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THE INFLUENCE OF FORENSIC EVIDENCE IN JUDICIAL DECISIONS: A LITERATURE REVIEW

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ABSTRACT

In this article, it was conducted a review of the world literature about the impact of forensic evidence on decisions in criminal prosecutions. A bibliographic survey was carried out, through the search of articles published in the databases of the CAPES periodical, from 2008 to 2018. It was used the terms "Influence", "impact", "forensic evidence", "verdict", "Criminal justice", "scene crime" and "case outcome" combined, in order to return the largest number of articles on the subject. After the exclusion criteria, three (3) articles were selected that specifically address the object of this study. The results showed that the influence of forensic evidence in the courts varies according to the criminal infraction practiced and the amount of evidence collected on the case. The review also showed that further research is needed in the field of forensic evidence and its repercussions at the end of criminal prosecution. In addition, it is concluded that there is a need to deepen the studies on the causes of the small percentage of success in the collection of traces according to several types of crimes.

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INTRODUCTION

All traces found at a crime scene, at first, are relevant and pertinent to clarify the facts that occurred. Thus, vestige is understood as any material that may have some relation with the crime. However, such a vestige, after analyzed and verified its relation with the crime, it will be called evidence. In this way, evidence is defined as a vestige that, after due analysis, it has been verified technically and scientifically its relation to the fact investigated (JESUS, 2013). Forensic science was defined as an application of scientific or technical practices in the recognition, collection, analysis, and evidence interpretation for criminal or civil matters (EUA, 2017). Although it is a relatively recent branch, forensic science has been developing rapidly over the last few years. With the dissemination of DNA analyses as a criminal trait as well as the use of drug testing, science laboratory multiplied, university programs spread and stimulated the development of new forensic techniques (ROUX; JULIAN; KELTY, 2013). As a result, the population became aware about the role and importance of forensic science in solving crimes. Large audiences on TV sitcoms such as CSI, NCIS, Forensic Files have created an expectation from the public about the existence of forensic evidence in criminal cases (BASKIN; SOMMERS, 2010).

Thus, scientific evidence has been more important in modern criminal cases, and forensic examination has become a relevant tool for evidence discovery (ZANG; LI, 2015). And, based on the technological advances experienced in the last three decades, in all areas of science, in the field of forensic science, such progress has resulted in a greater number of evidences, observed and collected in a crime situation. These data are relevant for the police during the investigation phase (KING, 2017). Despite these advances and growth in forensic science services, there is little published research about the uses and effects in scientific studies of evidence. Early studies, in the 1960s and 1970s in the United States, indicated that physical evidence was available at most crime scenes, but little scientific evidence was collected and had an impact on the outcome of the case (PETERSON, 2010). According to the importance of forensic evidence, studies have been carried out to verify the extent to which such scientific elements would have repercussions both on the investigation and on the progress and subsequent decision in the crime case. In this sense, this article aims to search and present the main researches published in periodicals that addresses the impact of forensic evidence.

MATERIALS AND METHODS

In order to raise literary output about the impact of forensic evidence on court decisions, a specific bibliographic database was investigated from selected articles that were thoroughly

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read and analyzed in detail. The databases were searched through the CAPES journal (federated academic community module). "The Portal of Periodicals from the Coordination for the Improvement of Higher Education Personnel (Capes) is a virtual library that brings together and makes available to Brazilian educational and research institutions, the best of international scientific production. It has a collection of more than 37,000 titles with full text, reference bases, bases dedicated exclusively to patents, as well as books, encyclopedias and reference works, technical standards, statistics and audiovisual content."

Thus, the databases searched in the portal CAPES were: One file (GALE), Scopus (Elsevier), Social Sciences Citation Index (Web of Science), ScienceDirect Journals (Elsevier), Elsevier (CrossRef), Science Citation (Index Expanded of Science). There are contents about Forensic Science area and scientific field in these publications, which are related to this study. It is relevant to point out that some specific terms were used in the research, as "influence", "impact", "forensic evidence", "sentence", "verdict", "criminal justice system", "crime scene" and "case outcome". The selection of articles was based on the delimitation of inclusion and exclusion criteria. As inclusion criteria of this research, the period from January 2008 to September 2018 was delimited as the date of publication, especially articles in Portuguese or English. As exclusion criteria, it was chosen studies that deal with the evidence relation and its repercussion outside courts.

RESULTS AND DISCUSSION

From the screening process (Table 01), it was possible to identify 158 (one hundred and fifty eight) articles with the content, possibly related to the theme. After applying the filter date of publication and collection (database) it was got an amount of 84 (eighty-four) articles that after reading the summary with emphasis to the purpose and the conclusion, resulted in 04 (four) articles, in English, potentially eligible in the criteria.

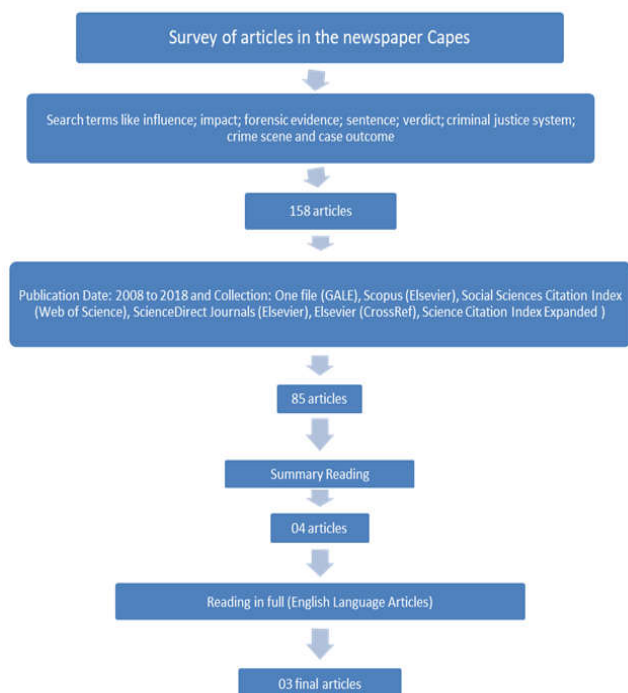


Table 1. Flowchart of the Tracking Process in the CAPES Databases from January 2008 to October 2018

Thus, a complete reading of these four (4) articles was fulfilled, in order to confirm the limited literature about the subject. After the reading, it was verified that only 03 (three) articles actually referred to the objective of the present literature review: to list the papers that addressed the impact of the forensic sciences in judicial decisions. Thus, among the three (3) final articles selected and read entirely, it was possible to observe that while two articles: Nir and Griffiths (2018) and Baskin and Soommers (2012) deal with the evidence in a general way, in relation to various types of crime and the effects of remnants in conviction or not, the other article, Costa, E. T., Pate, M., & Gibson, C.L. (2017) specifically addresses genetic evidence as a factor influencing jury decisions. So, in order to improve understanding, the results were divided according to the type of evidence approached: genetic behavioral evidence and forensic evidence in general.

Genetic behavioral evidence: Genetic evidence in court for the sole purpose of placing an author on the crime scene is commonplace for decades in the United States. However, the use of genetic factors, as a defense argument in judgments to justify a defendant's behavior in a crime has been the subject of questioning in recent years. To claim a genetic predisposition of a person in order to obtain an attenuator or to obtain an aggravating factor is more common in the courts, including some cases with death penalty. The results showed that not all judges accept such forensic behavioral evidence because they are fearful about the real genetic influence on people. In relation to the accusation, such evidence did not cause any impact among the investigations carried out when used in isolated manner. However, when associated with other investigative factors or during the procedural process, the behavioral evidence has shown to have an impact on the formation of the differential value judgment for the judges (COSTA; PATE; GIBSON, 2017).

General Forensic Evidence: In this approach, the other two articles, Nir and Griffiths (2018) and Baskin and Soommers (2012) selected, actually analyze the weight of the evidence in the decisions, condemnatory or not, or even according to the length of those sentences. The strength of an evidence, in a particular case, is determined by factors such as: the combination of evidence, the amount of evidence or a specific type of evidence in a case (SPOHN, 2000). Based on Nir and Griffiths (2018), in a study whose scope was to evaluate the impact of forensic evidence in criminal justice, on the length of custodial sentence for conviction in violent crimes, they note that a number of factors influence the judgments, as well as issues of race, gender, type of crime, sociodemographic factors, criminal history and especially forensic evidence. However, they concluded that the amount of physical evidence collected interferes intensely and positively in convictions, both in forming the judges conviction as long as in the sentence lasts. Forensic evidence examined in the laboratory refers to a variety of evidence, whether physical as a firearm, drugs, latent fingerprints, generic or biological objects, such as blood, natural and synthetic materials, and standard evidence (PETERSON; SOMMERS, 2010). Thus, judgements condemnation related to violent crimes, which involve a forensic laboratory report, result in an increase of 82.2% in the number of sentenced months compared to cases with no laboratory results. Besides that, each additional physical test results in a increase of 16.2% in the number of sentenced months. Regarding forensic evidence, evidence based on

Table 1. Description of the references analyzed with objectives and main results.

Title	Authors	Year	Objectives	TypeOfEvidence	Penal Infringement In Analysis	Data Source	MainResults
Can Molecular Genetic Evidence Influence Jurors' Perceptions of a Defendant?	Elise T. Costa, Margaret Pate, e Chris L. Gibson	2017	Examine whether judicial decisions of potential jurors are affected when the defendant's molecular genetic information is used as evidence	Genetic	Any crime	Perception of 279 people about the influence or not of a particular gene on the behavior of the defendant in certain crimes.	The results of multivariate regression models suggest that genetic evidence does not influence in punitive attitudes toward a defendant
Condemnation in evidence	Esther Nir e Elizabeth Griffiths	2018	Verify the effects of the type of evidence and the total amount of physical evidence in a case and the duration of the corresponding judicial decision	PhysicalandBiological	Violent crimes	Random sample of 4205 crimes occurrences reported at five sites in the United States from 2003 to 2006	The results show that cases of violent crime with forensic evidence result in longer prison sentences for convicted defendants
The influence of forensic evidence on the results of assaults and theft occurrence	Baskin, Deborah e A Sommers	2012	Influence of forensic evidence in the processing of incidents of assaults and theft.	PhysicalandBiological	Robbery and physical aggression (bodily injury)	Police reports about incident investigations; report of criminal laboratories; case files of prosecutors in 2003	Forensic evidence does not impact the results of prosecutions for cases of assault or theft. Cases in which there is physical evidence are no more likely to reach condemnation than those containing such evidence

witnesses is less objective and determinant in judicial decisions because of its credibility and reliability (NIR; GRIFFITHS, 2018). In the studies by Baskin and Soommers (2012) that has the objective to measure the influence of forensic evidence on the aggressions and robberies results, several limitations to the work development were perceived. One is the lack of an individualized analysis or an operational definition of each evidence, since these traces are combined in such a way that one can not exactly delimit the role made by each. The small amount of research, that explores the impact of forensic evidence on the various stages of the criminal justice process, is another limitation. Some studies, that accompany the effect of these traces until the end of the criminal prosecution, are more restricted, limiting itself to the phase of the police investigation. Notwithstanding such difficulties to the study, it was used some data of aggressions and robbery, which occurred in five jurisdictions of the United States: Los Angeles County, California, Indianapolis, Indiana, Evansville, Fort Wayne and South Bend. As a result, it was verified that forensic evidence is collected in less than a third of all cases of aggression and robbery, and from some which are collected, the latent impressions are the preponderant ones. These forensic evidence, when collected, is not always sent to the laboratory for analysis and when it happens, many of these traces are not used as evidence for a condemnation. Baskin and Soommers (2012) also found that forensic evidence does not have an impact on arrests, indictments or convictions in situations of assault or conviction, thus having limited utility in taking these cases to justice. Analysing the Table 2, it is easy to observe the differences between the few types of research in forensic evidence area, applied to judicial decisions, especially in relation to the type of crime committed without a specific study on a particular criminal offense and its relation to work forensics from the time of the crime to the trial stage in the Courts.

Final Considerations

The importance of forensic evidence in helping to elucidate crimes and consequently the use of this evidence as an element of condemnation or acquittal in criminal proceedings is indisputably worldwide. However, it has been observed in this bibliographic review that there are few studies that address the impact of these traces during the entire investigation, from the event to the final decision of the judiciary. The existing studies approach the evidence in a very generic way, without detailing each specific vestige and its importance and influence in the investigative and procedural phases. The work is also concerned with extralegal factors (gender, age, race, socio-demographic factors) as determinants or not in condemnations, focusing a little on the scope of the scientific evidence in the process. The shortage of works with this theme increases when one searches the last decade, for being an area of science that evolves rapidly in its process of crimes elucidation, researches about the performance of evidence in the judicial environment should be periodically and widely discussed, which does not occur. It is worth mentioning the divergent results of two of the three articles that were selected in the present study on the influence of the evidences in the judicial decisions, which makes the subject even more needy of further investigations in order to characterize the real role of the traces in the criminal prosecution. It is important to mention that due to the low levels of forensic evidence collected in the crimes of aggression and robbery, the study did not go deeply at any time in order to know the causes of this situation, since this reality must in some way influence the success or not of the investigations and criminal proceedings. Thus, it is necessary to look for factors that directly or indirectly contribute to this low rate of forensic evidence collection at the time of the crimes.

The continuity of research in this approach to the impact of forensic evidence, not only in all countries, has great importance as a feedback that this evidence is bringing to the legal order, especially in Brazil. There is not any research found that accompanies this path of forensic evidence, whatever it is and in relation to any type of crime, from the event to the condemnation. In the same way, according to the world-wide context, there was not a relevant quantitative of investigations in the last 10 (ten) years, approaching the expert work in relation to forensic evidence and its repercussion in the investigative and judicial scope. Based on the few existing articles, there is no one deepening of the qualitative factors that led to the conclusions obtained. It is necessary, therefore, to produce articles in order to collect forensic data, from the most diverse types of crimes, in the most diverse spheres, and on top of that, to understand the entire process of obtaining, processing and taking advantage of forensic evidence, verifying its application and value in judicial decisions, observing also the technical and human character embedded in this process that can also interfere in the results obtained.

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