

A45 The Effects of Enhanced Quality Control (QC) Measures on Forensic Anthropological Practice

Raphaela M. Meloro, MA*, University of Florida, Anthropology Department, Gainesville, FL 32603; Allysha P. Winburn, PhD, University of West Florida, Pensacola, FL 32514; Valerie DeLeon, PhD, University of Florida, Gainesville, FL 32611

Learning Overview: After attending this presentation, attendees will understand the benefits of enhanced QC in forensic anthropology casework.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing evidence that enhanced QC does not increase casework timelines.

Recent research indicates that implicit biases can affect forensic anthropological conclusions and argues for increased QC. In particular, cognitive neuroscientists recommend implementing blind analysis, blind Peer Review (PR), and linear sequential Unmasking (LSU) of potentially biasing case context (e.g., scene/autopsy reports). Yet, the benefits of such increased QC measures—and their potential detrimental effects on casework timelines—remain relatively unknown. This study uses a sample of 78 cases analyzed at the University of Florida’s C.A. Pound Human Identification Laboratory between 2013 and 2019, 42 undertaken using “normal” QC (non-blind initial analysis and non-blind PR), and 36 undertaken using “enhanced” QC, including blind initial analysis ($n=36$), Independent Peer Analysis (IPA) ($n=36$), blind PR ($n=35$), and LSU ($n=33$).

Findings from the biological profile categories of sex and ancestry illuminate contrasts between the samples. For the 41 “normal” reports that discussed sex, three report conclusions (7%) differed from the initial case notes, with no discernable pattern to the differences. For the 39 reports that discussed ancestry, 13 report conclusions (33%) differed from the initial case notes. Eleven of these cases were nearly evenly split between changes introducing ambiguity ($n=6$) and changes reflecting greater specificity ($n=5$); the other two evidenced changes from racial to ancestral terminology and vice versa. As no data on the peer reviewers’ initial case impressions are recorded in “normal” QC procedures, the role of PR in initiating these changes is unknown.

For the 34 “enhanced” cases where the analyst and reviewer independently estimated sex in the initial analysis and IPA, conclusions differed in 12 cases (35%). However, the final report differed from the initial analysis in only 5 of the 32 cases where sex appeared in the final report (16%). In most of these cases (three of the five; 60%), this change was in the direction of greater specificity, informed by the conclusions of the IPA. In one case, the initial analyst’s conclusions became more definitive in spite of a reviewer’s “indeterminate” sex estimation, suggesting influence by an undocumented factor (e.g., informal reviewer-analyst conversations). In 9 of 33 cases where ancestry was reported by both analysts (27%), the analysts disagreed on their estimates. Final reporting differed from initial notes in 6 of the 32 cases where ancestry appeared in the final report (19%). In four of these six cases (67%), the changes served to add ambiguity to an analyst’s initial conclusions. In one of the two cases where final ancestry conclusions changed in the direction of greater specificity, knowledge of the recovery context revealed during LSU was incorporated into the analysis. In the second, there was consensus between the analyst’s and reviewer’s initial reporting, but the final conclusion differed, suggesting influence by an undocumented factor.

Comparing the two samples, “enhanced” QC more frequently resulted in revisions to the final reporting of sex (16% vs. 7% in the “normal” sample) but less frequently to the reporting of ancestry (19% vs. 33% in the “normal” sample). In the “enhanced” sample, PR led to more specific sex conclusions but exerted a generalizing influence on ancestry conclusions. There was no clear pattern in the nature of changes made by analysts in the “normal” sample. In essence, “enhanced” PR enabled more specific estimates of a relatively straightforward variable (sex) and more general—potentially more accurate—estimates of a more ambiguous variable (ancestry). The clarity gained from the reviewers’ completion of a blind IPA seems to have structured the “enhanced” analyses and enabled productive dialogue between the analysts during this process. Both blind PR (with IPA) and LSU provide context for analyst decisions and render the changes made throughout analysis more transparent. Finally, the fact that the mean case turnaround time (from initiation to final report) was similar for both samples (20 weeks for the “normal” and 18 weeks for the “enhanced” samples) rejects the traditional assumption that prioritizing QC translates to longer and more cumbersome casework. Simply, the benefits of enhanced QC outweigh the negatives.

The data for this research comprises casework performed prior to the term of Dr. Phoebe Stubblefield as CAPHIL Director. Data do not reflect the current administrative practices of CAPHIL. The authors regret that these results were not reviewed or approved by Dr. Stubblefield prior to publication.

Quality Control, Cognitive Bias, Forensic Anthropology