

NO 26 RAYMOND DART (I)

Gerald Foley

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1. Today, I am going to talk about the anatomist and paleo-anthropologist Raymond Dart (1893-1988). A thoroughly nice man according to those who knew him.
2. He was a distinguished academic, professor of Anatomy for 36 years in the University of the Witwatersrand in Johannesburg and Dean of the Faculty of Medicine for 18 years.
3. Nowadays, he is mainly famous for his discovery of the fossilised skull of an early precursor of humanity in South Africa in 1924.
4. He crops up in a variety of ways in connection with the AT. He first became involved in it in the 1940s and wrote some scientific papers about it which are still interesting.
5. His scientific support for the Technique was important in the South African libel trial which if it had gone against Alexander would have been a major disaster for him and probably the Technique.
6. Although he never trained as a teacher, he became an important member of the AT community. He was friendly with Walter and Dilys Carrington, and with Alex and Joan Murray. He delivered the Alexander Memorial Lecture in 1970.
7. His most direct influence on the AT is through what have become known as the "Dart Procedures" which were initially promoted by the Murrays. More recently Robin and Beatrice Simmons have been demonstrating them around the AT circuit.
8. Some of the procedures are also used in various teacher training schools, sometimes without people being aware they came from Dart. You will also see if you do a little web-surfing that various teachers use them in their work with pupils.
9. Dart is thus an important figure in the history of the AT. But he also had some quite eccentric ideas that have dated very badly so rather than just congratulating ourselves on another important scientific person who agrees with us, we also need to look critically at these ideas.
10. I have a variety of information sources. Dart himself wrote a book called *Adventures with the Missing Link* which was published in 1959. This has lots of biographical information but nothing about the AT.

11. There is a rather gushing biography called *Dart: scientist and man of grit* published in 2001. This has lots of biographical information but out of the 360 pages only two (pp 223-224) deal with the AT – and rather poorly.
12. For Dart's thinking on the AT, the main source is a book called *Skill and Poise: articles on Skill, Poise and the F.M. Alexander Technique* which was put together by Alex Murray and published by STAT Books in 1995. This contains six articles by Dart, including the Alexander Memorial Lecture which he gave in 1970. It also has an article by Alex Murray describing the Dart Procedures
13. An issue of the AT magazine *Direction* (Vol 1 No 3) dedicated to the *Life and Work of Raymond Dart* was published in 1988. This has some interesting material including a warm tribute to him by his successor in the University – a highly distinguished scientist called Phillip Tobias.
14. As for Dart himself, he was an Australian, born in Brisbane in 1893. He was the fifth of nine children in a strict religious cattle-farming family. He was a bright boy and got a scholarship to Queensland University in 1911 where he qualified with a Bachelor of Science (BSc) degree in 1913.
15. He then went on to the University of Sydney to study medicine while continuing to work for an MSc in Queensland. It was hard work but by 1917, Dart had his MSc and had also obtained his medical qualifications.
16. He joined the army and served with the Royal Australian Medical Corps during the last year of the First World War but did not see any military action because the war ended before he got to the front lines.
17. At this stage Dart had decided that he wanted to make anatomical research his life's work. After demobilisation from the army, he got a position as Senior Demonstrator in Anatomy in University College London, under the famous Professor of Anatomy, Grafton Elliot Smith (1871-1937) who became Sir Grafton in 1934.
18. Elliot Smith was also Australian and Dart had been greatly inspired when he heard him giving a guest lecture in Sidney in 1914.¹ So Dart was now working for one of his heroes.

¹ Wheelhouse and Smithford (2001)23

19. Dart was obviously a very bright and hard-working young man and Elliot Smith recommended him for a Rockefeller Foundation research fellowship in the US and he spent a year there. During that time, he married an American girl called Dora Tyree who was a student instructor in anatomy at the University of Cincinnati
20. When Dart came back to his job in London, Elliot Smith, who was also interested in paleoanthropology – and was the world’s leading specialist on the evolution of the brain – was working on reconstructing the fragments of a skull that had been discovered at a place called Piltdown in Sussex.
21. This and a previous fossil skull found in the same place, were believed to be those of a very early ancestor of human beings, which the press christened Piltdown Man. It was considered by paleoanthropologists to be a very important discovery.
22. In fact, Piltdown Man is one of the most celebrated scientific frauds but its exposure did not come until 1953 when it was exposed as a skilful fake. There is still argument about who did it but it seems fairly certain that Martin Hinton, who later became Keeper of Zoology in the Natural History Museum in London had a hand in it.
23. That was long in the future and Elliot Smith’s interest in Piltdown Man and paleoanthropology inspired Dart. He began to study the huge collection of bones in the Royal College of Surgeons.
24. Just at that time, the professorship of anatomy became vacant in Witwatersrand University in Johannesburg. Elliot Smith persuaded Dart to go for the job.
25. Dart himself was extremely reluctant and said:

I hated the idea of uprooting myself from what was then the world’s centre of medicine and leaving my research and studies with the giants of the profession to take over the Anatomy Department at Johannesburg’s new and ill-equipped University of the Witwatersrand.²
26. There is a suggestion that Elliot Smith was rather glad to get rid of Dart. Another famous British anatomist and paleo-anthropologist, Sir Arthur Keith (1866-1955), said of Dart:

I was one of those who recommended him for the post, but I did so, I am now free to confess, with a certain

² Dart (1959)p26

*amount of trepidation. Of his knowledge, his power of intellect and of imagination, there could be no question; what rather frightened me was his flightiness, unorthodoxy and a scorn for accepted opinion.*³

27. Whatever the reason, Dart, who was by then aged 29, got the job and headed for South Africa with his new wife. When they got there in early 1923, they found that the Medical School in the University was almost completely derelict, with virtually no facilities and a dissecting department which was obviously used for student football games.

28. He said in his book *Adventures with the missing link*:

*Our first inspection of these conditions left my wife, whom I had taken from her medical studies in Cincinnati, in tears – a woman's prerogative I rather envied at that moment.*⁴

29. To his enormous credit, Dart adopted an entirely positive attitude and got on with building up the Anatomy Department from scratch. He stayed with the University for the next 36 years until he retired in 1958.

30. Because of the lack of equipment and facilities, very little actual anatomy that could be done in the Department, and Dart's interest in paleoanthropology that had been sparked by Elliot Smith was revived when he learned that there were lots of interesting fossils turning up in various areas in South Africa.

31. So he encouraged the students to bring in any they came across. The idea was to build up an anatomy museum in the Department. One of these students, Josephine Salmons, brought him what appeared to be a fossilised baboon skull which came from a place called Taungs, which is now called Taung, about 500 km from Johannesburg where rocks were being mined for lime-making.

32. This was a highly unusual finding; according to the orthodox view of the time, it should not have been there. So when she told him there plenty more there, Dart was immediately interested. As a result, he got in touch with the mine and was sent a box of fossils that the mine manager had collected.

33. Among them, he found what he described as

³ Ibid.31

⁴ Ibid.33

*...a beautifully preserved natural cast of the interior of the brain-case; its surface faithfully reflected all the impressions that the brain, in life, had imprinted on the cranial vault.*⁵

34. From his paleoanthropology work with Elliott Smith, Dart realised this was something new and extremely interesting. He looked through the rest of the box and found a lump of lime-consolidated clay with what appeared to be the front half of the same skull embedded in it.
35. In order to fit this front half of the skull to the cast of the inside of the skull, he needed to separate it out from the consolidated clay. He was terrified of damaging it and he spent the next two months delicately chipping away the surrounding hard material with small chisels and his wife's knitting needles.
36. What finally emerged was the face of a child, of about three years of age with a full set of milk teeth. He said:

*I doubt if there was any parent prouder of his offspring than I was of my "Taungs baby" on that Christmas of 1924.*⁶
37. At the time, the universal belief among the experts was that early pre-humans and humans had first emerged in Asia. But Dart was convinced from the beginning that he had discovered a precursor of humanity that was far older than anything found in Asia.
38. He prepared a paper for *Nature* – which is the ultimate publication goal of any scientist. He also gave the story to a friend of his who was the news editor of the Johannesburg *Star*.
39. In the *Nature* paper he said his Taung was a specimen of

*...an extinct race of apes intermediate between living anthropoids and man.*⁷
40. He estimated the age of his baby at about one million years which made it twice as old as the earliest Asian finds.⁸ Using his anatomical expertise, he reckoned it walked in the upright, more or less like humans.

⁵ Tobias (1992)6

⁶ Dart (1959)p9

⁷ Wheelhouse and Smithford (2001)63

⁸ Dart (1959)p51

41. He decided to call the fossil *Australopithecus africanus* – which means southern African ape. When the newspaper story and the paper were published, there was enormous scientific and popular interest.
42. Dart – who was not known for his lack of self-confidence – prepared an exhibit for the British Empire Exhibition in Wembley in 1925, in which he showed *Australopithecus africanus* as a fully upright anthropoid ape in the direct ancestral line of humanity. It was widely referred to as “*The missing link*” between apes and humans.
43. This level of self-publicity and leaping to conclusions without a sober debate in the scientific literature was very much disapproved of by scientific establishment. There was a rising tide of scientific criticism of Dart’s interpretation of his find and he found himself marginalised in the world of paleoanthropology.
44. But Dart’s University stuck by him and he was elected Dean of the Faculty of Medicine in 1925. It was difficult and depressing for him being outside the high scientific circles to which he was accustomed. But he showed great courage and determination and soldiered on, doing his job and building up the faculty.
45. His marriage broke up in 1933. Three years later, he married Marjorie Frew who was the medical librarian at the University.
46. At this stage, the scientific tide had begun to turn in Dart’s favour. This was mainly because of the work of a Scottish-born anthropologist called Dr David Broom, who had settled in South Africa and joined Dart’s department in 1934.
47. During the 1930s, Broom made a series of discoveries in various other areas around Johannesburg which basically confirmed Dart’s findings. By the end of the 1930s Dart had been vindicated and he had received handsome apologies for some of his most prominent critics.
48. In 1946, immediately after the Second War, David Broom and Gerrit Schepers, another member of Dart’s department, published a book called *The South African Fossil Ape-Men* which presented all the evidence and finally confirmed that Dart had been right.
49. At that stage, his fame as the discoverer of *Australopithecus* and his honoured place in the history of paleoanthropology were secure.

50. We now come to how Dart became involved in the AT. In 1941 Marjorie Dart gave birth to their second child whom they named Galen, after the early Roman physician.
51. The Dart's Galen was a premature baby, born at six and a half months, weighing only two pounds six ounces, just over a kilogram.
52. Medical care for premature babies was much less advanced than today and Galen barely survived. Dart described him as
*"...an emaciated, poorly nourished child with tense oedematous legs. His motor development was greatly delayed owing to spasticities of various kinds resulting from muscular inco-ordination."*⁹
53. Oedematous means swollen with fluid and spasticity means increased rigidity in muscles.
54. Dart was a very devoted father who put an enormous amount of effort into teaching the child to walk and use his body properly. In one way, this was a challenge that Dart was already prepared to face. As an anatomist and paleoanthropologist he was deeply interested in the whole question of posture and bodily use.
55. But it was a time of considerable strain for Dart. In 1943, he suffered what was then called a nervous breakdown¹⁰ and he had to give up work for a year. He resigned as Dean of the Faculty of Medicine but kept his position as Professor of Anatomy.
56. He spent a year away from work and came back refreshed and looking for new ways to help Galen. It was then he discovered Alexander's books and read them with great interest.
57. In the Alexander Memorial Lecture he said:
*Alexander's terminology of 'primary control' and 'head-neck relationship' on the one side, and the work of Sherrington and Magnus on segmental and suprasegmental reflexes on the other side, had riveted my attention...*¹¹
58. In the next talk, I will take the story forward.

References

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⁹ Wheelhouse (1988)p101

¹⁰ Wheelhouse and Smithford (2001)221

¹¹ Dart (1996) p33

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