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Elderly Suicide and Generational Exploitation in Rural China

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Abstract

Suicide, one of the leading causes of death around the world, has post a threat to the global public health and has been a heated topic when discussing human security issue. It is an extreme way to express one's anxiety and insecurity. Suicides among the Chinese population account for 1/5 of all the recorded suicides in the world, with the reported annual suicide mortality of 23/100,000 or 287,000 deaths. According to the WHO statistics, the incidence of suicide in China shows unique demographical patterns compared with those in the rest of the world in several ways. Among those, the suicide rate in rural areas among the elderly being 3-5 folds higher than that in urban rates has become the center of my focus.

This paper tried to analyse the suicide of rural elderly people from the perspective of intergenerational relations and social competition. Through fieldwork, the imbalance of resource allocation caused by social differentiation has been noticed, that rather underprivileged peasants are more struggling in maintain and improving their social status in their surrounding environment, and they are trying to achieve so by utilizing all the available resources as well as cutting down all the "unnecessary" expenditure within the household. As a consequence, they are more likely to transfer the pressure of social competition to the elderly family members through intergenerational exploitation. Once the elderly can no longer create value, cannot take care of themselves or become ill, they are living under the anxiety and insecurity of becoming a burden and cumbersome to the younger family, together with the catalyst of being ignored or maltreated: thus they are apt to commit suicide for the feeling of insecure and also the consideration of the younger generation. Their value is determined by the cost and benefit in taking care of them. Meanwhile, in order to justify the exploitation towards the elder generation since it's against filial piety (one of the central traditional Chinese moralities), the mechanism of "demoralization" came into being through the daily language of fellow villagers. This has eased the moral burden on the younger generation and made it "normal" to treat the elderly in such a way.

Keywords: social insecurity; social differentiation; rural population; intergenerational relations; elderly wellbeing

1. Introduction

Suicide, one of the leading causes of death around the world, has post a threat to the global public health has been a heated topic when discussing human security. It is an extreme way to express one's anxiety and insecurity. Suicides among the Chinese population account for 1/5 of all the recorded

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suicides in the world, with the reported annual suicide mortality of 23/100,000 or 287,000 deaths (Phillips, 2002). Typically, the incidence of suicide in Mainland China has displayed unique demographical patterns with age, to be specific, the population aged over 65 years has the highest rate of committing suicide, reaching 44.3/100,000, which is 4-5 times higher than that in the general Chinese population (Li, Xiao, 2009). Moreover, the suicide rate in rural areas among the elderly is 3-5 folds higher than that in urban rates (Xu, Chen, Liu, 2000).

According to the WHO statistics, the incidence of suicide in China shows unique demographical patterns compared with those in the rest of the world in several ways. Firstly, Chinese women commit more suicides than the Chinese men, which is contrary to the trend in the rest of the world. Secondly, rural Chinese commit more suicides than urban Chinese, but the suicide rate in cities is higher than that in countries in most parts of the world. Thirdly, which is also the point that I try to focus, the elderly suicide rate in rural China has increased greatly over the past two decades.

Many sociocultural changes have taken place with the rapid development of the market-oriented economy in China over the past 40 years, such as the rapid urbanization and economic development, massive rural-to-urban migration, marked shift in the values from Confucian collectivism to individualism, shook families stability (represented by rocketing divorce-to-marriage ratio of over 30% in 2017 compared to 3% in 1978) and diminished traditions of filial piety and respect for the elderly. Typically, all these vicissitudes have affected the way of living within a family as well as the surrounding community.

Meanwhile, various types of elderly suicide behaviors have been discovered in rural area, for instance, suicide following the burst out of a bitter conflict, suicide as a disapproval of how they are treated by their children (verbal or psychical abuse or both), suicide following major chronic diseases, and suicide when they consider themselves as a burden on the family （Liu, 2013）. Notably, the "rational" choices that villagers make when facing the pressure of village life should account for the factor underlying these direct causes. For example, family conflicts can usually be triggered since the elderly cannot help to take care of their family or grandchildren; or they have spent too much money without thinking about saving for their future generation; or they constantly require care and money after developing some diseases, which will cause a heavy burden on the whole family; or, simply, they are no longer able to work and contribute to the family as they do in the past, which has shifted their roles into the pure consumers, inducing a heavy burden on the younger generations. Hence, the elderly in rural area are perceived as "unproductive" and "burdens" in some aspects, and according to their children, "they are making our lives even more difficult". Those who are not willing to shoulder the responsibility to attend to the elderly may also have poor financial condition and are dealing with

greater pressure.

It becomes clearer after communicating with the peasants that, they can feel strong insecurity from the above-mentioned pressure, which may be derived from the competition with the surrounding peasants and the living environment after the emergence of differentiation. And for the elderly who have ever had the idea of giving up their life, they are questioning the value and dignity of continuing living.

2. Social differentiation and social competition

In the past, most peasants used to be engaging in pure farming, and the gap in their income is not as noticeable as that in today's society (Yang, 2013). Thanks to the Reform and Opening up policy, more opportunities are opened and peasants are no longer restrained to the land; instead, they are offered with more variety of jobs with higher freedom of mobility. However, at the same time, the gap among peasants is also getting more noticeable: some have settled in urban area with nice new apartments and cars whereas some are struggling in the village in a ramshackle house with a leaky roof. Scholars have classified the rural population as 4 levels based on their actual income and the descriptions by villagers, including rich peasants, upper middle peasants, middle peasants and bottom ones. The social stratification tends to be stabilized after 40 years of reform and opening-up. Except for those in the rich class whose major daily activities are happening outside of the village, since the majority of them now move to live in the city and only come back to the village on major holidays to visit their relatives. Those in the rest three classes on the other hand, are highly involved in the village surroundings, ranging from daily conversation with villagers to co-decision-making of the village issues. Typically, these three classes are no longer in the cooperating relationship, on the contrast, they are more in a relationship of competition and comparison, and all of these competitions and comparisons are taking place between acquaintances, neighbors, relatives and friends.

Notably, such social differentiation is accompanying with the complication of interests and the protrusion of interests-related conflicts. Scholars have varied opinions on such an issue of "social differentiation", but some common factors have been recognized. Firstly, family is the primary unit in the differentiation. Peasants have been classified based on the general conditions of their families instead of their individual performance (Wang, 2002). Usually, the elderly are counted along with their adult children due to their living arrangement (co-habitant with adult children) and limited productivity. Secondly, village remains the major place for differentiation. For the majority of rural population, their villages are the places where major activities take place, where they can gossip and get gossiped; and

they have power on judging their members (Lu, 2002). Thus, many peasants have formed their identity and position based on the criteria and status built in side of their village.

Coming together with the amelioration of income, their level of consumption also rose at a staggering rate. In the past, electrical appliances or private cars can barely be witnessed in rural China, but now it's no longer a rare scene. Furthermore, in current village life, the criteria of being successful are mainly judged at the material and financial level; specifically, the family who enjoys a stronger economic power will enjoy higher social status which suggesting that one will be perceived as the role model for other neighboring families and also having more influence on village business. Therefore, for anyone who wants to be recognized by their fellow villagers, his/her family must reach up to certain standards, and only in this way can one family stay in the mainstream of community social life. Meanwhile, those who are eliminated or withdrawn from competition will be deprived of dignity and reputation, and they may be treated as the "losers" and stay in the marginal space (Yang, 2013), suggesting they may be left out of social events and become invisible in the village. Several villagers mentioned the different attitude from others after their failure in business or retirement from village administrative positions, that "before, others looked up to me and always asked for my opinion on major issues concerning the village, now they look me as a joke and mock me behind my back."

"Being conspicuous" may be the focal point in such social competition of rural area, suggesting that one should possess some widely recognized representations of fortune, which include but are no restricted to housing, consumer durables, leisure and recreation, expenditure of "Renqing" (money used to retain the relationship within the village on special occasions, e.g. weddings and funerals), farmland and education for children. Notably, the scale of their sons' wedding and whether the family is able to purchase a property for their son in town/city are also the critical elements to judge a family's condition by its fellow villagers.

When asked "what do you always compare with others", some villagers answer "to see who owns house in town/city, whose children and grandchildren are doing better, and whose land is more productive…"; besides, "we are keen on face-saving even when playing Mahjong and giving money for 'Renqing', and "I will look humiliated and lose face if others have houses in town/city while I don't". There is not necessarily competition on every aspect, but quite "selective": some can be compromised while some have to be accomplished. They will no longer be considered as winners if these "musts" are not fulfilled. For instance, consumer durables are the necessities to modern life, which have brought convenience to our daily activities; however, these are often considered as one of the instruments to keep up with the Joneses in rural areas, and one may think that "since you have it, then I must have it." I observed during fieldwork that, more than one family has put their grains in

their washing machines; the refrigerator has always been placed in a noticeable position in the living room even though it is not electrified; and the air conditioner has barely been used even in summer when the temperature can easily reach 40-degree Celsius and in winter when it can drop to below zero. “It uses too much electricity and we can manage without it” is always their explanation. On the other hand, a bike is already enough to satisfy the daily needs for some villagers, but they still strive to buy a car even though it hardly ever leaves the yard. Despite the fact that these consumer durables (especially for the home appliances) have become rather common among the Chinese rural regions, it does not necessarily suggest that these convenient, modern equipment have changed people’s life by making it easier, but rather, they have been more frequently used to compare with others in terms of their brand, price and quantity. Clearly, the upper class usually does not have great difficulty in buying a big or even foreign brand; while those in the lower class may be unable to afford those as fancy, but they are still going to have a small one. Here, utility is not the major factor for consideration; what coming along with the image of “I can afford this” is. What’s more, most villagers have mentioned the cost of “Renqing” as a growing heavy burden. In the past, villagers would give the same amount of money when there were celebration ceremonies or funerals, however, some began to the compete on this aspect nowadays. For instance, it used to be 50 yuan for a neighbor’s ceremony several years ago, but now it has raised to 300 or 400 yuan, and for the rather close relatives, the amount cannot be lower than one thousand yuan, since people may believe that they will lose face and be looked down upon if too little money is given. One interviewee clearly remembers that the money he spends on “Renqing” has taken up over one half of the family expenditure in the past whole year. “I don’t want to do this, but what choice do I have? It will look bad if I didn’t give as much as others do.” The rather close social environment (as in a small village) and close interpersonal relations has made it difficult to avoid being a part of the competition.

During such competition, all classes are paying wide attention to the distinction between other families or classes (Bourdieu, 1984), or at least fighting to stay in a position that will not be surpassed by others. Through the spending on housing, consumer durables, leisure and recreation, and expenditure of “Renqing”, people are expecting something in return, which are their status and faces in the village. Such a phenomenon has just verified the anxiety that they hold towards their future, namely the eager to raise their social status and the fright to lose it. If they are lucky enough to climb up the social ladder, it often times indicates that they are changing the life of their future generation by being able to provide them with better opportunity of personal development, for instance, settle down in the city and their children can receive better education. On the contrary, if they fail, the poverty within the family will probably be passed down, and their offspring will have to shoulder the

same pressure again. Even being in the same social environment, different levels are encountered with various pressure levels due to varied social-economic resources that they possess. Relatively speaking, those belonging to the upper class have access to more material and social resources, and they usually have more choices and space to relieve the pressure. Thus, their anxiety is not as strong as that in those belonging to the lower class. They are likely to have different reaction even when encountering the same problem, for instance, physical disease, that some who are already struggling with financial problem will be less possible to go to a big hospital to have a proper medical checkup. Similarly, people in the higher level have higher capacity to mobilize the resources in order to satisfy the "standard" of winning in the competition. They can create more based on what they have possessed. For families in the lower class, their limited resources have foreseen their difficulties in keeping up with those criteria set by the "haves" group, and they are living under the pressure that they can hardly deal with. As a result, the "have-nots" will have little choice due to the restrictions in the methods of working off pressure and anxiety. Notably, the only thing they can do is to keep taking advantage of what is already there, and to get rid of whatever gotten in their way.

Among the overall rural population, the middle-aged people probably have to face such pressure in the most direct way. By saying "direct", I mean that they are the ones who are taking the responsibility as the bread earners for the whole family and have already over-exploited themselves during the social competition. They have devoted themselves to working to fight for a better life for the whole family, therefore, it seems quite challenging for them to spare any more energy, time or money to take care of the elderly. Furthermore, the fortunes for those in the upper class keep raising, and the criteria of being successful is refreshing constantly: the competition never stops. It keeps elevating and the pressure on the peasants' shoulder is growing as well. As a result, they have no choice but to mobilize all the available resources and labor forces into the competition, as well as cutting down the expenditure on what's no longer productive.

As the weaker members in a family, the elderly are no longer in the position of possessing resources or creating value, which has led them into the category of "useless". What they can do to contribute in the competition is to take care of themselves and try not to be any extra burden on their middle-aged children. They are always compromising and compressing their needs in fear of being the draggers for the family. The phrase I've heard most regularly is, "I don't want to be a burden." In this way, if someday they can no longer take care of themselves, the ideal way out for everyone is to die soon, to relieve the burden for their descendants, to finish their life when they can still have some dignity. Moreover, this "inward" effort to relieve the burden by depriving the living space the weaker family members and cutting down all the "unnecessary" costs has made it almost impossible to

cooperate with other peasants, since everyone wants to be better and richer (Yang, 2013); however, this will ironically make the competition even more severe and render greater pressure on these peasants.

In short, peasants at the lower class are under greater pressure in the competition than those in the upper class, and one of the ways that they alleviate this pressure is to compress the quality of life of the elderly. As a consequence, the elderly belonging to the lower class are more vulnerable in the face of stress, which may lead to the suicidal behaviors. It is their solution towards the insecurity not only in their own lives, but also to the insecurity in their children's.

3. Intergenerational relations and exploitation

Nowadays, the three-generation family structure (constituted by grandparents, adult children, and grandchildren) is gradually replaced by the nuclear family structure, either in rural or urban area (Huang, 2011). However, such change in the family structure does not necessarily bring vicissitudes to the core family relationship. It has been clearly stated in the Chinese law that, it is the children's responsibility to care for their old parents; particularly, family care remains the mainstream in supporting the elderly in rural areas, which can be ascribed to insufficient pension system and health care system. "Father" and "child" are tightly tied up together, and it is natural for the elderly who can no longer be independent either physically or financially to move in to the house of their sons'. Hence, they are also implicated into the social competition no matter whether actively or passively, suggesting that they have to obey and serve the order in this system. This kind of intensively competitive social relation requires that every family member should be involved to contribute unreservedly, and the elderly are of no exception. For one thing, the primary elderly care in rural area at present is still provided by the family members; for another, the elderly usually have great concerns of the emotional sustenance, and they also hope to pass their goodness down to their younger generation (He, 2002). Thus, they may be keenly aware of the pressure and anxiety from their descendants that they are highly expected to serve the family continuously, or at least not to be an obstacle. As a consequence, such pattern of intergenerational relationship has already shifted from the traditional filial piety to the intergenerational exploitation.

In any time, elderlies are otiose labor force, but in the past, women and children are usually the ones who are ignored and exploited at war or famine times (Tan, 1997). The family structure of "men having power over women, and the elderly having power over the younger generation" has been developed in the past centuries under the patriarchy system (Liu, 2013). Under such family structure,

the elderly have an absolute voice on the family issues and are in the role of resource distribution, and the relationship between father and son usually comes before that between a son and his wife (Guo, 2008). Here, one of the most important traditional Chinese morality “filial piety” has come into being. However, after the establishment of PRC, the patriarchy is criticized, and the authority of the elderly (especially the father) has also been challenged. Furthermore, coming along with reform and open-up policy and the leap of productivity, the value of experience in crafts has shifted to technology and education. Meanwhile, the image of “wisdom” and “experienced” which used to be attached to an elderly has faded out gradually, as it’s getting increasingly difficult for them to catch up with the pace of social as well as technological changes. While the elderly are sticking to the old Confucians' teaching, the younger generation no longer value it that much. They prefer to pursue their personal achievement even though sometimes it suggests them to leave their old parents behind. In addition, with nuclear family structure becoming progressively common in recent years, the younger generation have gained their talk power, and elderlies are moving to the listening side. Under such circumstances, the elderly will not be favored during the family resource distribution, since they do not create any value, nor do they have the power to allocate the family wealth.

Traditionally, the emphasis on filial piety has indicated a balance between parents and children (Fei, 1948). It is an obligation for the children to do the same as a payback when they grow up, considering how much care they have received from their parents. Our traditional morality believes that one should support his/her parents financially, attend to their psychical and mental needs, and try his/her best to provide a cozy life for their parents. Contrariwise, the current pattern of “intergenerational exploitation” has focused more on the contribution that the elderly can make to their children, rather than the other way around. Under this system, elderlies seem to have endless responsibility towards their descendants; for instance, they have to raise children up until they can earn their own living, they have to worry and help them to get married and prepare a big wedding ceremony, they have to save money to buy a property in town/city for their sons, and may have to raise their grandchildren as well. The elderly are working throughout their entire life to expect for some care and support from their children when they finally fail to move their body. In recent decades, the trend that the newlyweds ask the groom’s family for expensive betrothal gifts has gained its popularity. These newlyweds intend to reduce their life costs for their new nuclear family by asking their parents to purchase cars and electronic appliances, regardless of the struggles their old parents are going through in order to meet these demands. Moreover, purchasing a property in town/city seems to be the non-negotiable condition for their son to ever find a wife; however, the parents who pay for the house usually are not going to live there. Instead, they will often stay in the village waiting for the younger

generation's occasional visits.

As mentioned above, whether the elderly is "useful" or not has become a decisive benchmark in the intergenerational relationship within a family. "Being useful" suggests that the elderly can provide financial assistance or labor force, ranging from being able to purchase a property for children or taking care of the grandchildren; their relationship with their descendants is relatively peaceful, and they can be treated with more care and dignity. On the contrary, when the elderly fail to create any economic value or even require to be attended, they are perceived as the major stumbling block to obtain a "good life". Such condition is true particularly for those who are in poor health condition, and their children and spouses will sometimes express their impatience to accuse the elderly that "they are going to die sooner or later, and there is no point in going to the hospital" or they are "troublesome and cost too much money" if their diseases cannot be cured within a short period of time. In this case, the intergenerational relationship is always tense, adult children may despise their parents, abuse them physically or mentally, refuse to pay for their food, clothing or medical service, or simply, just ignore them. Some interviewee indicated their worry that they might no longer be able to keep their dignity as human beings as long as they cannot be any use to the descendants. "My neighbor, Mrs. Huang, since she was diagnosed with cancer her children stopped to feed her. They left her in a separate room waiting her to die."

In summary, the elderly generation can either be a "plus" or a "minus" for one family in social competition. Children are likely to calculate the costs and benefits when dealing with the issues related to the elderly; for example, they are doing mathematics to find the more beneficial way when it comes to the living arrangement, property division, medical treatment, home care and funeral of the elderly. They are willing to do a thing when the benefits outweigh the costs; otherwise, they will try to avoid it or do less of it. There is one typical story from one informant saying, "My brother is sixty-one years old and he was diagnosed with cancer last year. It will take about 40,000 yuan to go to the hospital. His son and daughter in-law believe that he may probably live more than ten years if he is cured, and the money that he can make by farming should be more than 4,000 yuan per year; as a result, it is worth paying the medical fee to treat him. Nonetheless, if he is seventy-one, he may not be able to do farming for long even if he is cured, so his children will definitely not pay for the treatment, and he can do nothing but to wait for death." Under such imbalanced exploitational relation, the elderly are deprived of the initiative, and they are just like a puppet swinging in the calculation of "useful" or "useless". It seems too luxurious to talk about "dignity", as the elderly can barely ask for it when they are no longer independent.

Nonetheless, to the surrounding environment, the fact that the middle-aged generation have

ignored the care of the elderly (no matter unintentionally or not) appears to be fairly understandable, since they are busy earning a place in the severe competition. People defended their relatives, neighbors or even own children against maltreat of elderlies. According to the informants, elderlies who only care for their own wellbeing and happiness without sharing the pressure for children are likely to be judged, and those who do no help to take care of their grandchildren or do the housework are likely to be criticized, by both the descendant's family as well as other villagers. Apparently, it seems to be an unwritten rule that an elderly should always devote completely to his/her children, and the interests of children should guide the behavior of the elderly. The elderly should feel guilty when they no longer have the power to grow for the family, and it can be accepted and highly regarded if they can find a way to relieve the burden on the family, even at the cost of their lives. Sadly, after 25 years of the idea human security was brought up, that man should have "freedom from fear, freedom of want, and to live in dignity" (HDR, 1994), these elderlies failed to enjoy any of them.

4. Demoralization: a mechanism of justification

Morality cannot be discussed without the background of a certain social class, and their living conditions will always decide their moral level. According to Sun (2008), moral deterioration was likely to take place when resources were lacking to improve the current living condition. It comes together with the attempt to transfer risks, costs and prices to others in the same or weaker position; besides, moral deterioration itself also serves as the justification of these attempts. In other words, in rural areas, when the survival stress has been transferred largely onto the elderly, a mechanism of justification will be inevitably going to arise. A system should be established to make sure that these behaviors will not threaten the adult children's reputation or position since such behaviors are against one of the most important traditional Chinese moralities. Here, demoralization, in another word, a "blind-eye" that the lower-class peasants choose to turn to the exploitation of the elderly, is the product coming along with their pursuit of interests under the great competition pressure. There are mainly two reasons for its sustained existence in the rural society. Firstly, the members who take part in this "conspiracy" are commonly desperate to "look better" than others, and their priority is to obtain more while reduce the "unnecessary" consumption to win themselves a place in the intense competition. Secondly, the younger generation have the absolute power over the elderly. The emotions, feelings or dignities of the elderly generation is unlikely to affect the decision of the younger generation, since the elderly are no longer in possession of bringing any benefits. Noteworthily, demoralization has almost become a consensus among the younger generation in the village, and the voice of the elderly

is often ignored. Under this mechanism, the elderly are silent, and even their suicide cannot trigger much condemnation towards their children, while the younger generation have become the main force of "public voice" in the village and have the power to decide their old parents' lives.

There are several frequently used strategies during this justification process.

I. Emphasizing on the difficulties of the adult children

Undeniably, the middle-age generation have experienced great hardships in this highly competitive social environment; nonetheless, through overly laying weight on this objective factor, they intend to challenge the traditional moral condemnation towards them if their parent ever commits suicide. Typically, the explanations for not giving money or care to their old parents are often noticed in their causal language: "It has been already not easy to feed his wife and children, prices keep rising, and everything costs a lot. However, we still need to have what others have, since we are living in the same village right next to each other" or "One child is at middle school and the other one is at high school, so we are right in this period of time requiring lots of money. It's not that we do not offer food or clothes to our parents, but we are having difficulties and they (parents) can understand." Strikingly, similar statements do not merely come out of the younger generation, but from the elderly as well.

As for the elderly who are living alone in the village since their children have become the migrant workers in big cities, the ignorance towards them has already been taken for granted. "If they (the elderly) cannot move anymore and have to lie in bed, it will be bad for not only themselves but also for their children. Specifically, the worst thing is when they have developed chronic disease, they will not die in a short time, but apparently their children cannot be there every day just to look after them. Moreover, it is also impossible to hire someone to take care of the elderly, since it is costly; on the other hand, the overall family condition will be worsened if their children do not go out to work." .

II. Focusing on the "badness" of the elderly

This is mainly used when discuss the issue in families with frequent conflicts between the elderly and the children. By attributing the blame to the elderly, the younger generation can evade their own responsibilities and even be portrayed as the victims. For instance, several middle-aged interviewees said repeatedly that "It's not only the problem of their children, he (the elderly) is just too difficult to get along with. He does not know how to be a 'proper' old man and ruins the relationship within his family." In some cases, their personalities may be the trigger of the death penalty. "She (the elderly) has a strong character, and we neighbors do not like her, let alone her children. It would be a relief for everyone if she could die early." Thus, for the sake of others, the elderly who end their own life are

just doing a right thing, since they should not have lived that long.

III. Concentrating on the "goodness" of the adult children

While emphasizing on the "badness" of the elderly, the "goodness" of the adult children is also frequently mentioned. When informants commented on the family in which an elderly had committed suicide, many expressed that "his (the elderly's) son is a very nice guy, all people in the village get along pretty well with him. Of course, he himself does not want this to happen."

IV. Stressing the government's responsibility for elderly care

During the fieldwork, a majority of the villages, either the family member of the elderly who ended their livers or other unrelated villages, claimed that this suicide issue was not individual problem, but a social issue, and there was no solution if government did not help. Meanwhile, multiple informants had expressed their idea in a frank way: "we do not even have enough money to support ourselves (referring to their core family), can the government give more subsidy to the elderly?" Several villagers complained about the dereliction of local officials and said that, "our country really needs to solve the problem of the elderly group in future decades, but we cannot count on children, and the government should find a way to gather the elderly together so that they can have something to do and have some fun. Only in this way can the family burden be alleviated partially. Otherwise, suicide is unavoidable with the assistance from the government policy." These statements, to certain extend, have eliminated the responsibilities of the middle-age generation.

V. Underlining the morality of the elderly suicide behavior

The term that "They (the elderly) are really doing a great deed to help their children by ending their life" has defined the suicidal behavior as one of the last favors that they can do to their children, suggesting that suicide is a noble act to realize their own physical weakness and that they are actually a hindrance to the whole family. Typically, being aware of this point has marked a higher state of morality, and these selfless men/women will enjoy complement and even become the role models in the village. On the contrary, those who do not want to give up their lives are likely to be disdained and despised. It is probable that the daughter in-law will curse the elderly of "Why are you still wasting our food? Look at others who had drunk pesticides! Why can't you do the same?" What's more, criticism towards them also happens in the gossip within the village, saying "These people only care about themselves, and they are too selfish for not thinking about their children." In some case, the elderly who insist clinging to their lives are deprived of the living space under this moral standard,

since ending their own lives has been considered as the greatest morality.

To sum up, exculpation and shift of responsibility of the adult children, along with the glorification of the self-sacrifice of the elderly has consisted the demoralization strategies. The whole system relies on the sympathetic consensus shared by the lower class in rural society, which aims to eliminate the psychological burden on their younger generation, and eventually encourages the elderly to initiate their own suicide.

5. A Conclusion

As mentioned previously, peasants tend to maximally use what they can integrate and mobilize into the competition in the face of great pressure, and those who fail to make contribution and continuously consume the limited resources have turned out to be the encumbrance. The peasants are wishing for more labor forces, more income and less white elephant, since only in such a way can they achieve success in a faster way than other fellow villagers. The priority under this intense environment will create the possibility for the seemingly rational justification, which was that, those who can no long make contribution will not have any saying regarding family issues and will be judged and criticized. Typically, the elderly are the first to take the brunt, since they are no longer as productive as they are in previous days, let alone many of them have suffered from diseases and require intensive care by other labor forces in the family. In this way, to measure the benefits over the costs to determine the best way to maximize the utility may seem to be understandable at a glance.

Taken together, it can be judged from the above analysis that generational exploitation accounts for the direct cause of elderly suicide. Most frighteningly, people take plain attitude towards it. Gradually, it has grown into a mechanism to justify the suicidal behavior among the elderly, and further, it will deny the entire problem to make it nothing but normal. Through such “demoralization”, it seems acceptable and reasonable to exploit the elderly. Moreover, it will in turn encourage the more frequent and public occurrence of such exploitation, without any sense of guilty. In human security, seven key dimensions are often included: economic, food, health, environmental, personal, community, political, and more flexibly, also refers to the freedom of fundamentals. In the central, is the idea that people have the “the right to live in freedom and dignity, free from poverty and despair… with an equal opportunity to enjoy all their rights and fully develop their human potential (UN General Assembly, 2012).” Here, despite of the fact that some of the elderly are ignored and deprived of the basic human needs, let alone having dignity; they themselves turned out to show no complaint nor anger when talking about their life in despair. They are trying to view their own condition from the perspective of

“thinking for the children” instead of making demands for themselves. For a majority of the villagers, the criterion to judge whether a child is treating his/her parents well is that “he/she has never beaten them (the elderly)”. Moreover, for the elderly that are abused by their adult children, they do not cry or curse, instead, they will find excuses to defend them. No matter which class that the elderly belong to, their behavior code and the language aim at not causing any trouble or extra work for their children, and they “don’t want to be the burden”. They never think about that they deserve more patience or care, to say nothing of fighting against it, and they just take in the heavy load from their children and absorb it by squeezing themselves. They are constantly struggling to absorb the feeling of anxiety and insecurity by themselves, with little assistance from others---if they fail, their final solution is to end their own lives.

On the other hand, we must realize that this rationalist way of interpreting younger generation’s behavior does not necessarily explain why the elderly didn’t come up with a counter-measure when facing the exploitation, which requires further study and discussion.

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Managing Civilian Nuclear Safety in China: Problems with Administration and Legislation

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Abstract

In the worldwide backlash against nuclear power after the 2011 Fukushima accident, China has stood out for its booming nuclear energy industry. China is now one of the world's biggest civil nuclear power operators, and will exert stronger impact on the global nuclear market. The expansion of nuclear industry is accompanied by growing risks of nuclear accident damage, therefore pressing for a mature state nuclear safety management system. China passed its first Nuclear Safety Law in 2017, marking its hard work to enhance nuclear safety. However, the country's nuclear safety awareness as well as policy measure still lags behind world progress.

My paper aims to examine how China approaches nuclear safety, focusing respectively on its nuclear administration and legislation systems. I argue that despite the abundant progress achieved in both fields in recent years, various problems persist and perplex the safe development of China's nuclear industry. On the one hand, the state nuclear administrative system suffers from ineffectiveness and inefficiency as a result of the lack of an independent nuclear safety authority, the fragmentation and overlapping of responsibilities between regulatory bodies, and the complicated government structure and rigid hierarchy. On the other hand, the nuclear safety legislation remains incomplete and immature. I also contend that compared to the administrative system, a reform can and should come more efficiently and effectively in the legal sphere. The state should build a comprehensive and effective nuclear safety legal mechanism by accelerating the legislation process, establishing specialized laws on key issues like nuclear damage compensation, specifying concrete and feasible provisions for each issue, and engaging more with the international nuclear safety legal regime.

Keywords: China, civilian nuclear safety, administration, legislation, damage liability.

1. Introduction

Since the 1950s, nuclear energy has been widely adopted and developed by countries around the world. This clean, cost-effective alternative to traditional energy sources offers an ideal way to deal with energy shortage and environmental deterioration caused by fast, large-scale economic development and excessive consumption of fuel. The number of world nuclear power plants peaked in 2002 at 438, and the total installed capacity reached its highest in 2006 at 368 GW. As of 2017,

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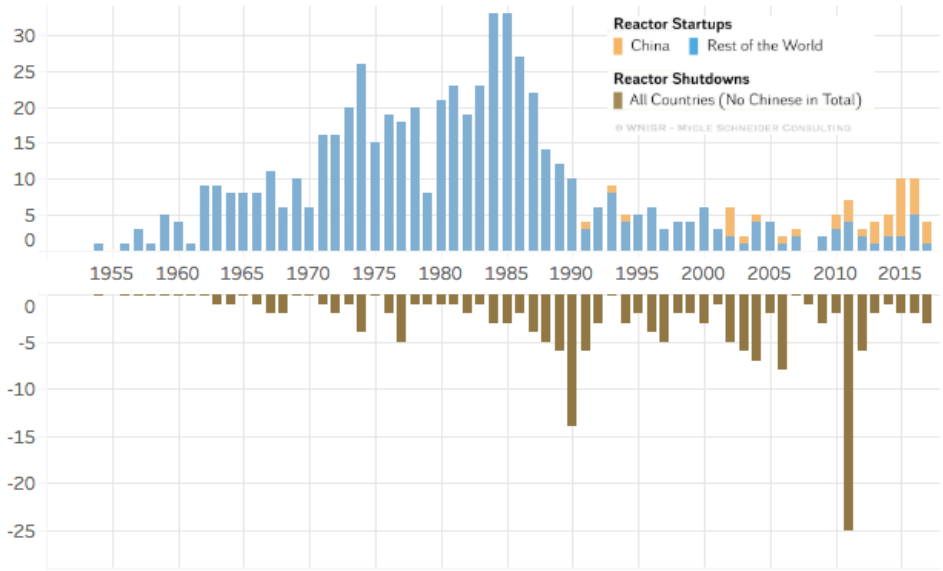
about 403 power reactors were operating in 31 countries, generating 10.5% of the world's electricity. The total installed capacity was 351 GW, providing the world's second largest source of low-carbon power.[2] However, decades of euphoria faded when several major nuclear power plant accidents caused massive loss of life and monetary cost. Especially after the Fukushima Daiichi nuclear disaster in 2011, serious concerns were raised worldwide over the issue of nuclear safety. Governments started shutting down nuclear power plants and calling off new development programs. From 2013 to 2017, the number of units under construction declined continuously, and more efforts have been put into developing renewable energy like wind and solar power.

In the midst of the global backlash against nuclear expansion, one country stands out as exception. China, after the Fukushima incident, only shortly suspended its nuclear projects, and soon resumed construction. As is shown in the graph below, China took up the majority of nuclear reactor startups of the world since 2011. In 2016, China put into operation five reactors, half of the world's total. It also launched two of the world's three constructions. At a capacity of 4.6 GW, China installed more nuclear capacity than any other country, as is the same in the previous year.[3]



Nuclear Reactor Startups and Shutdowns in the Worlds (In Units, from 1954 to 31 December 2017).

Source: World Nuclear Industry State Report

[2] Schneider and Froggatt 2017.
[3] Ibid.

China has also actively engaged in technological development and innovation. Through decades of research and practices, China has grown from a nuclear power technology importer to a largely self-sufficient country in reactor design and construction. It is now leading world exploration of generation III nuclear power technology, and is pursuing technology exportation.

However, despite the rapid expansion of nuclear energy industry, China's development in the awareness and measures to ensure nuclear safety lags behind world progress. In fact, it was not until 2017 when the first Nuclear Safety Law was passed that the concept of nuclear safety was initially put forward in the legal sphere. This paper aims to examine how China approaches and guarantees nuclear safety, with focuses on the nuclear-related administration and legislation systems.

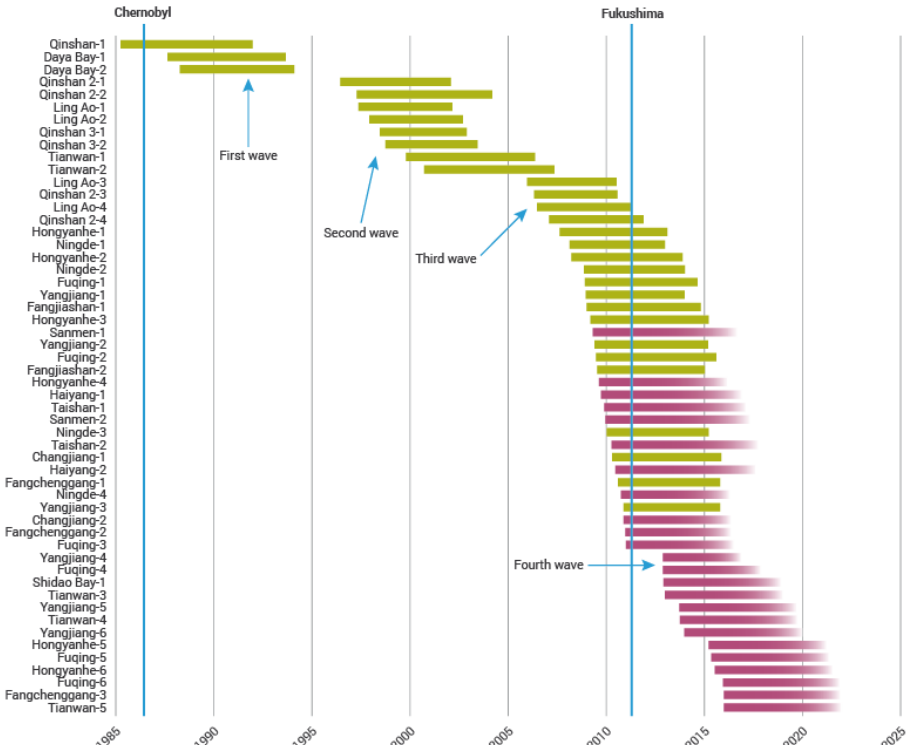
The second section of the paper reviews the rapid evolution of China's nuclear industry and the relatively slow development of nuclear safety awareness, and points out how such imbalance poses threat to human security. Then, it moves on to examine two pillars of the state's nuclear management: government regulation and legislation, and reflect on their deficiencies respectively. As a conclusion, I argue that despite the abundant progress achieved in both fields in recent years, various problems persist and threaten the safe development of the China's nuclear industry: While the state nuclear administrative system is perplexed by ineffectiveness and inefficiency as a result of inter-departmental overlapping of responsibilities and excessively complicated intra-departmental structure and hierarchy, the nuclear safety legislation suffers from incompleteness, abstract provisions, and lack of maneuverability. I also suggest that compared to the regulatory system, a reform can and should come more promptly and thoroughly in the legal system, including establishing more specialized laws on the important issues concerning nuclear safety, and engaging more in the global nuclear safety legal regime.

2. Evolution of Nuclear Industry and Nuclear Safety in China

China started its nuclear research and development project in 1955, with an exclusively military purpose. For the following two decades, the newborn state achieved remarkable progress in nuclear weapons, detonating its first atomic bomb in 1964 and launching the first nuclear missile in 1966. One year later, the first hydrogen bomb test achieved success, and in 1970, China launched its first nuclear-powered submarine. The military program built a solid nuclear science and technology foundation for the country's civilian nuclear industry to be developed later.

China's economic reform took place in 1978, driving the country towards market-oriented economic development. The nuclear industry also started its transition from a military focused

program to a combination of military and civilian purposes. In 1985, China launched the construction of its first nuclear power plant, Qinshan Nuclear Power Plant. The project was located in Haiyan County of Zhejiang Province on the country's southeastern coast, and was put into operation in late 1991. In the following 15 years, 5 more power plants were built and put into use. In 2007, The State Council of China approved the "Medium- and Long-term Nuclear Power Development Plan (2005-2020)", which outlined the country's goal to increase its total nuclear installed capacity to 25 GW by 2015, and to 40 GW by 2020 with an annual electricity generation at 260-280 billion kWh.[4] Since then, nuclear construction accelerated, and the industry expanded quickly.



Three waves of nuclear power plant construction from 1985 to 2016. Red= estimated completion.

Source: "Nuclear Power in China".

According to the "China Nuclear Power Development Report", produced by the China Nuclear Energy Association and released in April 2018, by the end of 2017, China owned 37 nuclear units in operation, about 20 under construction, and more about to start construction. The scale ranked 4th in the world. Also, the total installed capacity reached 35.81 GW, and 247.47 billion kWh of electricity were generated from nuclear sources. The nuclear power capacity takes up 3.94% of the national total

[4] National Development and Reform Commission of the People's Republic of China, 2007.

electricity demand, ranked 3rd in the world.[5]

Technologically, China has also grown from an importer to a world top designer, constructer, and operator of nuclear reactors in the past few decades. It is leading world's Generation III reactor design and construction with its home-grown Hualong One technology. In December 2018, China's Taishan 1 EPR reactor entered commercial operation, marking the first generation III+ nuclear reactor to be able to do so. After 2012, China has been actively pursuing the exports of nuclear technology and equipment. In October 2013, the National Energy Administration of China put forward the nuclear power "go global" strategy.[6] The plan later became an important part of its Belt and Road Initiative. So far, China has been investing in relevant projects and constructing nuclear facilities in nearly 20 countries like Pakistan, the UK, and Argentina.

Accompanying the rapid expansion of domestic and overseas nuclear construction comes the increasingly pressing demand for nuclear safety assurance. For the past several decades, China has maintained a relatively high level of safety for all the nuclear power plants, and no major nuclear accident has taken place. This is partly due to its focus on technological development. However, while advanced technologies can greatly enhance the safety of nuclear reactors, there is no guarantee that no accidents can ever happen. On the one hand, the "myth of absolute safety" of nuclear energy has long been broken. One needs only take a look at the 2011 Fukushima Daiichi nuclear accident to know that. The human impact of the Fukushima nuclear meltdown was disastrous: 160,000 residents were displaced from Fukushima, and the return, healthcare, and damage compensation for these people remains an issue unsolved even today.[7] Compared to the Fukushima prefecture, which is a relatively underdeveloped and marginalized area in Japan, the locations of nuclear power plants in China, that is, eastern and southeastern coastal areas, are mostly economically developed and densely populated. For example, Guangdong province, which hosts three operating nuclear power plants and two more under construction, has a population of 113 million, ranking first in China, and a GDP of CNY 9.73 trillion ($1.4 trillion), also first in China, in 2018,[8] and Zhejiang Province, which also hosts three operating power plants and two under construction, has a population of 57 million and a GDP of CNY 5.6 trillion ($ 849 million) in 2018.[9] Were any accidents to happen to any one of these plants, the damage to the local residents would be beyond imagination. Besides, as most of the power plants are built along the western Pacific Ocean, any nuclear and radiation accident would not only endanger the

[5] China Nuclear Energy Association, 2018.
[6] National Energy Administration of China, 2013.
[7] "Fukushima Daiichi in 2016: The social consequences of the accident."
[8] See "Population size of Guangdong tops list of Chinese provinces for 13 consecutive years." *People's Daily Online*, 06/18/2019. And Jing, 01/30/2019.
[9] See the Peoples' Government of Zhejiang Province, 2019.

lives of local people, but also pose grave threats to the environment and population of other countries in the region, including Japan and the Korean Peninsula.

Sites of nuclear power plants in July 2018.

Source: "Nuclear Power in China".

On the other hand, the special development trajectory of China's nuclear power technology also raises specific concerns for the safety of the industry. First, China's nuclear reactors have adopted Generation II, III, and III+ technologies, some imported from foreign sources like French, Russia, Canada, and the U.S., and some independently developed. The hybridity of technologies and safety standards increases the difficulty for state and local safety management. Secondly, the period of development of civilian nuclear industry is relatively short in China, therefore, many problems, like the storage and disposal of radioactive waste, are not immediately apparent yet, but will emerge as tough issues soon in the future. Thirdly, the achievement and application of technological innovation also means that little experience would be available from foreign countries. Therefore, it is necessary to be especially cautious in ensuring safe construction and operation and proactive in formulating emergency response plans.

However, it cannot be ignored that the country's development of awareness of nuclear safety and

concrete measures to ensure security and handle emergency lag, at least to certain degree, behind world process. Take the "Medium- and Long-term Nuclear Power Development Plan (2005-2020)" (shortened as the Plan henceforth) submitted by China's National Development and Reform Commission (NDRC) and approved by the State Congress for example. The Plan formulated in concrete details the prospects of the nation's nuclear technology development, equipment manufacture, power plant site selection, construction arrangement, resource exploitation, investment budget, and so on for the coming decade. However, on the topics of nuclear safety assurance, emergency preparedness, and emergency response, the Plan only generally and vaguely mentioned that the state should:

> Strengthen governmental supervision over nuclear safety according to law, reinforce safety law enforcement and regulation; expand input of manpower, money, and material sources in nuclear safety supervision and regulation, cultivate advanced nuclear safety culture, carry out active nuclear safety research, continue the construction of nuclear emergency system, formulate accident prevention and management measures, construct and maintain effective defense system against radiation hazard. … Improve nuclear power safety laws and regulations, complete the Atomic Energy Law and its supporting laws and regulations as soon as possible.[10]

However, the Plan did not prescribe any concrete, feasible measures for improving governmental supervision over nuclear safety, accelerating relevant legislation, or building effective emergency prevention and management system. In addition to lack of administrative attention, the public awareness of nuclear safety issue also remained relatively weak for a long time. It was not until the Fukushima nuclear accident took place in 2011 that nuclear safety was brought to the forefront of both the Chinese government's and public attention.

The disaster in Japan warned the world about the possible destructive power of nuclear industry. China, as Japan's neighbor, was no less shocked than any other country. Shortly after the catastrophe took place, the Chinese State Council ordered a halt to the examination and approval of new nuclear projects, started an overall review of the nation's nuclear industry safety, and adjusted its nuclear development plans to keep a relatively mild pace. In the meantime, public concern over nuclear safety grew rapidly, raising questions over the reconsideration of the country's nuclear ambitions, demanding more measures to ensure nuclear safety, and pressing the government to enhance policy transparency. The approval and construction of new power plants was resumed in 2012, but since then, the safety of nuclear power has been highlighted in every nuclear development plan of the country. In 2013, the government published the Sixth National Report Under The Convention On Nuclear Safety, reiterating

[10] National Development and Reform Commission of the People's Republic of China, 2007.

the basic principle of "safety first" in the development of nuclear industry, and attaching special importance to the national "Nuclear Safety Program" which set long-range objectives for safety regulation, legislation, and emergency preparedness and response by 2020.[11] In the same year, China's National Nuclear Safety Administration (NSSA) agreed with its Japanese and South Korean counterparts to form a transnational cooperative network on nuclear safety, including quick exchange of information in case of nuclear emergencies. In 2014, the NSSA further signed an agreement with the Nuclear Energy Agency (NEA), a specialized international agency under the Organization for Economic Cooperation and Development (OECD), promising to share experience on the effective regulation and oversight of nuclear safety.[12]

owever, despite the vigorous governmental efforts and wide public demand to ensure and enhance nuclear safety, many problems still persist and threaten to endanger the country's ability to maintain nuclear security and handle nuclear emergency. The next two sections examine two pillars of China's nuclear safety management, namely government administration and legal system, point out existing problems, and suggest possible ground for improvement.

3. The Nuclear Regulatory System of China

Before the 1978 economic reform, China's military-oriented nuclear program was managed entirely by the central government. The Ministry of Nuclear Industry (MNI) was founded in 1955 as a government bureau for national nuclear industry. In 1984, China joined the International Atomic Energy Agency (IAEA), and established the National Nuclear Safety Administration (NNSA) to supervise and manage the operation of civilian nuclear facilities. In 1988, the MNI was reorganized into China National Nuclear Corporation (CNNC), a state-owned but self-supporting economic corporation. This transformation represented the larger post-reform trend of nuclear industry marketization in China, which produced several national nuclear conglomerates. In addition to CNNC, other major nuclear power developers and operators include China Power Investment Corporation (SPIC), China General Nuclear Power Group (CGN), and State Nuclear Power Technology Corporation (SNPTC).[13]

The nuclear enterprises operate under the direct management of China's central authorities. The government regulatory system is composed of multiple departments, bureaus, and sections. They

[11] International Atomic Energy Agency, 2013.
[12] World Nuclear Association, 2018.
[13] Zhou et al 2011, 775.

together undertake the job of planning, approving, licensing, and supervising reactor projects, as well as providing the basic guarantee for nuclear safety management. The major regulatory bodies include the National Nuclear Safety Administration (NNSA), National Energy Administration (NEA), and China Atomic Energy Authority (CAEA).

The NNSA was established in 1984 under the Ministry of Environmental Protection (MEP), which was reformed into the Ministry of Ecology and Environment (MEE) in 2018. It is responsible for licensing nuclear reactors and inspecting nuclear power plants, nuclear materials, and nuclear activities. The NNSA also serves as the regulatory body for nuclear safety in China, implementing the unified and independent regulation of the nuclear safety of nuclear power plants throughout the country.[14]

The NEA operates under the NDRC and is the administration department of energy industry in China. Within NEA's 12 internal departments, the Nuclear Power Department is responsible for nuclear-related administration. NEA's duties in the nuclear sector include drafting and implementing developing programs, relevant laws and regulations; putting forward the layout of nuclear power and review opinions on major projects; organizing, coordinating, and guiding nuclear research; organizing and promoting international cooperation and intergovernmental exchange; and organizing emergency management of nuclear power plants.[15]

The CAEA operates formerly under the administration of the Commission of Science, Technology and Industry for National Defense, and now under the Ministry of Industry and Information Technology (MIIT). Domestically, the CAEA is also known as the State Administration for Science, Technology and Industry for National Defense (SASTIND). It is responsible for organizing, coordinating, and supervising nuclear research projects; drafting and implementing nuclear policies, regulations, and developing programs and plans; controlling nuclear materials and protecting nuclear facilities; reviewing and managing nuclear export; facilitating international communication and cooperation; and undertaking emergency management in case of nuclear accidents.[16]

Other main actors in the national nuclear administrative system include the Nuclear Accident Emergency Response Coordination Committee, which is led by the SASTIND, the National Health and Family Planning Commission, Ministry of Finance, Ministry of Foreign Affairs, Ministry of Public Security, Ministry of Civil Affairs, Ministry of Transport, Ministry of Health, and State

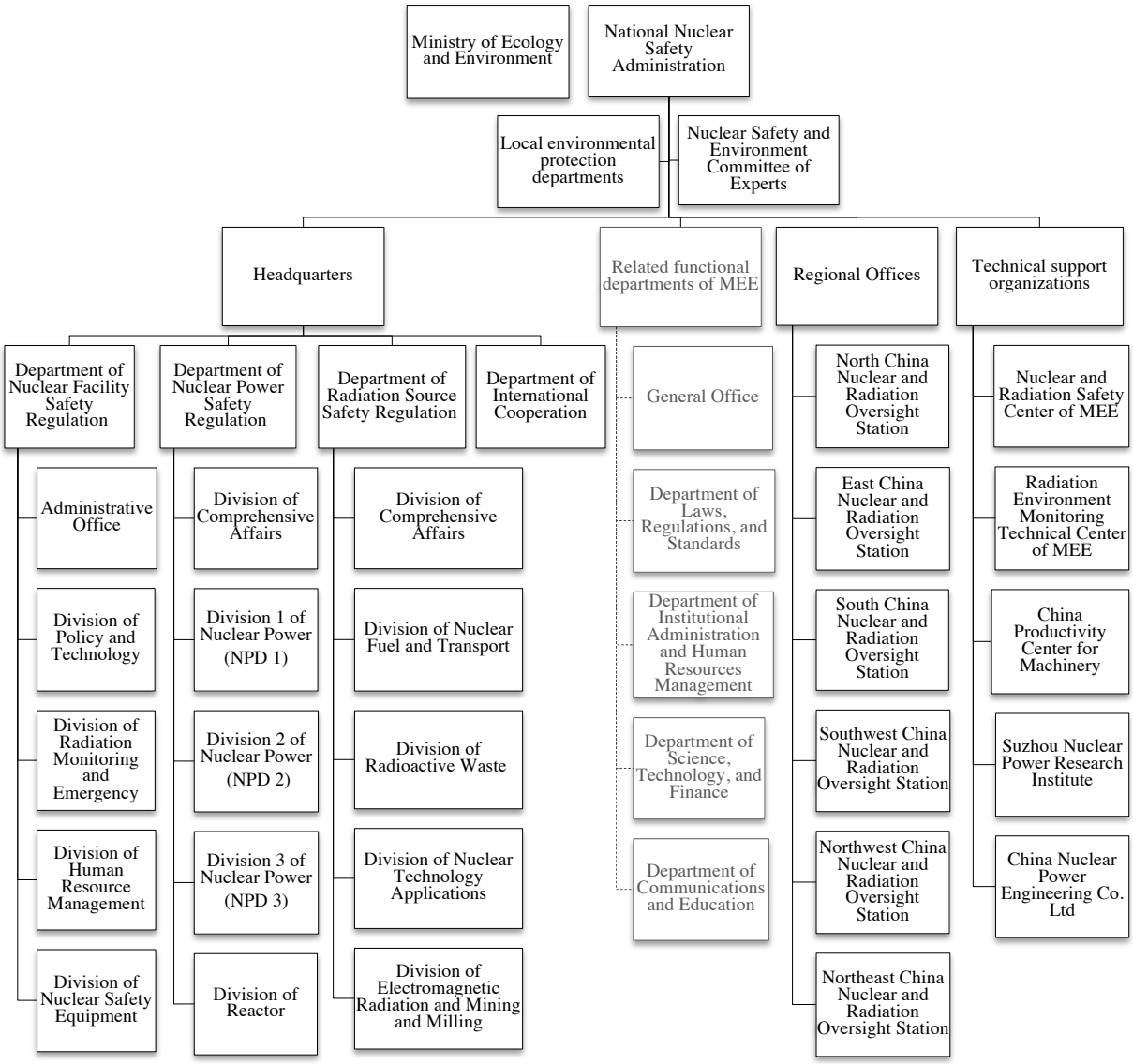
[14] International Atomic Energy Agency, 2016.
[15] National Energy Administration.
[16] International Atomic Energy Agency, 2016.

Administration of Work Safety.

Several problems hinder the effectiveness and efficiency of the national nuclear regulation. First, the leading nuclear management authority, NNSA, is affiliated to the MEP or now MEE, which results in its lack of independence in terms of human resources, financial sources, and dealing with foreign affairs. Without a nuclear safety authority independent of any other ministry or commission under the State Council, it is difficult to develop uniform, strong, and therefore efficient and effective regulation measures.

Secondly, the repetitive institutional reform within the central government over the years led to serious overlapping of responsibilities and functions between different regulatory bodies in the area of nuclear safety management and supervision. For example, the NEA and the SASTIND have overlapping functions in managing nuclear materials. Also, the ambiguous differentiation between civilian nuclear facilities and military nuclear facilities leads to possible conflicts between the performance of functions by the NNSA, which manages the civilian nuclear industry, and the SASTIND, which oversees the development and operation of military nuclear industry. In addition, the division of duties and authorities in nuclear emergency preparedness and response between the NNSA and the SASTIND remains unclear, as one of the major functions of the SASTIND is to take the lead in planning and coordinating national nuclear accident emergency preparations and rescue work,[17] while the NNSA also has three Divisions of Nuclear Power, which are responsible for the investigation and treatment of incidents and accidents at respective nuclear power plants, and a Division of Radiation Monitoring and Emergency (also called Nuclear and Radiation Accident Emergency Office), which is responsible for supervisory monitoring of key nuclear facilities and radiation sources, and public information preparation and dissemination about nuclear and radiation safety regulation.[18] The fragmentation and overlapping of power and duties render individual departments unable to fully wield their authorities or perform tasks, and also lend them excuses for buck-passing and inaction. This greatly undermines the effective implementation of nuclear safety policies and regulations, and could very likely lower the efficiency of emergency response if a nuclear accident takes place.

[17] See the State Council of the People's Republic of China, 2013.
[18] National Nuclear Safety Administration of China, "About NNSA- Organization Structure".



Structure of the NNSA[19][20]

[19] See International Atomic Energy Agency, 2016, National Nuclear Safety Administration of China, "About NNSA-Organization Structure", and Ministry of Ecology and Environment of the People's Republic of China, 2016.

[20] The NPD1 is responsible for the licensing and regulatory oversight of nuclear power plants, research reactors and critical devices with respect to nuclear safety, radiation safety, environmental protection, in addition to the investigation and treatment of the incidents and accidents at related nuclear power plants.

The NPD2 is responsible for the licensing and regulatory oversight of modified reactor nuclear power plants during their siting, construction and operation with respect to nuclear safety, radiation safety, environmental protection, in addition to the investigation and treatment of the incidents and accidents at related nuclear power plants.

The NPD3 is responsible for the licensing and regulatory oversight of novel reactor nuclear power plants during their siting, construction and operation with respect to nuclear safety, radiation safety, environmental protection, in addition to the investigation and treatment of the incidents and accidents at related nuclear power plants.

The lesson can be learnt from Japan. Although the direct cause of the Fukushima nuclear meltdown was a violent earthquake and an ensuing tsunami, both the Japanese and international society admits that the inherent weakness of the country's nuclear organization and regulatory mechanism hampered the response operations after the accident took place. The IAEA Director General's Report on the Fukushima Accident in 2015 pointed out that in Japan's regulatory framework, "[r]esponsibilities were divided among a number of bodies, and it was not always clear where authority lay." The National Diet of Japan, in its own report on the Fukushima nuclear accident in 2012, also admitted that the disaster was "made in Japan", in that the ineffective cooperation between the operator, the regulatory bodies, and the government body hindered them from taking preventive measures before the March 11 natural disasters, and the ambiguous boundaries defining the roles and responsibilities of the relevant parties impeded timely and efficient emergency response operations after the crisis took place, resulting in the situation's continued deterioration. Although the nuclear organizational and regulatory system of China is different from that of Japan, they share similar defects in the division of authority and responsibility among regulatory parties. To learn from the Japanese lesson, China should take proactive measures, reform relevant nuclear regulatory bodies and clarify the system's function mechanism so as to enhance the country's emergency preparedness and crisis response ability.

Thirdly, overly complicated structural composition and hierarchical system within each administration body lead to protraction and inefficiency in both the top-down decision-making process and the bottom-up emergency report process.

However, it should be noted that the problem of fragmented and overlapping distribution of power and responsibilities between different ministries and departments, as well as the complicated and hierarchal organizational structure within each institution, is not unique to the nuclear sector. Rather, these defects have long perplexed the authoritarian state's regulatory system in every field. Is should also be noted that the Chinese government has carried out several rounds of institutional reform to address these problems. From the 1980s, when the national Reform and Opening-up started, to 2019, eight rounds of major State Council Institutional Reforms have taken place.[21] After the 8th round of reshuffle in 2018, the State Council had 27 ministries and commissions apart from the General Office, down from over 100 before the first round of reform in 1982. Nevertheless, there remains a long way to go to achieve a fundamental solution to low working efficiency, inaction, buck-passing, and prolonged decision-making in all government sectors, including the nuclear related ones.

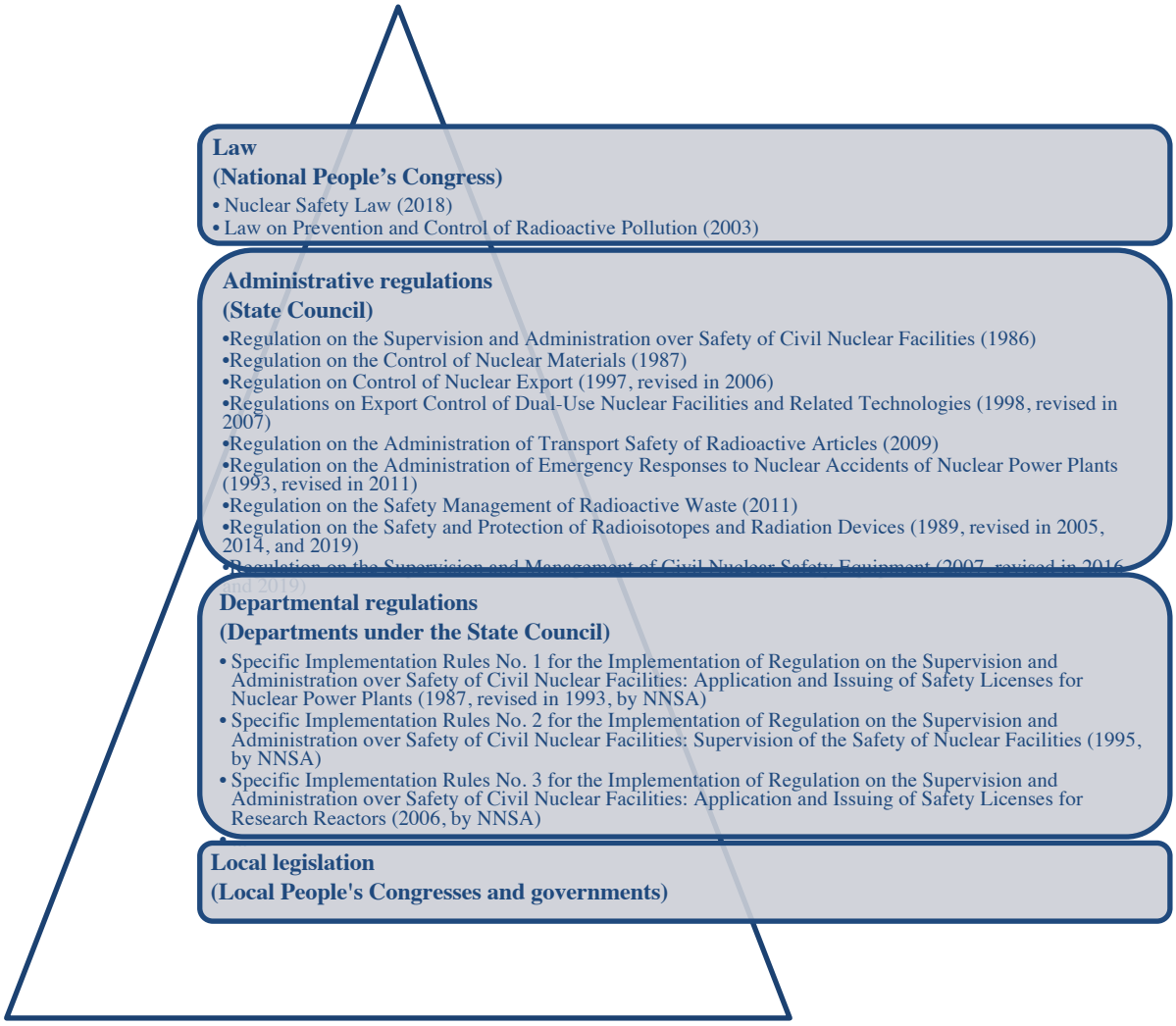
[21] The eight rounds took place respectively in 1982, 1988, 1993, 1998, 2003, 2008, 2013, and 2018.

4. Legal Instruments: A Case Study on Nuclear Damage Liability Legislation

If the problem with China's nuclear safety bureaucracy is the overly complicated structure as a result of prolonged and repeated institutional reform, then the legal system of the state's nuclear safety management suffers from late start, slow development, immaturity, and incompleteness. Nuclear safety related legislation in China, like the legislation of other specific issues, comprises laws and normative documents including administrative rules and regulations and departmental rules and regulations at the state level. Laws are made by the National People's Congress, China's national legislature, and have the highest legal power behind the Constitution and basic laws.[22] Administrative rules and regulations are made by the State Council, namely the central government. Departmental rules and regulations are mare by departments under the State Council according to and in order to help enforce respective laws and administrative rules and regulations. Under the state level, there are also local rules and regulations issued by respective provincial- and sub-provincial level administrative divisions. Currently, there are two laws in China concerning nuclear safety, namely the Law on Prevention and Control of Radioactive Pollution enacted in 2003 and the Nuclear Safety Law newly enacted in 2018, 9 administrative regulations, over 30 departmental regulations, and over 200 local rules and regulations issued by 31 provincial level administrative divisions.[23]

[22] Including administrative laws, civil and commercial laws, economic laws, social laws, criminal laws, and litigation and non-litigation procedural laws.

[23] The State Council of the People's Republic of China, 2019.



Nuclear safety-related legislation in China

China's nuclear-related legal system features a prominent lack of balance between the legislation on promoting development and that on safety risk management and damage compensation. In the world's 32 countries that have nuclear power plants, most have enacted atomic energy laws and nuclear damage liability laws in the early state of nuclear power development. Countries like the US, Canada, France, Japan, South Korea, and Taiwan have developed laws related to nuclear liability and damage compensation before the 1970s. In China, however, it was not until 2017 that the first Nuclear Safety Law was passed. Before that, issues concerning nuclear safety, emergency management, and damage liability were referred to in some relevant laws, regulations, and government documents and reports. However, related legal provisions are usually general and lack concrete measures, while the status of administrative regulations with specific stipulations lacks legal binding force. Even after the new Nuclear Safety Law was passed and enacted, the nuclear legislation still requires further revision

and improvement before a systematic, concrete, and maneuverable nuclear safety legal mechanism is developed.

Considering that nuclear safety as well as nuclear safety legislation is a complicated, multifaceted issue, here I examine one particular aspect of the issue to illustrate the general problems with the entire system. Civil liability for nuclear damage is an issue of vital importance for emergency preparedness and accident response in the industry. Currently, China's nuclear liability legislation comprises the new Nuclear Safety Law (2017), the Reply on Issues concerning Compensation Liability for Nuclear Accident Damages (2007) issued by the State Council, and some relevant provisions scattered in other laws and regulations, such as the Law on Prevention and Control of Radioactive Pollution and Tort Law.

Before the Nuclear Safety Law was enacted in 2018, only one government document provided specific provisions for nuclear damage compensation. The Reply on Issues concerning Compensation Liability for Nuclear Accident Damages issued by the State Council in 2007 was developed on the basis of a previous Reply concerning the Handling of Third-Party Nuclear Liability released in 1986. The 2007 Reply stipulates that (1) operators running nuclear power plants or nuclear facilities should bear liability for casualties, property loss, and environmental damage caused by nuclear accidents; (2) individual operators should provide up to 300 million RMB for compensation in case of nuclear accidents, and should make proper financial arrangements to guarantee the prompt and effective performance of such compensation; (3) the state provides up to 800 million RMB if the amount of compensation claim exceeds 300 million, and the limit could be reconsidered if severe damages were caused by extreme accidents.[24] This document stipulates specific compensation liability for different stakeholders, but fails to clarify concrete process or approach to compensation implementation. Also, although the 2007 Reply served for many years, and still does now, as the governmental standard and main source for nuclear damage liability, it is just an administration regulation, therefore possessing limited legal validity.

The Nuclear Safety Law, approved in 2017 and coming into effect in 2018, is China's first law that systematically lays out the guidelines, principles, establishment, and implementation of nuclear safety management.[25] The law stipulates two articles about nuclear damage compensation. Article 11 claims that citizens, legal persons and other organizations have rights to claim compensation if they suffer from nuclear damage. More specifically, Article 90 stipulates that (1) the nuclear facility operator that causes personal injury or death, property loss, or environmental damage due to nuclear

[24] The State Council of the People's Republic of China, 2007.
[25] Liu et al 2018, 2224.

accidents should provide compensation unless it is able to prove that the damage resulted from such circumstances as war, armed conflict, or riot; (2) entities which provide the nuclear facility operator with equipment, engineering or services, among others, bear no responsibility for compensation for nuclear damage; (3) where the nuclear facility operating entity has an agreement with it, it may, upon making compensation, exercise its remedy against the nuclear facility operating entity as agreed; (4) nuclear facility operators should make appropriate financial arrangements by purchasing liability insurance, participating in mutual aid mechanism and other means to ensure timely and effective implementation of compensation for nuclear damage.[26] However, both articles are relatively abstract and lack concrete and feasible measures for the implementation of compensation.

Other laws that contain relevant provisions suffer from the same problem. For example, the Law on Prevention and Control of Radioactive Pollution (2003) stipulates in Article 12 that "(u)nits that operate nuclear installations, utilize nuclear technology, or exploit uranium (thorium) and accompanying radioactive mines shall … bear the responsibility for radioactive pollution caused" and in Article 59 that "(w)here radioactive pollution causes harm to people, civil responsibility shall be borne in accordance with law".[27] However, this law, which served before the 2007 Nuclear Safety Law as the only specialized nuclear legislation, fails to provide any specific provisions for nuclear damage compensation. Therefore, it is vital and pressing that the country establish specialized legislation on nuclear damage compensation, creating clear definition and scope of nuclear damage, strict responsibility principles for different stakeholders, appropriate liability amount, stable financial guarantee for operators, and concrete, detailed, and feasible measures for approaching and implementing nuclear damage compensation.

Current Legal Framework on Nuclear Damage Liability of China

Laws	Nuclear Safety Law (Article 11 and 90) Law on Prevention and Control of Radioactive Pollution Law (Article 12 and 59) Tort Law (Article 70) General Principles of the Civil Law (Article 123) Product Quality Law (Article 73) Maritime Law (Article 208)
Administrative Regulations and Rules	Reply of the State Council on Issues concerning Compensation Liability for Nuclear Accident Damages (2007)
International Conventions	None

Source: Liu, Jiu, Bingyu Liu, and Dentao Chen (2018).

[26] Law of the People's Republic of China on Nuclear Safety (2017).
[27] Law of the People's Republic of China on Prevention and Control of Radioactive Pollution (2003).

Another problem with China's nuclear damage liability legislation is its lack of engagement in the international legal framework concerning nuclear damage compensation. Although China has actively participated in international communication in the nuclear sector and joined multiple international conventions on nuclear issues, none of them are specified on nuclear damage compensation. The established international compensation liability regime, like the Paris Convention system, the Vienna Convention system, as well as the Joint Protocol Relating to the Application of the Vienna Convention and Paris Convention, is well developed in addressing nuclear damage, and has attracted many states to join.[28] So far, China is not party to any of these international legal instruments on nuclear damage liability, so it is strongly suggested that enhancing engagement with the international framework would accelerate China's legal construction and perfection on this issue.

China has long realized these defects and has been trying to improve its legal system on nuclear safety management. In September 2018, China's Ministry of Justice published a draft Atomic Energy Law for public comment. The proposal contains 8 chapters, among which Chapter 5 focuses specifically on Safety Supervision and Management and Chapter 7 addresses Legal Liability. If this law is formally approved, it will mark another major step for China's nuclear safety legislation, as it would, on the one hand, provide a comprehensive authoritative guide for China's nuclear energy operation and development, and on the other hand, further establish the importance of strengthening nuclear safety and especially clarifying nuclear damage liability. However, a closer look at the draft Nuclear Energy Law would expose that the problem of ambiguity remains insufficiently solved. For example, Article 50 of Chapter 7, which deals with nuclear damage liability, states simply "where nuclear incidents cause personal injury or death, property loss, or environmental damage, complementation shall be made in accordance with law".[29] However, as of today, no such special law on nuclear damage liability has been established to support this general stipulation.

To conclude, China's laws and regulations concerning nuclear damage compensation suffer from either low legal authority or abstract provisions. To address these problems, the state should, on the one hand, establish a specific, systematic, and maneuverable liability mechanism with specialized nuclear damage compensation laws, and, on the other hand, take advantage of the existing international legal regime of nuclear damage to facilitate its own legal construction.

[28] Liu et al 2018, 2225.
[29] Law of the People's Republic of China on Atomic Energy (Consultation Paper).

5. Conclusion

China's nuclear energy industry boomed after the mid-2000s. In the worldwide backlash against nuclear power after the 2011 Fukushima accident, China stands out for continuing building new power plants, and setting more ambitious nuclear development goals. China has now become one of the world's biggest civil nuclear power operators, and will exert stronger impacts on the global nuclear market as a customer and as a potential supplier. The expansion of nuclear industry is accompanied by growing risks of nuclear accidents, which points to an imperative need for higher safety level guaranteed by a complete and mature state nuclear safety management system. Although China has been working hard in multiple fields to ensure the safety of the nuclear industry, various problems still perplex the state nuclear bureaucracy and legislation, hindering their effectiveness. As of the governmental regulatory system, the major concerns lie in the lack of an independent nuclear safety authority, the fragmentation and overlapping of responsibilities and functions between different administrative bodies, and the overly complicated structural composition and hierarchical system within each department. These structural deficiencies could easily lead to limited administrative authority and execution power, buck-passing and inaction, and low efficiency in decision-making and policy implementation. On the other hand, the state nuclear safety legislation suffers from slow development, incompleteness, and immaturity. Specifically, existing laws and regulations concerning nuclear safety management either lack strong legal validity, or needs more concrete and feasible details.

To safeguard the healthy development of the state nuclear energy industry, both institutional and legislative reform is needed. However, comparatively speaking, a more efficient and effective reform should come first in the legislative aspect. This is due to three considerations. First, as mentioned before, the structural deficiency in the administrative system is a general problem not only existing in the nuclear sector but inherent in the state's authoritarian bureaucracy as a whole, so it is difficult to fundamentally solve the issue in a short period. Secondly, some administrative loopholes related to nuclear safety management can be filled with legislative measures. For example, the aforementioned ambiguous differentiation between civilian and military nuclear facilities can be clarified with specific legal stipulations, therefore settling the conflicts of functions between the NNSA and the SASTIND. Thirdly, over the years, updates in related legal provisions become increasing necessary to keep up with rounds of administrative reforms by the central government, for example, the gradual reorganization of the MNI as a government bureau into the CNNC as a state-owned cooperation over the decades, the renaming of the Commission for Science, Technology, and Industry for National Defense as SASTIND and merging into the MIIT in 2008, and the reform of the State Environmental

Protection Administration into the MEP in 2008, and further into the MEE in 2018. As a result, further and more active legislative construction is imperative. The state should build a systematic, comprehensive, effective, and up-to-date nuclear safety legal mechanism by accelerating the process of relevant legal construction, establishing specialized laws and regulations on important issues like nuclear damage compensation, specifying concrete and feasible provisions for each issue, learning from the advanced legislative and practice experience of foreign countries, and engaging more widely and deeply with the international nuclear safety legal regime.

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