The Person Behind The Teeth

Using different profiling techniques to unlock the identity of a person when all that is recovered is a lower jaw and teeth.

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01. Background

This project involved a specimen found in a sand quarry in Louisville, NY. The specimen is currently stored in the State University of New York at Potsdam's Biological Anthropology Laboratory. The specimen was taken from the quarry by the police and given to Dr. Malit for investigation. They found a home in State University of New York at Potsdam's Anthropology Department.
The project involved using both qualitative and quantitative data to create a biological profile of the specimen. The three traits scored for were: ancestry, sex, and age.

02. Objective

Can an individual's teeth be used to profile who they were in life?

03. Methodology

The methods used in this project include:

- **Human Dentition Ancestry Scoring Protocol**
- **Human Mandible Ancestry Protocol**
- **Human Mandible Sex Scoring Protocol**
- **Dental Wear analysis**
- **mandibulometer Measurements**

04. Results/Findings

The results of the project are:

- **Ancestry: Probable European**
- **Sex: Probably Male**
- **Age: Adult**
- **No pathologies of note**

05. Analysis

Using decision tables to score for traits on both the jaw and teeth estimations were made. First ancestry was scored for, as shown in the table below, and after each trait was scored and assigned an estimation the scores were added up an a biological profile of European ancestry was assigned to the specimen. Next biological sex was scored for using qualitative and quantitative methods as shown in the chart below. Like with ancestry one the scores were taken they were assigned a biological sex, these estimations were then added up and the specimen was profiled as a biological male. Lastly age was estimated for, because the third molar was erupted the remains had to belong to someone at least 21 years of age and with the addition of significant tooth wear the specimen was likely and adult or older adult.

Trait	Score	Ancestry Estimation
Chin profile	Protruding	European
Undulation	Slight undulation	European
Gonial eversion	Vertical gonial angle	European, African, and Asian
Height of coronid process	Short, anteriorly projecting coronoid process	European and African
Rocker jaw	Non-rocker jaw	European and African
Shovel shaped incisors	0	European and African
Distal accessory ridge	0	European and Asian
Anterior fovea	0	European and African
Deflecting wrinkle	0	European and Asian
Protostylid	0	African
C 5	0	European and Asian
C 7	0	European and African

Trait	Score	Sex Estimation
Chin shape	Square/Round	Male and Female
Mandibular shape: basal view	U-shaped	Male
Ascending Ramus fexion	Flexed	Male
Ascending Ramus width	31.5	Indeterminate and Male Leaning
Gonial angle	123 degrees	Male
Gonial eversion	Marked/Slight	Male and Female
Canine mesial distal width	6.5	Indeterminate
Canine: distal accessory ridge	Small	Female

06. Conclusion

Through this study it was found that a biological profile can be created from just a mandible and a few teeth. The profile was not unexpected from where it was found. Police believe the remains were from an unknown family grave in the North Country so an adult white male would be expected to be in the grave.

Bibliography

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