**Morton's Cranial Collection**

Samuel George Morton (1799 – 1851) was the greatest American scientist, recognized worldwide. His work argued that it was Gould, not Morton, who was biased in his analysis. They are mistaken.

**Human Diversity in Five Races**

Morton wanted to apply the methods of natural history to human variation. He categorized human diversity using racial types, dividing humans into five races: Caucasian, American, Malayan, and Ethiopian (African). His map of racial variation is shown below.

**Measuring Man**

Morton believed that cranial capacity, the volume of the interior of the cranium, was a proxy for brain size and for intelligence. He measured human variation. He categorized human diversity using racial types, dividing humans into five races: Caucasian, American, Malayan, and Ethiopian (African). His map of racial variation is shown below.

**Gould's Main Argument is Correct**

Gould argued that the differences between the peppercorn-based and shot-based measurements reveal Morton's biases. Although Lewis et al. showed that Morton's shot-based measurements are reliable, this cannot defeat Gould's argument. They would have to show that Morton's peppercorn-based measurements were accurate. Systematic differences in the means is evidence of systematic measurement error. This systematic error could be the result of racial bias.

**Gould's critique of Morton has been widely cited as an illustration of bias in science; it ought to remain so.**

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**Were Morton’s Measurements Racially Biased?**

<table>
<thead>
<tr>
<th>Race</th>
<th>Mean Cranial Capacity in Cubic Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>87.00</td>
</tr>
<tr>
<td>American</td>
<td>79.75</td>
</tr>
<tr>
<td>African</td>
<td>78.00</td>
</tr>
</tbody>
</table>

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**2011 Remeasurement of Morton's Crania**

Lewis et al. remeasured 46% of Morton's collection with precision plastic balls. They found that only 2% of their measurements differed significantly from those reported in *Crania Americana*.

"These results falsify the claim that Morton physically mismeasured crania based on his a priori biases." — Lewis et al., 2011

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**Notable Specimens**

Morton had special interests in Native American Mound Builders, Americans with manipulated skull shapes, European notables, "idiots," and criminals.

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**Sexual Dimorphism**

Despite labeling the crania by sex, Morton never computed different averages for males and females.

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**References**

- Morton, Samuel George (1839). *Crania Americana or, a Comparative View of the Skulls of Various Aboriginal Nations of North and South America*. Philadelphia: John Pennington.

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