Reflection on the Inversion of the Burden of Proof in Environmental Infringement——Pollution Analysis by Noise and Electromagnetic Radiation

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Abstract. Since the 21st century, industrialization has entered a new process, and at the same time, it has brought more environmental infringement. The traditional allocation of the burden of proof follows the principle of "who advocates who provides evidence". Due to the difficulty and complexity of proving causality, the burden of proof is reversed in environmental tort. In order to protect the vulnerable infringees in environmental tort cases, relevant laws and regulations emphasize that infringers need to bear no-fault liability. However, in practice, the inversion of the burden of proof makes most tortfeasors rely heavily on the expert opinions of professional organizations, and sometimes even become "vulnerable groups" in the evidential relationship, which leads to a large number of controversial penalties with different standards. In environmental infringement involving pollution such as sound waves and electromagnetic radiation, there are still a lot of unknowns in related research fields, which further intensifies the internal contradiction of the design of inversion of the burden of proof. Aiming at the practical problems of the inversion of the burden of proof in practice, this paper studies practical problems such as cognitive limitations, fuzzy responsibility distribution, lack of diversity, etc. Studying the environmental tort of noise and electromagnetic radiation and analyzing the application of inversion of the burden of proof will help to further improve the rules of proof of environmental tort and provide a reference for the design of subdivided laws and regulations.

Keywords: environmental infringement; burden of proof; new pollution; liability without fault.

1. Introduction

At the beginning of the 21st century, the global energy and communication market ushered in a climax with the rise of the Internet industry. A large number of new power generation facilities such as wind power and tide, ultra-high voltage transmission lines in urban areas, and super-large substations have been built and put into use, and a close and complex communication network transmits massive information through microwave base stations all over cities and suburbs. The above energy and communication facilities not only bring tangible convenience, but also bring invisible electromagnetic and acoustic pollution. For a long time, due to the gaps in laws, regulations and related health and safety awareness, electromagnetic radiation and sound wave (including ultrasonic and infrasound waves) pollution caused by communication and transmission equipment have caused a large number of cases of endangering physical and mental health. In a single field, the state has formulated measures and standards such as "People's Republic of China (PRC) Noise Pollution Prevention and Control Law" and "Electromagnetic Radiation Environment Monitoring Method of Short-wave Broadcasting Launching Station", which have reduced the electromagnetic and acoustic pollution to some extent. However, in the tort liability law, the burden of proof should be reversed when an environmental tort is involved, and it is difficult for infringers to prove themselves in most cases under the premise of no-fault liability. In order to seek solutions to the above problems, it is necessary to have a deeper understanding of the inherent contradictions of the inversion of the burden of proof. This paper selects the allocation rules of burden of proof for complex environmental pollution infringement such as noise and electromagnetic radiation to analyze, which can fully analyze the shortcomings of the current single form of the burden of proof allocation. Understanding the internal contradiction of the inversion of the burden of proof and the practical problems in practice

will help to improve the rules of the burden of proof, make them more reasonable and typological, and avoid controversial punishment caused by inconsistent standards.

2. Practical Problems of the Inversion Rule of Burden of Proof

2.1. Limitations

The important reason for the inversion of the burden of proof lies in the "complexity" of the proof of causality. Based on the consideration that it is difficult for the infringed to prove the causality positively, this paper reconstructs it on the basis of the general tort liability law to avoid this "technical" difficulty. Therefore, the recognition of "cognitive limitations" is one of the bases for the inversion of the burden of proof, and it is also the reason why the infringee only needs to provide "probable" causality. However, the inverted burden of proof means that the infringer must provide a set of complete and detailed proof elements, so as to determine that the "causal relationship" is absolutely untenable, which will greatly improve the requirements for its "cognitive boundary". Even if it is a single pollutant, there is far more than one way and path for it to affect human health and environmental ecology. Among them, a large number of paths are far beyond the scope of "identifiable" or even research. The infringer only needs to prove that one of them is true, while the infringer is required to prove that all paths are false. This means that the principle of "recognition of cognitive limitations" has not been implemented in the whole process of proof [1].

At the same time, in the scene of environmental infringement, even if the infringer has a wider cognitive range and richer professional knowledge, it is still extremely difficult to ask him to give "convincing" fair evidence unilaterally [2]. This also means that in a truly "complex" case, turning to a third party to make a neutral professional judgment has become the final and only option for the infringed, the infringer and even the judge. However, among the new environmental pollution infringement cases, Ni Xulong v. Dandong Ocean Red Wind Power Co., Ltd. is taken as an example. In the wind power project, environmental infringement can bring possible pollution sources such as light and shadow, noise and electromagnetic interference only when the wind turbine is running. The damage caused by the environmental infringement, in this case, is the death of a large number of Chinese soft-shelled turtles, in which the wind power pollution needs to be identified by the Energy Administration, and the cause of the loss needs to be identified by the Fisheries Administration [1]. However, there is no way for any existing identification agency to complete the causal relationship [3]. The complex pollution composition far exceeds the appraisal business scope of most appraisal institutions. In practice, there are very few cases in which professional appraisal can be effectively sought. At the same time, because the appraisal qualifications of relevant institutions are often limited to a single field or a single pollution factor, it is increasingly rare that the appraisal results can finally be used as the basis for the infringer to reduce or exempt his liability. Sometimes, the professional appraisal has not only failed to become a strong support, but also caused some questions. In the above-mentioned death case of Trionyx sinensis, the court entrusted the Fishery Administration for appraisal, and after the fishery administration issued an opinion that the causal relationship was not established, it was recognized in the first instance and the second instance, and the retrial was deemed invalid by the court. The repetition of similar cases eventually led to the disapproval of professional appraisal in judicial practice, and the "deduction of cause and effect" returned to the state of relying mainly on the experience of judges [2].

2.2. Distribution of Responsibilities

On the basis of the inversion of the burden of proof, the damage result and causal relationship that the infringee needs to provide should be probable. There is a correlation between the pollutants discharged by the polluter or the secondary pollutants and the damage. A certain substance can cause some kind of damage, and there is no need to give proof of the specific dose of pollutants and the damage result, and the specific causal relationship between pollution and damage. The burden of proof of causality is assigned to the infringer, so the burden of proof of causality and damage belongs

to two subjects. However, in actual operation, especially for noise and electromagnetic radiation, which are pollution factors with a "threshold" of damage, it is proved that the correlation between damage and pollutants can only be proved by technical means, and the existence of a "threshold" makes the detection itself only bring a binary conclusion. That is, whether a certain dose of pollution factors cause harm or not, essentially contains proof of causality [4]. The infringer is involved in the proof of “causality”, and the final “conclusion” is obtained by the positive (positive relevance) and negative (negative relevance) proofs. The original intention of the design of inversion of the burden of proof has not been achieved, but the distribution of the burden of proof has become blurred, thus affecting the efficiency of both parties’ proof [5]. The identification of most cases by victims is based on the inseparability of proof of damage and proof of causality, which is obviously not considered in the design of environmental tort rules.

2.3. The Lack of Diversity

In reality, in the environmental infringement related to noise and electromagnetic radiation, health and environmental ecological damage are not produced in an instant or extremely weak dose. The sources of noise and radiation are diverse, and most of the pollution emission control standards are required in the form of "the detected concentration is not higher than". Pollutants from various sources will accumulate slowly, and it will take a long process to constitute damage. Because there is only one distribution form of the burden of proof, it is difficult for the infringee and the infringer to separate the causal relationship and the damage result to prove separately when the damage results are various and the sources of pollution factors are diverse, and a certain part of pollution only causes partial and specific types of damage [6]. Taking electromagnetic pollution as an example, the pollutants and the harmful process are invisible to the naked eye, and the harmful results (mental diseases and tumor diseases) are more common and frequent in daily life than other toxic substances (often with a single and definite poisoning symptom in medicine). One harmful result may correspond to many reasons, and a single rule of inversion of the burden of proof obviously cannot match the “complexity” of the problem. Similarly, in the working process of power grid facilities, excessive radiation may cause health problems. Relevant personnel cover almost all residents, but the radiation amount has a safe threshold, and the damage can be avoided by adjusting the safe distance [7]. In this case, without detailed investigation and proof of causality, the infringee can't determine the specific infringer, and the damage can't be compensated. However, the lenient proof of probable causality only for the infringee can easily lead to excessive litigation. The rules of burden of proof for environmental infringement directly distribute the burden of proof for causality and damage to different subjects in a fixed proportion, which violates the realistic logic of things development in many cases. Article 6 of the Supreme People's Court's Interpretation of Several Issues Concerning the Application of Laws in the Trial of Environmental Tort Liability Disputes requires the infringee to provide evidence that "the pollutants discharged by polluters or their secondary pollutants are related to the damage", which to some extent also corrects the order of proof and the distribution ratio.

3. Literature References

3.1. Rationalized Liability Rules

The latest judicial interpretation of environmental tort makes it clear that even if the pollution discharge behavior has administrative legitimacy, it should bear the corresponding responsibility. In the proof of causality, the relevant judicial interpretations deny whether there is administrative legality as the reference for taking responsibility. Not only does it argue that the causal relationship between pollution and damage cannot be supported on the grounds that sewage discharge conforms to relevant administrative regulations, but it can't even be recognized by exempting some responsibilities on the grounds of administrative legality. As an important reference standard for the infringer to monitor the pollution discharge level and for the competent department of ecological environment to issue pollution discharge permits, administrative laws such as the regulations on the

management of pollution discharge permits should have corresponding evaluation functions. It is obviously unreasonable to completely ignore whether it has administrative legitimacy, and require enterprises with sewage discharge permits to bear the same responsibility as those with illegal sewage discharge. In addition, the pollution discharge regulations of relevant administrative regulations are inconsistent with the rules and standards of civil law, which leads to the lack of clear guidance for enterprises to prevent damage and avoid legal risks, which is not conducive to the management of pollutant discharge by enterprises and administrative units. In the common technical appraisal, the requirements of the relevant regulations in administrative law on the total amount and concentration of emissions are mostly obtained by authoritative organizations after a large number of comparative experiments and careful consideration of the causal relationship between pollutants and damage results, which is itself the authoritative reference value of the technical appraisal. It is contradictory to deny the evaluation function of administrative law in an all-round way, but at the same time recognize the conclusion of technical appraisal on causality. In fact, in the pollution infringement cases of electromagnetic radiation, because electromagnetic radiation is a kind of energy, and it is difficult to prove the causal relationship between electromagnetic radiation and damage, judges tend to abandon the single inversion of the burden of proof, take the initiative to refer to relevant administrative laws and creatively acknowledge the effectiveness of administrative legality in the proof, thus maintaining the value of environmental protection-related administrative laws while avoiding disputes.

3.2. Distribution of Burden of Proof for Classification

Compared with traditional air pollution, water pollution, etc., the principles of electromagnetic waves and sound waves harming human health and environmental ecology and their existing forms are unique. As sound waves and electromagnetic waves do not exist in entities, their sources are very diverse, and the values existing in the same environment can change greatly in a short time. Therefore, it is very difficult to prove the causal relationship between this kind of pollution and damage results, and the applicable tort liability rules should be different from those of traditional pollution [8]. For electromagnetic radiation and noise pollution, directly adopting the standards of administrative law related to environmental protection as the basis of punishment can not only unify the standards, and avoid controversial punishment, but also help to prevent damage and provide timely relief. In the new judicial interpretation of environmental infringement, the general environmental infringement is also gradually subdivided, and the provisions of separate environmental protection laws such as marine environmental protection law, water pollution prevention law and air pollution prevention law are applicable. If there is no provision in the relevant separate environmental protection law, the provisions of the Tort Liability Law shall apply [9]. Classifying different types of environmental infringement and applying the different burdens of proof distribution will effectively avoid the controversial penalty caused by the disunity of standards, and at the same time, it is conducive to the original intention of timely relief of the infringed and prevention of pollution in advance [10].

3.3. Core of Humanitarianism

The core of the Civil Code is people-oriented, and its greatest practical value lies in safeguarding citizens' basic rights and interests from infringement. On the basis of the limitation of technical means, the division of the burden of proof should be centered around the core of the humanitarian spirit instead of the absolute requirement of proving causality. In the current distribution of the burden of proof, taking objective causality as the only penalty standard, ignoring the subjective will of the infringer, is a direct reaction to human autonomy, and essentially violates the humanitarian spirit of the Civil Code [11]. Therefore, whether the infringer has subjective intention in environmental pollution should be taken as an important basis for the final imputation. At the same time, the single and complicated causality proves that it takes a lot of time, which makes it difficult for the infringed to get timely relief, and even easy to sustain damage. Therefore, based on the classification of laws and regulations, for some environmental infringement cases with a clear causal relationship, Judges

should try their best to remove the link of proof, determine the compensation as soon as possible, and ensure that the infringed gets relief in time [12].

4. Conclusion

The distribution of the burden of proof for environmental infringement has been tested for a long time. In many previous cases, the rights and interests of some infringed people have been effectively protected. However, with the development of the times, the changes in the situation and the emergence of new types of pollution, it is not appropriate to directly assign the burden of proof of causality to the infringer, which complicates some simple problems. For cases where the causal relationship itself is very clear and there is no causal relationship based on experience, the burden of proof can be redistributed based on the facts. Judges should further establish various separate laws on environmental protection, classify different situations, and allocate the burden of proof flexibly and accurately. No-fault liability should be reduced or exempted for the infringer who is subjective and unintentional and actually meets the relevant standards of ring arrangement. The level of science and technology will still have great limitations in the short term. The penalty of environmental infringement should keep the original intention of humanistic care, and make a compromise between the results of a scientific and technological appraisal and the experience and subjective value orientation of judges. In order to better practice the spirit of the Civil Code, judges should assume more responsibilities in the distribution of the burden of proof. In the process of actual proof, the judge should make use of the advantages of both parties in the proof of damage and causality according to the actual situation, and finally complete a fair penalty.

References

[1] Chen Jianhua. Empirical thinking on the burden of proof of causality in environmental infringement cases —— based on the perspective of judicial practice [J]. China Case Law Review, 2018(01):43-57.

[2] Zhang Xudong. Reflection and Reconstruction of Inversion of the Burden of Proof of Causality in Environmental Infringement: Legislation, Theory and Case [J]. Journal of China Geo University (Social Science Edition), 2015, 15 (05): 24-32.

[3] Liu Changxing. Deviation and Correction of Environmental Tort Rules Design —— Analysis Based on Environmental Tort Appraisal [J]. Legal Business Research, 2018, 35 (03): 63-72.

[4] Sun Lechi. Research on Causality in Environmental Pollution Responsibility [D]. Jilin University, 2021.

[5] See "Ni Xulong v. Dandong Ocean Red Wind Power Generation Co., Ltd. Environmental Pollution Infringement Dispute Case" [(2013) Liao Shen San Min Ti Zi No.45]

[6] Wang Qian. Interpretation of the Rules on the Distribution of the Burden of Proof of Causality of Environmental Infringement [J]. Law, 2017 (04): 85-98

[7] Tang Shaojun, Ma Xiaosheng. Distribution of burden of proof of causality in environmental pollution infringement litigation —— Taking electromagnetic radiation infringement case as an example [J]. Lvye, 2017(04):28-34.

[8] Zhang Ting. Reconstructing the burden of proving the causality of environmental pollution infringement —— An empirical analysis based on 619 relevant civil judgments [J]. Law, 2016(07):102-111.

[9] Shen Minglei, Luo Youcai, Wang Chengyao. Causality and value choice in electromagnetic radiation infringement cases [J]. People's Justice, 2011 (06): 68-71. doi: 10.19684/j.cnki.1002-4603.2011.06.018.

[10] Qiu Qiu Qiu. Preliminary study on the legal countermeasures of electromagnetic radiation pollution in China [J]. Radiation Protection, 2007(01):47-52+57.

[11] Chen Wei. The burden of proof from the perspective of the typology of causation in environmental tort [J]. Legal Research, 2017, 39 (05): 133-150

[12] Sun Youhai, Sun Shufen. Research on the confusion and cracking of causality and relevance in environmental health litigation [J]. Journal of Tianjin University (Social Science Edition), 2020, 22 (01): 46-51