

# The Rate of Criminal Error in DNA Extraction Operations

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## ملخص البحث

لقد غيرت دراسة البصمات الجينية علم الطب الشرعي، حيث منحت سلطات إنفاذ القانون أداة قوية لتحديد هوية الأشخاص وربط المشتبه بهم بمسرح الجريمة بدقة مذهلة. وقد أدى هذا التطور إلى تحسين كيفية إجراء التحقيقات، ولكنه أثار أيضاً قضايا أخلاقية وقانونية مهمة تتعلق بالخصوصية والموافقة وخطر إساءة استخدام المعلومات الجينية. وبينما ننظر عن كثب إلى هذه الآثار، فمن المهم حقاً التفكير في كيفية استخدام البيانات الجينية للسلامة العامة مع حماية الحقوق الفردية في مجتمع يبدو أنه يميل أكثر نحو المراقبة. حيث تسعى هذه الدراسة إلى تسليط الضوء على إن إمكانية التلاعب بتقارير البصمات الجينية تخلق قضايا رئيسية، حيث يمكن أن تعرض موثوقية الأدلة الجنائية للخطر وتؤدي إلى إدانات أو تبرئة خاطئة. من المهم حقاً أن يكون لدينا ضمانات قوية وبروتوكولات واضحة للحفاظ على ثقة الجمهور في ممارسات الطب الشرعي، وخاصة عند التعامل مع هذه القضايا الأخلاقية المعقدة.

## Abstract

The study of genetic fingerprinting has transformed forensic science, giving law enforcement a powerful tool to identify individuals and link suspects to crime scenes with incredible accuracy. This development has improved the way investigations are conducted, but it has also raised important ethical and legal issues around privacy, consent, and the risk of misuse of genetic information. As we look closely at these implications, it is important to consider how genetic data can be used for public safety while protecting individual rights in a society that appears increasingly surveillance-oriented. This study seeks to highlight that the potential for manipulation of genetic fingerprinting reports creates major issues, as it can compromise the reliability of forensic evidence and lead to wrongful convictions or acquittals. It is important to have strong safeguards and clear protocols in place to maintain public confidence in forensic practice, especially when dealing with these complex ethical issues.

## Introduction

Criminal evidence is fundamental to substantiating charges and linking them to the accused. It is a fundamental principle that claims and defenses in criminal matters, specifically the prosecution and defense in criminal

proceedings, must be substantiated by evidence for the criminal judge to evaluate the legitimacy of the accusation or defense. This process culminates in the acquisition of proof, leading to either conviction or acquittal, thereby resolving the criminal dispute with a judicial ruling that serves as a testament to the truth. This pertains to evidence.

The genetic fingerprint raises numerous concerns, such as the extent to which the criminal evidence it generates is adequate for the purpose of establishing lineage and the presence of fraud or error. The reality is that it will be adequate in this field to achieve this objective. If it is insufficient, the criminal legislator will not be required to intervene with modern evidence. This is due to the Iraqi Criminal Procedures Law, which clarified the evidence of proof and specified it in Chapter Eight under the title of the ruling and reasons, in witnesses and other evidence. "In Articles 212 to 222 of the Code of Criminal Procedure, a provision was included in which it was stated that this evidence was not included in an exhaustive manner." This text suggests that the emergence of contemporary criminal evidence is not a cause for concern, as criminal legislation adheres to the principle of unconstrained or absolute proof. The conviction and formation of the criminal judge's belief from any legitimate evidence or the result of legitimate procedures to acquire it are of paramount importance. This belief must be certain and not subject to any doubt, as doubt is interpreted in favor of the accused.

Consequently, we will commence by examining the genetic fingerprint's origins, followed by a discussion of its definition. Subsequently, we will address the most critical concepts that may be susceptible to fraud or error, as well as elucidate the legal classification of the conditions of tampering with reports derived from genetic fingerprint analyses. - Consequently, the research plan for the composition of these documents is as follows:

### **Research problem**

The issue with the study is that the genetic fingerprint results are nearly conclusive in establishing the ancestry of the children to the parents or refuting it, as well as in associating the blood, semen, or saliva sample discovered at the accident scene with its owner. It is significantly more robust than conventional physiognomy, which establishes lineage through physical similarities between progenitor and descendant. Errors in genetic fingerprinting are not inherent but rather stem from human error or environmental contaminants. Thus, the procedural challenges associated with acquiring this evidence are evident. The criteria for the mechanisms

used to obtain this evidence were established within the framework of traditional crimes and were not designed to address the emerging crimes that have arisen from them. The application of traditional texts to emerging crimes presents several challenges, with the primary concern being the difficulty of establishing lineage (Hussein, 2024).

“No limits should be placed on art (science), just as no artist or scientist has ever reached the level of complete mastery.” (Ahmed, n.d.)

When British scientist Frederick Griffith was researching the germs that cause pneumonia in 1928 AD, genetic fingerprint research initially surfaced as evidence that challenged the notion that genetic material is composed of proteins. He found that one strain of pneumonia germs may be changed into a genetically distinct strain. Griffith came to the conclusion that part of the deadly bacteria's genetic material had inadvertently infiltrated the non-lethal bacteria and changed them into deadly ones; he named this process "bacterial transformation". (El-Gamal, 2007)

Furthermore, lack of strong quality control and assurance policies, which would cause possible testing process mistakes and result interpretation based more on assumption than empirical evidence, presented major obstacles in the first introduction of DNA profiling into the American legal system. Defense challenges highlighted the debate about the accuracy of DNA evidence, which finally helped to raise the quality of the evidence; nonetheless, the goal of a perfect identification technique remains unmet (Aronson, 2007).

Afery Oswald, an American scientist, and his associates McCarty and MacLeod successfully isolated an active ingredient from a lethal bacterial strain in 1945 that could convert the germs. This active ingredient was eventually identified by chemical and physical study as DNA.

All members of the same species of living animals have DNA with the same chemical composition, according to research done in 1954 by scientist Erwin Chargaff and his collaborators. However, proteins are an exception to this rule. Additionally, the four nitrogenous bases—adenine (A), thymine (T), guanine (G), and cytosine (C)—are present in the same nucleotides in all DNA compounds, though they are not equally distributed in the cells of different animals. Nonetheless, the proportion of nucleotides in DNA taken from various people of the same species or from various tissues of the same individual is the same. Additionally, each species' DNA has an identical amount of each of the four

nucleotides. Following this finding, the structure of the DNA molecule (DeoxyriboNucleic Acid) was determined. (Ali, 2018)

However, it wasn't until 1984 that the genetic fingerprint became evident. In that year, Dr. Alec Jeffreys, a geneticist at the University of Leicester in London, published a study explaining that genetic material can repeat itself in random, unintelligible sequences. After a year of investigation, he came to the conclusion that these sequences are specific to each person and can only be comparable in identical twins; in fact, there is a one in a trillion chance that two genetic fingerprints will be similar between two people. (Al-Mayman, n.d.)

These patterns were dubbed "The DNA Fingerprint" by Dr. Alec, who copyrighted his findings in 1985.

### **Section Two: The Concept of Genetic Fingerprint**

Genetic fingerprinting, also known as DNA profiling, has a wide range of applications in forensic research, including identifying persons in criminal cases, settling paternity disputes, and identifying victims of major disasters. It is essential for identifying individuals who cannot be seen, such as in cases of extensive decomposition or combustion. Furthermore, DNA profiling helps with wildlife conservation and can be used to correlate biological materials for transplant appropriateness, which improves breeding operations in zoos and animal sanctuaries (Pawar et al, 2021). Each of our bodies receives this code, which reads, "What will you be?" What are the billions of millions of cells going to do? (El Houda, 2009), It is sometimes referred to as "DNA typing" and is defined as "a means of identifying a person by comparing DNA segments." During the Islamic Organization for Medical Sciences conference, the papers titled "The extent of the validity of the genetic fingerprint in proving paternity" confirmed that each individual has a unique pattern in the arrangement of his genes within each cell of his body that no other individual in the world shares. This is referred to as the genetic fingerprint. A researcher confirmed that this fingerprint encompasses the intricate structure that uniquely identifies each individual, making it nearly impossible to err in verifying biological parentage, as well as in establishing and confirming identity.

The Islamic Fiqh Council articulated its definition during its sixteenth session convened in Mecca, describing it as "the genetic structure - pertaining to genes, i.e., inherited heritage - that signifies the identity of each individual person." Scientific research and studies demonstrate that, from a scientific standpoint, it serves as an effective method for

enhancing accuracy in the field of forensic medicine. It can be obtained from various human cells, including those found in blood, saliva, semen, urine, or other sources.

### **The Second Requirement: The Legal Nature of The Genetic Fingerprint**

The Iraqi Code of Criminal Procedure is the most stunning piece of criminal evidence, second only in beauty to the accused's confession, which must be "an admission by himself to committing the facts that constitute the crime, in whole or in part." This comes after introducing the idea of genetic fingerprinting and discussing how well it correlates with other forms of evidence. It is, by definition, the accused's self-admission to engaging in conduct that constitutes a penal offense. The confession encompasses requirements, pillars, and stipulations. (Idris, 2021)

The application of this evidence in offenses pertaining to lineage is unequivocal, as stipulated by the procedural criminal law; the judge adjudicates based on the conviction established with absolute autonomy, therefore the judge's belief is paramount. Under the idea of free or absolute criminal evidence, the judge forms his conviction based on whatever evidence given for consideration, provided that this evidence is permissible and acceptable in terms of reason and logic. The confession serves as appropriate criminal evidence to establish or refute the validity of lineage (Muhammad, 1997).

The legal consequences of employing genetic fingerprints in forensic science include privacy problems, the requirement for informed permission, and the accuracy and trustworthiness of DNA evidence. Comprehensive legal frameworks are required to oversee the collection, use, and sharing of DNA information while maintaining public trust through transparency and nondiscriminatory procedures. Furthermore, rigorous laws are required to avoid the misuse of DNA data, emphasizing the significance of continuous examination and adaption of legal guidelines in response to advances in DNA technology (Tiwari, 2024). Additionally, the legal ramifications of employing genetic fingerprints in forensic science encompass its classification as corroborative evidence according to several Indian statutes, including The Indian Evidence Act, 1872, and the Criminal Procedure Code, 1973. DNA profiling must comply with ethical principles and international standards to guarantee its admissibility in court. The judiciary is essential in assessing the credibility of DNA evidence, which can profoundly influence criminal cases and the rights of the individuals concerned (Srivastava, 2022).

## **Section Two: The Idea of Error and Deliberateness in the Field of Genetic Fingerprinting**

While the concept of mistake is pervasive in criminal law, it remains nebulous, incidental, and undefined when used to genetic fingerprinting, despite its prevalence in many other areas of criminal law. This necessitates elucidating the concept within the penal code to use it in addressing inaccuracies in genetic fingerprinting.

### **The First Requirement: The Idea of Error in The Genetic Fingerprint**

Error is characterized as the offender's divergence from the standard conduct expected of a typical individual facing comparable external and personal circumstances, resulting in their inability to avert the criminal outcome, despite having the capacity and obligation to do so (Hosni, n.d.).

An unintentional error is assessed based on an objective, realistic standard comprising two elements: the first part is the objective standard, which reflects the deviation of the perpetrator's conduct from the amount of caution and care that a reasonable person would exercise. The second is the realistic or personal standard, which encompasses the personal circumstances of the perpetrator, including health status, age, educational attainment, intelligence, professional experience, and the contextual factors of time and place (Hosni, n.d.).

Error manifests in two forms: the first involves expecting an outcome yet neglecting adequate safeguards to avert its occurrence, despite the offender's capacity to implement necessary measures. The second: anticipating the outcome and failing to take measures, indicating that the culprit is indifferent to whether it transpires or not. The error in these two forms is referred to as conscious error, error with expectation, or error with insight. Some argue that this type of error poses a greater danger to society than the first type, namely unconscious error, as the individual who foresees a potential criminal outcome is required to implement a higher level of precaution than one who does not foresee such an outcome. This assertion is not universally applicable. The perpetrator may foresee the criminal outcome, yet possess limited precautionary measures, rendering him less hazardous to society than an individual who failed to anticipate the result, despite being surrounded by circumstances that would facilitate such foresight and necessitate it from him.

The element of error is a defining characteristic in unintentional crimes. For a conviction to be valid regarding errors in genetic fingerprinting, as

outlined in the Penal Code, the ruling must elucidate the nature of the error made by the accused and establish the causal relationship between the error and the resultant outcome. Furthermore, the court is required to reference the evidence upon which it bases its decision and articulate its implications in a sufficiently detailed manner. It is inadequate to simply reference it; the evidence's content must be enumerated, and its implications articulated comprehensively to demonstrate its support for the incident, as the court was persuaded of its validity and its consistency with the remaining evidence, thereby clarifying the rationale for its reliance.

Genetic fingerprinting may encounter flaws due to contamination, human mistakes, and laboratory procedures, hence affecting the reliability of forensic analysis. The Netherlands Forensic Institute (NFI) determined that contamination, especially excessive contamination, is the primary source of error, frequently resulting in irreparable outcomes. Although numerous inaccuracies are caught prior to report issuance, certain critical flaws are recognized post-analysis, which may lead to grave consequences, including wrongful convictions. Comprehending these error rates is crucial for enhancing quality and fostering public confidence in forensic DNA evidence (Kloosterman et al,2014). The concept of errors in genetic fingerprinting, especially in the interpretation of DNA mixtures, pertains to the erroneous identification of innocent individuals as contributors to DNA evidence. This problem originates from subjective approaches such as the Combined Probability of Inclusion (CPI), which have been considered insufficiently defined and lacking basic validity. Such inaccuracies can result in false convictions, as evidenced by research revealing substantial disparities in laboratory conclusions. Implementing probabilistic genotyping can reduce these errors and enhance the precision of forensic analysis (Hampikian, 2019).

Errors in genetic fingerprinting can profoundly affect the responsibility of forensic scientists in legal contexts by compromising the reliability of DNA evidence. Erroneous outcomes may result in unjust convictions or exonerations, prompting inquiries into the proficiency and ethical integrity of forensic experts. This requires rigorous laws and extensive legal frameworks to guarantee the precision and dependability of DNA analysis, thus safeguarding human rights and preserving public confidence in the criminal justice system. Continuous assessment of these principles is necessary (Tiwari, 2024).

The imposition of punishment does not require the occurrence of all forms of error delineated in the Penal Code; it suffices for the crime to be established if any one form is present, provided that the element of error is demonstrated in the accused's conduct, as defined by the law, which encompasses negligence, recklessness, inattention, or breaches of laws, regulations, and directives. The lawmaker referenced these forms not exhaustively, but rather for clarity and illustration purposes. If the error pertains to disregarding the fundamental and self-evident rules mandated by the occupation, which are recognized by practitioners and do not permit ignorance or violations, the judge of the subject matter retains autonomy in evaluating the severity of the error (Al-Tabbakh, n.d.).

Individuals engaged in artistic endeavors are accountable for material errors made by them, whether related to their artistic activity or not, akin to the "ordinary person"; nonetheless, contention has emerged concerning the technical errors they may commit. One perspective advocated for non-responsibility for the technological fault, another suggested restricting culpability to significant technical errors, while a third proposed assigning blame for all technical errors, irrespective of their severity. A significant portion of jurisprudence upholds that liability for serious technical errors is applicable, and that liability concerning individuals engaged in artistic works is only established in instances of serious technical errors. The minor error should be disregarded (Hanan, 2015).

### **The Second Requirement: The Idea of Error in The Genetic Fingerprint and The Employee's Responsibility**

Errors in genetic fingerprinting can profoundly affect employee accountability in forensic science. Contaminations and amplification artifacts, such as allele drop-out or drop-in, may result in the misinterpretation of DNA evidence, so influencing case results. Forensic professionals must follow stringent standards to mitigate contamination risks and guarantee precise results. Neglecting this can lead to erroneous convictions or exonerations, underscoring the imperative for responsibility and compliance with optimal procedures in evidence management and analysis (Ludes & Keyser, 2011).

As evidenced in situations involving misidentification, mistakes in genetic fingerprinting compromise the responsibility of forensic scientists by result of erroneous convictions. Lack of required quality assurance criteria and thorough audits in crime laboratories adds to these mistakes, therefore reducing the validity of forensic evidence used in court cases. Consequently, the forensic community is under pressure to enhance



validation and control to guarantee that forensic methods, especially those with dubious scientific basis, are strictly controlled to stop next miscarriages of justice (Bonventre, 2021).

The Iraqi Penal Code includes a general provision addressing the ruling on error in permissibility, along with specific applications that elucidate its stance on this matter. It has established a distinction between error in permissibility and permissibility itself concerning the execution of a duty (Article 40) and legitimate defense (Article 42/1). It specified that for equality to be established in the context of fulfilling a duty, the erroneous belief must have been formed with good intentions and based on reasonable grounds.

The individual tasked with public service responsibilities should possess a degree of legal immunity while executing their duties. This immunity is essential to prevent feelings of embarrassment, hesitation, or fear of criminal accountability, thereby allowing for the effective performance of their role without concern for potential consequences. Consequently, the Iraqi criminal legislator has determined in specific instances (as outlined in Articles 39 and 40 of the Penal Code) that an employee or individual tasked with public service is exempt from liability, even when exceeding their jurisdiction or misjudging the orders received or the authority responsible for issuing them, provided that their actions are in good faith, their rationale is reasonable, and they have exercised due diligence.

Article 40 of the Penal Code stipulates that work is deemed illegal in two instances where an employee or public servant is excused despite committing an error in the execution of laws or orders:

The initial case is outlined in clause one and the concluding paragraph of the previously mentioned article. If an employee or an individual responsible for public service erroneously believes that their actions, taken in accordance with legal mandates, are within their jurisdiction, they may establish a defense by demonstrating good faith, reasonable grounds for their belief in the legitimacy of their actions, and that they undertook appropriate precautions prior to acting.

This case posits that the law neither mandates nor authorizes the act in question, thus rendering it impermissible. The employee, or an individual in a similar position, has acted independently based on personal judgment, mistakenly believing that their actions fall within the scope of their assigned duties and powers. Subsequently, it becomes evident that the individual has exceeded their authority and jurisdiction, engaging in

conduct that contravenes legal stipulations and constitutes an unlawful act (Hosni, n.d; Al-Saeed, n.d; Al-Khalaf, n.d; Salem, n.d.).

This case posits that the law does not permit the employee or individual tasked with a public service to perform the actions taken, either due to a lack of jurisdiction or because such actions exceed the legal boundaries established for their jurisdiction (Al-Majali, n.d.).

The culprit may have overstepped his jurisdiction, despite the relevance of his actions to his area of expertise. His departure may stem from an imprecision in understanding his jurisdictional boundaries or may arise from haste, irresponsibility, or similar factors, resulting in a flawed belief that subsequently leads to erroneous actions (Al-Saeed, n.d.).

This case posits that the task, although unlawful, pertains to the employee's jurisdiction, authority, and competence; nonetheless, the employee's transgression of these boundaries stems from a deficiency in understanding and an error in its application. Consequently, there is no basis for exemption from culpability if the employee's tasks depart from their area of expertise, such as when a regular employee issues an arrest warrant or imposes a penalty beyond their authority. The employee's belief shall not be considered, even if it is founded on good faith and reasonable grounds (Al-Majali, n.d.).

Nonetheless, if the employee and his counterparts do not differ from his area of expertise and he perceives his actions as legitimate within his authority—provided he acts in good faith, holds a reasonable belief, and exercises due diligence—then a crime is not perpetrated against him, as stipulated by Clause (First) and the concluding paragraph of Article (40) of the Iraqi Penal Code. Nevertheless, the employee and individuals in similar positions are not entitled to comply with the provisions of this article if their actions stem from impulsiveness and carelessness, accompanied by negligence and omission that result in a mistake, since they are accountable for an unintended offense in such circumstances.

The second scenario, as outlined in Clause (Second) and the concluding paragraph of the aforementioned article, occurs when an employee or individual tasked with a public service erroneously believes—contrary to the facts—that he is executing an order from a superior whom he is obligated to obey, provided he demonstrates that his belief in the legitimacy of his action was founded on reasonable grounds and that he undertook his action only after exercising due diligence. This is contingent upon the law permitting the employee to disclose the order made to him. In the absence of legal provisions permitting such discourse,

he faces no repercussions, regardless of whether his beliefs lack rational foundation and he failed to exercise due diligence, as is applicable to military directives or orders given in exceptional and urgent circumstances pertaining to external or internal security, including war, emergencies, disasters, and similar situations. The condition of good faith referenced solely in the first case is a requisite here, even in the absence of explicit stipulation, as the existence of reasonable grounds and appropriate care cannot be discussed without presuming the presence of good faith.

The Iraqi parliament resolved to absolve subordinates from both intentional and unintentional criminal culpability when errors occur in executing a superior's directive, provided the offender acted in good faith and had a belief grounded in reasonable justification after exercising due diligence. He sincerely believed that the action he was obligated to undertake was lawful and aligned with the rule of law, having arrived at this conclusion after careful and deliberate consideration, devoid of haste, recklessness, or impulsiveness, as unintentional liability stems from negligence and neglect. If good faith nullifies intent, then taking sufficient measures also nullifies error.

The employee's belief should be regarded as an erroneous assumption of permissibility that undermines the moral aspect of the offense, and the conviction of the act's validity should not be deemed admissible in isolation (Hassani, n.d.). The general principles regarding the impact of error on criminal intent stipulate that a material error concerning a fact that the law mandates knowledge of negates criminal intent and precludes the establishment of intentional liability. This error closely resembles a mistake in civil or administrative law upon which the imposition of a penalty relies, akin to an error in a legal rule outside the penal code, as the law does not prevent the employee from verifying the legitimacy of the matter. The law mandates him to conduct this investigation and inquiry, as the act jeopardizes interests deserving of criminal protection. It is presumed that he is aware his actions may result in such a violation of those interests, as knowledge of the criminal nature of the act is assumed. Consequently, general principles necessitate the imposition of criminal responsibility on the perpetrator. Nonetheless, this obligation may be mitigated by the error committed by the employee, which is acknowledged by the law (Al-Majali, n.d.). Error significantly influences information, subsequently misguiding the will by steering it inappropriately based on that knowledge, which contradicts the truth.

## Conclusion

- 1- The collaboration and amalgamation between genetics and embryology have transcended boundaries, and this advancement should not be a cause for concern. Historically, most scientific discoveries were initially regarded with skepticism and apprehension; but, individuals eventually embraced them upon recognizing their significance and the advantages they conferred upon humanity.
- 2- The research on genetic fingerprints emerged in 1928, when British scientist Frederick Griffith examined the microorganisms responsible for pneumonia, challenging the premise that genetic information consists solely of proteins.
- 3- The concept of error is prevalent in criminal law; yet, its application in genetic fingerprinting remains nebulous, imprecise, and incidental.
- 4- It is acknowledged that individuals engaged in artistic endeavors are accountable for material errors made by them, whether related to their artistic activity or not, akin to the "ordinary person"; yet, contention has emerged about the technical errors they commit. One perspective advocated for non-responsibility for the technical fault, another suggested limiting culpability to significant technical errors, while a third proposed assigning blame for all technical errors, irrespective of their severity. A significant portion of jurisprudence upholds that liability for serious technical errors is applicable, and that liability concerning individuals engaged in artistic works is only established in instances of serious technical errors. The minor error should be disregarded.
- 5- The Iraqi Penal Code does not contain a general provision addressing the ruling on error in permissibility; however, it offers certain applications that can be utilized to elucidate its stance on this matter. It has established a parity in the ruling between error in permissibility and permissibility itself concerning the execution of a duty (Article 40) and legitimate defense (Article 42/1). It specified that for equality to be established in the context of fulfilling a duty, the erroneous belief must have been formed with good intentions and grounded in reasonable justification.

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Article (39) of the Iraqi Penal Code states that “there is no crime if the act occurred in the performance of a duty imposed by law.”

Article (40) of the Iraqi Penal Code stipulates that ((There is no crime if the act is committed by an employee or a person charged with a public service in the following cases: - First - If he committed an act with good faith in implementation of what the laws ordered or believed that it was within his jurisdiction; Second - If the act was committed by him in implementation of an order issued to him by a superior whom he must obey or believed that his obedience was obligatory. In both cases, it must be proven that the perpetrator’s belief in the legitimacy of the act was based on reasonable grounds and that he did not commit it except after taking appropriate precautions. However, there is no punishment except in the second case if the law does not allow the employee to discuss the order issued to him)). It corresponds to (Article 63 of the Egyptian Penal Code, which states: ((There is no crime if the act is committed by an official employee in the following cases: First - If he committed the act in implementation of an order issued to him by a superior whom he must obey or believed that it was his duty. Second - If he had good intentions and committed an act in implementation of what the laws ordered, or believed that its implementation was within his jurisdiction. In any case, the employee must prove that he did not commit the act except after verification and investigation and that he believed in its legitimacy, and that his belief was based on reasonable grounds....)).

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