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Research on the Application of Empirical Rules in the Subjective Aspects of Crime

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Abstract. Due to the inherent and concealed characteristics of the subjective aspects of crime, empirical rules are often needed to achieve inference in criminal proceedings. The determination of criminal intent and negligence represents a fundamental challenge in criminal law, as subjective mental states cannot be directly observed but must be inferred from objective conduct and circumstances. However, in practice, the application of empirical rules suffers from problems such as arbitrariness, inconsistent standards, and lack of procedural safeguards. These issues are mainly related to factors such as the probabilistic characteristics of empirical rules, quasi-objective tendencies in judicial reasoning, and the increasingly stringent judicial environment that constrains judicial discretion. Through systematic analysis of contemporary judicial practice and comparative legal research, this study proposes comprehensive reforms including constructing scientific application mechanisms, strengthening procedural safeguards, and standardizing classification criteria for different crime types. We aim to improve the scientific accuracy and fairness of determining the subjective aspects of crime, thereby promoting the effective implementation of the principle of individual criminal responsibility and enhancing the overall integrity of criminal justice proceedings.

Keywords: Empirical rules, subjective aspects of crime, indirect evidence, probability, quasi-objectivism.

1. Introduction

The subjective aspects of crime refer to the perpetrator's psychological attitude toward their conduct and its consequences, primarily including intent and negligence. As one of the elements of criminal constitution, its determination directly relates to the accuracy and fairness of conviction and sentencing. However, due to the subjective aspects of crime existing within the perpetrator's inner world and possessing characteristics such as internality, concealment, and complexity, their determination faces numerous difficulties and challenges.

As such, empirical rules serve as important cognitive tools and reasoning methods, playing crucial roles in determining the subjective aspects of crime by compensating for insufficient evidence, connecting evidentiary chains, and forming reasonable inferences. Judges frequently apply empirical rules such as “normal people's reasonable reactions in specific situations” and “the inner attitudes typically reflected by specific behaviors” to infer the perpetrator’s subjective psychological

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state from objective facts including their words and actions, behavior before and after the incident, criminal methods, and criminal consequences.

Currently, academic research in China on empirical rules mainly concentrates on four aspects: first, conceptual and connotative research, providing in-depth interpretations of “experience” and “empirical rules”; second, classification and characteristic research, constructing classification frameworks from dimensions such as knowledge sources and functional domains, and summarizing basic characteristics like regularity, objectivity, and abstractness of empirical rules; third, function and risk research, emphasizing the inevitability of empirical rules in criminal trials while identifying two major risks of misuse/abuse and reluctance to use; fourth, normative safeguard research, proposing substantive and procedural safeguard measures. However, existing research still has shortcomings: theoretical research outweighs empirical analysis, lacking in-depth exploration of specific standards and operational procedures for applying empirical rules; research specifically targeting the determination of subjective aspects of crime is relatively weak, lacking typological and refined analysis.

This paper focuses on the problems existing in the determination of subjective aspects of crime through empirical rules, attempts to analyze their causes and propose targeted countermeasures, providing theoretical support and practical reference for improving China's mechanism for determining the subjective aspects of crime.

2. The connotation of empirical rules

Although empirical rules are called “rules,” they are essentially sets of probabilistic propositions obtained through induction, characterized by “usually so, but not necessarily so.” This probabilistic characteristic determines their dual nature in judicial cognition: first, providing pathways for inferring unknown facts from known facts, functioning as cognitive tools; second, unlike the certainty of scientific laws, their inferential results contain uncertainty and require reinforcement and verification through other evidence. This makes empirical rules both indispensable and requiring cautious application in determining the subjective aspects of crime.

Compared to scientific laws, empirical rules have more diverse formation pathways (including daily observation and professional practice accumulation), lower reliability (mostly “high probability” rather than “necessity”), and broader application scope. Compared to legal presumptions, empirical rules are factual judgments rather than legal judgments; they are freely selected and applied by judicial officers according to individual cases rather than predetermined by legislation; their results can be overturned by contrary evidence, while legal presumptions are divided into rebuttable and irrebuttable types.

These two categories are both distinct from and mutually influential: the objectivity and certainty of scientific laws can compensate for deficiencies in empirical rule judgments and may limit or replace the application of empirical rules under certain conditions; simultaneously, empirical rules have verification and corroboration functions for scientific evidence. It should be noted that using empirical rules for factual inference does not lower the standard of proof, therefore it is not presumption, and the abuse of presumption concepts should be prevented [1].

Empirical rules have multiple functions in the proof process: first, serving as bridges connecting evidence and facts to be proved. In determining the subjective aspects of crime, judges cannot directly observe the perpetrator's inner activities and must rely on external behavior for inference, a process that cannot be separated from the support of empirical rules; second, serving as measures for judging the probative value of evidence—whether evidence can prove specific facts largely depends on whether it conforms to empirical rule expectations, such as whether a defendant's recantation

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conforms to common sense; third, serving as frameworks for constructing proof systems—in complex cases, a series of empirical rules connect scattered facts to form logically closed chains of proof; fourth, having the function of allocating burden of proof—when case facts conform to certain empirical rule expectations, it may lead to transfer of burden of proof, such as when objective conduct easily leads to specific results, the party claiming the actor lacked possibility of recognition needs to bear a higher burden of proof.

In summary, empirical rules, as sets of probabilistic propositions, serve as important links connecting objective facts with subjective psychology in determining the subjective aspects of crime.

3. Current status of application of empirical rules in determining subjective aspects of crime

3.1. Legislative status

Regarding empirical rules, China's Criminal Procedure Law and related judicial interpretations already have relevant provisions. Article 75, Paragraph 2 of the “Interpretation of Criminal Procedure Law” stipulates: “Testimonial evidence that is speculative, commentary, or inferential in nature shall not be used as evidence, except where it conforms to facts based on general life experience.” Article 5 of the “Provisions on Evidence in Death Penalty Cases” by the Supreme People’s Court and Supreme People’s Procuratorate states: “In handling death penalty cases, the determination of defendants’ criminal facts must reach the standard of reliable and sufficient evidence. Reliable and sufficient evidence means: ... (5) The process of determining case facts based on evidence conforms to logic and empirical rules, with conclusions drawn from evidence being the only conclusions.” Article 80 stipulates that special attention should be paid to reviewing defendants' confessions and explanations, examining whether defendants' explanations conform to case circumstances and common sense, and whether there are contradictions.

Overall, legislation regarding empirical rules is mainly indirect and principled, leading to a lack of clear standards and insufficient procedural safeguards in judicial application of empirical rules, affecting the accurate determination of subjective aspects of crime.

3.2. Practical status

In determining intentional crimes, empirical rules mainly proceed from external facts such as the perpetrator's objective conduct, behavior before and after the incident, criminal methods and consequences. Judicial practice commonly uses the empirical rule that “the dangerousness of specific conduct positively correlates with the actor's cognitive ability”—the more dangerous the conduct and the more likely it is to lead to specific consequences, the more likely the actor is to recognize this dangerousness. For example, in the case of Wei's intentional injury, the defense attorney argued that “regarding how the victim's injuries were caused, the indictment believes they resulted from the defendant using his elbow to press on the victim's chest and kneeling on the victim's upper body, but there is no direct evidence of recognition, and it is highly possible that the injuries were caused when both parties fell and the victim fell on the steps, which was an accident.” The court needed to make judgments based on the empirical rule that “normal people should know that pressing with elbows on the chest and kneeling on the upper body with knees may cause injury,” combined with specific circumstances of the incident [2].

Another commonly used empirical rule is that words and actions before and after conduct reflect the actor's true intentions. For example, in Fan's contract fraud case, the court applied empirical

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rules to determine: “The victim and defendant had no friendship or acquaintance relationship, and the victim's claim of lending large amounts of cash to the defendant does not conform to ordinary people's daily life empirical rules, so this money was obtained through fraud.” The court inferred the defendant's intent of illegal possession by analyzing the relationship between parties and transaction methods. This inference method is relatively common, but it should be noted that words/actions and inner intentions do not necessarily correspond, and overall circumstances should be considered for judgment [3].

In distinguishing between direct intent and indirect intent, courts often apply empirical rules based on factors such as the relationship between the actor and victim, criminal motives, and the course of events. Generally, premeditated murder, revenge killing, and killing to achieve specific purposes are mostly considered direct intent; while conflicts after drinking and crimes of passion may constitute indirect intent. For example, in the case of Xu and Su's intentional injury, the court applied the circumstance that "defendants Xu and Su had conflicts due to Su's improper relationship with victim Peng," combined with the course of events, determining that although the defendants inflicted injury on Peng, the death result due to the victim's special constitution reflected the difference in subjective intent between intentional injury caused by emotional conflict and premeditated murder [4].

In determining negligent crimes, empirical rules are mainly used to judge the actor's possibility of foreseeing harmful results, duty of foresight, and fulfillment of duty of care. Judicial practice commonly uses the empirical rule that "people with specific occupations or identities should have general foresight ability regarding risks in their professional fields," adopting objective standards for judgment. For example, in Chang's illegal medical practice case, the court applied the expert opinion from the provincial hospital stating that "the defendant's traditional Chinese medicine knowledge and experience could only superficially treat minor burns and scalds and could not treat patients with severe burns and scalds," using the empirical rule that "those engaged in medical practice should know the matching relationship between treatment capability and disease severity" to judge that the defendant had foreseeability and duty of foresight regarding harmful results, determining that he constituted negligence through inadvertence [5].

In distinguishing between inadvertent negligence and overconfident negligence, the key is judging whether the actor has foreseen the possibility of harmful results. For example, in Shi's traffic accident case, the court determined through the fact that "the defendant had heard sounds and stopped to check when the accident occurred, but thought he had hit cats or dogs and left without getting out to carefully examine," applying the empirical rule that "continuing risky behavior after receiving clear warning signals indicates the actor has foreseen the risk," determining that the defendant had overconfident negligence [6].

In negligent crimes in specific professional fields, courts often apply empirical rules based on the actor's professional competence, professional requirements, and industry standards to judge whether professional duties of care were violated. For example, in Cen's traffic accident case, the court applied the fact that "the defendant had held a driver's license for over 10 years," combined with the empirical rule that "professional drivers should possess safety driving capabilities and responsibility awareness higher than ordinary people," comprehensively considering factors such as collision sounds, scene traces, and lighting conditions, determining that he violated professional duties of care and should have been aware of the accident but drove away from the scene [7].

3.3. Problems in practice

The main problems in practical application of empirical rules are as follows:

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First, the application of empirical rules has strong arbitrariness and subjectivity. First, the proposal of empirical rules lacks basis and explanation. Many judicial documents use vague expressions such as "according to common sense" and "based on life experience" when applying empirical rules, without clearly elaborating and explaining the sources of the empirical rules relied upon, making it difficult for parties and the public to understand and accept judicial results. Second, the selection of empirical rules has preferential tendencies. Due to different knowledge backgrounds, life experiences, and values of judges, the empirical rules they select and apply also differ. Some judges may prefer empirical rules supporting presumption of guilt while ignoring those that may lead to presumption of innocence, affecting the neutrality and fairness of judgments. Finally, the application of empirical rules lacks necessary verification and examination. Some judges simply elevate personal experience or subjective cognition to universal laws, leading to loopholes and defects in reasoning processes. For example, in the Peng Yu case, the presiding judge determined based on empirical rules that defendant Peng Yu had knocked down plaintiff Xu Shoulan, with several reasons including: (1) if the defendant was doing good deeds, then catching the person who knocked down the plaintiff would be more realistic; (2) if the defendant was doing good deeds, then after the plaintiff's family arrived, the defendant should have left after explaining the situation; (3) if the defendant's advance payment of medical expenses was doing good deeds, then after the plaintiff's family arrived, the defendant should have asked the plaintiff's family for reimbursement. This determination process had problems with arbitrary application of empirical rules: the court did not explain the source and basis of the empirical rule that "doing good deeds should have specific behavioral patterns," nor did it consider the impact of individual behavioral differences and specific situations on empirical rule application, simply elevating personal cognition to universal laws.

Second, empirical rules should have different application standards in different types of cases, but this awareness is often lacking in practice. First, the distinction between intentional and negligent crimes in empirical rule application has not received sufficient attention. Determining intentional crimes should emphasize consistency between subjective malice and objective harm, while determining negligent crimes should focus on the degree of violation of duties of care. Second, the specificity of different crime types has not been fully considered. For example, in dangerous driving cases, more reference should be made to professional empirical rules in traffic safety fields; in medical accident cases, more reference should be made to medical professional standards and clinical experience. However, in practice, general life experience is often simply applied, ignoring the professional characteristics of different fields. Finally, the distinction between special criminal subjects and general criminal subjects has not been fully reflected. For actors with special identities, occupations, or professional backgrounds, higher standard empirical rules should apply; while for special groups with limited cognitive abilities, more lenient standards may be needed.

Third, procedural safeguards for empirical rule application are obviously insufficient. First, the proposal of empirical rules lacks open and transparent procedures. Judges often silently apply empirical rules in their mental deliberations without clearly proposing them in court proceedings and allowing parties to cross-examine and debate, causing empirical rule application to be in a "black box" state, affecting procedural fairness and transparency. Second, parties' rights to defend against empirical rules are not fully guaranteed. Since empirical rules are often applied implicitly, parties find it difficult to present defenses and rebuttals against specific empirical rules, affecting the realization of debate rights and equal confrontation. Finally, reasoning and argumentation for empirical rule application are insufficient. Many judicial documents, when elaborating determination reasons, often simply cite empirical rules without sufficient logical argumentation and

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reason elaboration, making judicial results difficult to convince and affecting judicial authority and credibility.

4. Analysis of causes of practical difficulties with empirical rules

4.1. Inherent risks of empirical rules

First, empirical rules themselves have subjectivity and uncertainty, mainly manifested in several aspects: First, the formation of empirical rules is influenced by individual experience and cognitive background. Different individuals may form different empirical rules based on their respective life experiences, educational backgrounds, and professional practices. Second, the application of empirical rules is constrained by social culture and temporal background. With social development and cultural changes, some empirical rules once widely accepted may no longer apply to current situations. Third, empirical rules are often vaguely expressed and lack precision. Many empirical rules are expressed with ambiguous words such as "usually," "generally," and "in most cases," lacking clear application conditions and scope limitations, leading to considerable interpretive space in specific applications. Finally, empirical rules can hardly be completely objective and neutral—behind every empirical rule lie specific value judgments and interest balancing, making it difficult to escape the influence of personal positions.

Second, as probabilistic propositions, empirical rules vary in reliability, and this variation affects their weight and role in proof processes. According to sources, they can be divided into life experience, professional experience, and judicial experience, with probability generally increasing in this order. Life experience derives from daily observation and accumulation, is intuitive and easy to understand but often lacks systematic verification, with relatively low probability; professional experience derives from professional knowledge and practice in specific fields, is built on professional theory and practice foundations, has undergone certain verification, with relatively high probability; judicial experience derives from long-term judicial practice and case accumulation, is the crystallization of judicial practice, reflects legal patterns, and has high probability in judicial fields. According to probability levels, empirical rules can be divided into highly reliable, relatively reliable, and reference types. Highly reliable empirical rules approach natural scientific laws with extremely high correctness probability, can play decisive roles in proof, and may even serve as sole bases for fact determination; relatively reliable empirical rules have high correctness probability but certain exceptions, need to work together with other evidence, and should not serve as sole determination bases; reference-type empirical rules have low probability, only have general reference value, can only serve as references for preliminary suspicion or investigation directions, and cannot serve as bases for fact determination.

Third, when applying empirical rules to determine subjective aspects of crime, various cognitive biases and error risks may exist: confirmation bias—judicial personnel may tend to seek and interpret evidence and facts that conform to their preset positions while ignoring or underestimating evidence unfavorable to that position; hindsight bias—when results are known, people often overestimate their ability to predict those results beforehand, leading to tendencies when evaluating actors' foreseeability of results to believe actors should have foreseen results, thus expanding the scope of negligent liability; fundamental attribution error—people tend to overestimate the influence of personal factors on behavior while underestimating the role of situational factors, possibly leading to overemphasizing actors' personal traits when determining criminal intent while ignoring specific situations where behavior occurred; representativeness heuristic—people often judge categories based on surface characteristics while ignoring base rates, possibly leading to simple

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judgments of inner states based on external behavioral manifestations, such as "stabbing with knives necessarily has killing intent," while ignoring the complexity of specific case circumstances.

4.2. Quasi-objective tendencies in determining subjective aspects of crime

In determining subjective aspects of crime, since inner activities cannot be directly observed, judicial practice inevitably needs to rely on objective conduct to infer subjective states. This inference process often depends on reasoning judgments and empirical rules, but in practice shows latent characteristics—the inference process is non-transparent, non-public, and non-questionable, becoming implicit premises of judges' inner convictions. This latency mainly manifests as insufficient description of reasoning inference processes in judicial documents, often replacing specific reasoning processes with general expressions such as "according to common sense" and "obviously"; unclear premises and bases for reasoning inference, making it difficult to verify their reasonableness; direct transformation of reasoning inference conclusions into legal judgments, lacking explanation and argumentation of intermediate links.

Another manifestation of quasi-objective tendencies is the increased risk of objective attribution. Objective attribution refers to determining criminal liability based solely on objective harmfulness and result severity of conduct while ignoring the actor's subjective psychological state, determining conduct that should originally be convicted of negligence as intentional crimes, or determining conduct that originally does not constitute crimes as negligent crimes. This risk mainly manifests as inferring intent from results—directly presuming conduct causing serious consequences as intentional crimes; expanding the scope of duties of care—overemphasizing actors' duties of foresight while ignoring limitations of their actual foresight abilities; weakening proof standards for subjective elements—directly inferring subjective states from objective conduct when evidence is insufficient.

The deeper reason for quasi-objective tendencies lies in difficulties in exploring actors' psychological states. Due to the internality and non-direct observability of subjective psychological activities, judicial practice finds it difficult to accurately restore actors' true psychological states and can only make indirect inferences through external conduct and objective circumstances. This inference faces challenges such as complexity and variability of psychological activities, limitations of linguistic expression, and difficulties in evidence acquisition. Human psychological activities are complex and variable processes, often having multiple characteristics such as rationality and irrationality, consciousness and unconsciousness, clarity and vagueness, making them difficult to summarize with simple legal concepts; there are natural contradictions between the precision of legal language and the complexity of psychological phenomena; evidence regarding actors' psychological states mainly comes from actors' own confessions and external behavioral manifestations, which may both deviate from true psychological states.

4.3. Stringent judicial environment

Judges' professional competence and knowledge structure limitations affect scientific application of empirical rules. Judges' professional backgrounds mainly concentrate in legal fields, with limited understanding of professional knowledge in medicine, engineering, and other fields, making it difficult to accurately apply professional empirical rules in related cases. Judges from different backgrounds have different life experiences and values, leading to different understandings of the same empirical rules. Additionally, judges' insufficient understanding of cognitive science and

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psychology research makes it difficult to realize possible cognitive biases when applying empirical rules.

More prominently, the current stringent judicial accountability environment and evaluation mechanisms seriously constrain proper application of empirical rules. Under the high pressure of lifelong accountability for wrongful cases, judges face enormous professional risks and psychological pressure. This stringent accountability environment makes judges extremely cautious and conservative when applying empirical rules. Judges dare not openly and fully use empirical rules for reasoning and judgment, but tend to choose conservative empirical rules with higher "safety coefficients" that may not best fit case circumstances, or simply avoid using potentially controversial empirical rules. The severe judicial reality of heavy caseloads and insufficient personnel further exacerbates this dilemma. Under enormous pressure for case-handling efficiency, judges are forced to simplify empirical rule application processes, unable to conduct in-depth detailed analysis and argumentation, and can only adopt simple and crude "one-size-fits-all" approaches.

This stringent environment also manifests in excessive dependence on appellate supervision. To avoid risks of being overruled by higher courts, grassroots court judges often dare not flexibly apply empirical rules according to individual case characteristics, but mechanically refer to precedent standards of higher courts, leading to rigid empirical rule application and loss of due flexibility and targeting. In this environment, judges would rather choose standardized "cookie-cutter" applications than bear professional risks that might come from innovative or individualized empirical rule applications. The stringent judicial environment actually suppresses judges' subjective initiative in applying empirical rules, turning what should be flexible and scientific empirical rule applications into rigid and conservative mechanical operations.

The balance dilemma between case processing efficiency and truth-seeking also reflects the stringency of the judicial environment. Limited judicial resources make comprehensive exploration of actors' subjective psychological states difficult, leading to over-reliance on empirical rules. The objective difficulties in collecting evidence regarding subjective aspects of crime (such as evidence destruction and defendants' non-cooperation) make empirical rules tools for filling evidentiary gaps, but also increase uncertainty in determinations. Additionally, excluding illegal evidence to maintain procedural justice may also lead to some true circumstances being unable to be presented, further increasing dependence on empirical rules.

5. Paths for improving application of empirical rules in subjective aspects of crime

Scientific application of empirical rules in determining subjective aspects of crime requires improvement from three aspects: constructing application mechanisms, strengthening procedural safeguards, and differentiated treatment.

First, constructing scientific empirical rule application mechanisms is the foundational step. Discovery of empirical rules should be diversified and scientific. Beyond traditional life experience and judicial experience, the latest research achievements from cognitive science, psychology, behavioral science, and other fields should be actively absorbed. Simultaneously, mechanisms for collecting and organizing empirical rules should be established, continuously updating empirical rule databases through case analysis, expert discussions, interdisciplinary research, and other methods. Selection of empirical rules should follow principles of appropriateness, relevance, and reliability—being appropriate to case nature, directly related to facts to be proved, and having high probability. Application of empirical rules should follow principles of caution, supplementarity, and

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falsifiability—maintaining appropriate doubt, using them as supplementary rather than primary means, and accepting questioning and examination.

To ensure fair and transparent application of empirical rules, scientific confirmation and review procedures should be established. In court proceedings, judges should clearly propose empirical rules to be applied, giving both parties full opportunities for cross-examination and debate. For empirical rules involving professional fields, their scientific nature and reliability should be confirmed through expert witnesses, expert opinions, professional literature, etc. Unified empirical rule review standards should also be established, including source reliability, application universality, verification adequacy, etc. Appellate review should focus not only on fact determination and evidence sufficiency but also review the reasonableness and compliance of empirical rule application.

From the perspective of same cases same judgments, standardization of empirical rule application is needed. This can be achieved through issuing guiding cases, typical cases, and case analyses to clarify application standards for empirical rules in different case types; compiling empirical rule application guidelines to standardize applications in common case types; organizing judge training and exchanges to reduce individual differences and subjective preferences; using big data and artificial intelligence technology to analyze empirical rule applications in historical cases, providing objective references for judges.

Second, strengthening supporting procedural safeguards is a key measure. Judicial documents should strengthen reasoning requirements for empirical rule applications, clearly explaining sources and bases of applied empirical rules, detailed elaboration of reasons for selecting specific empirical rules, showing complete reasoning processes, and acknowledging probabilistic characteristics and application limits of empirical rules. This makes adjudication processes more transparent and controllable, enhancing predictability and acceptability of results.

Expert assistance systems have important significance in scientific application of empirical rules. The scope of expert witness applications should be expanded, neutral expert consultation mechanisms established, standards for adopting expert opinions standardized, and communication between judges and experts strengthened, compensating for judges' deficiencies in professional knowledge and improving scientific and professional nature of empirical rule applications.

In adversarial proceedings, empirical rule applications should follow adversarial principles and procedural justice requirements. Empirical rules should be included in court cross-examination scope, granting prosecution and defense equal rights to question and refute; both parties should enjoy equal rights to apply empirical rules; judges should fulfill active clarification duties, clarifying disputed issues and guiding effective debate; when parties have objections to empirical rule applications, they should have rights to raise procedural objections.

Defense empirical defense rights are important safeguards for realizing procedural justice, including rights to propose empirical rules, refute empirical rules, defend case specificity, and provide alternative explanations. Defense has rights to propose empirical rules favorable to defendants, question empirical rules proposed by prosecution and courts, claim case specificity, and provide reasonable explanations different from prosecution. This helps balance prosecution and defense powers and avoid one-sidedness in empirical rule applications.

Third, determination of different types of criminal subjective aspects should receive differentiated treatment. In intentional crimes, cognitive and volitional elements should be distinguished, applying different empirical rules for different elements; direct intent and indirect intent should be distinguished—the former focuses on purposive characteristics of conduct, the latter focuses on relationships between risk awareness and behavioral decisions; specialized empirical rules for

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specific crime types should be formed; full consideration should be given to impacts of special defense circumstances on empirical rule applications.

In negligent crimes, judgments of foreseeability should adopt objective standards, referencing reasonable persons' foresight abilities in the same situations; content of duties of care should be related to actors' professional identities and professional backgrounds; when distinguishing inadvertent negligence from overconfident negligence, attention should be paid to actors' cognitive performance and risk response methods; complex causal relationships that may exist between conduct and results should be considered.

Different types of crimes have different behavioral characteristics and psychological patterns, and empirical rule applications also show typical patterns. In violent crimes, subjective psychological states are mainly inferred through behavioral methods, tool selection, injury locations, etc.; in property crimes, criminal intent and purposes are inferred through behavioral means, possession methods, post-incident disposal, etc.; in dangerous crimes, degrees of subjective negligence are judged through risk cognition, duty of care fulfillment, etc.; in official crimes, subjective intent is judged through behavioral concealment, interest relationships, exercise of authority, etc.

Through the above improvement paths, the scientific nature and standardization of empirical rules in determining subjective aspects of crime can be enhanced, achieving more precise responsibility evaluation and penalty application, promoting fairness and efficiency of criminal justice. In individual cases, judges need to flexibly apply empirical rules according to case characteristics, balancing objectivity of inference with case specificity, avoiding both injustice caused by mechanical application and uncertainty caused by excessive case individualization, achieving organic unity of legal uniformity and individual case justice.

6. Conclusion

Empirical rules are both indispensable cognitive tools and have application risks and limitations in determining subjective aspects of crime. The application of empirical rules in China's judicial practice has not yet formed systematic norms, leading to problems such as arbitrary application, inconsistent standards, and procedural control failures, affecting the accuracy and fairness of determining subjective aspects of crime.

Improving the application of empirical rules in subjective aspects of crime requires multi-pronged approaches: constructing scientific application mechanisms for empirical rules, clarifying their discovery, selection, and application rules, establishing confirmation and review procedures, achieving standard unification; strengthening supporting procedural safeguards, enhancing reasoning requirements, improving expert assistance systems, standardizing applications in adversarial proceedings, safeguarding defense empirical defense rights; implementing differentiated treatment for different crime types, forming specialized application models for intentional crimes, negligent crimes, and specific crime types.

Scientific application of empirical rules must avoid both injustice caused by mechanical application and uncertainty caused by excessive case individualization. While respecting their probabilistic characteristics, through procedural regulation and multiple checks and balances, the organic combination of legal application uniformity and individual case justice should be achieved, ultimately promoting criminal justice fairness and rule of law progress.

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