

**Source Data** – This file contains the source data for Figures 3-5 and Supplementary Figures 7, 10-16.

**Supplementary Data 1** – Interactive html PCA plot showing variation in P<sub>3</sub> EDJ shape. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 2** – Interactive html PCA plot showing variation in P<sub>4</sub> EDJ shape. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 3** – Interactive html PCA plot showing variation in M<sub>1</sub> EDJ shape. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 4** – Interactive html PCA plot showing variation in M<sub>2</sub> EDJ shape. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 5** – Interactive html PCA plot showing variation in M<sub>3</sub> EDJ shape. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 6** – Interactive html PCA plot showing variation in P<sup>3</sup> EDJ shape. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 7** – Interactive html PCA plot showing variation in P<sup>4</sup> EDJ shape. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 8** – Interactive html PCA plot showing variation in M<sup>1</sup> EDJ shape. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 9** – Interactive html PCA plot showing variation in M<sup>2</sup> EDJ shape. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 10** – Interactive html PCA plot showing variation in M<sup>3</sup> EDJ shape. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 11** – Interactive html plot showing centroid size across the maxillary tooth row in *Homo habilis* v *Australopithecus*. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 12** – Interactive html plot showing centroid size across the maxillary tooth row in *Homo habilis* v *Homo erectus*. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 13** – Interactive html plot showing centroid size across the maxillary tooth row in *Homo habilis* v later *Homo*. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 14** – Interactive html plot showing centroid size across the mandibular tooth row in *Homo habilis* v *Australopithecus*. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 15** – Interactive html plot showing centroid size across the mandibular tooth row in *Homo habilis* v *Homo erectus*. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 16** – Interactive html plot showing centroid size across the mandibular tooth row in *Homo habilis* v later *Homo*. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 17** – Interactive html plot showing centroid size across the maxillary tooth row in *Homo erectus* v *Australopithecus*. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 18** – Interactive html plot showing centroid size across the maxillary tooth row in *Homo erectus* v later *Homo*. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 19** – Interactive html plot showing centroid size across the mandibular tooth row in *Homo erectus* v *Australopithecus*. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 20** – Interactive html plot showing centroid size across the mandibular tooth row in *Homo erectus* v later *Homo*. Each specimen's accession number and taxonomic attribution can be viewed by hovering with the mouse.

**Supplementary Data 21** – Full hominin study sample for geometric morphometric analyses with information on each specimen.

**Supplementary Data 22** – Full extant ape study sample with information on each specimen.