

Discussion on the Undue Limitation of the Crime of Smuggling Human Genetic Resources Materials

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Abstract

Human genetic resources, which not only contain the secrets of human life but also have significant strategic importance, especially in the field of medical research, hold immeasurable value. Through human genetic resources, researchers may be able to explore the essence of life, with any major breakthrough potentially impacting society as a whole[1]. However, the legal protection of human genetic resources in China does not match their significant value. In recent years, China has introduced the Interim Measures for the Management of Human Genetic Resources and the Regulations on the Management of Human Genetic Resources, and has regulated them in related preliminary laws such as the Biosecurity Law, gradually advancing the legal protection of human genetic resources. In terms of criminal law protection, the crimes of illegal collection of human genetic resources and smuggling of human genetic resource materials, added in the Criminal Law Amendment (XI), undoubtedly represent the latest progress.

Keywords

Smuggling; Human Genetic Resource Materials; Improper Restriction.

1. Introduction

There are different views in the criminal law field regarding the crime of smuggling human genetic resource materials. This crime, compared to the simultaneously added crime of illegal collection of human genetic resources, is limited to human genetic resource materials. It is understandable that this is a narrowing of the scope of the crime. Human genetic resource materials refer to organs, tissues, cells, and other genetic materials containing the human genome and genes. The term "material" emphasizes its physical entity nature, as opposed to human genetic resource information, which is data and other informational materials generated using human genetic resource materials and has a non-physical, data nature. Thus, the restriction of the crime's scope to exclude non-physical human genetic resource information is understandable, rationalizing the establishment of the crime. But is it really necessary to exclude human genetic resource information? Is the specification of the crime of smuggling human genetic resource materials an undue restriction? In my opinion, there is indeed an improper restriction in terms of the object of the crime, and the explanation should start with the concept definition of human genetic resource materials.

2. Overview of the Concept Definition of Human Genetic Resource Materials

2.1. Preliminary Law Definition

Regarding human genetic resources, China has introduced the Interim Measures for the Management of Human Genetic Resources and the Regulations on the Management of Human Genetic Resources, both of which clearly define related concepts. Based on the Regulations, a

new law, human genetic resources include human genetic resource materials and human genetic resource information. Human genetic resource materials refer to organs, tissues, cells, and other genetic materials containing human genetic material. Human genetic resource information refers to data and other informational materials generated from human genetic resource materials. In short, human genetic resources include both human genetic resource materials and human genetic resource information, with the latter being generated based on the former. It's important to note that although human genetic resource information is generated from human genetic resource materials, it is not part of human genetic resource materials; instead, it has a physical nature opposite to that of human genetic resource materials. The separation of these two in the preliminary laws also confirms this.

Therefore, according to the preliminary laws, it's important to emphasize the physical material nature of human genetic resource materials, which are primarily organs, tissues, or cells containing human genetic material.

2.2. Other Definitions and Divisions

Aside from China's preliminary law perspective, there's a more narrow understanding, represented by the Convention on Biological Diversity, which considers human genetic resources to be solely human genetic resource materials, equating the two in content. In other words, it does not include derived data and informational materials in the concept, recognizing only the regularity of physical materials[2]. This understanding is logically consistent within its framework, suggesting that including derived data and information as human genetic resources might be inappropriate, hence not including human genetic resource information in the scope of protection. However, in reality, although human genetic resource information is derived from original materials, as long as it contains content of research and protection value, it must be recognized as still having the nature of genetic resources. Thus, I believe that this narrow understanding might be logically consistent in a specific context, but compared to including genetic resources in the form of data as human genetic resource information under legal protection, it is undoubtedly a more prudent approach.

If we apply the two perspectives on understanding genetic resources to the crime of smuggling human genetic resource materials, it's clear that under the narrow view, human genetic resources are just human genetic resource materials, thus limiting the crime's scope to physical materials. Under this interpretation, the crime circle would be severely narrowed, and all transnational criminal activities involving genetic resources in non-physical material forms would be unregulated; whereas if we adopt the perspective of China's preliminary laws, meaning human genetic resources include both human genetic resource materials and information, with the former giving rise to the latter yet existing independently, under this understanding, smuggling human genetic resource materials seems to become a crime specifically targeting physical genetic resources, also unable to restrict activities that provide genetic resources in data form to overseas entities.

Thus, under the premise of adapting China's preliminary law perspective, the target of the crime of smuggling human genetic resource materials seems to have deviated from the derivative data of human genetic resource information, focusing solely on smuggling bodily organs, cells, tissues, and other physical genetic materials. In this context, some propose an expanded interpretation, including human genetic resource information within the scope of human genetic resource materials of the crime, attempting to broaden the scope of the crime's objects, thereby expanding its enforcement range. [3]This expanded interpretation has its basis, as the crime of smuggling human genetic resource materials is specified within the crimes of illegal collection of human genetic resources and smuggling human genetic resource materials, with the description of smuggling activities being "illegally transporting, mailing, or carrying out of the country human genetic resource materials", implying that such actions constitute the

crime of smuggling human genetic resource materials. These actions' common feature is transporting human genetic resource materials out of the country in various ways, and compared to physical materials, data-based informational materials are easier to provide overseas at lower costs, with more available means and faster speeds. However, for data-based human genetic resource information, China only protects it under the crime of illegal collection of human genetic resources, where only after illegal collection of human genetic resource information does the perpetrator's action become regulated, which is clearly insufficient. Perpetrators are unlikely to be limited to only the crime of collection; if criminal law only targets collection actions, it cannot effectively curb providers beyond collectors, especially when co-offending is possible, and the perpetrator may be overseas, with providing actions being cheaper and less risky compared to collection actions. Thus, it's understandable why an expanded interpretation has emerged, including human genetic resource information within the scope of the crime of smuggling human genetic resource materials, implicitly regulating the act of providing human genetic resource information and other data materials overseas, thereby indirectly addressing this issue.

However, this expanded interpretation still has issues; including human genetic resource information within human genetic resource materials contradicts the initial intention of preliminary laws to differentiate the two, thus inevitably creating logical contradictions. Whether the issue is worth the risk of negating the preliminary laws' stipulations to pursue an expanded interpretation remains debatable.

3. Definition of Smuggling Activities in the Crime of Smuggling Human Genetic Resources Materials

The term "smuggling" in the legal provision of the crime of smuggling human genetic resources materials corresponds to "illegally transporting, mailing, or carrying human genetic resources materials out of the country". In the context where the object of the crime is human genetic resources materials, illegal transportation, mailing, and carrying are quite appropriate preparatory actions. However, if judicial interpretations were to expand the object of this "smuggling" to include some human genetic resource information, then these actions would clearly not cover all potential criminal objects. Therefore, defining "smuggling" within this crime is crucial; the broader the range of activities that smuggling can cover, the more effectively judicial interpretations can function.

In criminal law, "smuggling" generally refers to the act of illegally transporting goods or items across national (or border) checkpoints in violation of customs regulations to evade customs inspection. [4] Traditionally, smuggling has been associated with customs and national borders, representing the illegal movement of goods and items across countries. If this understanding is applied to the crime of smuggling human genetic resource materials, then human genetic resources materials would correspond to goods or items. Clearly, human genetic resources cannot be considered goods, but human genetic resources materials, as physical entities, are considered items. Under the conventional use of the term "smuggling" in criminal law, if the object of the crime of smuggling human genetic resources materials is not expanded, the term can still be justified. However, if there's an attempt to broaden the scope to include data-form human genetic resource information, it becomes challenging to define this information as items, especially those needing to evade customs inspections to cross borders. Thus, if there's an attempt to broaden the scope of this crime, a new understanding of smuggling is needed.

In traditional criminal law theory, the object of smuggling must be tangible goods or items, as the concept of smuggling originated from customs trade, which initially did not involve intangible data or information like today. However, as times have changed, the dissemination of such intangible data and information no longer requires passing through customs nor

physical transportation. Therefore, it is somewhat narrow to still interpret the term "smuggling" with its traditional concept. The meaning of words can evolve with their use, expanding over time. Although "smuggling" originally referred only to the act of secretly transporting goods across real borders, the term is increasingly applied to situations unrelated to customs trade, such as "emotional smuggling[5]" or "HTTP request smuggling[6]", thus, it should no longer be limited to describing specific behaviors in customs trade but should adapt further to reality, providing a broader, more refined interpretation. Since smuggling is not just a term for real trade phenomena, it can be understood as "secretly moving items from one place to another", with these places typically being prohibited from normal contact with each other, such as "emotional smuggling" representing extramarital affairs, which are morally prohibited, and "HTTP request smuggling" being a deceptive type of cyber-attack. Under this understanding, smuggling in the context of the crime of smuggling human genetic resource materials can be given a new interpretation.

Smuggling can mean not only illegally carrying, transporting, or mailing but also transferring items containing genetic resources out of the country through other means or methods, such as transferring data containing genetic resource information out of the country via the internet. This process could even be entirely conducted on internet terminals, requiring only the provider of the data to extract the relevant information from valuable genetic resources materials beforehand. Although this does not involve physically transporting materials containing genetic resources out of the country, it achieves the purpose of "smuggling" human genetic resources materials.

By this reasoning, it is not difficult to see that adopting today's latest understanding of "smuggling" could effectively broaden the enforcement range of the crime of smuggling human genetic resources materials, covering many new-era behaviors overlooked by the narrow understanding of smuggling.

4. The Unequal Treatment in Preliminary Laws

4.1. Inequality in Legal Status

China's preliminary laws divide human genetic resources into materials and information, a division that in itself is not problematic. However, in the establishment of crimes in criminal law, the crime of smuggling human genetic resources materials did not include human genetic resource information in its literal scope. Although through certain interpretative paths, human genetic resource information can still be included within the protection scope of this crime, this also means that preliminary laws did not provide equal protection for human genetic resources materials and information. If attempting to solve this problem through judicial interpretation, it's particularly important to emphasize the status of human genetic resource information.

China's legal system regarding human genetic resources has become more stable, with the introduction of the "Regulations on the Management of Human Genetic Resources" and supplementary provisions by the "Biosecurity Law". The gradual improvement of preliminary laws has made the related concepts clearer under the provisions, which is both advantageous and disadvantageous. Regarding human genetic resource information, although the provisions clearly define what it is and how it is produced separately from human genetic resources materials, the overly clear concept makes its boundary with physical materials too distinct, leading to its negligence after being criminalized. Clearly, setting up a crime should not violate preliminary laws, so any slight bias in the preliminary provisions often affects the specific regulations after criminalization. This has resulted in the factual status of human genetic resource information being lower than that of human genetic resources materials, ultimately leading to some degree of neglect.

4.2. Preliminary Regulations of Legal Protection Objects

The purpose of establishing the Regulations on the Management of Human Genetic Resources is clearly defined in its first article: "To effectively protect and rationally utilize China's human genetic resources, maintain public health, national security, and social public interests, this regulation is established". It's evident that besides the direct purpose of protecting and rationally utilizing human genetic resources, public health, national security, and social public interests are all objects of protection. Notably, including national security among the objects of protection signifies the strategic importance of human genetic resources to the nation. Based on the requirements of this purpose in preliminary laws, the protection of national security naturally cannot be overlooked after criminalizing human genetic resources. The crimes of illegal collection of human genetic resources and smuggling of human genetic resources materials are closely related to cross-border illegal transportation and trade activities, especially the crime of smuggling human genetic resources materials. Whether based on the traditional understanding of smuggling or an expanded interpretation, both involve an infringement on national security. The key genetic information contained in human genetic resources, if leaked, not only affects national security but also poses a significant threat to the life and health of every individual, meaning that the protection of human genetic resources includes maintaining national security as well as related to social public interests and health[7]. Given such strong emphasis on protecting national security in preliminary laws, the crime of smuggling human genetic resources materials undoubtedly plays this role in the field of criminal law. Smuggling, closely related to cross-border trade and transportation, can now be understood in a broadened sense, allowing perpetrators to adopt new forms of cross-border illegal transportation activities, especially pure information cross-border transmission, which is low-cost and low-risk, yet poses no less a threat to national security. On the contrary, cross-border information transmission activities using new technologies are often more secretive and difficult to detect compared to traditional smuggling through customs. In terms of human genetic resources, while physical materials such as genetic resource materials cannot be transmitted across borders using these methods, genetic resource information can be transmitted across borders unrestrictedly thanks to its data advantage. Although limited by its physical form and thus its research value is less than that of human genetic resources materials, the vast amount of information and its strong secrecy cannot be ignored. If these actions are unchecked, they could potentially cause greater harm than traditional smuggling methods. Objectively, human genetic resource information is merely data, its research value and significance clearly less than tangible human genetic resources materials. However, in today's era of convenient data transmission, the law should provide equal protection to both, especially emphasizing the important role of human genetic resource information in protecting national security.

5. Pathways to Resolution

5.1. Exclusion of Legislative Amendments

As a preliminary law related to genetic resources, the "Regulations on the Management of Human Genetic Resources" already comprehensively outlines China's overall protection strategy for human genetic resources, including views on human genetic resources materials. Currently, China adopts a bifurcated approach, differentiating human genetic resources materials from human genetic resource information, a method that is undoubtedly more scientific than the narrow definition that does not distinguish between physical materials and derived data information. It is my view that this method of defining genetic resources in our preliminary laws is sufficient to meet the demands of the current era. Looking at the crimes of illegal collection of human genetic resources and smuggling of human genetic resource

materials, the legislation does not entirely neglect human genetic resource information but rather confines it to the scope of objects of the crime of illegal collection. Although objectively insufficient in targeting the provision side, it is not a completely laissez-faire situation. Thus, rash legislative changes might backfire. Adopting a legislative approach without altering the preliminary laws would only widen the scope of the crime of smuggling human genetic resources materials, effectively changing it to the crime of smuggling human genetic resources. While such a change superficially broadens the enforcement scope of this crime, not all human genetic resources can be subject to smuggling. Furthermore, given the Criminal Law Amendment (XI) was only introduced recently and its provisions were thoroughly considered by legislators, achieving an improvement in legislative expression in a short period is extremely difficult, possibly leading to conflicts with the intent of preliminary laws and undermining the foundation of legislation. Therefore, I believe choosing the path of legislative amendment is not suitable for the current situation, whereas judicial interpretation appears more flexible and convenient.

5.2. Advantages and Disadvantages of Judicial Interpretation

Adopting the path of judicial interpretation can effectively avoid the risks and difficulties associated with amending legislation. However, the direction of interpretation remains similar: to address the current issue of the improper restriction of the object of the crime of smuggling human genetic resources materials, the scope of this crime's object must be expanded. As previously mentioned, the most direct approach is to interpret human genetic resources materials to include human genetic resource information, thereby naturally encompassing previously excluded data and informational materials and solving the issue. However, such an interpretation would contradict the division of genetic resources in preliminary law, which stipulates that human genetic resources include both human genetic resources materials and human genetic resource information, and explains that the latter is produced by the former but exists independently from physical materials after its creation. Including human genetic resource information within human genetic resources materials would result in a logical inconsistency, highlighting the inadequacy of directly broadening the interpretation.

Nevertheless, adjusting through judicial interpretation remains the most feasible approach, unaffected by temporary logical inconsistencies. Beyond directly interpreting human genetic resource materials to include human genetic resource information, judicial interpretation could also explore other angles. Although the Regulations on the Management of Human Genetic Resources indicate that human genetic resources comprise both materials and information, it does not completely separate them. This implies that while they objectively differ and exist independently, this does not mean there is no overlap. Human genetic resource information, being data produced from human genetic resources materials, must necessarily rely on a medium and thus could be embedded within materials or other objects capable of storing data. Under this logic, human genetic resources materials could indeed contain certain human genetic resource information without violating the preliminary law's distinction between their natures.

From this perspective, addressing the issue of improper restriction requires starting with judicial interpretation, avoiding a direct broadening interpretation due to unresolved conflicts with preliminary law. Shifting the approach to begin with an understanding of the stipulations in preliminary law may offer a suitably overlooked path.

6. Directions for Resolving the Issue of Improper Restriction

6.1. Emphasizing the Conceptual Intersection of Human Genetic Resource Materials and Information

As mentioned earlier, opting for an expansive interpretation to resolve issues could lead to inconsistencies between the conceptual scopes of human genetic resources materials and human genetic resource information with preliminary laws. The relationship between the two is not purely inclusive, and interpreting human genetic resource materials to encompass human genetic resource information could be logically inappropriate. However, it's undeniable that the concepts of the two are not entirely mutually exclusive. Information data requires a medium to exist, and such data itself serves as a record of physical materials, hence, there exists a certain degree of intersection between them. This conceptual intersection highlights the deficiencies in the original scope of objects targeted by the crime. Thus, by adopting an interpretive approach, it's crucial to emphasize the intersecting content relationship between the two, such as interpreting human genetic resource materials to include aspects of human genetic resource information. This approach could effectively address issues of logical inconsistency and broaden the scope of what is conventionally understood as human genetic resource materials.

6.2. Broadening the Understanding of Smuggling in Accordance with the Times

Originally, smuggling referred solely to illegal cross-border transportation based on a customs trade background. However, in the context of the crime of smuggling human genetic resource materials, if the understanding of human genetic resource materials is broadened to include data such as human genetic resource information, the traditional interpretation of smuggling is no longer suitable. The purpose of broadening the interpretation of smuggling is to encompass purely informational cross-border illegal data transmission activities that no longer pass through physical customs and borders. Given the unique strategic position of human genetic resource information compared to other types of informational data, expanding the interpretation of smuggling would allow it to fall within the regulatory scope of the crime of smuggling human genetic resource materials.

6.3. Equally Protecting Human Genetic Resource Materials and Information

As China's preliminary laws related to human genetic resources, both the Regulations on the Management of Human Genetic Resources and the Biosecurity Law have stipulations for the protection of human genetic resources materials and human genetic resource information, with the Regulations describing the concepts and contents of the two, and the Biosecurity Law providing legal processes and boundaries for various activities such as development, provision, and usage of human genetic resources from a risk prevention perspective. Currently, both the Regulations and the Biosecurity Law provide detailed regulations for human genetic resources materials and information, covering a wide range of scenarios but showing a clear bias in focus. For example, Article 56 of the Biosecurity Law, which requires approval from the State Council's competent department of science and technology for scenarios including "transporting, mailing, or carrying human genetic resources materials out of the country", aligns with the description of the crime of smuggling human genetic resources materials, but Article 56 does not address the situation of human genetic resource information. Human genetic resource information is only mentioned in Article 57, which requires prior reporting and submission of information backups to the competent department under the State Council for provision and open use. While submitting information backups can maintain the integrity of human genetic resource information as data, it does not limit the transmission of information content, resulting in a relatively lower level of protection for human genetic resource information.

The Biosecurity Law specifies scenarios of "transporting, mailing, or carrying human genetic resources materials out of the country", a situation inherited in the crimes of illegal collection of human genetic resources and smuggling of human genetic resources materials. Following conventional logic, smuggling actions corresponding to "transporting, carrying, and mailing out of the country" leads to a narrow interpretation of the crime of smuggling human genetic resources materials. However, broadening the understanding of smuggling to include illegal provision and transmission of human genetic resource information could address the imbalance in legal status between genetic resource materials and information from the perspective of criminal law practice.

The crime of smuggling human genetic resources materials, as a newly added crime, marks an important milestone in the legal protection of human genetic resources in China, reflecting the gradual perfection of the country's legal system related to human genetic resources. The Regulations on the Management of Human Genetic Resources and the Biosecurity Law have clarified the legal status of human genetic resources and provided detailed regulations on their content and protection measures. With the criminalization of human genetic resources, this legal framework has been further refined. Although the crime of smuggling human genetic resources may appear to restrict the scope of criminal activities in its textual description, the preliminary laws did not rigidly define the boundaries between human genetic resources materials and information, leaving some room for interpretation. Therefore, adopting a broad interpretation of smuggling and human genetic resources materials can expand the enforcement scope of this crime, thus avoiding overlooking crimes that utilize new technologies and forms.

7. Conclusion

Currently, concerning human genetic resources, although China has made preliminary legal framework constructions through the Regulations on the Management of Human Genetic Resources, the Biosecurity Law, and the addition of new crimes in the Criminal Law Amendment (XI), facing the increasingly severe situation of genetic resource theft and genetic safety risks, these measures are far from sufficient. [8]Judicial interpretations can address some situations not yet covered by current legislation, but this is not a long-term solution. In 2022, the Ministry of Science and Technology publicly sought opinions on the Implementation Rules of the Regulations on the Management of Human Genetic Resources (Draft for Comments). According to the Implementation Rules, foreign entities are not allowed to collect and preserve China's human genetic resources, nor provide them to overseas. This move indicates that China has been trying to perfect procedural legislation for the protection of human genetic resources and thereby further construct a complete legal system for the management of human genetic resources. With the cooperation of mature management processes, the application of criminal law will be more accurate and reasonable, and can effectively prevent issues like improper restriction caused by disputes over conceptual expressions.

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