

Raymond Dart

lone scientist



Johnnic Library, 18 March 1963

Raymond Dart (1893 - 1988)

Raymond Dart was one of nine children, born in Toowong, Brisbane, Australia in 1893. After graduating from the University of Queensland in science, he studied medicine at the University of Sydney. He was a member of the Royal Australian Medical Corps in World War 1 in Europe. Afterwards, he worked at University College in London, spent a year in the USA as a Rockefeller Foundation research fellow and was then appointed Professor of Anatomy at Wits University. He was only 29 years old. A couple of years later he became the Dean of Medicine. He held the chair of Anatomy for 36 years and carried on lecturing well into his 90s.

In 1924, Dart noticed a skull being used by a student demonstrator that had been found in the northern Cape. After he had chipped the skull out of the limestone in which it was embedded and examined it closely, he claimed that it represented a new species. It was not an ape skull as he had thought at first but something that was close to being human – something in between ape and human. Many scientists – especially scientists overseas – were angry with Dart. They said his claims were 'preposterous' and that the 'Taung' skull was simply that of an ape's. They did not believe that someone at an African university could have made an earth shattering discovery. It was generally believed that humans first developed big brains, then stood upright, and Dart said the Taung skull showed it had happened the other way round. Worst of all he was suggesting that the first human-like creatures had lived in Africa and not Europe or Asia!



Professor Raymond Dart Johnnic Library

A Lesson in the Importance of Independent Observation

In this lesson plan, learners will become familiar with the story of Raymond Dart's defiance of accepted 'scientific' wisdom. Very few people believed what Dart had to say. He was harshly ridiculed by many other scientists for 25 years. But in the end, he was proved right. It turned out that the other scientists had been taken in by a fraud! It's vital to be aware of how prejudice can cause us to make errors even when we think we are being scientific.



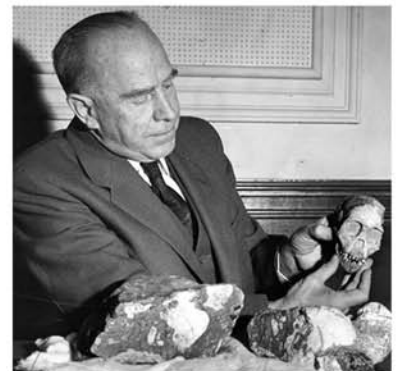
For 25 years, Dart was rejected and mocked by the scientific world. But he refused to give up his theory. The Taung skull was that of a child of about 5 years old who had died more than a million years ago. Dart called it his 'baby'. The scientific name that he gave to his new species was *Australopithecus Africanus*.

Later, discoveries by other scientists in Africa eventually showed that Dart was right about his new species. Taung was more human than ape. Perhaps Taung was the missing link.

Dart died in 1988 when he was 95 years old. As *The Star* commented on the 23rd of January 1985 just before Dart's 92nd birthday: 'Happily, Professor Dart has lived to see his claims vindicated and his genius... acclaimed.'



Professor Raymond Dart with Taung skull South African National Library, Cape Town



Professor Raymond Dart with the Australopithecus Skull from Makapansgat Johnnic Library, 22 January 1961

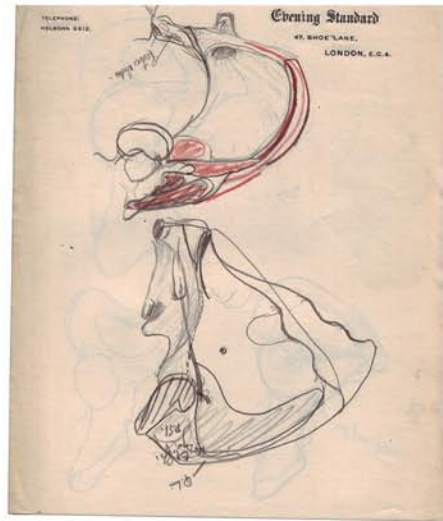
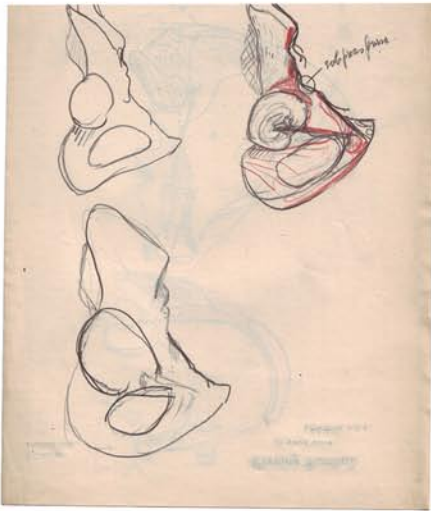
How could this tiny skull that was over a million years old be the key to understanding where human beings come from?

- The Taung child had stood upright or nearly upright – Dart could tell by the way the skull must have been joined to the spine.
- The Taung child's teeth were more human than ape.
- The Taung child's forehead looked more like a human's than an ape's.
- Dart made drawings of the skull for a scientific magazine to show readers that the Taung child was more human than ape. Can you see what features made him draw this conclusion?

- Why did many scientists refuse to accept what Dart said about the Taung skull despite the evidence?
- Why is it important not to just go along with what the crowd thinks?

Dart said that evolution did not mean that God did not exist. When he was an old man, he told a journalist: 'I have thought from childhood that there is a God... This we know for sure – man ... is insignificant in terms of the cosmos. How dare he say he knows?... If you ask who is responsible for the universe that we live in, man is not in a position to answer this kind of question.'

Quoted in 'The Man who discovered the missing link' by Anita Allen in *The Star*, 7th February 1993



Raymond Dart's anatomical drawings from the Wits Central Records. No explanation accompany these and their date is unknown.

Life was made harder for Dart by the Piltdown skull supposedly discovered in Britain, which had a large brain case. Many scientists said that this was obviously the first kind of human-like creature. But it was a hoax. A group of scientists had glued together the skull of a hominid and the jaw of an ape, and buried it so that it could be 'discovered'. They wanted to prove that intelligent humans had first appeared in England! Forty years later it was shown to be a fraud by a man who had been one of Dart's students.

Learner Activities

- Now discuss some of the questions Philip Tobias, (who was one of Dart's students, and who is now a famous scientist in his own right), said that the discovery of the Taung skull makes us consider:

What are the features that distinguish hominids from other primate families?
Which of the defining characteristics of human beings were the first to appear?

- In other words: what makes human beings human?
- Do research and find other examples of scientists who went against the crowd and were then proved right.
- Pretend to be one of the scientists behind the Piltdown fraud. You realise that you have not got long to live and want to make amends. Write a letter of apology to Raymond Dart – own up to your motives.

Other Ideas

Ask your learners if they can think of reasons the apartheid education departments did not want schoolchildren to learn about theories of evolution.



The Taung Skull MuseuAfrica



A selection of tool and bone fragments from Raymond Dart's collection MuseuAfrica

Criteria for Assessment

- Learners demonstrate that they understand that scientific 'findings' can be skewed by prejudice.
- Learners show they understand that the scientists behind the Piltdown fraud were driven by a desire to prove that England was the home of the first real human beings who supposedly had big brains.

Curriculum Link – Grades 10 & 11

LO 2, AS 2

LO 4, AS 3

Grade 11 Content Link – What was the impact of pseudo-scientific racism in the 19th and 20th centuries?