"Health Care for the People": An Ecological Analysis of the Barefoot Doctor Program during China's Cultural Revolution

I. Introduction

During China's Cultural Revolution (1966-1976), a large number of lay medical workers—the "barefoot doctors"—were trained and worked in the rural areas as semi-doctors "to provide elements of environmental sanitation, health education, preventive medicine, first aid, and primary medical care while continuing their farmwork" (Sidel and Sidel 1982: 37). The barefoot doctor program, often seen as a unique socialist "paradigm for basic health care provision" (Bien 2008: 5), has drawn much attention from historians (Fang 2012; Pang 2017; Yang 2019 [2006]). Fang (2012) examines the critical role of barefoot doctors in establishing the rural medical system and in introducing western medicine in rural China. He argues that the barefoot doctor campaign is an important force of medical institutionalization for establishing the rural medical system in China. On the other hand, in her analysis of the culture of models during the Cultural Revolution, Pang (2017) contends that the barefoot doctors themselves can be also seen as a less formal medical institution for providing the rural residents with basic medical and healthcare service. She concurs with Wei (2013) that the barefoot doctor campaign is an institution "able to solve China's rural health issues in practical ways", and furthermore, "an effective model" which "could be copied widely and proliferated with many variations" (Pang 2017: 117). And she notes that such copying process is "flexible, practicable, and productive enough to facilitate social mimesis among the people" (Pang 2017: 117).

However, less research has analyzed the barefoot doctor program as an institutional ecology (Star and Griesemer: 1989) and placed the barefoot doctors in a broader medical and health care network with many other heterogeneous participants from an STS perspective. Instead of viewing the barefoot doctors as a mere "political creation" (Rosenthal and Greiner 1982) or one of the "newly emerged things" of the Cultural Revolution, Yang situates the barefoot doctors in a complicated and dynamic social context: "Some seemingly simple political actions may have more complex reasons at play……In fact, from the very beginning, the actions of the barefoot doctors were embedded in a network of social relations and interests, but this network flowed slowly and unobtrusively like a potential wave in a political torrent" (Yang 2019 [2006]: 11).

Despite their importance and central role in the ecology of rural healthcare system, the barefoot doctors are by no means the only actors of the barefoot doctor program. In fact, not only the state, but also the professional medical doctors, local government (production team and brigades), the rural residents with little medical knowledge, as well as the other pre-existing or established medical actors such as the folk doctors and healers, are all the participants (either the allies or adversaries) of the establishment of the rural health care system. In this sense, the barefoot doctor program of the rural health care system can be seen as an ecology of intuitions with heterogeneous actors.

In their seminal work on the analysis of the history of Berkeley's Museum of Vertebrate Zoology, extending the *interessement* model of Latour, Callon, and Law, Star and Griesemer (1989) take an ecological approach and develop a new analytic concept of "boundary objects" to understand the coexistence of heterogeneity and cooperation in the museum work among all the participants. However, their model and the case they study in their paper mainly focus on the cooperative work among the participants as allies to each other, without adequate analysis on the

situation with the co-existence of allies and adversaries (except briefly mentioning the other non-cooperative means of satisfying the potentially conflicting sets of concerns). While, in the case of the barefoot doctor program, to achieve the success of it and the state health care system in the rural areas, the heterogenous actors made their diverse contributions through both cooperative and non-cooperative work, which not only relies on multiple "translation" work of the diverse concerns to reconciliate the different interests or goals among the different allies, but also the "imposition of representations, coercion, silencing and fragmentation" (Star and Griesemer 1989: 413) against the different adversaries.

In this context, taking the same ecological approach and based on the model of "boundary objects" proposed by Star and Griesemer, this paper attempts to offer a preliminary examination on the cooperative work among the "alliance" of the heterogeneous participants of the barefoot doctor program (consisting of the state, professional medical doctors, and the barely medical literate rural residents), as well as the non-cooperative work of the above groups to compete against their "adversaries", including the local folk healers and anyone else who criticized or was unsupportive of the program. In this process, this paper takes an ecological institutional analysis of the history of the development of the barefoot doctor program as part of the rural healthcare system during China's Cultural Revolution. In this manner, the barefoot doctor is analyzed as both a key participant group (the real barefoot doctors), who is definitely a protagonist of the rural healthcare system, as well as the center of the ecology of the institutions itself (the barefoot doctor program at the village level of rural healthcare system).

The next section will introduce the barefoot doctor program as an ecological institution, giving a whole picture of all the major participants as well as their adversaries, including the barefoot doctors, the state, other "pre-existed" or established medical groups, and rural residents.

Furthermore, it discusses different participants' visions of the establishment of the barefoot program during the Cultural Revolution. The third section examines different types of the "boundary objects" for the cooperative work among the heterogenous participants "in the absence of consensus" (Star 2010: 604) in the process of the establishment of the barefoot doctor program, with a focus on how they translated and bridged the diverse concerns and interests of different social worlds. The final section concludes the paper with a further discussion of the contribution and implications of the case of barefoot doctor program for the future study of "boundary objects" in a non-Western context.

II. The Institutional Ecology of Barefoot Doctors Program

In contrast with most STS research in the Western context, the case of the barefoot doctor program is an example of the institutional ecology in a different sociopolitical context in which the state is not a backdrop anymore but acts as one of the protagonists on the stage. In fact, science as an ideology in modern China is often inextricably connected with the political ideology of the state. Meanwhile, the development of science has been seen as one of the main goals of the socialist construction. Based on her investigation on the "scientific farming" in socialist China, Schmalzer (2016: 25) argues that "technocrats and radicals had different perspectives on how science should work, but both groups embraced science as a core value". Moreover, in his analysis on Chinese medicine and STS approach, Lei (2014: 357) notes that "while STS scholarship has focused on making visible the hidden relationship between techno-science and its sociopolitical contexts, historical actors in the modern Chinese context sometimes explicitly promoted and valorized this relationship between science and politics".

However, despite the salient political influence from the state on the design and launch of barefoot doctors, the top-down political leadership of the state does not necessarily mean the state's

vision of the barefoot doctors is consistent with or can dominate all the goals and interests of the other diverse actors in the network of rural health system. The following section will discuss the major heterogenous participants' visions of the barefoot doctor program and its work from different perspectives.

The State's Vision

It is widely believed that the barefoot doctor program as a national public health initiative and mass campaign, was one of the most important political ramifications of Mao's directive "*Stress Medical and Health Work in Rural Areas*", which appeared for the first time in Mao's statement made on Jun 25, 1965 (Sidel and Sidel 1982; Fang 2012). In his statement, Mao criticized the Ministry of Health for their focus on the privileged urban residents while ignoring the medical need of the peasants in the rural areas: "*The Ministry of Health is not a people's ministry. It should be called the Urban Health Ministry, the Ministry of Health for the Lords, or even the Urban Ministry of Health for the Lords. . .*" The statement was later known as the famous "June 26 Directive". Thus, in a sense, Mao, or the state's overriding aim of the barefoot doctor program is to redistribute the medical and health care resources to the rural areas, and in the long run, to realize the modernization of the rural medical world in China, providing rural residents with the same modern health care and medical services as those available to urban residents.

In addition to the overriding vision, the barefoot doctor program was associated with a variety of political ideologies and was given with a series of diverse political tasks under Mao's directives. Or we may arguably say that their professional work was imbued with various political meanings. In this manner, we can identify more specific political visions of the barefoot doctor

program by mainly drawing on the propaganda materials about the barefoot doctor program during the Cultural Revolution. The following are two major examples of them.

- *"Integration of Chinese and Western Medicines"*

Another important vision the state has of the barefoot doctor program is to further promote the state policy on Chinese medicine, so-called the "integration of Chinese and Western medicines". During China's early communist period, Chinese medicine had maintained a close relationship with the power of Chinese Communist Party (CCP), as it "met the criteria of the CCP and was embraced within the Communist Revolution" (Taylor 2005: 1). In a sense, Chinese medicine was regarded as a "medicine of revolution" serving for the state's revolutionary purposes. In particular, during the Great Leap Forward period, Mao's political zeal on Chinese medicine once led to some radical medical policies which used Chinese medicine as "a political tool…to correct the bourgeois thought of doctors of Western medicine" (Taylor 2005: 109). While, during the Cultural Revolution, these policies were moderated and replaced by the new slogan "integration of Chinese and Western medicines", which "encouraged the use of know cures of Chinese medicine, alongside a more prominent role in public health" (Taylor 2005, 110).

- *Reds versus Experts*

During Cultural Revolution, the term of "both red and expert" was a popular political slogan used in many places. Being "red" (*hong*), as opposed to "white", refers to having a proletarian worldview on politics, while being "expert" (*zhuan*) means to have technical and professional knowledge. Among various kinds of propaganda materials, "both red and expert" is also frequently used to refer to the ideal and goal of the barefoot doctors, as the term "barefoot doctor" meets the demands of Mao to call for the training of "proletarian intellectuals" and working-class experts, who he believes would become the models of being "both red and expert".

On October 9, 1957, Mao for the first time coined the term "both red and expert" (*you hong you zhuan*) in his speech at the Enlarged Third Plenary Session of the Eighth Central Committee of the Chinese Communist Party, to describe his understanding on an ideal relationship between politics and professions under socialism:

> Politics and the professions form a unity of opposites, in which politics is predominant and primary, and while we must fight against the tendency to ignore politics, it won't do to confine oneself to politics and have no technical or professional knowledge……Our cadres in all trades and professions should strive to be proficient in technical and professional work, turn themselves into experts and become **both red and expert**. It is wrong to talk about becoming expert before becoming red, which is tantamount to being white before being red……The Rightists say that we don't have the ability to lead, that "laymen cannot lead experts". We rebut them by asserting that we can. When we assert we can, we mean that politically we can. As for technical knowledge, we still have a lot to learn, and we will certainly be able to learn it.

To some extent, Mao's proposal of "working-class experts" and "proletarian intellectuals" seems to be in conflict with the political ideology of "de-professionalization". But, it was such de-professionalization of pre-existed professional training which gave birth to the one of the first successful examples of Mao's ideal of both red and expert: the barefoot doctors, who are by no means the conventional "elite" medical professionals working in hospitals or advanced clinics, but their medical knowledge and expertise is sufficient enough to provide basic medical care for the rural residents in their communities.

The Barefoot Doctor's Vision

Despite their seemingly homogenous public image and political representation, the barefoot doctors are actually a diverse group of people who have various social backgrounds. The majority of the barefoot doctors are the peasants who have limited education, yet slightly more educated than their peer residents in their communities. Meanwhile, there is a significant number of them who are decently educated in the cities as a rusticated youth, as well as the people who already had some medical knowledge and education before becoming the barefoot doctors. Many of the peasant barefoot doctors are recommended by their own communes to become the doctors based on the commune's evaluation of their reputation, education, and abilities, while the rusticated youth barefoot doctors are often the ones sent down from the cities to the designated communes in the countryside by the government.

On the other hand, although barefoot doctors are often seen as a server to the poor and lower-middle peasants, who are supposed to be in an equal social position with their rural peers in the communes, some scholars note that through work and practice they perform, the barefoot doctors still gradually separated themselves from the rest of the commune member and experienced a process of professionalization. In the meantime, the villagers they served also "formed new perceptions of medical professionals as a result of their interactions with the barefoot doctors" (Fang 2012: 152).

Thus, as a newly emerged "profession" and a social category, the barefoot doctor's vision on their own professional identity is closely related to their professionalization process in a social space where most of the members with little medical literacy, themselves included before they took the medical training. Against this background, almost all of the barefoot doctors are faced with a common challenge: to establish their authority, in particular the medial authority, in their

communes, by competing with other pre-existing and dominant medical actors. Among them, two groups are their most strong competitors: local folk healers and the professional doctors at a higher level of medical institutions. In short, their vision of the barefoot doctor program is to increase their authority by winning more trust from their peers in their communes and marginalizing the role of other medical competitors.

The Professional Medical Doctor's Vision

During the Cultural Revolution, with the stress on the de-professionalization of medical workers, medical schools shortened the required length of the medical training of medical students and students were encouraged to learn and improve their medical techniques in their practice. Meanwhile, many professional medical doctors and scientists with sophisticated medical techniques and advanced knowledge were sent down to the countryside, or experienced various ways of political oppression. The ones used to be trained or educated in the elite medical colleges adopting a "Western" style of curriculum, were especially criticized, and oppressed. For example, Francis D. Moore, an American surgeon who visited China in 1981, recounts the stories of his host, a famous medical professor in China, during the Culture Revolution:

> A notable superlative. Our host, Dr. Tseng, now Professor of Surgery at Beijing, had during the Cultural Revolution been assigned to a province just northeast of Tibet where he dug in manure fields and made irrigation ditches. He and two or three of his colleagues quietly started a small hospital there. At the time of our visit they were still helping to run that hospital 2,000 miles away in a rural land of peasants and few modern conveniences (Moore 1995: 299).

Due to their unfavorable political position during the Cultural Revolution, most professional doctors had very little opportunity to show any objections, but only resigned

themselves to various political arrangements. Thus, although they were often portrayed as the "enemies" or "reactionaries" of the establishment of the barefoot doctor program, most of the punished or oppressed professional doctors in practice were responsible for training the barefoot doctors, either by teaching them in their workplace, or consisting the mobile medical team to teach them in the field. Regardless of their "genuine" vision, they played a collaborative role in the ecology of the barefoot doctor program, as an ally to the barefoot doctors.

Competitors and Adversaries

Different from Star and Griesemer (1989)'s study of the cooperative work of Berkeley's Museum of Wertebrate Zoology, the establishment of the barefoot doctor program involves not only the mobilization of a wide variety of actors and cooperating them, but also the competition against a few adversaries, such as the local folk healers and some professional medical doctors as well as the rural residents who are suspicious or unsupportive of their barefoot doctors and the barefoot doctor program in general. Among them, some can be converted to the "allies" through mobilization and "education", such as some rural residents and professional medical doctors, while other groups, especially the local fold healers are usually seen as the adversaries and sometimes even the enemies.

Before the advent of the barefoot doctor program at a national level in 1968, folk healers had maintained a dominant position in the rural medical world. However, with the establishment of the barefoot doctor program, their position was significantly challenged, and they were gradually marginalized in the rural medial world:

> Healers in religious orders and supernatural sects were criticized and then eventually prohibited from operating at the beginning of the Cultural Revolution. From the late 1960s onward, the new

> regulations declared that "*vagrant healers and witch doctors should be strictly controlled. Each level of government should take serious measures to control them. Health departments at each level should also enforce the management and supervision [of medical work] in order to protect the health of the masses."* Barefoot doctors were asked to fight against feudal superstition as part of their daily work……Although "superstitious healers" and their practices did not disappear entirely from the villages upon the announcement of these policies, the villagers dared not seek treatment from these traditional sources openly (Fang 2012: 160).

Many barefoot doctors recount how they had "class struggles" against the "illegal healers". For example, one young female barefoot doctor recounts her experience of competing for trust and authority against a local female healer and "traditional" midwife Zheng Daban in the delivery of a pregnant woman. The pregnant woman was about to give birth when the barefoot doctor was away on business, so her family asked the healer for the midwifery. When the barefoot doctor returned to the village, she found the healer was helping with delivering the baby by "calling the soul" of the pregnant woman:

> Zheng Daban's power was taken away, but she did not resign herself to it. She jumped out to compete against me at every opportunity……When I entered the house, I saw the house full of people, a group of people by the bed pulling the hair of the expectant mother. A person below pulling the small feet of the fetus, kept shouting "Guo's daughter-in-law quickly home, Guo's daughter-in-law quickly home!" She was "calling the soul"! This person was not someone else, it was Zheng Daban. I was furious, shouting at her: "stop!" ……On the spot, I ruthlessly exposed her technical incompetence and explained the essentials of assisted labor for breech delivery, pointing out that pulling hair only hurts the body and increases pain, which is a sign of feudal superstition.

III. Analysis of Boundary Objects

In their analysis of the translation tasks and boundary objects of the museum work, Star and Griesemer (1989) identified four different types of boundary objects: repositories, ideal type, coincident boundaries, and standardized forms (See Figure 1).

Figure 1: Four Types of Boundary Objects in Star and Griesemer's Model

Type	Main Characteristics
Repositories	"These are ordered 'piles' of objects which are indexed in a standardized fashion. Repositories are built to deal with problems of heterogeneity caused by differences in unit of analysis"
Ideal type	"This is an object…which in fact does not accurately describe the details of any one locality or thing. It is abstracted from all domains, and may be fairly vague. However, it serves as a means of communicating and cooperating symbolically"
Coincident boundaries	"These are common objects which have the same boundaries but different internal contents. They arise in the presence of different means of aggregating data and when work is distributed over a large-scale geographic area"
Standardized forms	"These are boundary objects devised as methods of common communication across dispersed work groups"

Source: Star and Griesemer (1989: 410-411)

In the case of the barefoot doctor program, the translation work also involves with different kinds of boundary objects and two major boundary objects are "A Barefoot Doctor's Manual", and the representation of the barefoot doctors, in particular its very title "barefoot doctor" and the related political slogans about the description of it that appear in various forms of propaganda. The former can fit into the category of "standardized forms" and the latter fits into the category of "ideal type".

A Barefoot Doctor's Manual

Since the advent of the barefoot doctor program as a political campaign, large numbers of young barefoot doctors appeared rapidly in almost every production brigade of all communes across the whole country. Sidel and Sidel (1982) contend that it was difficult to generalize about the barefoot doctors' training and role. "Because of the emphasis on decentralization, the barefoot doctor pattern varies widely, from province to province, from commune to commune within a province, and even, though far less markedly, from brigade to brigade within a commune" (41). Thus, despite the barefoot doctors' political zeal and commitment to their work and new identity, in practice, it was absolutely a challenge for the state to make all the barefoot doctors receive the sufficient as well as similar medical knowledge with their peers across the large country and fulfil their designated roles in the diverse communities in a short time. Fang (2019) notes that, in the beginning of the establishment of the barefoot doctors, the main method of training designed for the barefoot doctors had two problems:

> First, the length of training was usually quite short due to the constraint of medical recourses recourses—ranging from a few weeks to three months. Second, the education and literacy level of barefoot doctors was generally low, which directly determined their degree of medical proficiency, and consequently affected the medical service they were able to provide……
>
> Thus, in order to promote a nationwide health program at the quickest possible pace, manuals, or textbooks with a unified body of knowledge that specifically targeted these partially literate barefoot doctors were needed (Fang 2019: 170-171).

In this context, the first edition of *A Barefoot Doctor's Manual* was published in 1969 as a response to the need of the state to standardize the medical knowledge and technique as well as the conventions of medical treatments through the top-down knowledge transmission from the

medical professionals to the lay health and medical workers—— the barefoot doctors. “Books like *A Barefoot Doctor’s Manual* became an essential source of medical knowledge for them to enhance their brief stints of medical training. These publications effectively became their source of immediate medical guidance in their everyday practice” (Fang 2019: 180).

> As a comprehensive medical textbook, A Barefoot Doctor’s Manual covered all essential topics in medical education, such as public health and epidemic prevention, necessary surgical skills, and human anatomy. The remaining parts of the book cover medicines and the prevention and treatment of common diseases (Fang 2019: 173).

The large-scale distribution and circulation of *A Barefoot Doctor’s Manual* in the following years during the Cultural Revolution makes it serve as common communication across the diverse groups of barefoot doctors in the whole country. The forms of the manual as a political publication ensures the accuracy and consistency of the medical knowledge and techniques it includes. As a result, they become the standardized indexes and the immutable mobiles “which can be transported over a long distance and convey unchanging information” (Star and Griesemer 1989: 411) and delete the local uncertainties. Meanwhile, the Manual also disciplines the political understanding of the barefoot doctor program. As Fang observes (2019: 172):

> The guiding principles of the compilation of the *Manual* reflected the concerns of medical politics since the mid 1960s; namely, improving medicine and health in rural areas, preparing for war, and highlighting historical commitment. Chairman Mao’s instruction “Stress Medical and Health Work in Rural Areas” was placed on the first page…”

The Representation of "Barefoot Doctors"

According to Star and Griesemer (1989: 410), the "ideal type" boundary objects "serves as a means of communicating and cooperating symbolically — a 'good enough' road map for all parties" . In the case of the barefoot doctor program, two boundary objects serve the same role: first, the very name of the new kind of socialist "profession" — "barefoot doctor" by virtue of both of its symbolic vagueness and seemingly self-contradiction; second, the representation of the "model" barefoot doctors, namely, the ideal type in a literal sense from two different aspects — the real barefoot doctors who were selected carefully as a role model for all the other people to study from them, and the representation of idealized barefoot doctors as a political image of propaganda.

Fang (2012: 31) introduces the origin and the meaning of the term "barefoot doctors" as:

> On September 14, 1968, the *People's Daily* published an investigative report entitled "Fostering a revolution in medical education through the growth of the barefoot doctors." It introduced readers to barefoot doctors in Jiangzhen Commune…...The barefoot doctors were young commune members who were selected to receive basic medical training and then returned to their brigades to serve their villages. The term "barefoot doctor" was thought to come from the fact that villagers called for help from these health workers who labored barefoot in the rice paddy fields but were ready to do medical and health work as needed.

In a sense, the term of "barefoot doctor" explicitly indicates the twin identity of barefoot doctors as both peasant and doctors, and thus as "both red and expert", making it a political creation consistent with Mao's idealization of "socialist profession" in an almost utopian way, through an even combination of both "redness" and "expertise". While, in practice, the juxtapositions of "barefoot" and "doctors", as well as the symbolic meaning behind each of them, i.e., being "red" and being expert, often reveals a symbolic vagueness due to the seemingly self-contradiction of

the term. Such interpretative flexibility creates a confusion to both peasants and barefoot doctors themselves about their identity, sometimes even making them wonder whether the barefoot doctors are neither peasants nor doctors.

For example, as a salient symbolic element of the title, “barefoot” has been seen as an indicator of the peasant identity of barefoot doctors. In some occasions, footwear can become a crucial object to indicate the symbolic boundaries of barefoot doctors from other “adversarial” medical groups. In an article on *The People’s Daily*, one barefoot doctor reflects on his subtle psychological change associated with obtaining the new identity as a barefoot doctor in his village and made a self-criticism on that:

> Later, I made some achievements, and I was complimented, “Vanan is not simple, enough to be *a proper doctor*, change your clothes, don't be rustic.” I lost my way in the compliments and thought, “You indeed have to *look like* a doctor to be a doctor.” So, I gradually got out of labor, took off my coarse shoes and put on *nylon stockings*. The poor and lower-middle peasants said behind my back, “Vanan was our ‘barefoot doctor’ before, but now he has become a ‘doctor in socks’ and cannot even be requested for a visit”.

And an editor gave a commentary on it, admonishing that,

> You think you have a little medical technology, should be a “decent doctor”, so you think you are superior and look down on the poor and lower-middle peasants. The poor and lower-middle peasants cannot even request a medical visit from you. What is the difference between you and a bourgeois doctor then?

Such admonishment is one of the many examples that demonstrate both the hybridity and ambiguity of the profession and identity of the barefoot doctors. Fang contends that “barefoot” is more of a revolutionary discourse and a propagandized form and in actual practice, “the barefoot doctors had already donned shoes and separated themselves from agricultural labor” (2012: 152).

Yet, such separation and social division between the barefoot doctors and other peasants tend to only appear in an implicit way, such as enjoying more authority and respect from their fellow villagers, and in some cases, a few more limited career and mobility prospects.

In general, the medical ethics of the barefoot doctors with an equal emphasis on their identity as "barefoot" and the "doctors" prevent them from developing a pure "professional-to-patient relationship" (Sidel and Sidel 1982: 41) as observed in the elite Chinese medicine and Western medicine in the urban areas. For example, according to an interview Fang (2012) had with a barefoot doctor:

> One barefoot doctor said that she chose not to carry a medicine box: "I thought that if I carried a medical kit, the villagers would regard me as a doctor rather than a villager. I am a very sensitive person. Sometimes the villagers joked with me: 'Hey, you are a barefoot doctor. Why aren't you barefoot?' I immediately reflected [on my behavior] and whether I was keeping myself too aloof from the masses."

Furthermore, in the same manner, the visual representation of barefoot doctors of propaganda materials tends to depict the image of barefoot doctors as a family member and part of their communities. In her analysis of the barefoot doctor images during the Cultural Revolution, Pang notes that "the barefoot doctor in these posters…is sincerely embraced by the village as a family member. We do not see clenching fists, frowning faces, or piercing stares; rather, she soothes the soul and builds community through her sincere attention and affection. On the posters, she is often seen to be engaging with the community and is seldom a lone heroine wrestling her way to an idealized future" (Pang 2017: 112).

Conclusion

As a state-led program, the barefoot doctor program is often seen as a unique socialist "paradigm for basic health care provision" (Bien 2008: 5) which solved the problem of the insufficient medical personnel and resources in the less developed rural areas. Such vision and the state-led health care campaign are not an exclusive political creation in socialist China. In his analysis of the health ideology during Cuba's socialist revolutionary period, Brotherton (2012: 6) contends that health has been used "as a defining characteristic" of the socialist reform, "effectively linking the bodies of individuals to the political project of socialism and its governmental apparatuses", and as a result, the socialist health ideology "produced a new kind of medicalized subjectivity". By expanding the state medical system to the very bottom of the medical system at the village level, the state aims to include every rural resident in the national health program, and to have the whole rural pollution under the medical and health control of the state.

However, in the case of the barefoot doctor program, the dominant role of the state under socialism also doomed its disintegration with the change and transformation of the state power. Despite the achievement and the benefits of the program, it was quickly disintegrated with the wind-down of the Cultural Revolution, which brought about a series of dramatic changes of all the social structures the program used to be embedded with. For example, the new state shifted the emphasis on health and medical work again from "quantity" to "quality" (Sidel and Sidel 1982) and introduced a new medical certification as "village doctors" to eliminate a large number of barefoot doctors who were not regarded as qualified anymore. Moreover, "the core institutional context that had supported the barefoot doctors, the cooperative medical service, ceased to exist with the end of the people's communes (now known as townships)" (Fang 2012: 168). According to Sidel and Sidel (1982):

> The number of barefoot doctors has diminished since the mid-seventies. Overall, Chinese estimates of the total number of barefoot doctors in China have fallen from 1.8 million in 1975 to approximately 1.5 million in 1980…In the China-Rumania People's Commune outside Peking, for example, the number of barefoot doctors has been reduced from 450 for a population of 46,000 in 1972 to 250 for a population of 48,000 in 1980......

A famous American medical doctor who visited China in the early 1970s, Michael DeBakey, recounts his glimpse of the medical reform during his trip to China in an interview:

> SCHANCHE (interviewer): Does this indicate that……they want to get a maximum number of doctors trained in a minimum amount of time. And they're looking for minimal training and then they will take specialty training from there.
>
> Dr. DeBakey: Later, that's right. I asked them what they thought of this, and they said, well, they're experiments, they don't know whether it's going to be good or not, but they needed to experiment. And this is what the Cultural Revolution did.

In a sense, among all the "newly emerged things" during the socialist period of China, the barefoot doctor program, as a radical rural medical policy, is one of the most influential and successful, yet short-lived socialist experiments and social institutions during the Cultural Revolution. By drawing on the model of boundary objects and cooperative work from the STS perspective, this paper intends to demonstrate the complex dynamics of the ecology of the experimental socialist program and the process of its establishment. As a historical case study in the context of the non-Western society, it distinguishes itself from the other prior STS studies in the Western context by including the state as one of the heterogenous participants yet with a prominent role, but also rejects a reductionist view which reduces the socialist institutions as a one-dimensional political product merely imposed by the state through coercion, silencing and

fragmentation. For the future STS study of the institution and boundary objects, more research is needed to examine the diverse roles of the state in the non-Western social contexts. Besides, some studies can be conducted to compare the post-socialist and the Scandinavian societies where the public sectors of both tend to occupy a more significant position in the society, yet in a different socio-political context.

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