in the Huai Basin in 1994, damaging a zone from the Shaying River in Henan to the Hongze Lake in Jiangsu. Some places stopped using drinking water, some fisheries lost a lot, and some factories were shut down. The cause of this event was that a drought in spring 1994 made most gates in the Huai Basin closed. Then, a heavy rain in summer forced local governments to open these gates. On July 14, Yinghe Gate was opened and polluted water flowed into the main stream of the Huai River. Huainan and Bengbu was influenced. On July 19, Bengbu Gate was opened. Two hundred million cubic meters of polluted water flowed into the lower reaches of the Huai River, forming a super-large sewage zone with 70 kilometers long(Song 2007:416).

The subsequent heavy pollution incidents in 1995, 1999, and 2004 were similar to the one in 1994. In fact, since the economic reform and the development of industry in the Shaying Basin, the quality of water in the river has become worse and worse. The Shaying River was the water source of Mengying Village and the area around it. Since the river was polluted, the village and the area around it were inevitably polluted. Take Mengying Village as an example, polluted water from the Shaying River flowed into farmlands and ponds in the village via canals and sub-canals. Moreover, many shallow wells in the village were close to the ponds and polluted. In 2004, CTV's correspondents asked some

experts to test three water samples of the Shaying River, a canal, and a pond in Mengying Village. The result showed that five indicators (COD, ammonia, nitrogen, and so on) of the quality of these samples were worse than the standards of the quality of type-five water¹.

2. Pollution inside Mengying Village itself.

When conducting an investigation into water pollution in the Tai Basin, the author found that when the water in an area were polluted for a long time by sewage outside the area and the government did nothing to improve it, residents in the area might turn themselves from protectors to polluters(Chen 2010:132) . Later, when conducting investigations in North Jiangsu, North Anhui, and East Henan, the author found many similar cases. In the case of Mengying Village, after ponds were seriously polluted, residents started to throw their daily garbage into the ponds. When the author visited Mengying Village in 2009 and 2011, there was still much garbage around the ponds, even if the government has already improved the environment of the village and done environmental education in the village since 2004.

3. The abnormality of geological chemical element.

According to the test of water samples done in CTV's program, water in the Sun's well, which was eight meter deep, had excessive manganese. The program made the audience believe that this problem was caused by polluted water from the Shaying River. However, according to the author's field investigations and the literature, the abnormality of geological chemical element might cause the problem of excessive manganese. In "National Engineering for the Safety of Rural Drinking Water in the 11th Five-year Plan," issued by the central government, there was a chapter called "Current Situations and Main Problems of the Safety of Rural Drinking Water." And in this chapter, there was a section called "Other polluted Drinking Water: Distributions, Causes, and Damages." This section said,

In all rural areas of the county, the problem of excessive iron and manganese influences 44.1 million people, accounting for 14% of the

population under the shadow of unsafe drinking water, and accounting for 19% of the population under the shadow of unsafe water quality.

The problem of excessive iron and manganese is caused mainly by geological structures and hydro-geological conditions, distributed in lacustrine deposits, ancient rivers, and low plain areas. ... Also, the problem is caused partially by human behavior such as incorrect managements of mining, smelting, and industrial sewage, which pollute surface water and groundwater.

Judging from the geological conditions and the evolution of river system in Mengying Village, the problem of excessive manganese might likely be caused by geological structures and hydro-geological conditions. Moreover, as far as the author knew, factories in the upper reaches of the Shaying River did not mine manganese. If the problem had been caused by the polluted water from the Shaying River, then water in other wells should have had the problem of excessive manganese. Besides, when doing field investigation in Jiannan Village in South China, the author found the problem of excessive manganese in the village was caused by its geological structures(Chen and Cheng 2011). Thus, the problem of excessive manganese in Mengying Village might likely be caused by geological structures.

The attention from the media: Pollution from the outside of the village and cancer

In the mid 1990s, the problem of pollution in the Huai Basin was very serious and was noticed by the central government. In May 1994, the State Council convened an inspection of the enforcement of environmental law in the Huai Basin. In August 1995, the State Council issued the “Interim Regulation for Preventing and Controlling Water Pollution in the Huai Basin,” the first regulation for preventing and controlling water pollution in a certain basin. In 1996, the State Council approved the “Planning for Preventing and Controlling Water Pollution in the Huai Basin and the Ninth Five-year Plan.” During the period of the “Ninth Five-year Plan”, the government focused on the

improvement of the water environment of “three rivers and three lakes,” and the Huai River was one of them. Although the government and people placed high hopes on the improvement of the water environment in the Huai River, the problem of water pollution occurred again in 2004. In the middle of July 2004, a heavy rain in the upper and middle reaches of the Huai River forced local governments to open gates in these reaches. A lot of polluted water entered the main stream of the Huai River, and a group of sewage over 150 kilometers long drifted downstream (Lin 2007). The effect of the treatment on water pollution in the Huai River was seriously questioned. In this context, the TV program “Rivers and Villages,” broadcasted in August 2004, raised an acute and sensitive issue, that was, the water pollution in Huai Basin already damaged public health. People were shocked by the image that “water pollution” led to the high incidence of “cancer.”

CTV’s correspondents did an investigation in Mengying Village. They also asked a qualified institute to test water samples and consulted some experts. The following four paragraphs are issues about “diseases” and “relations between diseases and pollution” raised by “Rivers and Villages.”

The issue about the high incidence of cancer. When a correspondent walked into the village, there was a funeral. The correspondent said, “Mengying Village has been famous for its cancer patients for more than a decade. In this year, 17 residents’ names were added on the list of cancer patients, and eight of them already died.” The correspondent, accompanied by the secretary of the village party branch, walked along a street in the village and said, “In this street, eight families in a row have cancer patients.” “According to the village committee’s record of dead residents from 1990 to 2004, two hundreds and four people died during this period of 14 years.... One hundred and five people died because of cancer, accounting for 51.5% of the deceased.... Obviously, cancer is prevalent here. Most people who died of cancer are about 50 years old. However, the youngest is only one year old.”

In the end of the TV program, a list of dead cancer patients’ names was displayed.

What caused the high incidence of cancer in the sleepy village? CTV’s correspondent analyzed several possible causes. Then, she excluded the possibility of food and water pollution and indicated that water pollution was the cause. She said, “If the high incidence of cancer is not caused by food and water pollution, the most possible cause is polluted

drinking water.” According to the secretary of the village party branch, Mr. Wang, the nearer ponds and canals residents lived, the higher the incidence of cancer was; the farther from ponds and canals residents lived, the lower the incidence of cancer was.

The relation between water pollution in the Huai Basin and that in wells was obvious. When water in the Shaying River was polluted, polluted water flowed into farmlands and villages via canals. For example, Huaidian Gate in the Shaying River held 200 million cubic meters of water to irrigate 750,000 acres of farmlands and to supply over 500 villages. Polluted water flowed into canals and ponds around villages. Wells in these villages were close to ponds and were only from several to over a dozen of meters deep. They were polluted quickly. According to the test of water samples, five indicators (COD, ammonia, nitrogen, and so on) of the quality of the water sample from a pond in Mengying Village were worse than the standards of the quality of type-five water. The TV program concluded that “Since the sewage from Shaying River flowed into Mengying Village, the color of water in canals and ponds have gotten darker and darker, and the number of cancer patients and the number of people died of cancer have become larger and larger.”

From the perspective of the medical science, it is very difficult to define the high incidence of cancer and to determine its causes. Nevertheless, once the term "cancer villages" was widely spread, it led to extensive and profound social impacts.

This TV program quickly caught the attention of the central government. After Mengying “cancer village” was reported by the media, the Prime Minister, Wen Jiabao, immediately ordered the secretary of Henan Provincial Party Committee, Li Keqiang, and the Henan Provincial Governor, Li Chengyu, to investigate into the problem of the high incidence of cancer in the Huai Basin. Later, the State Council organized four provincial governments of Henan, Anhui, Jiangsu, and Shandong in the Huai Basin and other relevant ministries to launch a project for preventing and controlling pollution and cancer in the Huai Basin. (Lu 2010) In 2004 the Ministry of Health issued “Cancer Prevention and Control Program in China (2004 ~ 2010),” explaining the guiding ideas, objectives, tasks, and strategies for cancer prevention and control. In 2005, the Ministry of Health started the Central Transfer Payments for Early Detecting and Treating Cancer.

In 2005, the Chinese Center for Disease Control and Prevention invited Chinese

Academy of the Medical Sciences, Union Medical University, and other universities and research institutes to participate in a project, the “Investigation into Malignant Tumors in the Key Areas in the Huai Basin.” This project attempted to answer two questions, “how to define the high incidence of malignant tumors in these areas” and “whether water pollution in the Huai River led to residents’ malignant tumors.”² Then, a project, “Cancer Prevention and Control Program in the Huai Basin,” which was supported by a special national budget, launched. Unfortunately, the research results of this project was not made public.

After the report about Mengying Village, the government also quickly initiated the process of the improvement of water supply. According to the author’s investigations in Mengying Village, the government built three deep wells in the village to supply clean drinking water to residents. These wells served an area with 40000 people, including those outside the village. Obviously, the improvement of water supply in Mengying Village was a special case. Since 2000, the Chinese government has put more efforts in resolving the problem of drinking water in rural areas. The “10th Five-year Plan” and “11th Five-year plan” resolved the problem of drinking water in many rural areas. However, the “project for the safety of drinking water in rural areas” would not have been applied to Mengying Village, because, in theory, “the problem of drinking water caused by water pollution should be resolved by the parties which polluted the water.” In other cases in the author’s investigations such as Xiqiao Village and Jiannan Village, although residents asked polluting enterprises to improve the safety of their drinking water, they did not succeed.^[7]

The report about "cancer villages" also made trouble for the local. The news about "pollution" and "cancer" implicitly criticized the local government. A "bad image" created by the news also affected local investment promotion and economic development. Thus, the local government tried to replace the discourse of "cancer villages" with that of "ecological villages." In the investigation in 2009, the author found that a sign (about 70 cm long, 1 meter wide) on a wire pole said, “The demonstration Village of Circular Economy, Mengying Village.” In 2011, the author found that the appearance of the village was greatly improved, that a banner in a main street said, “The Provincial-level Eco-village, Mengying Village,” and that there were many slogans about environmental protection and ecology on walls along main streets.

The factors which lead to “cancer villages” may come from the “inside” and “outside” of these villages. Although the TV program “Rivers and Villages” reported the phenomenon of abnormal diseases in Mengying Village, the village was taken as an example to reveal serious water pollution in the Huai Basin. The focus of the program was water pollution outside Mengying Village. However, the central government’s intervention evoked the new issue of “cancer villages.” Given that the media already made the audience believe that water pollution outside Mengying Village caused the high incidence of cancer in the village, a scientific answer to what factors led to “cancer villages” became unsayable.

A complete understanding: Residents' life styles and diseases

The original aim of the investigation in 2009 was to find the sources of pollution that led to the high incidence of cancer in Mengying Village. Nevertheless, the reality was much more complex than what had been expected. In the investigation, the author got many doubts. After a lot of thinking and discussing, the author conducted the second investigation in 2011. According to the two investigations and years of thinking, the author notices that “cancer” had something to do not only with factors outside the village (water pollution in the Huai Basin) but also with factors inside it (residents’ life styles). The following information is about residents’ life styles relevant to their diseases. The information was neglected by the media.

1. A high proportion of patients who died of lung cancer was males and smokers.

When reading the categories of dead cancer patients, the author found that the sex ration was unusual. Most patients who died of lung cancer were males. There were 134 names on the list of dead cancer patients from 1990 to 2011. Twenty five patients died of lung cancer, accounting for 18.6% of dead cancer patients. Nineteen patients were males and six were females (see Table 1). The author tried to understand these male patients’ smoking behavior. Fifteen patients used to smoke. Only four patients did not. Medical research already shows that smoking has bad influence on people’s health. In Mengying Village, most patients who died of lung cancer were males and smokers. This fact showed that residents’ life styles were closely related to their health.

Table 1. Sex and smoking of dead patients with lung cancer in Mengying Village

sex	males		females	
	number of patients	percentage	number of patients	percentage
smokers	15	78.9	0	0
non-smokers	4	21.1	6	100.0
total	19	100.0	6	100.0

2. A high proportion of patients who died of liver cancer was hepatitis B patients.

When doing the first investigation in 2009, the author noticed that small advertisements to sell treatment for hepatitis B were everywhere in the Huai Basin in North Anhui and East Henan. Thus, the author wondered whether hepatitis B was prevalent in this area. Then, Dr. Wang confirmed the author's guess and reported that a high proportion of patients who died of liver cancer was hepatitis B patients. There were 134 names on the list of dead cancer patients from 1990 to 2011. Forty two patients died of liver cancer, accounting for 31.1% of dead cancer patients. Twenty one patients had clear history of hepatitis B. Two patients never got hepatitis B. Nineteen patients' statuses were unclear. (In the early years, it was not easy to do a test of hepatitis B. Many people did not know whether they got it. Besides, the "label" of hepatitis B had bad influence on marriage, so many families kept relevant information secret.) In the second investigation in 2011, the author got information about patients who died of liver cancer from 2009 to 2011. The number of them was five, and all of them had clear history of hepatitis B.

Table 2. Sex and history of hepatitis B of dead patients with liver cancer in Mengying Village

sex	male		female	
	number of patients	percentage	number of patients	percentage
patients with clear history of hepatitis B	19	79.1	2	11.1
patients without history of hepatitis B	2	8.3	0	0
patients with unclear status	3	15.8	16	88.9
total	24	100.0	18	100.0

In an interview, Dr. Wang revealed some information about patients with liver cancer and about their family members. WXH, who had gotten hepatitis B, died in 2003 at the age of 38. His brother died in 2008 at the age of 41. Their two uncles died of liver cancer, too. SFR died in October 2010 at the age of 48. His brother died in November 2010 at the age of 49. They both had hepatitis B when they were alive. Their father died at the age about 50. This man also suffered from hepatitis B. GHR died in 2009 at the age of 61. His brother died of liver cancer at the age of 31. His children are all hepatitis B patients.

3. The improvement of water supply and the decrease of digestive tract diseases

According to Dr. Wang, after water supply in Mengying Village was improved, residents' digestive tract diseases reduced sharply. Resident usually drank unboiled water. Before the improvement of water supply, whenever the weather got warm, residents' digestive tract diseases increased. After that, residents' digestive tract diseases reduced dramatically.

After the improvement of water supply, residents' intestinal diseases, such as enteritis, diarrhea, and chronic colitis, decrease. From May to August, people in this village like to drink unboiled water. During this period of time, intestinal diseases are often seen. In my clinic, from May to August, I have over 20 patients with intestinal diseases every day.... Now I only got one or two patients. (In August 2011, the author asked again how many patients he had per day during the normal period of time. His answer was three to four ones.) Last time, I bet with the chief of county health bureau. I told CTV's correspondent that I had 30~40 patients every day. The chief of county health bureau heard of that. He came to me and blamed me for exaggerating.... He said, "Let me sit at your clinic. I bet that you will get less than 30 patients." Unfortunately, I had over 50 patients on that day. (Dr. Wang was interviewed on 5 April 2009)

The author was surprised by Dr. Wang's description of drinking unboiled water. In the past, people in rural areas often have the habit of drinking unboiled water. For example, in films produced in the 1950s and 1960s, a boy usually scooped a ladle of water from a tank and drank it directly. However, as economy was developing and the quality of water was deteriorating, most residents in rural areas abandon this habit.

4. Residents' life styles changed gradually.

When the author visited Mengying Village in 2011, the village was very different from what it had been in 2009. One reason for this change was that the local government wanted to erase discourses about "cancer villages" and to stress discourses about "environmental protection" and "ecology." Another reason was that residents' life styles changed. Like other economically backward areas, most residents in Mengying Village worked outside the village. Working outside increased residents' incomes. Many residents were able to build their new houses with better sanitation. Moreover, many residents were influenced by urban life styles, gradually changing their unhealthy habits. Dr. Wang told the author some cases. People ate leftovers a decade ago, but they did not recently. People ate sick pigs, sheep, chickens, and so on a few years ago, but they did not recently. People started to grow their own food and vegetables on special pieces of land without pesticides, even if this would lead to lower productivity. People paid more attention on their food hygiene.

With the benefit of hindsight, the author realizes that residents' life styles were "inner" factors which might lead to the high incidence of cancer in Mengying Village. Residents' life styles are a topic of the social science and an important aspect for understanding the medical problem of cancer and the social scientific problem of "cancer villages."

Comparisons and discussions

The problem of cancer is very complicated. There are still many unresolved issues in the medical science. Whether pollution causes cancer is highly uncertain. If the science and technology cannot offer a clear answer to the question, one-sidedly emphasizing "inward" or "outward" perspectives may lead to biases in practice and in cognition. The

one-sided emphasis is usually the result of unfounded assumptions. In the following paragraphs, the author will apply the analytical framework of “inward” and “outward” perspectives to compare Mengying Village with Minamata disease in Japan, Tannerstown "cancer community" in the United States, and Dongjing Village in China.

Minamata disease was first discovered in Minamata Town in Kumamoto Prefecture, Japan. The name of the town was used to name the disease. After the Second World War, economy in Japan developed quickly. A nitrogen plant in Minamata Town discharged wastewater containing mercury directly into Minamata Bay. Organic mercury was absorbed by fish, shrimp, and shellfish, and then entered human bodies via seafood, damaging human nervous systems and brains. The causal relation between pollution and Minamata disease was clear, but there was a huge gap between “residents’ self-authentication” and the “government’s law-authentication.” Until 1986, the government authenticated 1672 people to have compensations, but denied 4999 people(Funabashi 2006). Three quarters of residents who claimed to have the disease were not authenticated by the government because of technological difficulties, legal difficulties, and interests. In the view of the analytical framework of “inward” and “outward” perspectives, technological uncertainty made those unauthenticated patients attribute their diseases to the outer pollution, while it made the government attribute patients’ diseases to their own life styles. Due to this disagreement, those unauthenticated patients and their supporters (including lawyers) have been protesting since the 1960s. In 1995, Japanese Prime Minister, Tomiichi Murayama, apologized for the first time. The government’s final solution to this issue was largely for humanitarian reasons.

Balshem discussed the attribution of “cancer” to “inner” or “outer” factors in Tannerstown in the United States. Because the government noticed the high incidences of cancer in some areas in an earlier investigation, it then launched a cancer education project, the CAN DO. Tannerstown, a European-American working class community in Philadelphia, was a high-cancer-risk area. The government and scientists wanted to change residents’ life styles via the cancer education project, while residents did not believe that these professionals could do anything. These cancer educators thought that residents’ life styles were problematic, but residents like to argued, "I have a neighbor who eats the old food, and she is night-three years old...." (Martha 1993:59). "My neighbor's

dog just died of cancer. Why did the dog die of cancer? The dog didn't smoke, the dog didn't eat an improper diet, the dog didn't lay out in the sun. So why?" (Martha 1993:61-62).

Residents, on the one hand, rejected inner causes, on the other hand, attributed the risk of cancer to environmental pollution. In 1981, the *Philadelphia Daily News* published a series of articles about "The Cancer Zones" which strongly believed that the high mortality of cancer in certain areas resulted from industrial pollution (Martha 1993:23-24). According to answers of 25 interviewees and eight focus group respondents, 93 people selected that life styles (such as diet, smoking, and so on) caused cancer, and 185 people selected that environmental factors (such as environmental pollution, food additive, and so on) caused cancer. The latter was two times of the former (Luo 2010). Obviously, residents and the project designers have quite different ideas.

In Balslem's study, a normal woman, Jennifer, whose husband, John, died of pancreatic cancer, bravely challenged the authority of a hospital doctor in order to objectively understand her husband's cancer. The doctor emphasized John's habits of smoking and drinking. In John's medical record, the doctor wrote, "extensive history of alcohol abuse." Jennifer objected to it and wrote on the edge of John's record, "less than one case of beer per week." By writing this, Jennifer stressed that her husband had not drunk a lot of beer, and that the doctor should not "take for granted" that "alcohol abuse" had led to her husband's cancer. Jennifer highlighted environmental influences on John's health. For example, John worked in a chemical factory for a long time and lived in a highly contaminated community. She wanted to mitigate the importance of her husband's life style to the risk of cancer (Martha 1993:104-105).

In fact, when the CAN DO was launched, it already presumed that residents in Tannerstown had bad life styles, and that their life styles were important causes of the high incidence of cancer. Nevertheless, residents had different ideas. At least, they wanted to emphasize environmental pollution, a factor overlooked by the government and scientists.

Similar situations happened in "cancer villages" in China. For example, residents in Dongjing Village believed that pollution outside the village caused the high incidence of cancer. However, the enterprises and local government denied that, and the court did not

support residents' claim because insufficient evidence(Luo 2010). In another cancer village, Jiannan, residents accused pollution from outside with strong emotions(Chen and Cheng 2011).

Mengying Village was different from Tannerstown, Dongjing Village, and Jiannan Village. The story was that outsiders blamed pollution outside Mengying Village, not that residents blamed pollution outside the village. Environmental protectors outside the village invited the national media to report serious pollution in the Huai Basin. Because the media took Mengying Village as an example of pollution, the issue of "cancer villages" arose. Then, this issue biased scientific studies of the relations between pollution and cancer. In fact, it was not easy to answer whether pollution caused cancer or not. However, neglecting "inward" perspective led to partiality in cognition and in practice. In the age of great passion, we should have kept calm and faced the issue rationally.

Notes

1. 《 He Liu Yu Cun Zhuang (Rivers and Villages) 》
<http://www.cctv.com/news/chian/20040810/102281.shtml>.
2. 《Zhong Guo Ji Bing Yu Fang Kong Zhi Zhong Xin Cheng Dan Huai He Liu Yu Zhong Dian Di Qu E Xing Zhong Liu Liu Xing Bing Xue Diao Cha Gong Zuo Ren Wu (China CDC undertake the investigation of cancer Epidemiology in Huai River basin) 》
http://www.chinacdc.cn/zxdt/200508/t20050819_30963.htm.

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