

# McNulty, Frost, Strait 2006

## Article ...

▼ ... in a Journal

**Author:**

[PublicAdministrativeSpace:McNulty, Kieran P.] [PublicAdministrativeSpace:Frost, Stephen R.] Strait, Da

**Title:**

Examining affinities of the Taung child by developmental simulation.

**Journal:**

Journal of human evolution

**Number:**

3

**Volume:**

51

**Year:**

2006

**Pages:**

274-96

**Keywords:**

'Animals' 'Fossils' 'Hominidae' 'Models, Biological'

**ISBN:****ISSN:**

0047-2484

**URL:**

<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&>

**Abstract:**

As a well-preserved juvenile and the type specimen of *Australopithecus africanus*, the Taung child figures prominently in taxonomic, ontogenetic, and phylogenetic analyses of fossil hominins. Despite general agreement about attributing the Sterkfontein and Makapansgat fossils to this species, limited morphological comparisons have been possible between these specimens and the juvenile Taung. Here, we used developmental simulation to estimate the adult form of the Taung child and directly compare its morphology to that of other fossil hominins. Specimens were represented by 50 three-dimensional landmarks superimposed by generalized Procrustes analysis. The simulation process applied developmental trajectories of extant hominine species to the Taung fossil in order to generate its adult form. Despite differences found in the developmental patterns of these modern species, simulations tested on extant juveniles—transforming them into "adults" using the developmental trajectories of other species—revealed that these differences have negligible impact on adult morphology. This indicates that the occlusion of the first permanent molar is already present by occlusion of the first permanent molar is the primary determinant of adult form, thereby allowing us to use the developmental trajectories of extant hominine species to estimate the morphology of an extinct species. The simulated Taung adult was then compared to the morphology of other fossil hominins. As these comparisons required assumptions about the pattern and magnitude of developmental changes, analyses were performed to evaluate these two parameters separately. Results of all analyses overwhelmingly support the possibility that the Taung child was a juvenile robust australopith, but were consistent with the hypothesis that the Sterkfontein fossils are conspecific. Between Sts 5 and Sts 71, the latter is more likely to resemble the adult Taung child.

▼ ...in a Conference Proceeding

**Author:**

**Title:**

**Editor:**

**Booktitle:**

**Year:**

**Serie:**

**Number:**

**Volume:**

**Pages:**

**Publisher:**

**Keywords:**

**ISBN:**

**ISSN:**

**URL:**

**Abstract:**

## **Monograph**

▼ Book/Booklet

**Author:**

**Title:**

**Year:**

**Editor:**

**Serie:**

**Volume:**

**Publisher:**

**How Published:**

**Keywords:**

**ISBN:**

**ISSN:**

**URL:**

**Abstract:**

▼ Thesis

**Author:**

**Title:**

**Year:**

**School:**

**Keywords:**

**ISBN:**

**ISSN:**

**URL:**

**Abstract:**

## **Others**

∨ Poster

**Author:**

**Title:**

**Year:**

**Conference:**

**DOI:**

∨ Internet Source

**Author/ Organization/ Institution:**

**Title:**

**URL:**

**Date of Access:**

**Date of Publication:**

**Version number:**

∨ Chapter in a Book

**Editor (Book):**

**Book Title:**

**Author (Chapter):**

**Chapter Title:**

**Year:**

**Serie:**

**Volume:**

**Pages:**

**Publisher:**

**Keywords:**

**ISBN:**

**ISSN:**

**URL:**

**Abstract:**

∨ Unpublished Item

**Author:**

**Title:**

**Year:**

**Note:**

**Keywords:**

**URL:**

**Abstract:**

**Linked Files & Pages**

**Multimedia Files:**

**Linked Pages:**

**Additional Content**