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LETTER TO THE EDITOR

Commentary on: Bethard JD, DiGangi EA. Letter to the Editor—Moving beyond a lost cause: Forensic anthropology and ancestry estimates in the United States. J Forensic Sci. 2020;65(5):1791–2. doi: 10.1111/1556-4029.14513.

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Editor,

Recently, Drs. Bethard and DiGangi opened a dialogue on the application of ancestry estimation as part of the biological profile in forensic anthropology [1]. Ancestry estimation of human skeletal remains is routinely used to predict a probable social race based on metric and morphological data from the skeleton. Anthropologists accept the social construction of race and are acutely aware of its harmful impact in American society, particularly with respect to the historic use of anthropology to promote scientific racism. When scientists fail to 'call out' racist ideas in their field, these ideas can become embedded within institutions and society, further reifying racist ideology [2]. In this context, we wish to respond to Bethard and DiGangi's request to open a conversation regarding the use of ancestry estimation in forensic anthropology and how it contributes to the identification process. In this letter, we provide a foundation for a conversation about ancestry as a means to encourage thoughtful discussion moving forward on the issues of redress, diversity, and multi-disciplinary collaboration.

Biological anthropologists have long rejected the validity of social race as biologically grounded and the racist ideas that were historically embraced by members in the field [e.g., 3–6]. Still, anthropologists today continue to salve the festering scars of erroneous race science borne from their disciplinary forbearers. Science can reflect the subtle biases of its practitioners, and mitigating these biases requires constant, intentional, and engaged effort. Whereas in the past, anthropologists approached human diversity with hierarchical models of superiority and immutability, researchers today investigate gradient patterns of human variation, decouple social races from traits, implement probabilistic assessments, and collect data from worldwide samples.

As part of the medicolegal community seeking justice for the deceased and closure for the living, forensic anthropologists must delicately balance the complicated relationships between population history, social constructs, and legal systems not only in ancestry estimation, but in the totality of the biological profile. For ancestry, we link skeletal biology to a probable social race category. A person's social race, whether it is a self-identified label or one placed upon them by society, is incorporated into all aspects of their identity. There are no exceptions for the deceased; these labels accompany one into the identification process (e.g., NamUs, NCIC, Death Certificates). As stated by Cunha and Ubelaker (7:90) [7], "Since missing persons are frequently described using racial terminology, forensic anthropologists are guided to use that terminology as well." Moreso than most fields, forensic anthropologists accept the race concept is far too simple for human biological variation [8]. However, skeletal features can be used to make predictions about probable social race groups because of their correlations to local population distributions. Importantly, the same morphological features could also be used to classify groups defined by language, nationality, or time period because those are all features that structure populations [9–12]. Research has assessed accuracy rates of ancestry estimations by forensic anthropologists and reported correct ancestry estimates at 90.9% [13]. Contra to Bethard and DiGangi, these results highlight the strong concordance between genomic ancestry and self-reported race/ethnicity in the United States [14–16]. Further, ancestry estimation contributes to identifying medicolegal significance of skeletal material (i.e., historic or modern) and plays a role in repatriation efforts [17–20].

Bethard and DiGangi broach concerns on the use of race in modern U.S. society in general, and in forensic science and law enforcement in particular; these are not new concerns in our field. Research has explored differential identification rates attributed to structural vulnerability in the demographic caseload of forensic anthropologists, both broadly [21] and specific to the US–Mexico border [22–25]. Efforts have been made to develop reference databases for under-represented groups in the United States, so that these groups are reflected within forensic anthropological methods [26]. Forensic anthropologists strive to modify policies and procedures to better center marginalized or under-represented groups, as well as collaborate with multiple agencies (e.g., NGOs) to increase the rate of positive identifications of undocumented migrants [27]. Beyond addressing needs in the field, additional catalysts for these deeper explorations were likely the 2009 National Academy of Sciences Report and major legal rulings that demanded an increase in scientific rigor of all forensic methods, including the development of probabilistic-based estimates and addressing cognitive bias and error analysis [28–33].

As part of these broad concerns, Bethard and DiGangi suggest that the inclusion of ancestry estimation may lead to systemic problems in the investigation process. Yet, no empirical data indicate that forensic anthropological ancestry estimates promote racially biased investigative outcomes. Before the discipline rushes to dismantle the use of ancestry estimation in forensic anthropology casework, we encourage researchers to reflect on the contributory role these results play, or do not play, in the dynamic process of identification. The difficulties forensic anthropologists experience in using ancestry terminology, its impact on the solvability of cases, and the utility of the ancestry estimation as dependent on the population demographics have been recognized in published literature [21,34,35]. Ultimately, addressing systemic problems, as with the "Missing White Woman Syndrome," is a conversation that ought to at least include policy, victim advocacy, and medicolegal and law enforcement communities, along with all other relevant stakeholders. Anthropology can contribute to this discussion, but this is a much broader societal issue.

A specific recommendation by Bethard and DiGangi is to discontinue the application of cranial morphoscopic traits. The authors focus on cranial morphoscopic traits ostensibly because of their typological history, but this history is not unlike other methods. Both metric and morphological assessments of cranial form were prominently used for typological goals in anthropology's disciplinary infancy (e.g., 34–41). The pseudoscientific creation of typological methods of the 19th and 20th century has left an uncomfortable legacy that modern anthropologists have inherited and must wrestle with. Researchers have recognized this past and work to understand the limitations of how the current traits were selected, have decoupled traits from social race groups, and have ultimately shown how traits vary within and among populations (e.g., 42–51). Furthermore, and importantly, unlike typological approaches, current methods are grounded in statistical analyses that provide probabilistic statements. These associated probabilities provide forensic anthropologists with guidelines on the practical reality of their estimates and provide insight into the limitations of the estimations. For example, the forensic anthropologist may report ancestry as indeterminate, with more than one group as possibilities, and/or into broadly defined geographic groups.

Bethard and DiGangi argue against the evolutionary and ecogeographic grounding of cranial morphoscopic traits central to forensic anthropological application, but assume a notion of heredity that is unreasonable in this context. Some, if not most, cranial morphoscopic traits are latent traits (i.e., interorbital breadth and nasal width are visual assessments of cranial measurements) and as such, heritability estimates can be extrapolated from studies exploring the continuous and genetic data [51–58]. Hefner and Linde [52] provide succinct descriptions of each morphoscopic trait and include such topics as heritability, historical development, gross anatomy, and functional morphology in their discussion.

Forensic anthropology is not practiced the same by everyone, everywhere. But many forensic anthropologists, including the authors of this response, are actively involved in communication with our stakeholders (weekly in some cases), provide continuing education training and services for medicolegal groups (law enforcement, ABMDI, coroner training, etc.), and offer free speaking events to the public and interested parties. Additionally, many forensic anthropologists maintain detailed databases of casework that are used to monitor its progression through the identification process. Subsequently, the information can be used to cross-check the accuracy of biological profile estimates once positively identified. Forensic anthropologists are encouraged to contribute to databases dedicated to increasing reference samples so they better reflect society (i.e., Forensic Data Bank) and/or for assessing method accuracy (i.e., FADAMA).

CONCLUSION

Bethard and DiGangi's letter to the editor does not acknowledge the long-standing trend in biological anthropology to rebut typological approaches and to interpret human biological diversity as impacted by complex sociocultural forces and microevolutionary processes. In the same way that Bethard and DiGangi challenged us to find data-driven support that ancestry inferences aid investigative outcomes, we also should be seeking data-driven support for the claimed negative impacts of ancestry on investigations. Asking, and adequately answering, these big-picture, real-world application questions is an essential part of any scientific discipline and certainly would inform the future practice of forensic anthropology in a positive way, regardless of the conclusions.

Is there more work to be done? Yes, most certainly. Can we envision a biological profile without ancestry? For many of us, the answer is conditionally no. We believe abandoning the estimation of ancestry without proper evaluation within our discipline and consultation with our stakeholders could harm cultural redress in our society and stagnate and dogmatize our discipline. Nevertheless, we agree that there should be conversation and research conducted on these issues as a means to best combat complacency in an imperfect system. We call on our colleagues to (a) continue to understand the genetic and environmental facets of the traits, features, and measurements we assess for all aspects of the biological profile; (b) contextualize the practice of ancestry estimation within the biological and cultural frameworks in which it exists today; (c) continue to educate ourselves, the public, law enforcement, students, and others on the evolutionary framework of human populations and the historic circumstances that lead to racial ideologies; (d) be engaged professionals and be active advocates for our cases; (e) implement best practices to ensure quality case results and traceability; (f) reject manuscripts that contain racialized and racist science when submitted to scientific journals; and (g) have a conversation regarding the responsibility anthropologists bear to redress this systemic problem.

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