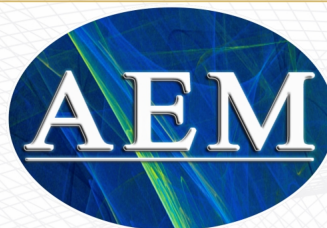




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Methods and Applications of Anthropology in Criminal Investigations

Abstract

Anthropology has shifted from studying primitive societies to addressing urbanization and crime, benefiting from its traditional methodologies. With the advancement of forensic anthropology, it has become essential in law and ethics, despite predictions of its decline, and has extended into modern forensic laboratories. This article aims to highlight the role of anthropological methods and their applications in criminology and criminal investigations. We have adopted a descriptive and analytical approach, examining the significance of anthropological studies in forensic work. Our findings emphasize the crucial role of kinship systems and blood samples in crime scene analysis, as well as the social impact of cultural characteristics in criminal investigations.

Keywords: *anthropology, methods and applications, criminology, forensic science, analytical laboratories*

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Cinayət axtarışlarında antropologiyanın metodları və tətbiqləri

Xülasə

Antropologiya ibtidai cəmiyyətləri öyrənməkdən, onun ənənəvi metodologiyalarından faydalanaraq urbanizasiya və cinayətlə mübarizəyə keçdi. Məhkəmə antropologiyasının inkişafı ilə onun tənəzzülü ilə bağlı proqnozlara baxmayaraq, hüquq və etika baxımından vacib hala gəldi və müasir məhkəmə laboratoriyalarına qədər genişləndi. Bu məqalə antropoloji metodların rolunu və onların kriminologiya və cinayət araşdırmalarında tətbiqini işıqlandırmaq məqsədi daşıyır. Məhkəmə ekspertizası işində antropoloji tədqiqatların əhəmiyyətini araşdıraraq təsviri və analitik yanaşma

tətbiq etdik. Nəticələrimiz cinayət yerinin təhlilində qohumluq sistemlərinin və qan nümunələrinin həlledici rolunu, habelə cinayət araşdırmalarında mədəni xüsusiyyətlərin sosial təsirini vurğulayır.

Açar sözlər: *antropologiya, metodlar və təbiiqlər, kriminologiya, məhkəmə ekspertizası, analitik laboratoriyalar*

Introduction

Anthropology appears to be a subject of study and interest for the social and human sciences, which encompass various branches aimed at understanding humans and grasping the meaning or significance of their actions.

These sciences, previously referred to as the "human sciences" and later as "social sciences," particularly in the Anglo-Saxon world, include numerous disciplines that study humans from multiple perspectives.

For example, in psychology, the focus is primarily on psychological phenomena; in sociology, the goal is to explain social phenomena; while in history, the emphasis is on studying past events and occurrences.

On the other hand, experimental sciences primarily study nature and everything that exists or is produced without human intervention. Among their most prominent branches are physics, chemistry, biology, astronomy, and geology—fields that are constantly evolving.

Research

However, one discipline has asserted itself in the field of knowledge: anthropology. With its various branches and domains, anthropology has shifted from the scientific study of primitive societies and the study of "the other" to the analysis of urban and metropolitan environments, ultimately transitioning from "the other" to "the self."

And with the diversity of its subjects, its methodologies have also varied, ranging from field studies to specialized field research, particularly with the applications of anthropology in forensic science and criminology. This paper aims to shed light on modern methodologies and applications in forensic laboratories and criminal investigations.

Despite the interconnection and overlap between this field and other sciences—such as natural, social, cultural, psychological, and political sciences—anthropology has distinguished itself with its unique characteristics. It relies on field-based material derived from the behavior of people and societies across different historical periods, grounded in the heritage and realities of these communities.

Anthropologists have long sought to uncover the hidden aspects of primitive civilizations, not merely to understand their historical and cultural past, but also to utilize this knowledge in analytical studies that inform the development plans of contemporary societies. This stems from their conviction of the deep interconnection between environment and social heritage, which necessitates preserving the natural and material environment as well as human cultural heritage.

This perspective is evident in contemporary anthropological studies, which analyze social phenomena through an integrated approach that draws upon multiple fields of knowledge. These include archaeological heritage and social aspects that contribute to understanding the stages of human evolution and development, recognizing humans as both biological and social beings who have undergone significant anatomical, cultural, and societal transformations.

Accordingly, we can pose the following question: **What are the applications and research methodologies of anthropology in modern forensic work?**

This study seeks to explore and define forensic anthropology, focusing on its various methodologies and applications. It also aims to highlight its significance, review its contributions to serving humanity, and attempt to predict the future development of this field.

1- Anthropology and Forensic Intersections

1.1 Intersections of Forensic Sciences

Intersections of Forensic Sciences: Forensic anthropology, as an interpretive and experimental science, constitutes a branch of criminology in its broadest sense. It examines the role of social, cultural, and biological factors among the various elements considered in attempts to explain criminal

phenomena (Lawless, 2022). This analysis takes into account both quantitative and qualitative differences in crime across different societies, as well as within the same society over time—even among specific social groups.

2- Criminology and Forensic Anthropology

Cesare Lombroso is credited with laying the foundations of forensic anthropology, or **Anthropologie Criminelle**, when he published the first edition of his work *"The Criminal Man"* in 1871 (Knepper & Ystehede, 2013). This branch aims to identify the individual factors contributing to criminal behavior by studying the physical and psychological characteristics of offenders. It examines the impact of external and internal anatomy, glandular secretions, innate instincts, and hereditary traits, as well as their overall influence on criminal behavior.

Thus, this science is divided into two major branches : The first is forensic biology, also known as biological criminology or organic criminology , which focuses on the influence of biological aspects and hereditary factors on the criminal's personality (Silver & Nedelec, 2019).

The second examines the impact of psychological traits and predispositions on criminal behavior, a field known as forensic psychology or psychological criminology, Since human beings consist of both body and mind, each influences the other. External and internal biological structures undoubtedly affect an individual's psychological predispositions.

In reality, criminal anthropology is also a branch of criminology. Sufficient evidence of the close connection between the two fields lies in the fact that the descriptive analysis of the criminal phenomenon has long relied on the organic and psychological interpretation of the criminal's personality, as demonstrated by anthropological studies.

Criminology and Forensic Psychiatry: Forensic psychiatry focuses on studying various mental disorders and their impact on an individual's criminal tendencies. The interpretation of deviant and criminal behavior, both considered forms of human behavior, often depends on the findings of this field. From this perspective, forensic psychiatry is closely linked to the application of criminal law. In fact, some theories in criminal law—most notably the theory of responsibility and its exemptions—owe much to the ideas put forward by this discipline (Arrigo, 2011).

Thus, forensic psychiatry can be classified among the auxiliary criminal sciences which are non-fundamental disciplines that do not study legal rules but rather examine certain phenomena related to crime. From this perspective, the indirect connection between this field and criminology becomes evident.

Criminology and Forensic Medicine: Forensic medicine is a branch of science that relies on medical and biological principles to collect criminal evidence and support various aspects of practical criminal applications. It plays a crucial role in resolving legal and judicial issues, such as diagnosing injuries and determining their causes, performing autopsies to identify the true cause of death, conducting chemical analyses to examine the nature and properties of toxic substances in poisoning-related murders, and analyzing handwriting to establish the identity of suspects in forgery cases (Petherick et al., 2009). This field has provided invaluable contributions to criminology, particularly during periods when the tendency to link an individual's physical traits to specific types of criminal behavior was prevalent. Most proponents of this approach were forensic medicine specialists.

Criminology and Criminal Investigation: Criminal investigation aims to study methods of proving crimes and identifying perpetrators, such as fingerprint matching, examining and identifying tools used in committing crimes, as well as utilizing photography equipment and lie detection devices (O'hara's, 1956). his field has no direct connection to criminology except to the extent that it establishes a link between a specific criminal pattern and the methods used to commit the crime.

Criminology and Criminal Psychology: Criminal psychology is one of the auxiliary criminal sciences and a branch of applied psychology that specializes in studying the psychological phenomena of various individuals involved in the criminal proceedings. This includes defendants, lawyers, investigating judges, prosecutors, witnesses, experts of all kinds, and ultimately, judges (Hollin, 2013).

There may be no direct connection between criminology and criminal psychology except to the extent that crime is linked to certain psychological phenomena, the revelation of which helps uncover hidden aspects of a crime. For example, a criminal may reoffend out of a desire for revenge against perceived judicial injustice, whether this injustice was real—manifesting as a judicial error—or merely imagined by the offender. This field is also linked to criminology for those who consider crime prevention as part of its scope. Understanding the psychological aspects of the accused by investigators and judges helps in selecting the appropriate criminal penalty, facilitating the offender's social rehabilitation as quickly as possible.

2-1 Criminal Anthropology

Anthropology is a term derived from ancient Greek, meaning "the study of humans." (Elias, 2019) It focuses on the origin of the human species, its evolution, the emergence and development of social and cultural relationships, human physical structure, behavior, variations among different groups, and the influence of ancient human history on the present cultural and social context. Over the decades, anthropology has branched into four main fields: biological or physical anthropology, cultural or social anthropology, archaeological anthropology, and linguistic anthropology. Biological anthropology primarily focuses on studying the biological, evolutionary, and demographic aspects of humans and other animals, as well as the biological and social factors influencing genetic and physiological variations (Barnard, 2011).

Archaeological anthropology focuses on studying human history through material remains and artifacts, such as tools, relics, plant remains, and buildings. By analyzing these remnants, archaeologists infer patterns of human behavior, customs, and traditions associated with past cultures. Linguistic anthropology, on the other hand, examines human communication methods and patterns, whether spoken or non-verbal, as well as language variation across time and space, its social implications, and its relationship with culture (Binford, 1962).

The term "criminal anthropology" emerged when biological (physical) anthropology was applied to answer forensic and legal questions, particularly in examining human remains in advanced stages of decomposition or mutilation, as well as skeletal remains. Forensic anthropologists work to identify individuals whose bodies have undergone severe decomposition, burning, or disfigurement, making recognition through facial features impossible. They also estimate the time elapsed since death to link remains to historical periods. It is important to note that the term "forensic" or "criminal" in medicine, anthropology, or any other field indicates the application of these sciences in legal or justice-related contexts. However, when forensic anthropologists deal with very old remains, their work loses its immediate forensic significance, as the crimes associated with such cases may have expired due to the statute of limitations or because the perpetrators have long since passed away (Galton, 1890).

There is an overlap between forensic medicine and criminal anthropology. While forensic medicine encompasses the examination of all types of human remains to establish identity—and forensic doctors perform this task thoroughly—their expertise extends beyond identification and determining the time of death. In contrast, forensic anthropologists primarily focus on these aspects. Due to the historical significance of ancient remains, this specialization emerged as a distinct field.

Like forensic doctors, forensic anthropologists extract, examine, and study human remains. Both fields aim to estimate age, sex, height, ethnic and geographical origins, and any signs of injuries or diseases before or at the time of death. For this reason, anthropologists often work alongside forensic doctors, forensic dentists, and homicide investigators to provide valuable insights for criminal or historical investigations. However, unlike forensic doctors, anthropologists are not legally authorized to determine the official cause of death. Instead, forensic doctors may consider their input when assessing the time since death, bone classification, age, sex, and other characteristics that help identify the remains (Byers & Juarez, 2023)

Specialized fields have emerged within forensic anthropology, including the exclusive examination of bones. Through bone analysis, it is possible to determine a person's height, sex, age, and racial lineage, and in some cases, evidence of the cause and manner of death may also be present. However, regardless of the examiner's expertise, estimates of age and height remain approximate rather than precise. This is because bone characteristics are influenced by various factors such as

nutrition, environment, and genetics. Additionally, the correlation between the length of a specific bone and a person's overall height can vary due to individual differences (White et al., 2011).

When it comes to highly specialized medical or scientific fields, the size of a population often determines the extent of specialization. In a small community, having a specialist in a rare field may be impractical if there is little demand for their expertise. For instance, in the United States, centralized referral institutions handle cases, forensic investigations, or biological samples from across the continent, ensuring that specialists remain actively engaged. In contrast, smaller communities may find it more cost-effective to focus on essential specialties and refer rare cases to experts in larger communities. This principle applies to anthropology in general and forensic anthropology in particular (Sujatha, 2014).

2-Scientific Research Methods in Criminal Investigations

In this study, the term "research methods" refers to:

- A set of principles and procedures used to achieve a scientific understanding of crime, criminals, and criminal behavior. The adoption of a scientific approach serves as the defining criterion between scientific and non-scientific studies.

- However, there is no universally agreed-upon methodological framework in criminology. Based on existing studies, two scientific approaches can be identified for studying crime and criminal behavior.

2-1 General Personal Interpretative Methods in Criminal Investigation

- **Anthropological Method:** Focuses on identifying the distinctive physical traits of criminals compared to others, as seen in Lombroso's studies.

- **Biological Method:** Examines the relationship between crime and heredity.

- **Medical Method:** Studies the impact of diseases and toxic disabilities as causes of deviant behavior.

- **Physiological Method:** Investigates the connection between human developmental stages and criminal behavior.

- **Biochemical Method:** Explores the influence of glandular secretions on criminal behavior.

- **Psychological Method:** Diagnoses the psychological factors leading to deviant behavior.

- **Psychiatric Method:** Focuses on diagnosing and treating psychotic disorders and various neurological diseases.

- **Psychoanalytic Method:** Analyzes an individual's subconscious to determine how repressed motives, desires, and needs contribute to internal conflicts. These conflicts may arise from a mismatch between personal desires and social or professional constraints, sometimes leading to criminal behavior as a means of psychological defense.

2-2 General Objective Interpretative Methods

- **Geographical Method:** Examines environmental factors surrounding an individual and their impact on behavior, particularly criminal behavior.

- **Ecological Method:** Studies the spatial distribution of crime and analyzes social factors related to this distribution. Researchers use maps to identify areas for study.

- **Economic Method:** Investigates the relationship between crime and economic conditions such as poverty and financial crises.

- **Social and Cultural Methods:** Analyze social institutions and their systems, assessing their role in shaping deviant behavior. Proponents of the socio-cultural approach argue that crime results from disruptions in social organization (Ratner, 2002).

2-3 Special Research Methods:

- These are the means and tools used to explain crime and uncover the factors behind its formation and emergence. These methods include the therapeutic approach, the statistical approach, and case histories. Some researchers argue that such classifications are unnecessary since criminal behavior results from the interaction of both personal and environmental factors.

Among the most important scientific methods and tools for obtaining information about crimes and their causes are the following:

2-3-1 Statistics: It is the quantitative study of social or natural phenomena, translating a specific phenomenon into numerical data. Statistics is one of the oldest methods used in studying crime. It provides a means to analyze criminal behavior and its relationship with various factors such as age, religion, gender, profession, social environment, weather, economic conditions, cultural level, and seasonal variations.

Since crime is not subject to direct observation by researchers, statistics—being a numerical representation of criminal activity in a specific place and time—serves as an indirect observation tool that provides researchers with information that would be difficult to obtain through other methods. By analyzing the collected data, researchers can make comparisons and draw conclusions by linking crime to the factors that led to its occurrence. This includes individual factors related to the criminal, such as gender, age, religion, education, profession, marital status, and family situation. It can also be linked to natural factors like weather and seasons or to social factors such as civilization, culture, and living standards.

The statistical method became widely recognized as a research tool in criminology following the emergence of crime statistics in France and the studies conducted by Quetelet and Guerry. Statistics is divided into two types: static statistics, which focuses on studying crime from a fixed perspective, such as location, time, or profession. This type is used to compare crimes occurring in the same place during different seasons or in different locations during the same season to determine the impact of environmental factors on crime. On the other hand, dynamic statistics examines crime through variables that change over time while keeping other factors constant, helping to analyze trends and shifts in crime rates over time.

Statistics is divided into official statistics, issued by official entities such as police departments, the Ministry of the Interior, and international organizations, and private statistics, conducted by researchers. The sources of statistics vary and include police stations, judicial courts, prisons, and mental health treatment centers. In Algeria, sources of criminal statistics include police stations, the prison administration, drug enforcement institutions, the Ministry of Justice, and border security forces (Weisburd & Britt, 2014).

Case Study Method: This method relies on a comprehensive study of an individual from birth to the time of research, examining their upbringing, physical, mental, and psychological development, as well as their surrounding environment and socio-economic conditions. This study is typically conducted after the individual has committed a crime and undergone police investigation, which may lead to variations in their responses compared to their initial state.

Social Survey Method: A social survey is defined as a comprehensive study of a specific social phenomenon or multiple interrelated phenomena. This method is widely used in studying criminal behavior, as it allows researchers to analyze the factors contributing to crime within society. It also helps determine the scale of crime and the extent to which various conditions affect it, using tools such as questionnaires. One of the main drawbacks of this method is the lack of sufficient data on certain social phenomena, such as the difficulty of accurately determining the percentage of impoverished individuals when studying the impact of poverty on crime. Additionally, applying experimental techniques such as observation and controlled experiments is often challenging when studying these phenomena.

3- New Applications of Anthropology in Criminal Investigations

3.1 Methods and Approaches to Researching Criminal Phenomena

From what has been previously discussed, we can identify the primary objective of criminology—as a causal explanatory science rather than a philosophical field—which is to analyze criminal phenomena and determine their contributing factors, whether related to the individual or society. This is done in order to establish general laws governing such phenomena.

Since crime is merely an incidental occurrence in an individual's life but remains an inevitable and constant phenomenon within society, research methods in this field must vary. Some approaches focus on the individual offender, while others are centered on the crime itself from a broader social perspective.

Before delving into this point, it is important to note that research methodology in this type of study often follows a scientific inductive approach. This approach relies on observation and experimentation to establish the general rules and laws governing criminal phenomena (Blokland & Van der Geest, 2017). However, this approach faces numerous challenges due to its focus on human personality, which is influenced by a range of variable factors. This makes **experimentation** and **observation** in criminological studies fundamentally different from their application in the natural sciences (Jupp, 2012). For example, crime and criminals cannot be subjected to experimentation. The only possible form of experimentation is the application of a specific penal system and the study of its outcomes. However, even in this limited scope, it cannot truly be considered an experiment, as it is impossible to compare the results of one system with those of another on the same criminal (Clear & Frost, 2013).

Even if experimentation were theoretically possible, it could constitute an infringement on personal freedom. For instance, if a pair of twins were placed in two different environments—one favorable and the other corrupt—to study the impact of social factors on their criminal behavior, it would be an assault on the humanity of the one placed in the corrupt environment, as they would become a criminal against their will.

Moreover, observation—in the sense of direct sensory perception—is a rare occurrence and can only happen by pure chance (as in bank or major store thefts monitored by surveillance cameras) or in cases where modern penal systems allow criminals to remain in free society under various monitoring methods, some of which may be electronic. In reality, what can be observed are only the traces and evidence left behind by the crime (such as how a safe was opened, fraudulent methods used, counterfeit banknotes, etc.).

All of this has necessitated reliance on other methods—beyond observation and experimentation—to determine the causes and factors behind criminal phenomena. These methods align with the nature of human sciences, and sociologists have played a major role in developing them.

Regardless of the research method employed, there are several fundamental principles that criminology researchers must adhere to in order to ensure the validity of their findings. The first of these principles relates to the necessity of multiple levels of interpretation (*Niveaux d'interprétation*). Examining crime as a phenomenon must differ from studying it as an individual case, and both approaches differ from analyzing the criminal himself. Each of these three levels—criminal phenomenon, crime, and criminal—requires distinct research methods and approaches (Vold, 1958).

Additionally, the researcher must ensure a comprehensive and precise description of the facts under investigation, a principle known as the *Principe de primauté de la description* (the primacy of description). This is essential because criminological studies are primarily descriptive in nature. Closely linked to this is the need for a *differential approach* (*Approche différentielle*), which emphasizes identifying the subtle differences that distinguish criminals from non-criminals or distinguishing one criminal from another within the same category of offenders.

Furthermore, criminological researchers should exclude from their focus the specific categories of mentally ill criminals diagnosed according to psychiatric criteria (*L'élimination des types psychiatriquement définis*), as such cases fall within the scope of medical rather than criminological studies.

First: Examination (*L'examen*) refers to the biological or physical examination of the criminal, as well as their psychological and mental assessment, aiming to establish a connection between their physical and psychological traits and their criminal behavior. The goal is to derive generalizable principles from individual cases. Accordingly, two types of examination can be distinguished: biological examination and psychological/mental examination.

a- Biological Examination: The biological examination may involve external body organs, in which case it is referred to as an external examination, or it may focus on the functions of internal body systems, making it an internal examination.

-External Biological Examination: This type of examination aims to establish a correlation between certain physical traits of an individual and their criminal behavior (Raine, 2014).

The Italian scientist Lombroso was the first to draw attention to the organic examination of criminals and the implications of examining external body features concerning criminal tendencies. Following Lombroso, several other scientists attempted to establish a link between crime and physical defects. The presence of an external physical disability, such as the absence of hearing, sight, or speech, or the loss of an arm or leg, may influence an individual's criminal tendencies and behaviors (Lombroso, 2006).

The disproportion between body parts may reveal a psychological or moral disorder in the criminal. An abnormally small or large brain, bulging eyes, an irregular nose, a protruding forehead, or the shape of the ears and teeth may indicate a specific criminal tendency (Rafter, 2008).

External biological examination is not limited to the body's external organs but may also extend to the skin. It includes, for example, analyzing scars on the top of the head, whether at the front or back, as they may indicate a tendency to commit violent crimes, particularly blood-related offenses. Scars on the right or left side may suggest that a person has fallen suddenly due to nervous seizures. Additionally, examining tattoos on the skin may reveal a lack or reduced sensitivity to pain in some individuals or expose hidden instinctive desires.

In reality, it is difficult to generalize the results of external biological examination to all individuals when interpreting their tendencies and criminal behavior, especially since the biological explanation of crime has been surpassed by other interpretations that are more scientifically rigorous.

-Internal Biological Examination: Following the stage of external examination comes the process of detecting dysfunctions that may appear in the internal organs of the criminal. This type of examination includes the body's internal systems, such as the reproductive, urinary, nervous, digestive, and respiratory systems. There is no doubt that malfunctions in these systems can affect an individual's behavior and inclination toward criminal activity. For example, disorders in the reproductive system may lead an individual to commit acts of public indecency or sexual offenses. Similarly, nervous system disorders may be linked to violent behavior, particularly crimes of passion and violent offenses. Studies have observed abnormal movements in the eyelids, tongue, neck, and hands in some criminals as a result of nervous system dysfunction (Raine, 2014)

The study and examination of gland functions receive significant attention due to the observed link between excessive secretion of the thyroid gland and a tendency toward violent crimes such as murder, assault, and battery. Glandular dysfunction may stem from nervous system disorders, sometimes caused by addiction to certain drugs or alcohol.

This examination may also include assessing the criminal's response to external environmental factors, as some individuals have heightened sensitivity to weather fluctuations, leading to mood disturbances and, in some cases, aggressive behavior.

b- Psychological and Mental Examination: The psychological and mental examination focuses on studying the individual's inner emotions and instincts to identify various psychological and mental disorders and determine their connection to criminal tendencies.

Given the influence of an individual's psychological state on their aggressive behavior, a field distinct from criminology has emerged—criminal psychology. This discipline encompasses the study of various psychological aspects, including tendencies, inclinations, and reactions specific to criminals. Specialists in this field, known as psychoanalysts, seek to uncover the hidden aspects of the criminal's consciousness and subconscious mind to diagnose the psychological disorder that led them to crime. This examination is typically conducted through interrogating the criminal and observing their behavior and emotional reactions during the process (Hare, 1999).

Here, we can mention two types of tests used in the psychological examination of criminals: the Rorschach test and the Mory test. The first involves presenting the examined criminal with ten inkblots of any color, which have no specific shape or clear meaning. The individual is asked to describe what these inkblots reveal in terms of objects, meanings, or similarities to other things and events. Their impressions and various reactions are recorded, including the time taken to provide observations. Afterward, the individual is questioned about the location, reason, and manner in which they perceived the objects or events they described. By analyzing the provided data, it becomes possible to identify the psychological disorders the criminal may be suffering from.

As for the Mory test, also known as the Thematic Apperception Test, it involves presenting the examined individual with thirty blurred images randomly selected from everyday life, depicting people, events, or objects. The person is asked to narrate a story about what they see in each of the thirty images. Their narratives and emotional reactions are recorded, and the analyst then examines these responses to uncover any underlying psychological disturbances within the criminal.

Psychological disturbances are usually linked to an imbalance in the criminal's instincts and emotions, which inevitably affect their tendencies and motivations (Blackburn, 1998). Criminal behavior may arise as a result of a quantitative imbalance in these instincts, either through excess or deficiency, or due to a qualitative deviation in the way an instinct is satisfied in an abnormal manner. A quantitative disturbance in the instinct of acquisition may lead to financial crimes such as theft, fraud, and breach of trust. Similarly, manifestations of quantitative disturbances in the sexual instinct may result in crimes such as rape, indecent acts, and sexual assault. Moreover, qualitative deviations in the same instinct (the sexual instinct) may be the cause of crimes involving child molestation, sodomy, or lesbianism (same-sex relations). Excess in the instinct of survival may drive an individual to commit violent crimes such as murder and assault, while a weakness in this instinct may lead a person to suicide, whether out of asceticism or disdain for life.

The study is not limited to psychological aspects but extends to examining mental aspects as well, which helps in understanding certain behavioral patterns exhibited by criminals. It has been observed that the intellectual faculties of criminals are generally lower than the average found in ordinary individuals. One such cognitive faculty, imagination or perception, may be impaired in criminals, leading to an exaggeration of certain real-life matters (such as an inflated sense of self-importance) or the creation of imaginary scenarios that do not exist (such as the false belief of being persecuted). This type of impairment may push an individual into criminal behavior, often involving fraudulent methods, such as in cases of fraud and deception.

Second: Studying the Criminal's History

Biological and psychological examinations often fail to fully uncover the motives and factors behind a crime. Therefore, it is common to study the criminal's life history from birth up to the moment the crime was committed. This approach aims to understand all the social conditions surrounding the individual, including family, school, work, acquired experiences, habitual behaviors, and any illnesses that appeared either in the criminal or their peers. The criminal's past, in all its aspects, undoubtedly plays a role in shaping the crime that has subjected them to study.

In practice, uncovering the criminal's past is typically conducted through observation, questionnaires, interviews, and case studies. The following sections will elaborate on these methods.

a- Observation (L'observation)

Observation represents the first stage of the scientific method and is a key tool of the inductive approach, preceding experimentation. It primarily involves monitoring and examining a particular phenomenon to derive the general rule governing it, which may also apply to similar phenomena.

In criminological studies, observation is conducted through field research, involving direct monitoring of criminals in a free environment. This applies whether the individual is an adult or a juvenile, sane or insane, healthy or ill. The goal is to identify general patterns that help explain criminal behavior.

Criminologist Sheldon Glueck employed experimental observation to assess the rise in juvenile crime rates in the suburbs of Boston following their urban redevelopment. He selected 500 delinquent youths and an equal number of non-delinquent youths with matching characteristics in age, intelligence level, and social background to study the phenomenon.

Observation requires certain guarantees to be effective and to be considered a reliable research method in criminological studies. The most important of these are the expertise and objectivity of the observer. Without expertise, the accuracy of assessment and conclusions cannot be ensured, and without objectivity, the researcher may be influenced by personal biases, relying on preconceived judgments and impressions about the observed criminal when drawing conclusions.

Observation is divided into two types: simple observation and structured observation. Simple observation occurs when the researcher merely watches or listens to the criminal without using any

additional technical methods to verify the accuracy of the obtained information. It relies solely on the researcher's personal ability to observe and record findings (Eysenck & Gudjonsson, 2013).

Simple observation can be conducted either with participation or without participation (Eysenck & Gudjonsson, 2013). Participatory observation requires the researcher to enter the field while concealing their identity to integrate into the criminal group under study, making it appear as if they are one of its members. However, this method may compromise objectivity, as the researcher could be influenced by the environment they have merged into and share the emotions and reactions of its members. Despite this, participatory observation can help verify the truthfulness or falsehood of statements made by individuals within the observed group.

In contrast, non-participatory observation is conducted when the researcher reveals their true purpose, and their integration into the group is based on the members' consent, usually in a partial manner. However, this method presents challenges, as individuals may be reluctant to cooperate with the observer for fear of exposure, particularly when studying the activities of organized criminal gangs.

Observation is considered structured or systematic when the researcher utilizes tools that facilitate data collection, such as questionnaires, tests, facial measurement devices, recording equipment, or cameras. The use of these tools enhances the accuracy of the collected information and ensures the researcher's neutrality, preventing biases or preconceived judgments about the subjects under study. It also helps the observer remain objective and free from personal inclinations or impressions during the observation process (Bryman, 2016).

b- The Questionnaire (Questionnaire)

The questionnaire is one of the methods used to study the social aspects of a criminal's life, aiming to collect data necessary for measuring the factors contributing to criminal behavior. It is conducted through a form containing a set of questions directed at individuals under study, requiring them to record their responses without the presence of the researcher who formulated the questions.

These questions primarily focus on the reasons behind committing crimes. They are based on seven key inquiries formulated by the criminologist **Seelig**, using the interrogative tools: **Who, What, Where, With What, Why, How, and When**. These questions relate to the victim, the location, the means used, the motive, and the circumstances and timing of the crime.

There is no doubt that the questionnaire, as one of the methods for studying the criminal individual—if its questions are well-formulated—plays an important role in obtaining direct data from the subject under study regarding criminal phenomena, without any influence from the researcher that might affect their responses. Certainly, the absence of the researcher during the respondent's completion of the questionnaire encourages the individual to answer all types of questions without embarrassment, especially when the questions pertain to crimes of a sexual nature (Bachman et al., 2015)

Despite its advantages, the questionnaire has drawbacks, the most significant being its limitation to literate individuals, making the research sample unrepresentative and leading to inaccurate results in societies with high illiteracy rates, such as Egypt, where over fifty percent of the population is illiterate. Additionally, responses may be misleading, as some questions may be too general to reveal specific details about the crime, some individuals may refuse to answer due to a lack of interest, and others may misunderstand the questions or provide exaggerated or inaccurate responses.

c- Interview: While the questionnaire is a research method conducted in the absence of the researcher, the interview is a direct approach that allows face-to-face interaction between the researcher and the subject under study. In this method, the researcher conducts a form of interrogation to collect comprehensive information about specific incidents as well as the psychological and social condition of the criminal. This method is usually employed in areas beyond the reach of authorities, such as interviewing shop owners to assess the extent of thefts or hospital directors to uncover cases of illegal abortions.

The interview has multiple advantages, making it one of the most widely used research methods in criminology. This approach encompasses individuals from all social classes, regardless of their level of education. The presence of the researcher allows for more accurate information, minimizing

false responses or deceptive emotions. Additionally, the interview process and participants' answers may inspire the researcher to ask further questions that were not initially considered. Moreover, the researcher's presence helps establish a relationship of trust and understanding with the criminal under study, facilitating a deeper comprehension of their motives and the true factors that led them to commit the crime.

D- Case Study: In criminological studies, a case study refers to the scientific method of collecting data on an entire social unit, whether it be an individual criminal or a group of criminals (such as a gang), with the aim of analyzing their psychology, examining their physical condition, and uncovering their social circumstances. This research involves studying the individual's past and present while exploring various aspects of their personality. It includes tracking the different social conditions the criminal has experienced, the incidents they have encountered, the knowledge they have acquired, their methods of social upbringing, habits, traditions, and relationships with others. The American scholar William Healy is credited with introducing this method in juvenile delinquency studies as early as 1915 when he conducted extensive research on the psychological, physical, and social factors that could lead a juvenile to deviate.

Conclusion

Today, anthropology significantly contributes to social life by uncovering hidden crime scenes, reconstructing events, and conducting forensic analysis of biological evidence and cultural indicators. Through its exploration of social relationship patterns and interactions with various psychological, social, and personal environments, anthropology is now capable of predicting the course of wars and crimes and identifying perpetrators in different crime scenes.

The study concludes that there is a strong and decisive link between anthropology, criminal acts, and the social and cultural environment. Additionally, anthropological applications play a crucial role in crime verification and crime scene analysis. Criminology intersects with anthropology in several aspects, primarily in the analysis of blood traits derived from kinship and lineage studies that connect both the victim and the criminal. Ultimately, anthropology, with all its branches, continues to provide invaluable services to science, society, and humanity.

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