H81   Racial Admixture: A Test of Non-Metric Ancestry Estimation

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After attending this presentation, attendees will understand the methods of ancestry estimation used by physical anthropologists when cranial remains are assessed. They will learn the problems with these methods in the estimation of ancestry for skulls exhibiting mixed ancestral heritage. They will learn which non-metric traits tend to be used when assigning specific ancestries. Participants will also learn what the "understood" procedure is when metrics and non-metrics yield differing ancestry estimates.

As race determination has always been a topic of debate among anthro- pologists, this presentation will impact the forensic science community by addressing the clines of traits found in admixed individuals. It also addresses the need for standardization of which non-metric traits should be weighted heavier than others in the analysis of individuals of mixed racial affinities.

The researchers hypothesize that each observer will use a different suite of non-metric traits to establish the racial profile for a specific skull. Therefore, it is hypothesized that each observer will assign a racial affinity based on the weight the observer themselves give to various traits or trait gradations. These factors combined will affect the observer's ability to correctly classify a mixed ancestry skull into the appropriate racial group according to current anthropological standards and will result in differing ancestry estimates for the same skull between researchers.

Twelve individuals that exhibited racial admixture were selected from the skeletal collection Louisiana State University. These skulls were analyzed by researchers with various levels of experience and their ancestry was assessed, based on the ancestry standards published by Gill and Rhine (1990). After ancestry conclusions were drawn solely from the non-metric data, cranial measurements were taken and entered into FORDISC 2.0. The results of both the metric and non-metric data were then compared. When there was a discrepancy between the results of the non metric and morpho- metric traits, the researchers attempted to identify specific traits that would account for the differing results. Statistical analysis was employed to identify: (a) which non-metric traits each researcher noted, (b) the weight each researcher gave specific traits in final determination, (c) which traits are more dominant in persons representing two or more racial categories, and (d) the effect, if any, that the interaction of sex and ancestry may have on any given non-metric trait.

The results of this research suggested very different racial classifica- tions based upon non-metric and metric analyses. The researchers were asked to pick one or two main ancestral affinities as most individuals identify with one particular social race. After thorough examination of each skull, the non-metric data demonstrated these individuals possessed strong traits for racial admixture, while the Fordisc 2.0 analysis suggested only one ancestral group, either with very low typicality rates or an entirely different racial category as determined by the non-metric results. The non-metric traits were analyzed to determine which traits took dominance in determining race for each anthropologist. The analysis shows that the researchers focused primarily on the traits of the upper face (eye orbit shape, nasal shape, nasal aperture, and zygomatics) when assigning race and rarely used traits such as inion hook, rounded external auditory meatus, dental arcade shape, suture simplicity, and wormian bones to alter their racial assessment.

The estimation of race from a skull is becoming increasingly more difficult as individuals are less and less made up of one specific racial affinity. As the need for an accurate race estimate is important to narrow the search for positive identifications, it is likely that different anthropologists will identify the same admixed individual as belonging to different racial cate- gories. There is a need for standardization of this process and a need to identify which non-metric traits are more dominant in admixed individuals and thus contribute more to the overall phenotype of the individual.

Racial Admixture, Non-Metric Analysis, Metric Analysis