

NO 26 RAYMOND DART I (1893 – 1988)

16 November 2009

1. The last couple of lectures, before the break, were about Aldous Huxley. Today, I am going to be talking about someone much less exotic. He is the scientist Raymond Dart (1893-1988) and his name keeps cropping up in a variety of ways in connection with the AT.
2. He began his career as a medical doctor, specialised in anatomy, became the most famous paleoanthropologist – a person who studies the origins and evolution of humans – in the world, and became a strong supporter of the AT.
3. My main source of information on Dart as a person is a book he himself wrote called *Adventures with the Missing Link* published in 1959. This deals almost entirely with his paleoanthropology.
4. A book called *Skill and Poise: articles on Skill, Poise and the F.M. Alexander Technique* was put together by Alex Murray and published by STAT Books in 1995. This contains several articles by Dart, including the 1970 Alexander Memorial Lecture, and a description of the Dart Procedures written by Alex Murray.
5. An issue of the AT magazine *Direction* dedicated to the *Life and Work of Raymond Dart* was published in 1988.
6. Just a word on Alex Murray whom some of you know. He was principal flute-player with the London Symphony in the 1950s. He started his training as an Alexander teacher here in Lansdowne Road when it was run by Charles Neil and finished it under Walter. He went to the US and became professor of flute at the University of Illinois. He and his wife Joan now run a teacher-training school in Urbana in Illinois.
7. Going back to Dart and beginning at the beginning, 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 he got a scholarship to Queensland University in 1911 where he studied medicine.
8. He graduated with honours in 1917 and joined the army and served with the Royal Australian Medical Corps in France until the end of the First World War.
9. After demobilisation, he became Senior Demonstrator in Anatomy – basically a lecturer – in University College London, under the famous Professor of Anatomy, Sir Grafton Elliot Smith. This was

a very good position for someone so inexperienced and suggests that Dart was an exceptionally bright young man.

10. At that stage, Dart had decided to make anatomy his life's work. He wrote a scientific paper called *A Contribution to the Morphology of the Corpus Striatum* which was published in 1920. For those who need to know, the corpus striatum is a stripey mass of white and grey matter located in front of the thalamus in each hemisphere of the brain.
11. He was recommended by Elliot Smith for a Rockefeller Foundation fellowship for research study in the US and spent a year there. During that time, he met and married an American lady.
12. When he came back to his job in London, Elliot Smith, who was also interested in paleoanthropology, was working on reconstructing the second Piltdown skull of which fragments had been discovered at a place called Piltdown in Sussex.
13. This and a previous fossil skull found in the same place, were believed to be those of a very early ancestor of human beings, who was christened Piltdown Man. It was considered by paleoanthropologists to be a very important discovery.
14. In fact, Piltdown Man is one of the most celebrated scientific frauds but its exposure did not come until 1953 when some workers in the British Museum found that it had been skilfully faked. Even today, no one knows for certain who perpetrated the hoax.
15. That was long in the future and Elliot Smith's interest in the Piltdown Man and paleoanthropology inspired Dart. He began to study the huge collection of bones in the Royal College of Surgeons.
16. Just at that time, the professorship of anatomy became vacant in Witwatersrand University in Johannesburg. Elliot Smith persuaded Dart to go for the job.
17. Dart himself was rather 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.*¹

18. There is a suggestion that Elliot Smith was rather glad to get rid of Dart. Another famous British anthropologist, Sir Arthur Keith, said of Dart

*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.*²

19. Whatever the reason, Dart, who was aged 29, 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.

20. I suspect Dart was never much of a feminist. He said

*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.*³

21. To his enormous credit, Dart got down to building up the anatomy department from absolute scratch. He stayed there for the next 36 years until his retirement – at the age of 65 – in 1958.

22. Because of the lack of equipment and facilities, there was 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 interesting fossils turning up in various areas in South Africa. So he encouraged the students to bring in any they came across. The idea was to build up an anatomy museum in the Department.

23. As a result of this, he acquired a box of fossils from a place called Taungs, which is now called Taung, about 500 km from Johannesburg where rocks were being mined for lime-making. Among them, he found the fossilised cast of the inside of a skull, the shape of which indicated that the brain was three times as large as that of any baboon and larger than an adult chimpanzee.

¹ Dart (1959)p26

² Ibid. p31

³ Ibid. p33

24. From his paleoanthropology work with Elliott Smith, Dart realised this was something new and extremely interesting. Very excited by this, he looked through the rest of the box and found what appeared to be the front half of the skull embedded in lime-consolidated clay.
25. In order to fit this front half of the skull to the cast of the inside, 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.
26. What finally emerged was the face of an infant, 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.*⁴
27. At the time, the universal belief among the experts was that humans had originated in Asia and most of the interesting paleoanthropology was being done in China and Java. But Dart was convinced from the beginning that he had discovered a precursor of humanity that was far older than anything found in Asia. He estimated the age of his baby at about one million years which made it twice as old as the earliest Asian finds.⁵
28. 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*.
29. 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. Dart – who was not known for his modesty – prepared an exhibition 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.
30. This level of self-publicity was all a bit too much for the scientific establishment and after a short while, opinion turned against Dart. He went through a bad time and his marriage broke up.

⁴ Ibid. p9

⁵ Ibid. p51

31. But he continued to have support in the University of Witwatersrand and from friends in South Africa. He also continued with his task of building up the Anatomy Department and was appointed Dean of the Faculty of Medicine.
32. Meanwhile a Scottish-born anthropologist called Dr David Broom, who had settled in South Africa, and who believed in Dart kept up the work of searching for fossils. During the 1930s, he made a series of discoveries in a couple of other areas around Johannesburg which basically confirmed Dart's findings.
33. Immediately after the Second World War, Broom and a South African in Dart's department called Schepers, published their results in a book called *The South African Fossil Ape-Men*. The evidence they produced was so scientifically convincing that Dart's view of *Australopithecus* was totally vindicated. He had handsome apologies from some of his prominent scientific doubters and his place was secured as one of the major figures in paleoanthropology.
34. Meanwhile Dart remained as Dean of the Faculty of Medicine and continued his work of building up its capacity and reputation. The Institute for the Study of Man in Africa was established in his honour in 1956 at the University which is now called the University of Johannesburg.
35. My dentist, who is South African, and studied there, remembered Dart well but for obvious reasons, our discussions on him were rather one-sided.
36. Dart's successor at the University was Dr Phillip Tobias who is now retired after a very distinguished career as a paleoanthropologist, as well as being an early campaigner against apartheid. Tobias, incidentally, was one of the people who uncovered the Piltdown hoax. He paid a very warm tribute to Dart in an article in *Direction* magazine in 1988.⁶
37. That covers Dart's very successful career as an academic and paleoanthropologist. But there was a lot more to the man.
38. One of the events which was of enormous importance in bringing out the other sides of Dart was the fact that, in 1941, his second wife Marjorie gave birth to their second child whom they named Galen, presumably after the early Roman physician who is seen as the founder of medicine.

⁶ Tobias (1988)p96-99

39. Dart's Galen was a premature baby, born at six and a half months, weighing only two pounds six ounces, just over a kilogram.
40. 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.*"⁷ Oedematous means swollen with fluid and spasticity means increased rigidity in muscles.
41. Dart was a very devoted father who put an enormous amount of effort into teaching the child to walk and use himself properly. In one way, this was a challenge that Dart was already prepared to face. As an anatomist and because of the debate over *Australopithecus* he was already very interested in the whole question of posture and bodily use.
42. He had, for example, been looking at the question of how to tell from a fossil skull how a creature walked.
43. Around this time, Dart came across Alexander's books and he read them with great interest. He also learned that Irene Tasker who had worked with Alexander was in South Africa.
44. Irene Tasker (1887-1977) is an interesting person in her own right and was associated with the Technique from a very early stage. In 1913, she had a series of thirty lessons from Alexander and became one of his assistants and assisted him with the first three books.
45. She learned the Technique as an apprentice, by helping Alexander work on his pupils. You can read a very interesting account of her experience in the pamphlet *Connecting Links* which is the transcript of a talk she gave here in Lansdowne Road in 1967. You can buy it at the desk
46. Dart got in contact with her Tasker but she was already booked on a sea-passage to England. It meant that he was only able to manage a short series of daily lessons with her but they made a huge impression on him.
47. This is how he later described the experience, saying he received

⁷ Wheelhouse (1988)p101

*...a series of daily demonstrations of Alexander's self-analytic technique. They had revealed to me how my own malpostured habits of sitting, standing, walking and lying down could be bettered. She had manipulated my moving body concurrently with my conscious desire to sense the feelings in my muscles and joints while striving to inhibit those feelings "wrongful, intermeddling with reflex details."*⁸

48. Even though the lessons only lasted a short period Dart noticed immediate improvements in his own health. He also found that what he had learned was useful in dealing with Galen's problems.

49. He became a fervent convert to the Technique but since he was completely on his own, and not lacking in self-confidence, he just continued to work things out for himself, using Alexander's books, together with what he had learned from Irene Tasker and his own anatomical and physiological knowledge.

50. He said

*I continued studying the wrongful and rightful performance of muscular acts so intensively that it became to some extent habitual. In the absence of my teacher I, too, had been forced to adopt a "do-it-yourself" technique.*⁹

51. At this point, I should tell you about one of the threads which runs through Dart's thinking which you need to be aware of when reading him. It is known as *recapitulation theory* and was developed by a 19th century German anatomist called Ernst Haeckel (1834-1919) who was a supporter of Darwin and evolution.

52. Haeckel's idea, which he proposed in 1866, just seven years after the first appearance of the *Origin of Species* is that the human embryo as it develops in the womb passes through, or recapitulates, the same physical patterns as the evolution of the human species from its earliest beginnings.

53. It was Haeckel who coined what is usually referred to as the "well-known" expression "*Ontogeny recapitulates phylogeny*" – though I confess I've never overheard it in the pub. Ontogeny is

⁸Dart (1996) p26

⁹ Ibid. p27

the entire sequence of events involved in the development of an individual organism from conception through to maturity whereas phylogeny is the sequence of events involved in the evolution of a species.

54. Haeckel believed that the human embryo passes through different developmental stages in which it not only resembles but actually has the characteristics of a fish, a reptile, a mammal and finally a human.
55. Recapitulation theory, in this more extreme form, was never particularly credible at a scientific level and fell out of favour in the early decades of the last century. One of the reasons contributing to this loss of credibility was that it was discovered that Haeckel had touched up his drawings of the different stages of the human embryo so that they looked more like the embryos of fish, reptiles and so on than they really do.
56. Modern genetics undermines recapitulation theory since we now know the full human genetic inheritance is present in the first cell, the fertilised egg, when it is implanted in the womb. The embryo and the child develop their own latent characteristics rather than go through a genuine process of evolution so that any resemblances to other creatures are incidental.
57. But the idea of the embryo passing the various evolutionary stages continued to linger on at a popular level and it is probably still lurking out there.
58. An interesting aside is that if you look up Haeckel on the internet, there is an unexpectedly large amount about him, devoted to demolishing his ideas. This is because various American creationists think that if they can demolish Haeckel, they are undermining the whole idea of evolution.
59. But back in the 1940s when Dart was struggling to find a way to deal with Galen's problems one can see that he might have felt in a broader sense that recapitulation theory had a certain validity.
60. The human embryo and the human infant go through a series of stages of development and if these stages are interfered with or shortened, this can cause developmental problems. This was the case with Galen who was clearly an underdeveloped infant.
61. In an article in *Direction* magazine by Frances Wheelhouse who interviewed Dart, she quotes him as saying about damaged children:

*By correcting any maladjustments from birth, due to possible wrongly promoted actions, either accidentally or deliberately, a series of exercises based on our ancestral movement, often right back to amphibious days, could help in readjustment. Even relaxing in some ancestral way and moving on ancestral all-fours can solve problems for some, and also assist the healthy.*¹⁰

62. Dart also applied these exercises to adults. Wheelhouse quotes one of Dart's colleagues in the Medical School, called Professor Arnold, going in to his room where Dart was working on a student who had a paralysed arm. He says:

*...I found him standing in the room with this student, a man of about twenty-five years, lying on the carpet, and I watched while Professor Dart put him through exercises which resembled movements of a primitive amphibian or fish...Then he would tell him to yawn deeply, because yawning is a very primitive activity. And in the middle of the yawn, he would roll and smack the paralysed arm against the carpet on the floor.*¹¹

63. In 1949, Dart came through London with his wife. He met Alexander and had a lesson with him. Dart really did get the point. He said

*...Alexander's work is important because it is based on the fundamental biological fact that the relation of the head to the neck is the primary relationship to be established in all proper positioning and movement of the body.*¹²

64. That's about all we have time for today. In the next talk I will tell you about how what have become known as *The Dart Procedures* emerged from a conversation between Walter and Alex Murray about the role of the jaw in head balance in 1967.

65. I will also tell you some of the interesting nuggets to be excavated from his technical papers and his Alexander memorial lecture in *Skill and Poise*.

¹⁰ Wheelhouse (1988)p105

¹¹ Wheelhouse (1988)p104

¹² Wheelhouse (1988)p102

References

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