

Big Daddy bites the dust

Peter Line

Recently the National Geographic Channel aired a documentary promoting human evolution titled: ‘Ape Man: Search for the First Human’.¹ The show, featuring Jurassic Park-like apemen animations, was all about proving that a fossil cranium, nicknamed Toumaï, was the earliest known hominid. The lead scientist of the group that discovered the skull, Michel Brunet of the University of Poitiers, France, was featured travelling the globe seeking support for his apeman from ‘friendly’ academics.

About three years earlier Toumaï, found in Chad, Central Africa, arrived with a splash, being featured on the cover of the 11 July 2002 issue of *Nature* with the title, ‘The earliest known hominid’. A few days later Toumaï made headlines in *Time* magazine,² with the cover of the European edition reading, ‘Big Daddy?’, and the Pacific edition, ‘First Man?’. Almost immediately, other evolutionists, including Brigitte Senut of the Natural History museum in Paris, expressed doubt about Toumaï’s hominid status. She said she was tending ‘towards thinking this is the skull of a female gorilla’,³ a claim sharply in contrast to that of Harvard palaeontologist Daniel Lieberman, who believed Toumaï to be ‘the most important fossil discovery in living memory’.⁴

The Toumaï cranium (TM 266-01-060-1: see figure 1) and other fossils (fragmentary lower jaws), thought to represent six specimens, were assigned to a new genus *Sahelanthropus*, and given the species name *Sahelanthropus tchadensis*.⁵ The cranial capacity of Toumaï, originally stated as 320 to 380 cm³,⁶ was more recently estimated at 360 to

370 cm³.⁷ The fossils were initially dated, using associated fauna, to be between 6 and 7 million years old,⁸ but later publications, including descriptions of additional dental and mandibular specimens,⁹ quote an age of about 7 million years.¹⁰ Perhaps the authors now regret this emphasis of 7 million years, as a recent genome analysis, by Patterson *et al.*,¹¹ ‘estimated that humans and chimps diverged no more than 6.3 million years ago, and probably less than 5.4 million years ago’.¹² From an evolutionary point of view Toumaï now becomes effectively too old to be the stem hominid. No wonder Brunet plays down the DNA findings, saying, ‘Their explanation is just a hypothesis, while Toumaï is a true fossil’.¹³

Claims later surfaced that one of the molars in the mandible was glued in the wrong place, and that an incisor collected at the site was not featured in the original *Nature* paper.¹⁴ The authors making these claims stated that the fossils attributed to *S. tchadensis* ‘are the subject of debate as to whether they represent a hominid or an ape. It is therefore necessary to provide full and accurate details of the fossil collection’.¹⁵ Their challenge to the establishment resulted in a predictable backlash.¹⁶

As no postcranial fossil material has been found for *S. tchadensis*, its hominid¹⁷ status, in which evolutionists consider walking upright a key feature, is inferred from features on the skull. These include a massive brow ridge, a small canine with apical wear, backward tilt of the nuchal plane, anterior position of foramen magnum, and a short flattish face.^{1,18–20} These will be considered in turn.



Figure 1. The Toumaï cranium was featured on the cover of the 11 July 2002 issue of *Nature* with the title, ‘The earliest known hominid’. Extraordinary media publicity and promotion of this fossil as an ape-man followed this announcement. However, the evidence used to support its status as a hominid is very much in dispute. (Illustration Copyright M.P.F.T. <www.cnrs.fr/cw/fr/pres/compress/Toumai/Toumaigb/illustragb.html>).

Beetle-browed

A few months after the *Nature* paper a brief communication was published in the same journal by a team of paleoanthropologists, led by Milford Wolpoff of the University of Michigan, who argued that *Sahelanthropus* was ‘not an obligate biped’, nor a hominid, but ‘an ape’.²¹ The Wolpoff *et al.* paper was accompanied by a rebuttal from Michel Brunet.²² The Wolpoff team suggested that Toumaï’s massive continuous supraorbital torus (brow ridge), reportedly greater than in any australopithecine or extant ape, but matched in *Homo erectus*,²³ was likely a mechanical response to strain.²⁴ More recently, an expanded Wolpoff group published an in-depth analysis of the Toumaï cranium.²⁵ In this paper they pointed out that the vertical thickness of the supraorbital torus in Toumaï had been reduced in reconstruction by over 2 mm, placing ‘it within the range of both male and female gorillas, but still outside the range of any australopithecine species or the range of chimpanzees’.²⁶

Canine

Another alleged hominid feature of Toumaï, compared to all living great apes, is its small canine with apical wear.⁶ However, Wolpoff *et al.* state that the Toumaï canine (right maxillary) fits well within the range of non-hominid Miocene apes,²⁷ such as *Sivapithecus* and *Ankarapithecus*.²⁸ Although the apical canine wear is described as ‘exceptional’ in Toumaï, suggesting ‘a masticatory cause’, similar wear patterns in canine crowns is reportedly also present in Miocene apes.²⁹ Evolutionists do not regard these Miocene apes as hominids, so this Toumaï feature cannot logically be evidence of its hominid status. For the same reason, if the canines of some Miocene apes and australopithecines are of similar size, then smaller canines in australopithecines (although still larger than in humans), relative to living apes,³⁰ is hardly evidence for the australopithecines being hominids. It should be pointed out that the now defunct ‘early hominid’ *Ramapithecus* also had smaller canines than those in living apes.³¹ The misidentification of *Ramapithecus*³² as a hominid, based on features of the species teeth, urges caution at the acceptance of any ‘dental hominid’.³³

Nuchal plane

Analysis of the reconstructed Toumaï cranium led the researchers to conclude that the nuchal plane³⁴ was ‘relatively long, flat, and rotated toward the horizontal as in *A. africanus* and *A. afarensis*’.³⁵ As creationists (and some evolutionists, such as the eminent authority Charles Oxnard³⁶) regard australopithecines as extinct apes,³⁷ this resemblance means little. However, most evolutionists regard these australopithecines as hominids, and so any feature in Toumaï not found in extant great apes, but present in these and other alleged hominids, is taken as evidence of an evolutionary relationship, and hence hominid status.

The Brunet team cites the ‘flat nuchal plane oriented at about 36° relative to the Frankfurt Horizontal’³⁸ as indication of bipedality in *S. tchadensis*, but the only reason for this inference appears to be that it is ‘well within the range of *Australopithecus* and *Homo* but not *Pan*’.⁷ This is because evolutionists believe that the greater horizontality of the nuchal plane in, for example, australopithecines compared with great apes, ‘reflects the consequences of a bipedal stance’.³⁹ The orientation of the nuchal plane is believed to reflect the direction of pull of the nuchal muscles when they stabilize the head, and therefore to indicate stance and head balance. However, the difference in nuchal plane orientation between *Pan* and australopithecines, in an example by Wolpoff, does not appear that great given the limited number of australopithecines included.⁴⁰ He lists a chimpanzee sample of unspecified size as displaying a range of 56° to 77° for the angle of the nuchal plane, compared to 45° and 50° for two *afarensis* specimens.⁴⁰ Given that the skeletal morphology of *afarensis* indicates that it was specialized for climbing in trees, as well as knuckle walking, as are apes,⁴¹ the alleged angular difference in the nuchal plane between australopithecines and extant great apes provides

no significant insight into differences in locomotion.

As quoted by Wolpoff *et al.*, the estimated unreconstructed angle of the nuchal plane of Toumaï was 55°, a variance of 19° from the later reconstructed value of 36°.⁴² This indicates considerable uncertainties in this measurement on some fossil skulls, in addition to considerable within species variation, as indicated by the chimpanzee sample. Having extolled the virtue of nuchal plane orientation as an index of bipedality, Wolpoff appears to break his own rules, as after analyzing the nuchal plane in the Toumaï cranium he and his team dispute Toumaï’s affinity with hominids, believing instead that the ‘TM 266 cranial rear and posterior portion of the cranial base, including the size, shape, and orientation of the nuchal plane, are compatible with a chimpanzee pattern of locomotion’.⁴³ Additionally, as Toumaï’s nuchal plane orientation appears more horizontal (and hence ‘modern’) than its alleged descendant *afarensis*, it seems this measurement is unsuitable as an index of ‘hominid status’ and/or bipedality in these apes.

Foramen magnum

A more anterior position of the foramen magnum, compared to African apes, is used to support the notion that *Sahelanthropus* was a hominid.⁴⁴ The foramen magnum, apart from being the entry point (opening) of the spinal cord into the braincase, is the pivot for neck rotation and ‘where the weights and forces acting on the head must balance’.³⁹ The foramen magnum is generally more forward in *Australopithecus* compared to the great apes,⁴⁵ and evolutionists believe that a more anterior position of the foramen magnum ‘reflects the consequences of a bipedal stance’.⁴⁰ However, this is oversimplifying a complex relationship, and in the words of evolutionists Aiello and Dean, the results of certain ‘studies suggest that it is difficult to predict a secure relationship between the forward position of the foramen magnum (or its orientation) and the habitual posture of hominoids’.⁴⁶

For example, when the bitympanic line is used as a reference, the relative position of the foramen magnum in *Homo sapiens* and some fossils attributed to early *Homo* (KNM-ER 1813, 3733 and 3883) lies somewhere between that of the great apes and australopithecines like *A. africanus*, *A. boisei*, and other fossils attributed to early *Homo* (SK 847, OH 24 and KNM-ER 1805).⁴⁷ Hence, there is no chronological development in the position of the foramen magnum from early to late supposed hominids. Rather, it’s a zigzag pattern. Even if a more forward position of the foramen magnum may be more likely to reflect a bipedal stance, this forward position appears to be uncorrelated with the supposed advancement of hominid evolution towards *Homo sapiens*. Hence, this would seem to rule out this feature as a hominid marker, particularly as it would infer that australopithecines like *A. africanus* and *A. boisei* were better adapted bipeds than humans. According to Oxnard, who considered it unlikely that any australopithecines had any direct phylogenetic link with the genus *Homo*, the locomotion of *A. africanus* ‘may not have been like that of

modern man, and may, though including a form or forms of bipedality, have been different enough to allow marked abilities for climbing.^{7,48}

It is argued that Toumaï might have been bipedal based on the angle between the orbital plane⁴⁹ and ‘the line connecting the anterior-posterior of the foramen magnum in the sagittal plane’.^{50,51} However, Wolpoff *et al.* dispute that this foramen magnum-orbital plane angle reflects posture and locomotion, adding that if the ‘angle *did* reflect posture and locomotion, we would conclude that the australopithecines were quadrupedal, but their putative ancestor, *Sahelanthropus*, was an obligate biped.’⁴³ The reason for this reaction was that in their analysis the australopithecine range for this angle (64° to 81°) was found to be ‘completely outside the human range’, but ‘almost completely within the chimpanzee range’,⁴³ whereas the Zollikofer *et al.* reconstructed Toumaï cranium (TM 266) yielded a value for this angle (95°) that was close to humans (103.2 ± 6.9°).⁵² Hence, it makes no evolutionary sense to them.

Flat face

From the very start the face of Toumaï posed a problem for evolutionists. It is short and flat (vertical) in comparison to chimpanzees and australopithecines.⁵³ Hence, the odd thing about the Toumaï cranium, according to paleoanthropologist Bernard Wood, is that it looks chimpanzee-like from the back, but ‘from the front it could pass for a 1.75-million-year-old advanced australopith’.⁵⁴ So, from an evolutionary point of view, if *S. tchadensis* is a ‘stem hominid’, this invalidates most of the geologically younger australopithecines from being hominids, as they display more ‘primitive’ faces; notwithstanding Wood’s ‘untidy model’, which allows ‘hitherto unknown combinations of hominid, chimp and even novel features’,⁵⁴ but in doing so explains effectively nothing as it lacks predictive power.

If Toumaï is a hominid, then paleoanthropologists have to explain how the face in chronological sequence went from ‘primitive’ (apes), to ‘advanced’ (Toumaï), then a reversal back to a ‘primitive’ condition (australopithecines), and finally a reversal of the reversal to an ‘advanced’ condition (*Homo*). Interestingly, after a virtual reconstruction by

Zollikofer *et al.*¹⁹ (figure 2) to remove distortion in the cranium, and as expressed by Ann Gibbons: ‘the face was taller and its mug protruded a bit more than the original skull showed.’⁵⁵ However, it will take more than this reconstruction to align the flattish Toumaï face with conventional human evolutionary chronology. The simplest explanation appears to be that Toumaï was an extinct ape with a more vertical face than extant apes, although how flat depends on the accuracy of the reconstruction. As there is only one cranium in the sample, the question of within species variation is also unresolved.

Conclusion

In her book *The First Human* Gibbons describes how Brunet made a bet with paleoanthropologist Tim White that ‘he would find the oldest hominid, the elusive missing ancestor’.⁵⁶ Given the flimsy evidence for Toumaï being the ‘First Human’, it seems like the race to find this earliest hominid, and associated honor,⁵⁷ caused a rush to judgment on Toumaï’s hominid status. Not even all evolutionists are convinced Toumaï is a bipedal hominid, with Wolpoff *et al.* concluding that ‘the evidence indicates that TM 266 *did not* habitually hold its head in an upright position over the spine and thus lacked this significant obligate bipedal adaptation.’⁵⁸

At the beginning of the National Geographic documentary the narrator informs the viewer that the researchers believe Toumaï to be ‘part of the skull of a hominid—a cranium nearly 7 million years old—if it is true it will turn the previous theories about the origin of man upside down.’¹ One wonders how many times a new supposed hominid fossil has turned ‘previous theories about the origin of man upside down’? After years of ‘eating sand’ in search of hominid fossils in Africa, one can understand Brunet’s desire for recognition. But effort and desire are never going to turn apes into apemen, and as the case for Toumaï being a hominid is unsubstantiated, it appears that his reign as ‘First Human’ is over. Even if Toumaï turned out to be capable of limited non-human bipedal locomotion, this would not prove it was a hominid. However, as even evolutionary paleoanthropologists Chris Stringer and Peter Andrews admit, there ‘is no indication at present whether this species was able to walk bipedally’.⁵⁹

References

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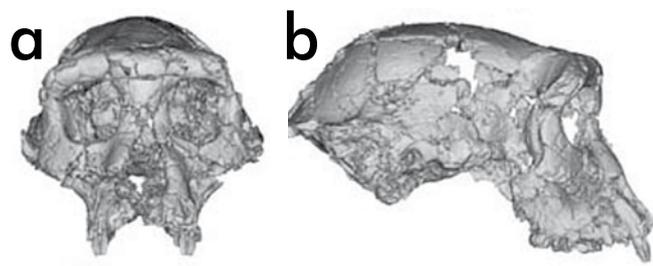


Figure 2. The above illustration shows a virtual reconstruction to correct distortion in the deformed Toumaï cranium. Orientation is in the Frankfurt Horizontal. (a) Frontal view, and (b) Right lateral view. (From Zollikofer *et al.*,⁷ p. 756).

6. Brunet *et al.*, ref. 5, p. 146.
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23. It was this alleged affinity with supposedly later hominids in the genus *Homo* that was the reason the massive brow ridge was used as supportive evidence for Toumaï being a hominid.
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27. To evolutionists the Miocene epoch was from about 24 million to 5 million years ago, and Miocene apes consisted of a diversity of apes that they believe ranged across the ‘Old World’ through this period. See: Begun, D.R., Planet of the Apes, *Scientific American* **289**(2):64–73, 2003.
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32. The fossils attributed to *Ramapithecus* have now been incorporated into the genus *Sivapithecus*—an extinct ape, not a hominid.
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34. The *nuchal plane* is an external area on the back of the skull, specifically the squamous part (flattened portion) of the occipital bone below the *superior nuchal line* (ridge extending laterally that marks attachment sites of muscles), that provides attachment for neck muscles. The *nuchal plane length* is the distance from *inion* to *opisthion*. The *inion* is the center of the *tuberculum linearum*, a protuberance of varying expression found where the superior nuchal lines meet at the *sagittal plane* (a sectional plane that divides the skull into left and right sections). The *opisthion* is the midline point of the posterior margin of the foramen magnum.
35. Guy *et al.*, ref. 20, p. 18837.
36. Oxnard believed that the australopithecines ‘were not like humans or apes, or midway between them, but actually completely different from any living forms’, and that including them ‘as a part of, or close to, the human lineage’ was ‘unreasonable’ given the many problems associated with such a scenario. See: Oxnard, C. E., *Fossils, Teeth and Sex—New Perspectives on Human Evolution*, Hong Kong University Press, Hong Kong, pp., 227, 244–245, 1987.
37. I.e. an extinct non-human primate group.
38. In African apes the nuchal plane is said to be more oblique or slanting (less horizontally oriented). The *Frankfurt Horizontal* (or Frankfurt Plane) is defined by three points made horizontal: the midpoint of the lower margin of the left orbit and the highest points in the upper margins of the two auditory meatuses or poria. This plane allows skulls to be compared in standard positions, when mounted on a stand in this orientation. See: Rogers, S.L., *The Human Skull: Its Mechanics, Measurements, and Variations*, Charles C Thomas, Illinois, pp. 44–45, 1984.
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Peter Line’s undergraduate major was in biophysics. After that he completed a Masters Degree and a Ph.D., both in the area of neuroscience. He has had a keen interest in the creation/evolution issue ever since becoming a Christian, as evolution was a stumbling block to him believing God’s Word was true.
