

Comment Submission Deadline: 17-Jan-22

Title of Document: ASB Standard 147, Standard for Analyzing Skeletal Trauma in Forensic Anthropology

| # | Section | | Type of Comment | Comments | Proposed Resolution | Final Resolution |
|----|----------|--|-----------------|---|--|---|
| 29 | | | | There are a few spacing inconsistencies sometimes two spaces are used after a period, sometimes one; and in one instance at the top of p7, there is no space between a period and the beginning of the next sentence but that should get sorted out with the next round of comments. | | Accept: spacing has been made consistent |
| 1 | Foreward | | T | Postmortem damage is not trauma, as stated later. | Trauma analysis is a component of anthropologic examination needed to identify traumatic events occurring before and during death, or damage occurring after death. | Accept with modification: The second sentence in the first paragraph was updated to read: "Trauma analysis is a component of anthropologic examination needed to identify traumatic events occurring before and during death, and differentiate from damage occurring after death." |
| 2 | 3.2 | | T | Projectile trauma definition (3.8) mentions application of force, which includes some information on the biomechanics of trauma. Inclusion of "release of kinetic energy", or something similar, would maintain consistency between definitions. | A skeletal defect produced by low-velocity impact and release of kinetic energy from a blunt object (e.g., being struck by an object or concussive wave) or the low-velocity impact of a body with a blunt surface (e.g., motor vehicle accident or fall). | Reject: adding a statement about release of kinetic energy is not necessary because it is commonly known to accompany projectile and blunt trauma. Consistency will be maintained in both definitions (see 3.8) by not adding it. |
| 3 | 3.8 | | T | Low-velocity is mentioned in relation to plastic deformation in the projectile trauma section (4.3.2). The current definition here seems to suggest that high-velocity is a requirement for projectile trauma, which is often, but not always, the case. The additions here account for this possible variation. | A skeletal defect often produced by high-velocity, rapid application of force over a relatively small surface area, typically by projectiles from firearms but can result from any small object impacting a bone and releasing kinetic energy. | Accept with modification: A skeletal defect often produced by high-velocity impact over a relatively small surface area, typically by projectiles from firearms but can result from any small object impacting a bone at a high velocity. |
| 18 | 3.14 | | T | "Trauma interpretation" now is defined as "Opinion regarding the mechanism of, timing, direction of impact(s) or minimum number of impacts associated with skeletal defect(s) based on quantitative and/or qualitative observations." The phrase "based on ... observations" indicates that the opinion on the truth, falsity, or probability of an inference being drawn from the data. Interpretation should at least include the possibility of describing the strength of the evidence in favor of the inference rather than opining on the truth, falsity, or probability or the conclusion itself. In addition, if the opinion-statement is an assertion that the hypothesis about what happened is true or false (either categorically or to some probability), it is not just based on the data, but on a prior probability for the hypothesis as well. | Delete "based on ... " | Reject with modification: opinion is changed to "Explanation." These explanations are typically based on quantitative and qualitative observations. |
| 19 | 3.15 | | T | The new definition of "trauma mechanism" is "The classification of an extrinsic factor that produces a skeletal defect." But "classification" is the act or process of classifying or a systematic arrangement in groups or categories according to established criteria. Sorting and labelling things is not a mechanism. | Define "trauma mechanism" as "underlying processes involved in or responsible for the trauma" or "external factors that produce a skeletal defect." | Accept (the second suggested definition): The external factors that produce a skeletal defect. |
| 4 | 4.1 | | E | Paragraphs do not flow. First and second paragraph should be flipped, so that the final sentence covering documentation flows into the third paragraph discussing documentation in more detail. | Skeletal material shall be assessed and evidence of trauma and damage shall be documented before and after processing. The cranium should be opened and a complete endocranial examination conducted. Ideally, the endocranial examination should occur after ectocranial trauma is documented and other cranial data are collected. Skeletal trauma shall be examined. Acceptable methods to examine trauma include gross, microscopic, radiographic, and other analytical methods. Documentation of trauma shall be adequate to allow independent verification of work performed in the absence of the original specimen. Documentation of skeletal trauma shall include written descriptions as well as visual representations (i.e., photographs, diagrams/sketches, radiographs, casts, 3D scanning)... | Accept |
| 5 | 4.1 | | T | Specimen might be a problematic term when discussing an individual, suggested change to "skeletal material". | Documentation of trauma shall be adequate to allow independent verification of work performed in the absence of the original skeletal material. | Accept with modification: Documentation of trauma shall be adequate to allow independent verification of work performed in the absence of the originally analyzed material. |
| 15 | 4.1 | | T | While we appreciate the response to prior comments and the directive as to what the anthropologist shall not do, the proposed edit ("An anthropologist shall not analyze these materials unless qualified") is problematic because there is nothing to define "qualified." How does one determine qualification: education, experience, certification? And qualified to do what? | Elaborate what constitutes "qualified" for purposes of analyzing the materials described in this section. | Reject with modifications: This paragraph was updated for clarity and "qualified" was removed. |

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| 20 | 4.1 | | T | The revised sentences state that "Skeletal trauma shall be examined. Acceptable methods to examine trauma include gross, microscopic, radiographic, and other analytical methods." This formulation deems every conceivable analytical method as "acceptable" no matter how poorly they perform. Labelling everything as "acceptable" is especially troublesome in a standard that does not include criteria and procedures for performing the analysis. | Replace "acceptable methods" with "methods in use" | Accept with modification: Skeletal trauma shall be examined using scientifically validated gross, microscopic, radiographic, or other analytical methods. |
| 21 | 4.1 | | E | The word "include" is inapposite in introducing a list that is all inclusive. | Consider the following: "Skeletal trauma shall be examined using scientifically validated gross, microscopic, radiographic, or other analytical methods." | Accept: Skeletal trauma shall be examined using scientifically validated gross, microscopic, radiographic, or other analytical methods. |
| 6 | 4.2.2 | | T | Wording seems to indicate that pathological conditions are considered antemortem trauma. Changes made to clarify that these would be associated with trauma, and not pathological conditions alone. | Antemortem trauma shall be identified based on the presence of a trauma-related osteological reaction. These reactions may include healed fractures or evidence of healing, the development of pseudarthrosis, degenerative joint disease, or infectious response related to a fracture, a dental fracture with worn or rounded fracture margin, or a surgically implanted device. | Accept |
| 7 | 4.2.4 | | T | Postmortem damage can also be assessed in conjunction with taphonomic changes, as it occurs to the body after death. | Suggest either referring to the taphonomy standards for further information on postmortem damage, or clearly stating that postmortem damage is also a taphonomic change when commenting on when to use the term "trauma" appropriately. | Reject: This comment is beyond the scope of this document and we cannot reference an unpublished standard. |
| 22 | 4.3.1 | | E | Section 4.3.1 states that "Trauma mechanism classification shall be based on defect shape and size, spatial distribution, and evidence of plastic deformation. Extrinsic, continuously variable and concurrent factors such as velocity and force may preclude classification of trauma mechanism ..." But if "trauma mechanism" is "classification" (as the standard now defines it), these sentences are speaking of classification of classifications instead of classification of the mechanisms. | Redefine "trauma mechanism" to refer to the mechanism that brings about a result rather than the classifications of mechanisms. (The section also should give concrete guidance or at least cite references that offer such guidance on how to make the classifications (but this comment may be beyond the scope of that which is allowed in this review period). | Accept with modification: Trauma mechanisms shall be based on defect shape and size, spatial distribution, and evidence of plastic deformation. Extrinsic, continuously variable and concurrent factors such as velocity and force may preclude the identification of a trauma mechanism. When the trauma mechanism cannot be identified, the defect shall be clearly described, documented, and reported without interpretation. |
| 23 | 4.3.1 | | E | "Fractured bones shall be re-approximated" uses the word "approximated" in a technical sense that might be obscure to non-specialist readers. | Define "re-approximate" or "re-approximation" in section 3 or use a different term with a plainer meaning here. | Reject: The standard is written for forensic anthropology specialists who understand the meaning of re-approximate |
| 8 | 4.3.2 | | T | Suggested changes for paragraphs 1 and 3 of section 4.3.2. "Projectile Trauma". | Observed features indicating projectile trauma may include: a projectile in association with the bone, entrance or exit defect characteristics (e.g., internal or external beveling), projectile residue, bullet wipe, remnants of the projectile, fracture pattern with minimal to no plastic deformation, and external beveling of concentric fractures in the cranial vault that indicates an internal to external force. ... When possible, entrance and exit defects shall include descriptions and photographs of internal and external beveling, defect measurement, anatomical location, associated fracture patterns (e.g., radiating and concentric fractures), and estimation of projectile path relative to anatomical position. | Accept |
| 9 | 4.3.3 | | T & E | Suggested changes for paragraph 1 of section 4.3.3. "Blunt Trauma". | Observed features of blunt trauma may include: fracture patterns with plastic deformation, delamination, or internal beveling of concentric fractures in the cranial vault indicative of external to internal force. Features of an impact site (i.e., depressed fractures, circumferential fractures, tool marks) shall be documented. Staining, (e.g., from blood and fat within crushed diploe) and other alterations, which may represent impact sites shall also be documented. | Accept with modifications: Observed features of blunt trauma may include: fracture patterns (e.g. wedge, buckle), plastic deformation, delamination, internal beveling of concentric fractures in the cranial vault indicative of external to internal force. Features of an impact site (i.e., depressed fractures, circumferential fractures, tool marks) shall be documented. Staining, which may result from blood and fat within crushed diploe, and other alterations which may represent impact sites shall also be documented. |

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| 10 | 4.3.4 | | T | Suggested changes for paragraphs 1 and 3 of section 4.3.4. "Sharp Trauma". Added "radiologically," since mention of physical evidence (blade tip) suggests potential for presence of radiodense artifacts. | Observed features of sharp trauma may include: straight-line incised defects, punctures or gouges, chop or hack marks (clefts), and kerfs. Defect features such as length, width, depth, and interstriation distance should be measured, and casts made when possible. Sharp trauma defects and their casts shall be examined grossly, microscopically, and radiologically . Fractures can occur in association with sharp trauma and shall be documented, if present. Features common with pseudo-sharp trauma, such as scrapes, scores, and scratch marks, shall be documented. Tool marks in bone or cartilage shall not be identified as hesitation marks. | Accept with modification: We would not radiograph a cast of SFT. Addition of "can" is accepted |
| 16 | 4.3.4 | | T | The notation "The type and spatial distribution of sharp force trauma may indicate dismemberment" does not belong in this standard because it does not indicate any action or prohibition to the practitioner, not does it give meaningful guidance to a practitioner about what type and spatial distribution of sharp force indicates dismemberment. (It appears that this insertion was made in response to comment #1, but is not responsive to that comment, which was requesting elaboration of classification of perimortem trauma). | Remove | Accept with modifications: Sentence has been modified to: "Dismemberment should be considered when interpreting sharp force trauma." |
| 24 | 4.3.4 | | E | The new sentence "Tool marks in bone or cartilage shall not be identified as hesitation marks" introduced the undefined technical term "hesitation marks." | Define "hesitation mark" in section 3 or use a different term with a plainer meaning here. | Reject: Hesitation mark is a term commonly used. |
| 11 | 5 | | T | Postmortem damage is a taphonomic change | Pathological conditions, anomalies, or taphonomic changes, other than postmortem damage , may mimic skeletal trauma. | Reject: the addition of this phrase unnecessarily complicates the intended meaning. Taphonomic changes is more clear and inclusive. |
| 12 | 5 | | E | Repetition: this statement is mentioned earlier in section 4.3.4. "Sharp Trauma". | Practitioners shall not determine a "match" between a specific tool and a tool mark. | Accept with modification: The earlier statement in 4.3.4 was amended to "Defect features may reflect class characteristics of the tool and shall be interpreted to identify tool type/class." |
| 13 | 5 | | E | Add space between death and Blast | ...cause or manner of death. Blasts/explosive events... | Accept |
| 25 | 5 | | T | New sentences are "Blasts/explosive events often cause blunt (including concussive) and projectile trauma to the body. When the trauma pattern and circumstantial information support a blast event, the trauma mechanism should be classified as 'blast trauma'". The undefined notion of "support" is too vague to give any guidance. | Describe the procedure for determining whether "support" exists. | Accept with modification: "When the trauma pattern and circumstantial information are consistent with a blast event, the trauma mechanism should be classified as "blast trauma". |
| 26 | 5 | | T | New sentences are "Blasts/explosive events often cause blunt (including concussive) and projectile trauma to the body. When the trauma pattern and circumstantial information support a blast event, the trauma mechanism should be classified as 'blast trauma'". The phrase "circumstantial evidence" invites the anthropologist to conclude that a pattern is the result of "blast trauma" primarily (or perhaps exclusively) on the basis of non-anthropological evidence. | A "sequential unmasking" process of unmasking should be required to clarify the extent to which the classification is based on anthropological expertise as opposed to other information. | Reject: While we agree this would be ideal to do, it is often not possible in medicolegal contexts |
| 17 | 5.1 | Correct section #6 | T | The change in the first sentence from "all" to "relevant" does not address the previous comment. "Relevant" is still an unclear descriptor and, in any case, is generally a determination reserved for the factfinder. If only "relevant" findings are documented, it is not possible to determine what else was found (which might later be determined to have been "relevant"). The original comment referred to "relevant" only to modify "examinations." But if an examination is deemed relevant, all methods and findings pertinent to that examination shall be reported. | Revise to: "The report shall include the methods used and the findings for all examinations that are (or are expected to be) referenced in support of an opinion. This may include, as appropriate, anatomical location and distribution of trauma, as well as trauma timing and mechanism." | Accept with modifications: Sentence changed to: "The written report shall include the methods used and descriptions of gross, microscopic, and radiological findings that are referenced in support of a trauma interpretation. |
| 14 | 6 | | E | Paragraph 3 seems like it may fit better in section 5, as it seems to be more of a consideration. | Practitioners may report the minimum number of traumatic events (e.g., blunt impacts, projectile entry defects, or sharp defects) observed skeletally, but shall not report a definitive maximum number of impacts, as skeletal trauma evidence may not reflect all impacts to the body. | Accept with modification: Sentence moved to section 5 and "may report" changed to "may estimate" |
| 27 | 6 | | | I like comment #30, but are we permitted to make a change at this stage, or are changes limited to the revised/redlined text? | | Accept with modification: see comment 30 comment resolution |
| 28 | 6 | | | I like comment#30, too, but does that fall under general rules of evidence? Or should it be specific to this document? | | Accept with modification: see comment 30 comment resolution |

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| 30 | 6 | | | <p>Under section 6, both casts of traumatic defects and physical evidence collected from a traumatic defect should not only be documented but also preserved. For example, under the DOJ/NIST pretrial discovery of forensic materials recommendations "when a party proposes the use of forensic evidence in a criminal case, the adversary party should be provided with access to the underlying items examined (if reasonably available). There should also be reciprocal access to any party to all documents and physical evidence. I recommend adding these provisions.</p> | | <p>Accept: "as the final disposition" clause added to the sentence beginning "When casts are made..."</p> |