Materials

Specimen	Species	Side	Location	Comments
KB5222	*P. robustus*	Left	Kromdraai	CT-Scan
TM1517c	*P. robustus*	Right	Kromdraai	CT-Scan
TM1603	*P. robustus*	Left	Kromdraai	CT-Scan
SK31	*P. robustus*	Right	Swartkrans	CT-Scan
SK41	*P. robustus*	Left	Swartkrans	CT-Scan
SK105	*P. robustus*	Left	Swartkrans	CT-Scan
SK835	*P. robustus*	Left	Swartkrans	CT-Scan
SK3975	*P. robustus*	Left	Swartkrans	CT-Scan
STW2	*Au. africanus*	Right	Sterkfontein	Holotype
STW6	*Au. africanus*	Left	Sterkfontein	Holotype
STW43	*Au. africanus*	Right	Sterkfontein	Holotype
STW179	*Au. africanus*	Left	Sterkfontein	Holotype
STW252I	*Au. africanus*	Left	Sterkfontein	Holotype
STW449	*Au. africanus*	Right	Sterkfontein	Holotype
STW524	*Au. africanus*	Right	Sterkfontein	Holotype
MLD44	*Au. africanus*	Left	Makapansgat	Holotype

Table 1: Third Maxillary Molar Specimens

Methodology

- **Landmarking:** Involves placing homologous anatomical points on specimens to capture shape variation in a standardized way. These landmarks serve as the basis for geometric morphometric analyses, allowing for quantitative comparisons of morphology across individuals, species, or populations
- **Procrustes Superimposition:** A method that standardizes landmark configurations by removing differences in size, rotation, and translation, allowing for shape comparison.
- **Principal Component Analysis (PCA):** A dimensionality reduction technique that identifies the main axes of shape variation within a dataset.
- **Canonical Variate Analysis (CVA):** A statistical method that maximizes group separation by identifying shape differences that best distinguish predefined categories.
- **Regression Analysis:** A statistical approach used to examine relationships between shape variables and external factors such as size, ecology, or phylogeny. It is commonly used to study allometry through Procrustes regression, assessing how shape changes with centroid size or other variables while testing significance via permutation methods.