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ANTHROPOLOGY IN THE SERVICE OF THE CRIMINAL JUSTICE SYSTEM AND THE SOCIETAL SECURITY

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ABSTRACT

Anthropology is the study of man in its totality. In other words, it can also be defined as the study of society, culture, and man as a biological being. There are several branches of Anthropology including Forensic Anthropology. The scope of Forensic Anthropology or Applied Physical Anthropology is enormously enhanced today in solving the problems in crime investigation and the administration of justice and ultimately in solving the problems of the society. Forensic Anthropology has a major role to play today in crime prevention, investigation and the administration of justice today. It establishes human identity and also helps in identifying animal bones. Through its tools, technologies, and methodologies it can link the criminal with the crime and can exonerate the innocent suspects in crime cases. The police, prosecution and judiciary all over the world today are using Somatoscopy, Anthropometry, Odontology, Footprints, Fingerprints, Genetic Screening, and other anthropological techniques for drawing inferences for providing justice to the people in different type of crime cases. In the present paper, an attempt has been made to review briefly what service Anthropology is providing to the criminal justice system and the society and also for maintaining security among different world populations.

Keywords: Anthropology, Criminal Justice System, Society, Fingerprints, Crime investigation, Security, etc.

INTRODUCTION

Crime free society is a dream of every human individual on earth. But it never happened ever since the origin of man on the planet earth. Crime is always perpetuated in one form or the other. With the advancements in science and technology criminals also became high-tech and commit crimes with scientific methods. To combat the scientific criminals and for the prevention and investigation of crime, scientific tools and technologies were always required by the criminal justice system. As we know "Diamond cuts Diamond" thus, for apprehending scientific criminals, scientific tools and technologies were always effective. Anthropology always provided these tools and technologies in the service of the criminal justice system and society and helped maintaining security and world peace[1].

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ANTHROPOLOGY AND FORENSIC SCIENCE

Anthropology is the study of man from all aspects. It has multiple tools and technologies for establishing human identity. In Forensic investigations or scientific crime investigations the major part of the process is establishing human identity. It may be of the dead or that of a living being.

Biological tissue materials like bones and hair, nail and teeth are required to be identified whether of human origin or animal. Likewise, soft tissues like skin, muscles and biological fluids and their stains have to be identified in crime cases, be it human or animal origin. These biological materials further have to be examined for individualization. Anthropology always provided tools and technologies for such examinations. This branch of knowledge was called Forensic Anthropology.

Word Forensics is derived from a Latin word 'Forensis' means a Forum or connected with the court of law or subjecting to discussion and debate. Forensic Science is defined as "Any branch of science and technology which is helpful in the investigation of crime and the administration of justice". Thus, Forensic Science is not a single science, rather, an amalgamation of different branches of pure and applied sciences. These may be Physics, Chemistry, Mathematics, Biology, Biochemistry, Microbiology, Molecular Biology, Physical or Biological Anthropology or Human Biology all are integral part of Forensic Science. Not only this, even Forensic Archaeology, Forensic Geology, Forensic Botany, Forensic Zoology and Forensic Medicine are branches of Forensic Science today[2].

FORENSIC ANTHROPOLOGY IN THE CONTEMPORARY SOCIETY

The contemporary society all over the world is changing very fast. The literacy rate all over the world is on the rise. The socio-cultural and scientific awareness is also increasing. The criminal justice system all over the world is more dependent on scientific evidence rather than oral testimony. Anthropological techniques are being enormously used in crime prevention, investigation and the administration of justice[1].

People themselves are demanding involvement of Forensic Anthropologists for the examination of scenes of crime and for the scientific examination of the evidence collected in the laboratories by them especially in the cases of Homicides, Sexual assaults, Paternity and Maternity disputes, Human trafficking, Disaster and Plane crash victim identification, Identification of Forgeries, bank frauds, insurance frauds, Wildlife crime, in the cases of dowry deaths by burning the dead bodies before the arrival of the police to destroy the evidence, and burnt bodies recovered from burnt houses, cars, buses, railway compartments and elsewhere. Illegal immigration is another issue that always requires anthropological examination. Not only this, even Sports Forensics and Marine forensics also need the attention of Anthropologists.

Crime Prevention

The prevention of crime has always maintained peace and harmony in the society and thereby leading to societal security as a whole.[1] Anthropological methods and studies always contributed to the same. Some of the important contributions can be listed as:

(a) Prevention of accidental or deliberate transfer of newborn babies was avoided by taking their palm and sole prints in the hospitals and maternity home records. This could also be done by registering blood groups and other genetic profiles. In the event of transfer the babies could be identified and assigned to the genetic or biological real mothers. The same could be true for paternity dispute cases and in the event of human trafficking.

(b) The forgeries and frauds could be prevented by registering fingerprints on documents. Impersonation could be detected by the examination of recorded fingerprints.

(c) Identification of persons or criminals could be done by circulating the portraits of the criminals, from the crowds by recognizing them from somatoscopic features. In the cases of rioting persons could be identified by their photographs, videos, and CCTV footage. This could be done in all kinds of crime cases. It proved as deterrent to potential criminals.

(d) From the record slips of fingerprints of the convicted offenders, the persons could be identified from the chance prints left at the scene of crime or the search slips prepared in respect of suspects. The second time offenders could easily be identified from their fingerprint records or databases. Likewise, the criminals could also be identified from the firearm and DNA data bank comparisons. Thus, the prevention of crime and the detection of criminals could be possible.

(e) Forensic Archaeologists identified the idols of antiquity from the fake idols in idol theft cases from the temples, which proved as a deterrent to future criminals.

(f) As the Anthropologists and Geologists could identify precious ores, stones and fossils which were smuggled, thus, the criminals were prevented with the fear that they could be identified.

Crime Investigation and the Administration of Justice

Right from the discovery of the ABO blood group system[3] till today blood groups, Redcell enzymes, Serum proteins, Osteology, Footprints, Fingerprints, Odontology, Biometrics, DNA profiling, Hair comparison, Handwriting, and Trace evidences have been examined by Anthropologists and Forensic Anthropologists all over the world in crime cases for linking the accused with the crime, the victim and scene of crime. They were brought to book by various courts of law with the help of Anthropological evidence[4]." It continues right from the beginning of the 20th century till contemporary times. From the famous Ruxton case of 1935 the superimposition of skull and photograph started and technique was modified as Linhof-Technika-Camera superimposition, Mirror Superimposition, Video-Camera superimposition and Computerized superimposition[5]. The evidences have been utilized by the courts of law all over the world to solve the highly ticklish cases of crime. Nowadays the scientists have switched on to computerized facial reconstruction from manual facial reconstruction. Thus, anthropological techniques changed with the changing pace of technology. Anthropological tools and technologies remained an integral part of crime investigation and helped in administration of justice process and provided internal security in various countries all over the world[2].

ESTABLISHMENT OF HUMAN IDENTITY

In crime investigation, when the crime is committed against human body, the first and foremost duty of the investigation is to establish human identity, whether living or dead, accused or victim. The nature and grievousness of injury and the age of a person have to be estimated. In the cases where the body is highly putrefied or only skeleton or bones have been recovered and the body is beyond recognition, the species of origin of bones, age, sex have to be detected and stature has to be estimated by anthropological methods. Efforts are also made to identify the body based on the belongings obtained like garments, shoes, wristwatch, mobile phone, ornaments, or any tattoo marks on the body. The shape of foot and somatoscopic features if available also helps. The tailor marks present on the garments and also the call details present in the mobiles may aid in identification and investigation. The blood samples are taken from the bodies for genetic profiling and fingerprints are preserved for identification and comparison. Photographs and videos are taken and preserved for establishing identity in future. Dead bodies are placed at some places for identification by the public and wide publicity is done for identification. Photographs are printed in newspapers and also broadcasted in different TV channels. Messages are also communicated to the public through radio.

Somatoscopy

The facial features of the body, facial morphology, and geometry are very much helpful in human identification. The shape of face, skin color, shape of nose, eyes, hair, ears, chin, mouth, lips, and secondary sexual characters play a significant role in human identification which vary from person to person and are genetically transmitted from the parents to the offspring's.

Anthropometry

Measurements taken on the human body is called Anthropometry. These may be length, breadth, circumference, angles using various landmarks on human body. The calculation of indices all help in human identification[6-15].

Osteology

Osteology is the study of bones or skeletons. We can find out species of origin of the bones, age, sex, stature by the use of osteological and osteometric methods. Osteology also indicates racial characteristics like shape of face and prognathism. We can also carry out superimposition of skull and photograph of a lifetime of the victim to identify the person. Facial reconstruction can also be carried out[7-15].

Footprints

An American anthropologist Louise M. Robbins on footprints has rightly said, "Footprints complete or partial do indicate something about the person who caused them". It is true and the persons can be identified from foot morphology, dimensions and stride length. The alignment to toes and foot contour are the other parameters which help in human identification. Footprints of every person and foot morphology are different and unique[16,17].

Fingerprints

Fingerprints of every human individual are unique for him or her. No two persons have identical fingerprints in the world. Thus, persons can be identified by comparing their fingerprints with recorded fingerprints during their lifetime say on Aadhar cards, bank records, sale deeds, service books, or from criminal databases of fingerprints kept in various fingerprint bureax in the world. Numerous human individuals have been identified in various crime cases from fingerprints in the world. The partial fingerprints also contain sufficient minutiae for comparison if the print is decipherable, that is, contains legible ridge characteristics[18-22].

Odontology

Odontology is the study of teeth. Every human being has a set of dentitions, which can be called to be his dental signatures. Thus, the bitemarks of every human individual are also unique and different. Teeth do help in establishing human identity and in estimation of dental age of the person. Studies have also been carried out on sexual dimorphism of teeth and efforts have been made to determine sex from the teeth. Dental peculiarities do permit human identification beyond any doubt[23-25].

Biometric Characteristics

Today we are living in computer age. Biometric features like, Fingerprints, Iris, Facial morphology are electronically recorded and further the person's identity is established using electronic gadgets. Biometrics security equipment's have become the essential gadgets and the way of life all over the world[27].

Serology

Serology is the study of body sera or fluids. In Forensic Serology we can find whether blood or any other body fluid is of human or of some animal. This can be done with antigen-antibody reactions by tube method, gel diffusion method or by cross-over electrophoresis. Blood groups, enzymes, and serum proteins can be of use in establishing human identity[2-4,6].

DNA Profiling

Prof. Alec Jeffrey in 1985, while working at Leicester Institute in England invented the DNA Profiling technique. Studies were carried out through RFLP (Restricted Fragment Length Polymorphisms) and later scientists shifted to STR and SNP technologies. The technique is infallible and has established human identity in numerous crime cases. The evidence has been accepted by the courts all over the world. As we know DNA of no two persons is identical except monozygotic twins and clones (in animals) thus, technology has revolutionized the crime investigation and the administration of justice scenario in the world. DNA can be extracted and amplified from tissue materials and biological stains. It can also be extracted from bone marrow and dental canals[4].

Hair

Examination of hair is also very helpful for establishing human identity in crime cases and to link or delink a person with the crime. It may be physical, microscopical, serological or DNA examination of hair, the evidence is highly valuable in the administration of justice process. Hair continuously falls from our body, can also get transferred during scuffle or during physical contact[6].

Handwriting

Every person's handwriting is the result of one's coordination of brain and hand. A person can be identified from one's handwriting. The handwriting and signature examinations have been used in many cases for identifying criminals. This evidence is invariably used in crime investigation and in the administration of justice process[28].

Trace Evidence

Trace evidences are minute as well as macro pollens, plant stains, tattoo marks, deformities, moles, old scars, surgical artifacts, food stains, dust and paint marks, grease and oil marks, dye stains, cosmetics, body oils, and creams, etc. it has been observed that in some crime cases these have been found to be excellent linking and identifying evidences[29].

Wildlife Forensics

When bones, teeth, furs, hair, claws, tusks and body subcutaneous fats of wild animals have to be identified in crime cases, the inputs of anthropologists have always been of immense help. Protection of wildlife endangered species is the need of the hour today. Efforts are being made to curtail wildlife crime all over the world. Wildlife conventions and laws demand anthropological methods for the crime investigation[30,31].

Team Efforts

Anthropologists have enormously contributed to the identification of exhumed bodies and skeletons, mummified dead bodies while working as team members with the team of medical officers who had conducted postmortem proceedings or

medicolegal autopsies. Sometimes, Medical officers, Anthropologists, Toxicologists, Odontologists, and Radiographers have to work as teams for carrying out examinations of difficult cases.

A CASE STUDY

In a dry pond, terminal ends of a human hand and foot bones protruding out from the ground were seen and reported to the area police station. The scientific team was called to examine the scene. The earth was dug and the human body was taken out. The body was highly putrefied and was not identifiable.

A closure examination revealed that left side of the body had putrefied, but fragments of skin and flesh were intact. The right side was all skeleton. The remnants of the male sex organ confirmed that the body belonged to a male. No cloths were found on the body. 'OM' in Hindi script was inscribed on the back of left hand. Dried pool of blood was spotted in the bushes near the pond. A few blood smears and drag marks were also seen near the pool of blood. Pieces of broken wine bottle and a cup were also recovered from the site of crime. The presence of these physical clues indicated that the deceased was done to death in the bushes, probably, after taking liquor and the body was buried in the pond.

The inquiries revealed that one Mr. 'X' aged about 20-21 years was missing from his house for the last 20 days. The relations of the missing person could not identify the body, but they did confirm the presence of tattooed mark 'OM' on the back of left hand of Mr. 'X'. To confirm identity, it was necessary to find some other identifiable clues. The investigating officer was advised to procure a photograph of the missing person and send it along with skull (complete with mandible) to Forensic Science Laboratory for identification.

The photograph of the missing person along with the skull were received in the laboratory along with other exhibits. After establishing the sex and age of the skull, the morphological features of the skull were compared with those of the photograph. These were found matching. Finally, the superimposition carried out and established the identity of the person.

DISCUSSIONS AND CONCLUSIONS

The analysis of the foregoing presentations clearly reveals that Anthropologists and anthropological tools and techniques have contributed in the past and are contributing a lot in the service of contemporary society and its security. Anthropologists have scientifically investigated crime through their tools and technologies and today they can boast of being an integral part of Forensic Science in the form of Forensic Anthropology. Anthropologists through their specialized knowledge have provided evidences to the police, prosecution, and judiciary for their usage in crime investigation and administration of justice process. In nutshell we can aver that Anthropology provided yeoman service to the criminal justice system in the past and present and shall continue to do so in future with advanced tools and technologies to keep pace with the advancing science and technology scenario in the world.

CONFLICT OF INTEREST

The authors declare no conflict of interest regarding this manuscript.

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