

Norman J. Sauer,¹ Ph.D. and Laurence R. Simson,² M.D.

Clarifying the Role of Forensic Anthropologists in Death Investigations

REFERENCE: Sauer, N. J. and Simson, L. R., "Clarifying the Role of Forensic Anthropologists in Death Investigations," *Journal of Forensic Sciences*, JFSCA, Vol. 29, No. 4, Oct. 1984, pp. 1081-1086.

ABSTRACT: Although their customary role is the identification of decomposed human remains, forensic anthropologists are frequently called upon to provide evidence for or to testify about the circumstances that surrounded a particular death. The literature is ambiguous and contradictory about the role of anthropologists in death investigations. Relying upon traditional distinctions, we present three cases that illustrate the presence of evidence for "manner of death" on decomposed remains. Then we argue that evidence for vital reactions, necessary for the determination of "cause of death," rarely if ever survives skeletonization, and while forensic anthropologists can be expected to provide evidence for the determination of manner of death, they are unlikely to contribute to the discovery of its cause.

KEYWORDS: physical anthropology, death, human identification, decomposition

Physical anthropologists have several traditional and well-defined roles in the medicolegal investigation of decomposed human remains. They are experts in the development of biological profiles (age, sex, stature, ethnic identity, pathologies, and so forth), in the evaluation of X-rays and medical records for the purpose of establishing individual identification, and in the estimation of the length of time that has elapsed since death or burial. Many forensic anthropologists are also trained in and have experience in the systematic excavation of skeletal material and the collection of surface remains. As is the case with other forensic science specialists, the anthropologists' niche is well-defined and few nonspecialists are professionally equipped to perform their duties.

Nevertheless, there exists an area of investigation in which the anthropologist's role is ambiguous and which poses a dilemma, that is, death investigation per se. In the United States, medical examiners or coroners are charged with the legal responsibility of certifying the cause and manner of death of decedants found in their jurisdiction. General or forensic pathologists, some of whom are medical examiners, usually perform postmortem examinations, study medical histories, consult with other specialists, and occasionally visit crime scenes. Their goal in these cases is to decide upon and sometimes verify the cause and manner of death. If the remains are decomposing or skeletonized they may seek the expertise of a forensic anthropologist. The forensic anthropologist may be asked not only to assist with identification but also to study and pass judgement about the circumstances that surround a death. In the lab the forensic anthropologist may study bone surfaces for signs of injury or perimortem lesions or systematically evaluate the precise position, relative to the body, of an associated object; if they are

Received for publication 15 March 1984; accepted for publication 9 April 1984.

¹ Assistant professor, Department of Anthropology, Michigan State University, E. Lansing, MI.

² Associate pathologist, Department of Pathology, E. W. Sparrow Hospital, Lansing, MI and adjunct professor, The School of Criminal Justice, Michigan State University, E. Lansing, MI.

asked to visit a crime scene or to assist with the excavation of remains, they may evaluate clues like body position and orientation, associated artifacts, and grave features. Clearly by providing such assistance, forensic anthropologists are contributing to death investigation. Nevertheless, the appropriate level of their participation in such cases is ill-defined.

A consideration of several of the recent reviews of forensic anthropology reveals that anthropologists themselves are not in agreement about the appropriate extent of their involvement. Twenty years ago, in his classic, *The Human Skeleton in Forensic Medicine*, Krogman [1], warned that anthropologists should not "tackle the cause of death," and he discussed death investigation no further. T. Dale Stewart, on the other hand, in his *Essentials of Forensic Anthropology*, urges that anthropologists should describe any evidence for possible perimortem skeletal damage, including its location and extent and should report any possibly associated weapons or artifacts. Even though it is unlikely that an anthropologist would learn the cause of death from skeletal remains, he argues, "someone has died and the reason for the investigation is to determine whether or not a crime has been committed, whatever the cause of death" [2]. In a 1982 review, Clyde Snow simply declares that anthropologists are "not qualified to give an opinion of the cause and manner of death. Such opinions are the prerogative of the forensic pathologists who conduct the autopsies and sign the death certificates" [3].

Cause and Manner of Death

It is proposed here that this problem may be alleviated by reconsidering the definitions and implications of the phrases, "cause of death" and "manner of death" and discussing an anthropologist's likely contribution to the determination of each. Lester Adelson in, *The Pathology of Homicide* [4], defines the *cause* of death as, "the injury, disease or combination of the two responsible for initiating the train of physiological disturbances, brief or prolonged, which produced the fatal termination." He defines the *manner* of death as, "the fashion in which the cause of death arose." He illustrates a distinction between the two concepts with an example. Suppose that in a particular case, the cause of death was determined to be a gunshot wound to the head. The manner of death could have been homicide, suicide, accident, or undeterminable (natural death obviously not being one of the considerations in the example cited).

The determination of cause of death is clearly a medical issue, one that requires the reasonable demonstration that the cessation of life was due to a specifiable pathological process. The necessary condition for its determination is the presence of physical evidence for a vital reaction to a fatal disease or trauma (Fig. 1). Although witnesses' information, investigating offi-

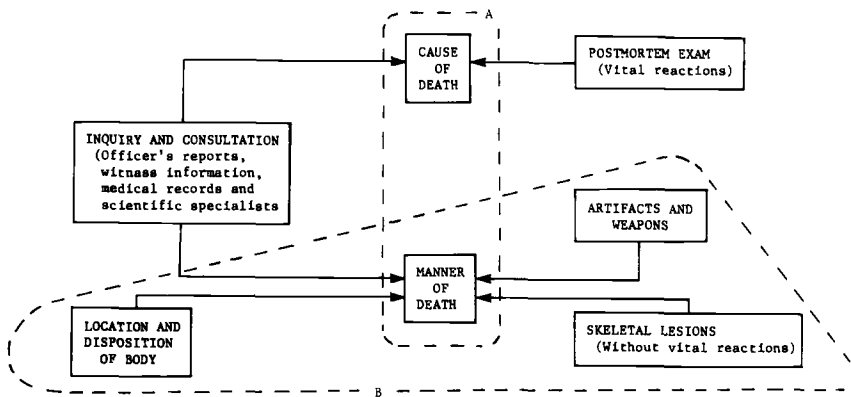


FIG. 1—Scheme relating several aspects of death investigation to cause and manner of death. (a) Area traditionally avoided by forensic anthropologists. (b) Area of contribution suggested for anthropologists.

cers' reports, or medical records may assist in the evaluation, the final decision rests with the pathologist or medical examiner who has conducted the postmortem examination.

The determination of manner of death is quite a different matter. While the postmortem examination is a critical ingredient to a manner of death determination, it is usually neither sufficient by itself nor always necessary. In Fig. 1 we are reminded that among the paths to manner of death are a knowledge of cause of death and inquiry; but also that manner of death may be revealed by other factors such as the location and disposition of remains, the nature of associated items, and the quality of signs of trauma that may not exhibit vital reactions. Unlike cause of death, the study of manner of death may require the piecing together of a spectrum of data derived from a variety of sources, medical and nonmedical. Investigating officers may discover obvious and incriminating signs of homicide at a crime scene in a case where cause of death is never determined. It is not necessary to have established the cause of death for there to be a successful prosecution of the perpetrator(s) of a homicide. The law only requires that the manner of death be homicide.

Anthropologists and Death Investigation

In cases that involve decomposed or interred human remains, forensic anthropologists (including forensic archaeologists) are often the only specialists with the training and experience to evaluate data relating to the "fashion in which cause of death arose." Several case studies illustrate this point.

Case Study 1

In 1979 our laboratory was presented with the partially decomposed remains of a young adult male that had been discovered in an isolated wooded area in northern Michigan. We were asked to verify a tentative identification and to study the remains for signs of trauma that might have been related to the individual's death. The material had already been examined for signs of perimortem injury by a pathologist who had little experience with disarticulated skeletal material.

Evidence disclosed by a group of anthropologists consisted of a comminuted fracture of the right mastoid process (with medially displaced fragments) and distinctive cut marks on opposing borders of two adjacent left ribs. One of the cut marks, on the lower border of the second rib, was actually a compressed notch with a flat base while the other, juxtaposed on the superior border of the third rib, displayed an uplifted slice of bone.

During our investigation, it was revealed that the eyewitness who had directed the police to the remains testified that the victim had been led to the wooded area and was murdered during an incident that involved a blow to the side of the head with a tree limb and repeated stab wounds to the chest and neck. The evidence we uncovered was used during an ensuing trial to support the conclusion that the deceased was the victim of homicide.

Case Study 2

In the summer of 1981, the Michigan State Police were led to the location of nearly completely skeletonized human remains. These were positively identified as a 15-year-old male who had been missing for about 11 months. The remains, which were discovered in a wooded area under a pile of logs, were collected by law enforcement officials and delivered to our lab along with clothing and closely adhering vegetation and soil. Although anthropologists were not invited to the scene, the police were aware of the value of the careful handling of such material and preserved the position of the body quite well during its recovery and transport.

At our initial investigation of the skeleton, we discovered and documented that the individual's hands had been bound behind his body. A length of cord had apparently been looped around

one, then the other, then around both wrists (Figs. 2 and 3). Even in the absence of signs of perimortem injury, this evidence, coupled with the fact that the remains had been deposited in an out-of-the-way wooded area, indicated that foul play was involved and that the manner of death was, with high probability, homicide.

Case Study 3

In the Fall of 1980, Michigan State University anthropologists were summoned to a scene where a body was known to have been buried for nearly one year in a grave that was 3 m deep. Because of the police agency's desire to protect a witness, the remains were excavated during the night. After an overburden was carried away by a back hoe and the remains were exposed, several sheets of covering material and soil were removed so that the body could be studied in situ. Figure 4 illustrates a chain that was found to encircle the victim's neck. Because the head separated from the torso during transport, this situation, documented by photographs at the burial site was not demonstrable at the morgue. Further evidence for the events associated with the individual's death did come to light at the morgue, however, when we discovered that the specimen had apparently been bound with a length of rope. This information, along with the discovery of the chain around the victim's neck, provided important evidence for homicide in this case.

Discussion

Death investigation is properly a team effort and the determination of the cause and manner of death properly requires the cooperation of pathologists, law enforcement personnel, laboratory scientists, and occasionally specialists who are not full-time forensic scientists but who have skills that are applicable to certain law enforcement situations. Forensic anthropologists are by definition trained in and have experience in the study of decomposed human remains. Many of them are also skilled in or work with people who are skilled in the systematic excavation such material. To cases that involve decomposed or interred bodies they bring a set of capabilities that other specialists do not possess. Anthropologists may be in a position to evaluate circumstances that surround death; however, it is extremely unlikely that cause of death as defined by Adelson will ever be determined from decomposed remains simply because the evidence for physiological responses to disease or trauma do not normally survive skeletonization. Nonetheless, clues like the placement and orientation of a body, the location and nature of artifacts, and the presence of perimortem skeletal injuries may all point to death by homicide particularly when supported by other data.

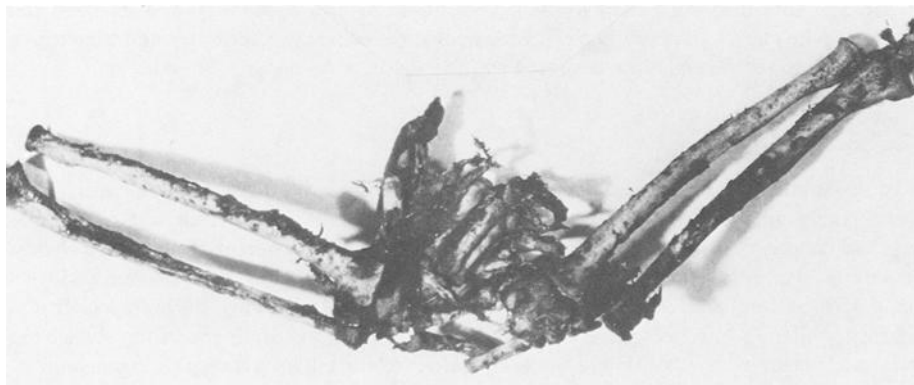


FIG. 2—Dorsal aspect of forearms and hands bound together by a cord encircling the wrists. Case 2.

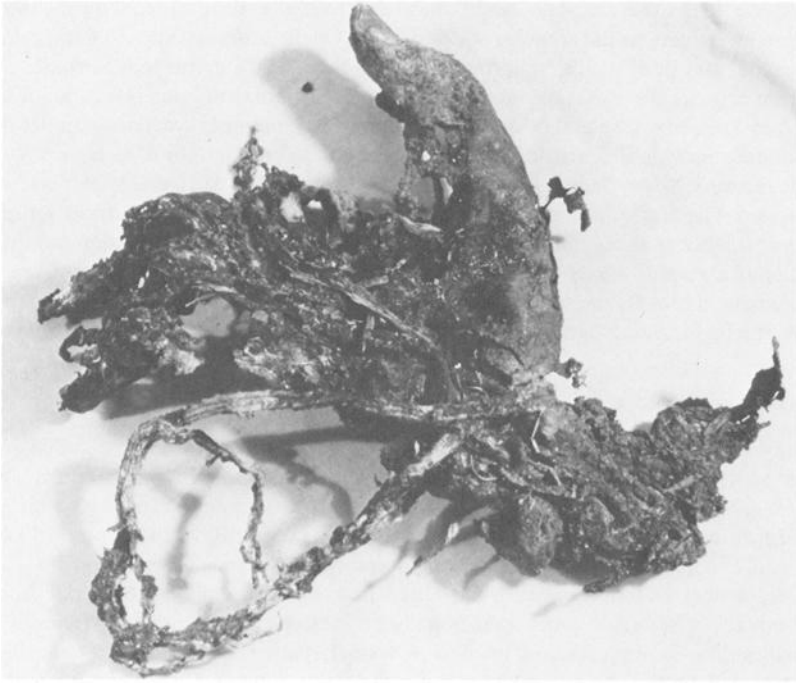


FIG. 3—Ventral aspect of right hand and wrist after removal of left hand and wrist from cord. Case 2.



FIG. 4—In situ photograph of a section of chain around the victim's neck, (white string attached for clarity). Case 3.

The above three cases are by no means unusual; rather, they illustrate that during the course of routine investigations anthropologists are likely to make observations and gather data and evidence that may be of critical importance in reconstructing the events that surround a death. In the first case dried skeletal lesions were consistent with eyewitness testimony about manner of death by homicide. Skeletal evidence for chopping injuries or characteristic bullet damage to a skull may provide similarly valuable clues [5]. The second and third cases involve human remains recovery. Many forensic anthropologists are trained in archaeology or work with archaeologists. The techniques and skills of archaeological investigation are directly applicable to forensic science recovery. Obviously the careful exposure of interred remains and the documentation of the associations between portions of a body and artifacts can greatly ameliorate the reconstruction of the events of deposition. Like skeletal lesions, the position of the body and the precise location of artifacts may be instrumental in discovering a homicide.

Conclusion

It is not suggested here that anthropologists take on new duties in the investigation of death, nor that some of the responsibilities of medical examiners be shifted over to anthropologists. What we are attempting to do is to establish a logical and consistent framework within which forensic anthropologists may carry out activities that they currently regularly perform. Anthropologists are frequently confronted with the decomposed remains of victims of homicide. In fact, since deliberate concealment or the destruction of evidence may increase the probability of decomposition before discovery, anthropologists may encounter homicide victims in higher proportions than do many forensic medical personnel. Anthropologists have a clear role in the investigation of death. Their expertise in the study of decomposed human remains and (often) the techniques of systematic disinterment make them invaluable specialists in certain kinds of cases. Instead of attempting to discover cause of death, however, or making qualified statements about "probable" cause of death, as some do, they should shift their attention in death investigation to manner of death and apply the term consistently. In doing so, they would clarify their contribution and be less likely to find themselves supporting an unverifiable position. There is confusion about the role of forensic anthropology in death investigation, but there need not be.

Acknowledgments

We thank Ms. Dorothy Nelson, Department of Anthropology, Michigan State University and Dr. Samuel Dunlap, Department of Anatomy, College of Medicine, Howard University for their invaluable assistance with the cases cited.

References

- [1] Krogman, W. M., *The Human Skeleton in Forensic Medicine*, Charles C Thomas, Springfield, IL, 1962, p. 7.
- [2] Stewart, T. D., *Essentials of Forensic Anthropology*, Charles C Thomas, Springfield, IL, 1979, p. 76.
- [3] Snow, C. C., "Forensic Anthropology," *Annual Review of Anthropology*, Vol. 11, 1982, p. 124.
- [4] Adelson, L., *The Pathology of Homicide*, Charles C Thomas, Springfield, IL, 1974, pp. 15 and 16.
- [5] Spitz, W. U. and Fisher, R. S., *Medicolegal Investigation of Death*, Charles C Thomas, Springfield, IL, 1980, pp. 124-201.

Address requests for reprints or additional information to
 Norman, J. Sauer
 Department of Anthropology
 Baker Hall
 Michigan State University
 E. Lansing, MI 48824