

Two Watersheds of Major Global Public Health Emergencies: History, Reality and Response

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Abstract: *The 1918-1919 pandemic influenza and the COVID-19 are the watershed of major global public health emergencies in the industrial age and the digital age. The latter has generality and particularity. The problems faced in the process of coping with the COVID-19 mainly include: prejudice hinders international cooperation; Extreme egoism of some countries and personnel reduces the effectiveness of responding to incidents; Rigid governance system; The theoretical support is insufficient. The causes of the problems are: many problems are long-term; The modernization speed of some countries and personnel is slower than the speed of environmental change; In the process of modernization, the modernization mode of the industrial age is adopted. The macro way to deal with the COVID-19 is to promote the modernization of the governance system and governance capacity, and give birth to the combination of "new system, new capacity - new environment". The micro approaches are: strengthening international cooperation and optimizing the international governance system; Enhance the modernization of national governance and the modernization of people; Effectively innovate the concept and method of governance.*

Keywords: Global Major Public Health Emergencies; Watershed; Industrial Age; Digital Age.

1. INTRODUCTION

Tracing back to history, we can find that the outbreak of the 1918-1919 pandemic in the industrial era and the response of all countries in the world were a watershed in the process of responding to major public health emergencies worldwide; The outbreak of COVID-19 in the digital era and the response of countries around the world are another watershed. There have been many major global public health emergencies between these two watersheds, but these events are not watersheds. For example, the "SARS incident" in 2002-2003 mainly affected countries and regions in Asia, especially in East Asia. Therefore, compared with the COVID-19, it is a major regional (not global) public health emergency; Although the 2009 H1N1 influenza virus epidemic affected a large number of countries and regions, it did not have a major and far-reaching impact on the global economy and governance system.

From the perspective of relevant studies in western academic circles, the representative discussions and main viewpoints in the field of "major public health emergencies" are as follows: first, the elements in the process of responding to major public health emergencies. Based on the analysis of some examples, Nicola power pointed out that in the process of responding to major public health emergencies, it is necessary to strengthen team cooperation and build "extreme teams"[1]; Richard McMaster and Christopher Baber believe that we must seize the opportunity in dealing with major public health emergencies[2]. Second, the effective operation of the political system has an important impact on the response to major public health emergencies. Kyriacou and others explained the impact of the political system in the process of responding to major public health emergencies with the operation of the political system[3]. Third, in response to major public health emergencies, we must implement many measures before, during and after the event. Based on historical experience, Steven m Becker pointed out that Japan should pay attention to protecting public health after the nuclear crisis[4].

The representative discussions and main viewpoints related to "major public health emergencies" in Chinese academic circles are as follows: first, attach importance to the modernization of emergency management system and capacity. Xue LAN pointed out: to modernize the emergency management system and capacity in the future, we should adhere to the principle of putting prevention first and combining prevention with rescue, strengthen the construction of systems and mechanisms, and encourage local innovation[5]. Zhang Haibo believes that after the establishment of the emergency management department, China's comprehensive emergency management system has moved from emphasizing the whole disaster management to emphasizing the whole process management[6]. Second, responding to crisis events in the digital era has its particularity. Zhou Limin and Tong Xing took the

"Yangjiang experience" as an example to study disaster management in the era of big data, and pointed out that attention must be paid to combining the wisdom of people with machine decision-making[7]. Third, in the new environment, we should strengthen our ability to respond to major public health emergencies. Zhong Kaibin pointed out that in order to prevent and resolve major risks, we must enhance our imagination, sensitivity, responsibility, leadership and awareness[8]. Xiao Wentao believes that responding to the current major public health emergencies requires that the governance system and capacity can effectively respond to the "normal" and "abnormal" problems in the governance process[9].

Existing studies have not used the grand historical view to analyze "major global public health emergencies and their responses", nor have they found that in the 260 years since the advent of the industrial age, there have been two watersheds in the process of responding to major global public health emergencies, namely, responding to the 1918-1919 pandemic influenza and COVID-19. Analyzing the situation of these two watersheds based on the grand historical view will help strengthen the effectiveness of the world's response to major global health emergencies and promote the modernization of emergency management systems and capabilities.

2. THE WATERSHED OF MAJOR GLOBAL PUBLIC HEALTH EMERGENCIES IN THE INDUSTRIAL AGE: SITUATION AND EXPERIENCE

2.1 The Watershed of Major Global Public Health Emergencies in the Industrial Age: Situation

Although Malthus, who was born when the industrial age came, advocated in his theory of population that natural causes (accidents and aging), disasters (wars, plagues, and famines of all kinds), moral restrictions and crimes (infanticide, murder, birth control, and homosexuality) should be allowed to "show their strength" to control the excessive population growth. However, in the industrial era, western countries have long been committed to optimizing the governance system and enhancing the governance capacity to effectively respond to major public health emergencies. Only from the perspective of medical system, before the Crimean War (1853-1856), the medical system efficiency of these countries was low. During and after the war, Nightingale effectively improved the health conditions of field hospitals and created nursing undertakings and modern nursing education. The medical system operation efficiency of western countries began to improve rapidly, The country's overall governance system and governance capacity have also been optimized. In the decades from the late 19th century to the early 20th century, western countries and people generally believed that these governance systems could effectively respond to major public health emergencies. This "illusion" was completely shattered by the 1918-1919 pandemic.

The 1918-1919 pandemic influenza (often referred to as the "Spanish pandemic") is a worldwide deadly infectious disease that has attracted much attention in history. This influenza originated in the United States in March 1918, and then the virus was brought to Europe by soldiers who entered Europe and spread to most parts of the world. At the beginning of 1918, it showed a common influenza state; In the autumn of 1918, it became high mortality influenza; From the winter of 1919 to the spring of 1920, the mortality rate of patients was between the first two stages. Although there are some differences in the statistical data of different institutions and researchers, it is recognized that the pandemic influenza has caused about 500-1 billion infections and 50 million deaths in the world, which is larger than the death toll of the first World War. While other countries have concealed the outbreak of influenza in their own countries, Spain has not concealed its own situation. Therefore, the pandemic is called "Spanish pandemic" by some countries, organizations and researchers, and "French influenza" by Spain. The pandemic influenza caused serious harm in Spain. A large number of people were infected and the mortality rate was high. It led to problems in the multinational troop supply and accelerated the pace of the end of World War I. of course, the war was not over but "suspended". A large number of people in Germany believed that revolution and plague led to Germany's surrender, This view is an important reason why Germany launched another foreign war 20 years later. In addition to the impact on the war, the pandemic influenza made people of insight realize the need to build a global health organization. The international health cooperation program began to appear, and medical statistics and epidemiology became the mainstream methodology in the field of public health research. This was an important reason why many plagues were controlled in time and the death toll was relatively small in the following hundred years. From this perspective, the pandemic is a watershed in the process of responding to major public health emergencies worldwide.

2.2 The Watershed of Major Global Public Health Emergencies in the Industrial Age: Experience

1) Strengthening international exchanges and domestic cooperation is conducive to responding to major global

public health emergencies. After the advent of the era of great navigation, the world is increasingly connected as a whole, and fewer countries and regions exist in isolation. Therefore, major public health emergencies worldwide, whether caused by war, plague or natural disasters, are closely related to many domestic and foreign subjects. For example, the civil war in a certain country is likely to be closely related to some foreign forces, It can be seen that strengthening international exchanges and domestic cooperation are closely related to responding to major global public health emergencies.

In the normal environment (that is, in the absence of major global public health emergencies), the main body of national governance must strengthen exchanges with other countries and regions and make corresponding preparations, especially in the fields of medical and health care. In an abnormal environment (in the case of major global public health emergencies), it is necessary for countries to effectively carry out exchanges and cooperation to strictly prevent major global public health emergencies from hindering national development. Take the 1918-1919 pandemic influenza as an example: before the pandemic, many countries in Europe and the United States were busy coping with the World War I, a major public health emergency. Although "crisis events usually occur together rather than alone", "there must be a major epidemic after the world war" and "the effectiveness of fighting alone is obviously lower than the effectiveness of collaborative governance", these countries did not prepare for and cooperate with the possible epidemic. After the emergence of influenza on a large scale, the first World War ended quickly, but countries around the world still failed to carry out effective communication and cooperation in epidemic prevention and control, and even many countries deliberately concealed the domestic epidemic. These are the reasons why the influenza is very harmful.

Responding to major global public health emergencies is a systematic project, involving many fields and subjects. In the process of responding, building an effective governance system, forming a joint force, and giving birth to a "path dependent" state will help the country reduce the threat in the process of development. For example, after the 1918-1919 pandemic, some western countries effectively innovated the medical system, strengthened relevant research, and began to strengthen the emergency management efficiency of the government, public welfare departments and other subjects, improving their ability to respond to major public health emergencies. This is an important reason why many plagues were effectively controlled in a relatively short time in the following 100 years.

2) It is necessary to effectively innovate the governance system and capacity. Major global public health emergencies pose a severe test to the governance system and capacity of many countries. Effective response can provide a good environment for national development, otherwise, it will hinder the rapid development of countries. By analyzing some situations of the 1918-1919 pandemic influenza, it can be found that during and after the response to major global public health emergencies, it is necessary to innovate the national governance system and strengthen the national governance capacity, so as to effectively respond to major public health emergencies and promote national development.

For example, before the outbreak of the pandemic influenza in 1918-1919, the governance system of western countries operated well for a long time. Especially during the Crimean War (1853-1856), Florence Nightingale improved the sanitary conditions of field hospitals and significantly improved the survival rate of wounded soldiers. After the war, she founded the first nursing school in London, initiating nursing and modern nursing education, These measures have significantly improved the operational efficiency of the governance systems of western countries, especially the medical system, which is an important reason why these governance systems were able to effectively respond to many major public health emergencies in the 60 years before the outbreak of the 1918-1919 pandemic. However, after long-term effective operation, these governance systems have generated inertia, and the systems, mechanisms and even personnel concepts have taken on a rigid color, After the outbreak of the 1918-1919 pandemic, it was difficult to effectively carry out innovation to solve new problems in the new environment, which is an important reason why many countries failed to effectively deal with the pandemic.

3) There are variables in the outcome of responding to major global public health emergencies. From the perspective of the impact of the performance in the response process on long-term development, there is no doubt that the performance of a country in the process of responding to major global public health emergencies will have an important impact on the country's development in the future: a rapid and successful response can create a good environment for a country's development; Inefficient or even failed responses are extremely unfavorable to a country's development. It is worth noting that the low efficiency in the response process does not necessarily lead to the decline of a country in a later historical period. In addition to the level of response efficiency, whether a country can effectively sum up experience and lessons, reform its governance system and strengthen its

governance capacity after the end of major global emergencies also has an important impact on a country's future development.

Take the long-term impact of the 1918-1919 pandemic on different countries as an example: the pandemic caused serious harm to Spain, which made it difficult for Spain to achieve rapid development and national rise in the subsequent period; Judging from the situation in the United States, in August 1918, the second wave of influenza originated in Ashgabat, the capital of Turkmenistan, was introduced into the United States. 200000 Americans died of the disease in October of that year, which reduced the average life expectancy of Americans by 12 years. From this alone, it can be seen that the United States failed to respond to the pandemic quickly and effectively. However, after the pandemic, the United States effectively summed up experiences and lessons, reformed its governance system and strengthened its governance capacity, creating conditions for it to eventually become the world's hegemon.

From the perspective of the impact of the response results of global major emergencies on other crisis events, global major emergencies are both risks and opportunities, which will have an impact on many aspects of the situation, and even have an impact on other major crisis events that cannot be ignored. Take the 1918-1919 pandemic flu as an example: this pandemic helped to end the first World War, and to some extent started international cooperation and related research, Both of these are positive impacts. However, it must be noted that boosting the end of World War I does not mean that the danger of war is completely eliminated. Many ethnic groups in Germany believe that the domestic revolution and the pandemic, rather than poor combat, led to Germany's surrender in World War I, and are very dissatisfied with the surrender and the Versailles Treaty and many other treaties. This is an important reason why Germany started the war again in 1939 after 20 years of forbearance.

3. THE WATERSHED OF MAJOR GLOBAL PUBLIC HEALTH EMERGENCIES IN THE DIGITAL ERA: SITUATION AND CONTENT

3.1 The Watershed of Major Global Public Health Emergencies in the Digital Era: the Situation

Covid-19 is the pneumonia caused by novel coronavirus infection in 2019. Since December 2019, several cases of COVID-19 have been found in some hospitals in Wuhan City, Hubei Province. China is the first country seriously harmed by this epidemic. At the beginning of 2020, some countries helped China. In March 2020, China had effectively controlled the epidemic. However, there were obvious differences in the importance and response measures of the epidemic among countries around the world, and the epidemic spread rapidly in many countries that failed to take precautions. While continuing to effectively prevent and control the epidemic, China has begun to assist a large number of countries, such as sending medical teams, introducing prevention and control experience, and giving relief materials. These measures have been praised by all countries.

3.2 The Watershed of Global Major Public Health Emergencies in the Digital Era: Generality

1) Sudden. The watershed of major global public health emergencies in the industrial age and the digital age is sudden. The 1918-1919 pandemic influenza suddenly appeared in a military camp in Kansas in March 1918, and then rapidly spread to China, Spain, Britain and other countries, and then spread to most countries and regions in the world in the autumn of 1918. It gradually disappeared until the spring of 1920, resulting in a large number of infections and even deaths. Like the last watershed of major global public health emergencies (1918-1919 pandemic influenza and its prevention and control), the watershed of major global public health emergencies in the digital era (COVID-19 and its prevention and control) is sudden.

2) The impact is large and far-reaching. The industrial age and the digital age are the watershed of major global public health emergencies, which have a significant and long-term impact on a large number of countries and regions in many fields. From the first watershed point of view: the 1918-1919 pandemic influenza spread to most countries and regions in the world, causing about 500-1 billion infections and about 50 million deaths, speeding up the end of World War I, and spurring relevant research and a certain range of international cooperation. From the second watershed point of view: the COVID-19 epidemic broke out suddenly at the end of 2019. It has affected more than 200 countries and regions around the world and has a serious negative impact on many fields of these countries and regions.

3) Start relevant research and a certain range of international cooperation. The watershed of major global public

health emergencies in the industrial age and the digital age has effectively opened up relevant research and spurred a certain range of international cooperation. Affected by the 1918-1919 pandemic influenza, medical statistics and epidemiology have made great progress and their status in the medical community has risen significantly. Some countries have begun to implement cooperation plans in the field of health. In the process of preventing and controlling the COVID-19 epidemic, many domestic and international research institutions and journals attach great importance to the research on epidemic prevention and control, which will certainly promote the development of academic research in the field of public crisis management. On the other hand, the COVID-19 epidemic has made mankind realize that global disunity is very dangerous, and major countries in the world have further increased their attention to international cooperation.

3.3 The Watershed of Global Major Public Health Emergencies in the Digital Era: Particularity

1) The effects of events exist in both physical and virtual spaces. The arrival of the digital age has created a brand-new space, that is, virtual space. This situation means that the impact of major global public health emergencies will not only exist in the physical space, but also in the virtual space, and this impact can be rapidly expanded to the whole world with the help of virtual space. For example, the impact of the 1918-1919 pandemic only exists in the physical space; The impact of the COVID-19 exists in both physical space and virtual space. The emergence and strengthening of virtual space have made the world more closely linked as a whole. On the one hand, many countries and regions can more conveniently communicate to effectively respond to the impact of major public health emergencies worldwide. On the other hand, it is very easy for some countries to take this opportunity to attack countries with major public health emergencies in virtual space and even physical space, So that the negative effects that originally only exist in the physical space can be strengthened with the help of the virtual space.

2) This has promoted the change of the world pattern from "strong in the West and weak in the East" to "East-West balance" and even "strong in the East and weak in the west". From the comparison of power between East and West, the 1918-1919 pandemic did not change the world pattern of "strong in the West and weak in the East". For a long time after the advent of the era of great navigation, the world pattern has always been "strong in the West and weak in the East". After the advent of the digital era, this pattern began to change to "East-West balance" or even "strong in the East and weak in the west". The emergence of the watershed of major global public health emergencies in the digital era (the COVID-19) has strengthened this trend. Some western scholars have noticed this situation. For example, Professor Stephen M. Walt of Harvard University believes that the COVID-19 epidemic will accelerate the transfer of power and influence from the west to the East. In the process of dealing with the epidemic, China made a good response after its early mistakes, while Europe and the United States responded slowly and made mistakes, which damaged the "image" of the West. All of these will have an impact on the changes in the world pattern, and promote the emergence of a "East-West balance" or even a "East strong west weak" world pattern.

3) During the changes of the times, the shortcomings of the governance system and the governance ability in the industrial era have been highlighted. From the perspective of the background of the times, the 1918-1919 pandemic was in the middle of the industrial age rather than the period of changing times, and the COVID-19 epidemic was in the comprehensive evolution from the industrial age to the digital age. The epidemic that broke out in this special period highlighted the shortcomings of the governance system in the industrial age. Many problems in the process of epidemic prevention and control stem from the difficulty of the governance system and capacity in the industrial age to effectively respond to major global public health emergencies in the digital age.

4. THE WATERSHED OF GLOBAL MAJOR PUBLIC HEALTH EMERGENCIES IN THE DIGITAL AGE: PROBLEMS AND CAUSES

4.1 The Watershed of Major Global Public Health Emergencies in the Digital Era: Problems

The biggest problem is that the current governance system and capacity of the international and some countries and regions are difficult to effectively respond to major global public health emergencies in the digital era. Specifically:

1) Prejudice hinders international cooperation. After the COVID-19 epidemic became a major global public health emergency, China supported other countries within its own capabilities, but for a long time, there were some biases among different countries and regions, mainly manifested in the western countries' bias against other countries and

regions, especially the ideological bias against China, These biases will block the response to major global public health emergencies in the digital era. In the process of preventing and controlling the COVID-19, western political circles, media and some members of the public have always been hostile to and smeared China due to ideological bias.

2) The extreme egoism of some countries and personnel reduces the effectiveness of responding to incidents. At present, countries have obviously exposed the problem of insufficient cooperation in the process of responding to the COVID-19 epidemic. What is more serious is that some countries and personnel have carried out extreme selfishness in the process of responding to the epidemic, harming the interests of other countries and personnel and reducing the effectiveness of responding to the COVID-19. Examples include: Germany successively intercepted masks or disinfected water from Sweden, Italy and Switzerland, Poland withheld masks sent to Italy, Italy intercepted disinfected water and masks ordered by Switzerland, the United States snatched 500000 kits from Italy, and American businessmen "snapped up" a batch of emergency protective equipment to be shipped from abroad to France on April 1 by way of price increase and payment. These countries and personnel put their own interests above public interests, which has a negative impact on the prevention and control of the COVID-19, a major global public health emergency in the digital era.

3) The governance system is rigid. The governance systems formed in the industrial era in many countries and regions have effectively responded to many major public health emergencies. After the advent of the digital era, these governance systems have become rigid in the process of responding to major global public health emergencies. In the face of the COVID-19 epidemic, some countries and regions have tried to effectively strengthen the efficiency of the governance system with many measures, but it is difficult to achieve results in the short term: the governance system has changed but the people in the system have not changed quickly, so it is impossible to improve the operational efficiency of the governance system in a short time. Moreover, some countries and regions have taken some measures to improve the modernization of emergency management systems and capabilities to effectively respond to the COVID-19. However, due to too many rules, regulations and documents, the organization has become rigid and impeded the improvement of the modernization level. In essence, there is a "governance modernization paradox": the governance body has formulated many rules, systems and policies, but these rules, regulations and policies have constrained many organizations and their members, on the contrary, they have hindered the modernization process and made it difficult to effectively deal with the COVID-19 epidemic.

4) The theoretical support is insufficient. From the international perspective, at present, governance theory, public administration theory and emergency management theory have more in-depth research on small-scale public crisis events, and less research on global major public health emergencies, resulting in a general lack of theoretical support for countries and regions in the world to deal with the COVID-19. From the domestic perspective, China's management or administrative circles have been committed to exploring the applicability of Western related theories in China, the problems in the application process and the ways to eliminate them on the basis of introducing western related theories for a long time. They have not really realized the localization of governance theory or administrative theory, It is also difficult to provide strong support for the prevention and control of COVID-19. Fortunately, China has many governance advantages, such as the strong leadership of the Communist Party of China, the effective operation of the national system, and the effective operation of the unitary state structure. These advantages have effectively strengthened the efficiency and capacity of China's governance system in the process of preventing and controlling the COVID-19 epidemic.

4.2 The Watershed of Major Global Public Health Emergencies in the Digital Era: the Causes of Problems

1) Many problems are long-term. The above-mentioned problems of "prejudice hindering international cooperation, extreme egoism of some countries and personnel, rigid governance system and insufficient theoretical support" are all long-term, that is, they have existed in the environment for a long time and are difficult to be effectively solved in a short time. These problems have existed in the industrial age for a long time, and are likely to exist in the digital age for a long time. They will not be eliminated quickly due to the evolution of the times, and they are less likely to disappear due to the impact of major global public health emergencies. Specifically, first, prejudice hinders international cooperation. In the hundreds of years since the advent of the great voyage, all walks of life in the West have gradually formed a strong sense of self superiority and despised most countries and regions in Asia, Africa and Latin America, resulting in regional prejudice. On the other hand, in the decades before the establishment of the Soviet Union, capitalist countries had been hostile to communism and socialism, resulting in prejudice in the ideological field. This prejudice was significantly strengthened after the

establishment of the Soviet Union, especially during the cold war. Although the degree of prejudice was reduced after the Cold War, it still has a strong influence. These two kinds of prejudices cannot be completely eliminated in a short time. Second, some countries and personnel have carried out extreme egoism. After the emergence of private ownership, some people, tribes or countries began to carry out extreme egoism in some cases, that is, this phenomenon has existed for thousands of years. This phenomenon has increased significantly in the industrial age, and still exists widely in the development of human society, and it is difficult to eliminate it effectively in the future. Third, the governance system is rigid. The governance system in the industrial era has gone through many stages, such as generation, development, improvement and ossification, and the duration of each stage is longer. This means that although this governance system has taken on a rigid color, it will still exist in a rigid state for a period of time, and it is extremely difficult to innovate quickly. Fourth, lack of theoretical support. From the perspective of time affiliation, the modernization of governance theory or public administration theory has gone through three stages, namely, the industrial age, the transition period from the industrial age to the digital age, and the initial stage of the digital age. This modernization process is relatively slow. So far, there has been no rapid modernization of theories triggered by a certain event or crisis. Based on historical conditions, it can be predicted that the occurrence of COVID-19 epidemic and the launching of prevention and control work are less likely to promote the substantial modernization of relevant theories in a short time, This means that when dealing with the COVID-19, a watershed of major global public health emergencies in the digital era, it is difficult for many countries and regions to effectively strengthen theoretical support in a relatively short period of time.

2) The pace of modernization of some countries and personnel is slower than the pace of environmental change. The advent of the digital age in an all-round way has brought about significant changes in the macro environment in which many countries and people live. The emergence of the COVID-19 has made this macro environment more complicated, that is, the watershed of major global public health emergencies in the digital age has given birth to a new environment. Compared with the speed of environmental change, the modernization speed of some countries and personnel is relatively slow: first, some countries and personnel faced many serious problems (such as civil war) before the COVID-19, and failed to effectively pool China's efforts to promote the modernization process. An example of this is Libya, which is still in civil war, and it is difficult to rapidly modernize the country and personnel to effectively deal with the COVID-19. Second, although some countries and personnel are committed to promoting the modernization process, they have not yet achieved modernization in the industrial age. Before the COVID-19, these countries developed steadily for a long time, but affected by many factors (such as economic exploitation by western countries), they did not realize modernization in the industrial age, so it is difficult to rapidly promote the modernization process of countries and personnel to effectively deal with the COVID-19. Second, some countries and personnel have achieved high-level modernization in the industrial era, and the long-term effective operation of their governance system has generated inertia. It is difficult to innovate quickly in the face of the new environment created by the COVID-19, and the combination of "old system new environment" has emerged, which makes it difficult to effectively control the epidemic. These countries and personnel have not really entered the digital age, that is, they have not realized the modernization of the digital age, and they have ideological bias or hegemonic psychology. The long-term effective operation of the existing emergency management system has created a conservative environment and a "comfort zone" for personnel, which makes it difficult to achieve innovation.

3) In the process of modernization, the modernization mode of the industrial age is adopted. For example, at the end of the industrial era, pluralistic governance has gradually become a governance trend. The advent of the digital era has enabled all subjects to fully express their wishes in the virtual space based on the digital platform, boosting the emergence of pluralistic governance in the physical space in the virtual space. However, from the situation of many countries and regions responding to the COVID-19, some governance entities mainly rely on many rules, regulations and documents to promote the modernization process, but these rules, regulations and documents are mainly formulated by the ruling party and government, which makes it difficult to comprehensively present a state of pluralistic governance. In essence, they adopt the modernization mode of the industrial age in the modernization process, It is difficult to effectively help the effective response to the COVID-19. The main body of governance mainly adopts the modernization method of the industrial age to promote the modernization process of the digital age, and this move will have an impact on other places, reducing the possibility of improving the effectiveness of COVID-19 based on modernization measures.

5. THE WATERSHED OF GLOBAL MAJOR PUBLIC HEALTH EMERGENCIES IN THE DIGITAL ERA: RESPONSE APPROACHES

The COVID-19 epidemic, a major global public health emergency in the digital age, has made the new

environment created by the comprehensive evolution of the industrial age to the digital age more complex. In order to effectively respond to this epidemic, it is necessary for countries and regions around the world to effectively innovate their governance systems and capabilities (that is, to promote the modernization of their governance systems and capabilities), We should foster a new governance system and new governance capability that are compatible with the new environment, and generate the combination of "new system, new capability - new environment".

5.1 Strengthen International Cooperation and Optimize the International Governance System

Today's world is completely in the digital age, and the links between different countries and regions are increasingly close. This means that the current watershed of major global public health emergencies involves most countries and regions in the world and many regions in China. Therefore, it is necessary for all countries and regions in the world to join hands. Specifically, first, we should strive to break the "halo" of western countries' governance systems and capabilities. Especially, when western countries discredit or slander other countries, we must point out the ugly acts of western countries in a tit for tat manner, so that many countries are no longer deceived by western countries. Second, we should strive to eliminate the prejudices of some countries, reduce the probability of prejudices hindering international cooperation, fight against countries with obvious prejudices, and create a good international environment for successfully responding to the current watershed of major global public health emergencies. Third, we should effectively reduce the influence of departmentalism on certain subjects, especially severely punish those subjects who are affected by departmentalism and who perform certain behaviors that have a negative impact on the current watershed of major public health emergencies, form a deterrent to other subjects, and reduce the incidence of similar behaviors. Fourth, the implementation of these two measures can optimize the macro environment for dealing with the epidemic from both positive and negative aspects.

5.2 We will Accelerate the Modernization of State Governance and the Modernization of People

First, we must further strengthen the leadership foundation of the ruling party, and give birth to the strong leadership ability of the ruling party and the strong leadership of the central government. For countries with a competitive political party system and countries with a composite state structure, it is difficult to implement these measures. However, these are actually China's successful experiences in effectively controlling the COVID-19, and they are worth promoting in various countries and regions. Specific measures should be combined with the actual conditions of various countries and regions, and should not be applied across the board. Second, in the process of innovation, we should effectively establish and practice the concept of collaborative governance, comprehensively promote the process based on the joint efforts of the subject and the object, and create conditions for countries to work together to deal with the COVID-19. And effectively innovate the governance system, so that it can quickly change from "normal" to "abnormal". Based on this, we can effectively improve the governance capacity, and bring the modernization process of the national governance system and governance capacity into a new development stage. Third, promote the modernization of relevant theories. Academic meetings can be held by means of video conferences to conduct in-depth academic discussions and exchanges; We encourage relevant research to strengthen the theoretical support for dealing with the COVID-19.

5.3 Effectively Innovate the Concept and Method of Governance

Today's world is already in the digital era. Therefore, in the process of coping with the current watershed, digital governance is very important. First, effectively innovate the concept of governance. We must make many governance subjects clear based on the presentation of various real situations: in the process of dealing with the COVID-19 epidemic, the current governance system and concept have become obsolete and must be reformed; Applying previous successful experience (especially western experience) may not be able to effectively deal with the current epidemic. We must abandon prejudice and cling to ideas, and effectively learn from current successful experience to effectively deal with the epidemic. Based on this, it promotes the innovation of governance concept. Second, further improve the level of digital governance. To strengthen the construction of digital government, digital economy, digital society and other fields, we need to implement many measures in both physical and virtual spaces to effectively respond to major public health emergencies. In terms of physical space, before the current watershed, many countries had some experience in dealing with major global public health emergencies. In the face of the current watershed, in the physical space, countries need to further sum up experience and optimize the existing coping structures and policies; In the virtual space, countries need to "transplant" the effective measures in the physical space, quickly build a response framework and response system, and strengthen their response

capacity. In addition, there are many differences between the virtual space and the physical space. In the face of the current watershed, countries need to effectively innovate in the virtual space.

REFERENCES

- [1] Power N . Extreme teams: Toward a greater understanding of multiagency teamwork during major emergencies and disasters[J]. *American Psychologist*, 2018, 73(4):478-490.
- [2] McMaster R , Baber C . Multi-agency operations: Cooperation during flooding[J]. *Applied Ergonomics*, 2012, 43(1):38-47.
- [3] Kyriacou E , Nicolaidou I , Hadjichristofi G , et al. Health and rescue services management system during a crisis event[J]. *Healthcare Technology Letters*, 2016, 3(3):205-211.
- [4] Becker S M . Protecting public health after major radiation emergencies: Nuclear crisis in Japan is a powerful reminder of past lessons[J]. *bmj british medical journal*, 2011, 342(7800):717-718.
- [5] Xue LAN. Learning the spirit of the decision of the Fourth Plenary Session of the CPC Central Committee and promoting the modernization of the national emergency management system and capacity [J]. *Public management review*, 2019 (3): 33-40.
- [6] Zhang Haibo. Innovative development of national emergency management system and mechanism in the new era [J]. *People's forum · academic frontier*, 2019 (5): 6-15.
- [7] Zhou Limin, Tong Xing. Disaster response 2.0: Disaster Management in the era of big data -- a case study based on "Yangjiang experience" [J]. *China soft science*, 2019 (10): 1-13.
- [8] Zhong Kaibin. Five ability requirements for preventing and resolving major risks [n]. *Learning times*, 2020-03-09.
- [9] Xiao Wentao, Cao Dongying Countermeasures for major public health emergencies from the perspective of public value management -- Also on the prevention and control of COVID-19 [J]. *Southeast academic*, 2020 (2): 18-25.

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