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# Contesting a legendary legacy: A century of reflection on Raymond Dart and the Taung skull

In 1925, Raymond Dart published his description of the Taung Child skull, which he named *Australopithecus africanus*, thereby making a pivotal contribution to the field of palaeoanthropology. While recognising Dart's central role in the field, this paper reviews the historiography of two aspects of Dart's legacy. First, this paper explores how, over time, Dart's telling of the story of the Taung fossil obscured the role of geologist Robert Young and promoted the myth of 'one man, one fossil', rather than the reality that all scientific efforts reflect the work of a team. Then the paper shifts to review Dart's belief in race typology, and his disturbing anthropological practices. These beliefs and practices were not questioned in the era of racial segregation and apartheid, and they carry painful legacies into the fields of anatomy, anthropology and palaeoanthropology. Dart's legacy was upheld during his lifetime and was further protected for another 25 years after his death by Dart's protégé and successor, Phillip Tobias. However, critical reflection on Dart's legacy of scientific racism began in the 1990s and continues today. Dart's important contribution to palaeoanthropology, the description of the Taung skull, continues to eclipse other more negative aspects of his legacy. This paper reviews scholarly writing on Dart's overall career, confirms this legacy of scientific racism, and argues that it stands alongside his legendary legacy of the description of the Taung Child skull.

**Significance:**

- The case of the Taung skull illustrates that palaeoanthropology is a matter of teamwork, and serves as a reminder to look for and document the team of people involved with fossil finds, rather than attributing them to one person.
- The Raymond Dart papers and Dart's publications at Wits University provide evidence of Dart's promotion of race typology and scientific racism.
- While Raymond Dart's significant contribution describing the Taung skull is secure, his overall legacy should be reassessed.

***[Abstract in Setswana]***

## Introduction

Raymond Dart had just turned 32 years old in February 1925 when he published his famous article in *Nature* describing the Taung Child skull, which he named *Australopithecus africanus*. Dart lived for more than another 60 years – passing away in 1988 at the age of 95. This paper reviews how, over time, Dart's telling of the story of the fossil obscured the role of geologist Robert Young and promoted the myth of 'one man, one fossil', rather than the reality that all scientific efforts reflect the work of a team. This paper also explores Dart's belief in race typology, and his disturbing anthropological practices, which were not questioned in the era of racial segregation and apartheid, and that carry painful legacies into the fields of anatomy, anthropology and palaeoanthropology. The paper reviews scholarly writings on Dart's overall career, shares findings from the Dart Papers of the Wits University archives, confirms this broader legacy of scientific racism, and argues that it needs to stand alongside the description of the Taung skull as part of Dart's overall legacy.

## The myth of 'one man, one fossil'

Today, because of contemporary accounts, we know that geologist Robert Young hand-delivered two pieces of rock to Raymond Dart in late 1924.[1–4] Yet, in Dart's 1959 memoir, *Adventures with the Missing Link*, Young was not there and Dart tells the story as a romantic drama playing out in the Johannesburg heat.[5] Dart writes that, as a 31-year-old Head of the Department of Anatomy at Wits University, he reluctantly put on a pair of black tuxedo trousers and a white shirt. The Darts had offered their Melrose home as the venue for a friend's wedding and soon the guests would arrive. Dart was to be the best man. Cursing his collar, Dart moved to the window and glanced outside. He saw two men coming up the driveway, staggering under the weight of two large boxes, and immediately his mood improved. He had been waiting for this delivery, and it had nothing to do with the wedding.[5] Yet the arrival of the boxes was not the whole story.

Just weeks earlier, Dart had been pleasantly surprised when one of his students in the Department of Anatomy, Josephine Salmons, arrived at class with an ancient baboon fossil. This part of the story has always been told consistently by Dart. The fossil that Salmons showed him had been embedded in limestone that had been blasted out of the Buxton Limeworks in Taung, about 400 kilometres southwest of Johannesburg, as lime was needed for gold processing. Salmons had seen the fossil by chance. The manager of the limeworks, A.E. Spiers, had shown the fossil to E.G. Izod, the director of the Northern Limeworks Company, who carried it to Johannesburg where he showed it to his son 'Pat' Izod, who in turn showed it to Salmons. Salmons asked Izod if she could borrow the skull and show it to Dart.[1,5,6]

According to sources at the time, as well as his later memoir, as soon as Dart saw the ancient primate fossil in the rock, he showed it to his geologist friend and Wits colleague Professor Robert Young. Looking at the fossil together,

Dart and Young were excited by the idea that there might be more ancient skulls to be found at Taung. Young knew the quarry at Taung – Buxton Limeworks – and he knew the local quarryman, Mr De Bruyn, who had been blasting at Taung for some time, and gathering fossils from the rock. Young told Dart that he was heading to Taung soon, and that he would consult with De Bruyn and report back.[2,5]

In late October or at some point in November 1924, De Bruyn blasted out a fossilised brain cast that he thought might not be from a baboon. He showed the two blocks of stone to his manager, who in turn showed them to the visiting Professor Young. Young decided to carry these two pieces of rock personally on the train back to Johannesburg. However, before he left Taung, he arranged for many other pieces of promising breccia to be boxed and sent on the train directly to Professor Dart – these were the boxes that showed up on the day of the wedding.[2,3]

This is where Raymond Dart's telling of the story in his 1959 memoir differs from the newspaper coverage in 1925. According to Dart's memoir, and the repetition of the story for decades, Dart ran out the door to investigate the boxes, and prised open the lid, saw the mould of a skull, and knew immediately that it was not another baboon skull like the one Josephine Salmons had brought him.[5]

Yet, the local newspaper coverage at the time[2(p.25)], Dart's 7 February 1925 article in *Nature*[1], and a letter sent to Dart by geologist Robert Young in February 1925[7], give a different story. Dart had not found the brain cast and skull in either of the two wooden boxes of rubble. It was Robert Young, the Wits geology professor, who carried these pieces of breccia back from Taung personally, and he hand-delivered them to Dart. For decades, this piece of the story was lost. Dart's telling of the story in his memoir minimised the role Young played at Taung and did not mention at all that it was Young who had delivered the fossils.[2,3,5]

The distinction between receiving a couple of rocks from a railway delivery service or from the hands of Robert Young might not be critical if it were not for the fact that the fossil from Taung would make Dart an internationally renowned scientist. What Dart's successor in the Department of Anatomy, Phillip Tobias, described as the "chain of discovery" – from the labourers in the mine to the supervisor De Bruyn, to the mine manager, to Professor Young to Raymond Dart, as well as the important role played by Josephine Salmons – would turn out to be the most important fossil hominin find of the 20th century. It would make a monumental contribution to our understanding of human evolution.[2,3,8]

On 7 February 1925, the same date that Dart's article describing the fossil appeared in *Nature*, Young wrote a letter to Dart on a small folded card; he congratulated Dart on the discovery and the glory it would bring him and the University of the Witwatersrand.[7] Three days earlier on 4 February, an article had appeared in *The Star* in Johannesburg with the headline "Blasted Out: How Professor Young Found the Skull". In an effort to set the record straight, Young wrote to Dart, "…the part I played at Buxton in the actual finding of the skull was to select amongst the specimens, the piece of rock containing it from some fragments of rocks and minerals laid aside in the quarry by the quarryman …I do not think it of any particular importance who 'found' the skull, and I mention the matter here merely because of the heading to the report...I had no intention of claiming anything, however small, that was not my due."[7]

In Dart's *Nature* article, he acknowledged that he was "manipulating the pieces of rock brought back by Prof. Young"[1]. A research note in *Nature* later that year read: "It will be remembered that the limestone block from which Prof R. Dart chiseled out the fossil skull of *Australopithecus africanus* was brought to him by his colleague Dr. R. B. Young."[4] Yet this aspect of the story was lost over the years, and Young was largely written out of history.[2,3,5,9,10] Young passed away in 1949, and by the time Dart wrote his memoir a decade later, Young played no role in delivering the skull to Dart.[5] The memoir was published 35 years after the fossil find, so memory lapses are likely, and Dart may have felt that finding the skull in the boxes of rubble made for a more dramatic story.[2,3]

In 1946, Robert Broom wrote that "The specimens were placed in Dart's hands in November 1924."[11(p.12)] Dart's successor at Wits, Phillip Tobias, grew up hearing the story in the 1950s and 1960s without much mention of Young, a version that circulated for decades.[2,3,12(p.22)] In 1974, the Johannesburg-based Museum of Man and Science published a booklet written by Roy Terry to commemorate the 50th anniversary of the Taung skull.[9] The popular booklet did not include references, and was distributed widely. It stated that the rock containing the skull "was crated together with other rocks and sent to Dart in Johannesburg"[9(p.7)]. It was only in 1984 that Tobias reviewed contemporary sources and reassessed Young's role in his publication, *Dart, Taung and the Missing Link*. Tobias concluded that it was likely that the boxes of breccia were shipped, but that Young carried the critical pieces of rock.[2] "It is clear from these re-interpretations", Tobias wrote, "that history should assign a greater role to R.B. Young in the chain of discovery"[2(p.26)].

In 2006, Tobias wrote a paper for the *Transactions of the Royal Society of South Africa,* again detailing the exact sequence of events surrounding the Taung skull and the "neglected role of Professor R.B. Young"[3]. But Tobias's meticulous research did not fully reinstate Young's role in the story. In 2003, for example, Bob Brain wrote an article for *Nature* commemorating Dart and the Taung skull, and he lifts the story straight from Dart's memoir[10], as did a Leakey Foundation podcast in 2019[13].

Unlike Young, Josephine Salmons was consistently credited by Raymond Dart. He claimed that she was the person who inspired him to search for fossils in Taung, and he published a photo of Salmons in his memoir.[5] Without her input, Dart might not have become a world-famous palaeontologist. Little is recorded about Salmons' later life. She completed her BSc and honours degrees, and all but her final year of a medical degree at Wits before she married Cecil Jackson and had two children. She did not continue with a scientific career and, in April 1950, she died of cancer in Scottburgh in Natal at the relatively young age of 48.[8,14]

It would not be the last time that someone who played a crucial role in a fossil find, like Robert Young, would defer to the lead scientist, and fade away from the historical record. This was a pattern that would repeat itself in palaeoanthropology in Africa again and again for the next century. Under segregation and apartheid, African labourers and assistants who helped build the careers of scientists, faced challenges very different from Young, yet they too received little attention or applause and their life stories faded from view. For example, Daniel Mosehle and Saul Sithole worked with Robert Broom at Sterkfontein and Kromdraai[8,15], and George Moenda was instrumental in finding evidence of fire at Swartkrans with Bob Brain[8,16]. Steven Motsumi and Nkwane Molefe identified the spot in the rock where they had been working with Ron Clarke to find Little Foot.[8,17] There is a need for greater acknowledgement of these individuals, a discussion which has begun in more detail elsewhere.[8,15–19] Science of all kinds is a matter of teamwork, collaboration and the sharing of ideas.[8,17–19] This story of the Taung skull can serve as a reminder to look for and document the team of people involved with fossil finds, rather than attributing them to one person.

## Decades of glowing praise

European scientists were sceptical of Dart's claims about Taung at first, even calling Dart's claims "preposterous"[5(p.45),20], and it took more than 25 years for the international scientific community to accept the significance of the Taung skull[20–22]. Yet, the reaction in South Africa to Dart's 1925 announcement was generally one of excitement. The University of the Witwatersrand was barely three years old and the university council congratulated Dart for his contribution to science and the distinction he brought to the university, and named Dart the Dean of the Wits Medical School within months of the paper.[8] Jan Smuts, previously South Africa's prime minister, who was then the president of the South African Association for the Advancement of Science ($S_2A_3$), sent Dart a warm letter of congratulations calling Dart's discovery "epoch making"[5(p.36)]. He suggested that it was "calculated to concentrate attention on South Africa as the great field for scientific discovery, which it undoubtedly is"[5(p.37)].

Many South Africans saw Dart as a scientific hero[23,24(p.2),25(p.231)] – an image that continued for the rest of his life. His heroic legacy was promoted by Robert Broom[11,12], Dart's memoir[5], and a 1984 biography written by Tobias: *Dart, Taung and the Missing Link*.[2] In the early 1980s, Wits historian, Bruce Murray, wrote that Dart was "the man who put the medical school and indeed the University, truly on the map"[26(p.179)]. At an international conference held in Johannesburg to honour the 60th

anniversary of the discovery of the Taung skull, Dart was showered with high praise for his work.[24(p.24)] His obituaries celebrated his tenacity and acknowledged that he "revolutionized the study of human origins"[24,27].

After Dart passed away, his legacy was further protected for another 25 years by Tobias, who saw Dart as a father figure.[25,28,29(p.219)] Francis Wheelhouse and K.S. Smithford published a reverential biography of Dart in 2001, *Dart: Scientist and Man of Grit*[23], which was based largely on Wheelhouse's PhD dissertation of 1998 which concludes that "by his sheer vitality and drive, [and] his inspired vision . . ., he lifted the University of the Witwatersrand to world prominence"[30]. In addition to praising his "major discovery of *Australopithecus africanus*", Wheelhouse applauded his many contributions in "anthropology, human migrations and culture"[30].

There are countless documents, articles, websites, and blogs that refer to Dart and the Taung skull.[2,10,13] But there is a large body of work that Dart pursued in the 1920s and 1930s related to physical anthropology, race typology, and cultural diffusion that is not often mentioned, and deserves greater attention. It was after Dart's monograph about the Taung skull was rejected by London in 1929 that he set aside his work with ancient fossils until the mid-1940s. In the intervening years, he turned to these other interests in comparative anatomy and the study of living humans.[8]

## Other areas of Dart's work – long unexamined

As soon as Dart arrived in South Africa in 1922, and before describing the Taung fossil, he started a human skeleton collection. He had seen these collections in Europe and the UK, where the motivation for starting them was to understand comparative anatomy and race.[8] He was especially impressed by the Terry Human Skeleton Collection in St. Louis in the USA, where anatomists looked especially at the skeletons of people indigenous to the Americas and took interest in a hierarchy of race.[31]

Many scientists at the time believed that humans could be divided into separate, distinct and pure racial types – which we now know is not the case.[32] Dart believed that race typology, which classified humans by their physical characteristics, was an important aspect of physical anthropology, as did Robert Broom[32,33(p.38)] and Matthew Drennan[24(p.13),33(p.42),34(p.157)] in South Africa, Robert Terry[8(p.49)] and Alec Hrdlicka[33(p.30)] in the USA, Lido Cipriani[35] in Italy, and many others across Europe and the UK[33(p.26)]. Dart was particularly interested in the anatomy of the people of southern Africa, especially the San and the Khoi, and he believed that understanding their anatomy would give him a clue to understanding race typology and human evolution.[24,33]

In 1936, Dart led a major Wits expedition of scientists to the Kalahari.[8,33,36] The Wits scientists relied on the work of Donald Bain, a former farmer and hunter. Knowing that many local people were struggling to find food and water, Bain offered them rations of both. He brought them together from various places across the Kalahari to an area called Tweerivieren. It was at this temporary camp that the Wits academics conducted their research.[8,33,36,37]

Focusing on physical anthropology, Dart and his assistant took cranial measurements and measured facial characteristics. They recorded eye colour and hair texture and wrote their findings on the cardboard tags. Dart's two 1937 journal articles, published in the Wits journal *Bantu Studies,* make disturbing reading, as he gave special attention to the measurements of the external female genitalia. He believed that taking measurements and photographs of intimate body parts would contribute to the effort to confirm racial types.[38,39]

After the measurements were completed, the scientists led each person to a second tent to have their face mask taken.[40] Dart had learned the face mask technique on an earlier Italian expedition led by Attilio Gatti through Somalia, Ethiopia and the Congo. Lido Cipriani, an Italian physical anthropologist, had developed a technique to gather face masks by moulding plaster of Paris onto the faces of living people. Cipriani believed in the superiority of Italians and the inferiority of Africans and later worked for the Italian Race Office. Dart saw this process as a significant new methodology in the field of physical anthropology.[35,36] There were no standard procedures in place in 1936 for seeking a research subject's consent. The ethics of taking these casts and measurements was not questioned by the scientists at the time.[41]

Dart and his assistant Eric Williams took 70 face masks of nearly all the adults and some of the children at the camp at Tweerivieren. From then on, through to the 1980s, almost every expedition from the Wits Department of Anatomy to study living people across Africa included taking face masks. Today at Wits, there are over 1000 masks in the Raymond A. Dart Collection of African Life and Death Masks. While the entire collection was on display for almost a century, the current curators have placed most of them in storage, leaving several on display for teaching.[40,42]

After returning from the Kalahari in 1936, Dart wrote that Bushmen "are, as it were, living fossils, representative of the primitive state of all mankind, mementos of our primaeval past"[24(p.11)]. Dart was not the only person using this term "living fossil". Jan Smuts used the offensive and dehumanising term as well.[43(p.249)] Living human beings are not fossils. Yet Dart and Smuts both supported the establishment of a San reserve, similar to the reservations for Indigenous people in the USA. The legislation did not pass, but it is one example of how the push for segregation existed in South Africa long before apartheid.[24,33]

Throughout his career in the Department of Anatomy, Dart's views on race typology influenced numerous students, including Alexander Galloway[33(p.42),34(p.157)], Laurence Wells[34(p.157)], Hertha De Villiers[33(p.62)] and Phillip Tobias[24(p.29),33(p.62),44(p.226)]. It was decades later that physical anthropology started to shift to a post-typological way of thinking that was influenced by statistics and genetics.[8(p.115)] In 1958, the physical anthropologist Ronald Singer critiqued race typology in South Africa, and yet its influence carried well into the 1960s and 1970s.[8(p.120),45] The Raymond A. Dart Collection of Modern Human Skeletons and the Raymond A. Dart Collection of African Life and Death Masks expanded, and the anthropological practices used by the Department were not questioned within the academy for over 70 years, certainly not publicly by scholars or anatomists while Dart was alive. It was not until the demise of legal apartheid that scholars began to critique Dart's career and influence.

## Beginning to critique scientific racism in the 1990s – Dubow, Burns and Abrahams

Saul Dubow published the first full-length study of the history of scientific racism in South Africa in 1995, entitled *Scientific Racism in Modern South Africa*. His chapter on physical anthropology discussed Dart and critiqued the concept of race typology, measurement and classification. "The objectification of the observed by the observer is heightened by the clinical detachment and steely technical terminology used in the description of the bodies of others", wrote Dubow[33(p.31)].

In his 1996 paper 'Human Origins, Race Typology and the other Raymond Dart', Dubow continued his investigation and argued that "Assumptions of intrinsic racial difference and notions of superiority and inferiority are so embedded in Dart's lifework that it is impossible to assess his contribution to anthropological knowledge in isolation from this fact."[24(p.12)] Dubow's important point is not yet embraced by many palaeoanthropologists, scholars and historians almost 30 years later.

Phillip Tobias took over from Dart as the Head of the Department of Anatomy at Wits Medical School in 1959. As a student of Dart's in the 1940s and 1950s, Tobias fully embraced race typology.[44(p.226),46] In 1951, 15 years after Dart's expedition, Tobias made his first of many trips to the Kalahari to study the San. Each of these trips involved measuring every part of a person's anatomy, as Dart did, including women's labia.[47]

One of the first scholars to write critically about Phillip Tobias as a protégé of Dart, and about Dart's broader influence, was Catherine Burns in her PhD at Northwestern University in 1995. Drawing on her dissertation research, she presented a paper to the Centre for African Studies at the University of Cape Town in May 1996 titled 'Bantu Gynaecology: The Science of Women in South Africa, 1920-1960'. Burns deplored the fact that scientists, medical scholars and anthropologists, including Dart and his students, placed a focus on measuring black women's physical and sexual characteristics as a means of defining racial types.[24(p.11),48,49]

Yvette Abrahams was another important critic of racist and sexist scientific practices. Abrahams published her article 'The Great Long National Insult' in 1997, describing the sexual obsession that Europeans held with the Khoi and the San as long ago as the 1600s. Her research and writing about Sarah Baartman made an important contribution, bringing an analysis of race and gender to the history of science in the 1800s.[50] And Dart and his (mostly) male colleagues brought these anthropological practices into the 20th century.

In the mid-1990s, Phillip Tobias had private correspondence with Alan Morris, who had been his PhD student in the 1970s and 1980s. Morris had become the Director of the Department of Anatomy at the University of Cape Town, and he wanted to write about race typology and racism, but Tobias discouraged him. Tobias argued that physical anthropology had not had an impact on apartheid.[8(p.224-225)] He protected Dart's legacy for decades in his writing, public speaking and teaching.

## Skeletons in the cupboard and science and spectacle – Legasick, Rassool and Hayes

In 2000, Martin Legasick and Ciraj Rassool of the University of the Western Cape published *Skeletons in the Cupboard.* While the book did not focus on Dart in particular, it offered the first review of the involvement of South African museums in the human skeleton trade in the early 20th century, which set the scene for Dart's own collection.[51] The book was a turning point relating to collections at universities and museums in South Africa.

In 2002, Ciraj Rassool and Patricia Hayes published a chapter entitled 'Science and Spectacle' in which they provided a thorough description of the Dart-led Wits Expedition at Tweerivieren in 1936 and the Empire Exhibition held at the Wits campus in Johannesburg in 1936 and 1937. The chapter focused on the life of /Khanako, a woman from the Kalahari that Dart met on his expedition.[36] Rassool and Hayes's chapter made clear that Dart and his promotion of race typology turned /Khanako from an individual person to a "generalized type"[36(p.150)].

While Rassool and Hayes cited Dubow's critique of Dart and physical anthropology, they argued that little of the literature to date had "made a connection showing how science and the spectacle worked together"[36(p.121)]. Abrahams had emphasised this connection in relation to Sarah Baartman in the 19th century, but more work was needed to critique scientific racism in the 20th century.

Rassool and Hayes recorded that Matthew Drennan, Dart's counterpart at the University of Cape Town's Department of Anatomy, took casts of /Khanako's head, her hand and her pelvis and her labia.[36(p.127-129)] They referred to /Khanako's daughter /Keri-/Keri as well, writing that /Keri-/Keri's face mask, her body and her skeleton had been held by Dart's department at Wits University after she died. "A visit in 1996 showed that her skeleton meant to be in storage as item A43 in the Dart Collection had gone missing."[36(p.137)]

In addition to the Wits Expedition and the Empire Exhibition, Rassool and Hayes wrote about Dart's skeleton collection, his face masks, and his use of photography as tools of anthropology. "For Raymond Dart and his colleagues, research at Tweerivieren and Frankenwald enabled the physical characteristics of the bushmen to be compared to the fossil record whose analysis was making Dart and his department famous."[36(p.140)]

## Another critique in the 2000s – Derricourt

In addition to Dart's promotion of race typology, and his disturbing anthropological practices, Dart believed in another fatally flawed concept – cultural diffusion. He believed that there was a racial hierarchy, not only in terms of physicality, but also in terms of cultural development. Dart believed that Mapungubwe and Great Zimbabwe were not built by the local African population, but by foreigners who had travelled to southern Africa centuries ago.[15,52] Dubow explored this topic in 'The Other Raymond Dart'[24(p.16-24)]. Thirteen years later, in 2007, Robin Derricourt, an archaeologist from Australia, took up this issue as well in his article 'The Enigma of Raymond Dart' in *The International Journal of Historical African Studies*. Derricourt wrote that "Dart's proselytizing of non-African influence on African culture was well outside his area of expertise. It was however a passion."[28(p.271)]

Both Dubow and Derricourt pointed out that Dart had been greatly influenced by Sir Grafton Elliot Smith, who had promoted the theory of cultural diffusion.[24,28] One month after Dart published his article about the Taung skull in *Nature*, he published another *Nature* article declaring his diffusionist views, stating that the people of southern Africa were influenced by ancient visitors from the Near East who "not only visited their territories and carried off their denizens, particularly their women, but also intermarried with them and settled down amongst them, bringing to them novel arts and customs"[52]. Derricourt wrote that Dart's career and "the fate of his views, raise questions about the nature of science in the early twentieth-century 'colonial' culture and the particular world of white South Africa's emerging ideologies"[28].

Dubow argued that most scholars in anthropology, even eminent American anthropologist Sherwood Washburn, in 1985, failed to see the importance of looking at Dart's career in its entirety. "There is a convenient silence about central aspects of his research agenda", wrote Dubow[24(p.25)]. "This includes Dart's vital role in the hugely misconceived race-typology projects of South African physical anthropology and his passionate advocacy of cultural diffusionist theory."[24(p.25)]

Derricourt went further to argue that "South Africa was receptive to ideas that would not challenge the racial categories that reinforced perceptions of power and difference – and Dart helped to deliver up these ideas"[28]. Like Dubow, Derricourt suggested that "for white South Africa, a racial typology model reinforced assumptions, political needs and economic structures in the interwar years"; he went on to say that, after World War II, "ideas of racial typology hardened in South Africa as they were being dissolved in science"[28].

As a result of Taung's acceptance, Dart's status grew enormously. Derricourt argues that, as a result, public criticism by others in the field was "muted and indirect"[28]. In Dart's later life, some scientists were "unwilling to say in print what they thought in private", wrote Derricourt, who also suggested that the Dart papers in the University of the Witwatersrand archive had not been utilised fully by scholars to explore these dynamics.[28]

Both Dubow and Derricourt remarked that Phillip Tobias remained loyal to Dart and often came to his defence, which had a significant impact on Dart's reputation.[24,28] Tobias wrote a great deal of glowing material about Dart, including a tribute on his 75th birthday, and an obituary.[53,54] From the time Tobias took over from Dart as Head of the Department of Anatomy, for over 35 years, he continued to take face masks at each expedition across southern Africa.[42] And he added 2000 human skeletons to the Dart Collection well into the 1980s. Tobias did not write about Dart's expansion of the human skeleton collection, nor how Dart came to have /Keri-/Keri's skeleton in his possession. In all of his many journal articles, essays and interviews, as well as in his own autobiographical documentaries and books, Tobias protected Dart's legacy.[8,24,53,54] In his 2012 paper, 'Human Remains and Disciplines of the Dead', Rassool pointed out that Tobias had crafted his own legacy to protect Dart's.[55] Tobias died in 2012 at the age of 86.

## After Tobias's death in 2012 – growing reflection on scientific racism

The scholars reviewed in this paper – Dubow, Burns, Abrahams, Rassool, Hayes, and Derricourt – and the arguments they present about Dart's scholarship, have not received the attention they deserve. Dart's achievement with the Taung skull has overshadowed all of his other work.

Several months before Tobias passed away, Alan Morris, who had previously argued with Tobias, wrote an analysis of physical/biological anthropology in South Africa. Morris suggested that Dart, Tobias and many of their colleagues were not "directly involved in the implementation of the apartheid policy"[34(pS152)]. However, Morris made the point that their long-time support of race typology "provided a solid growth medium in which the government policies could develop without credible scientific

opposition"[34]. Morris applauded "the crumbling" of race typology in the late 1950s and 1960s, but lamented that "the public conception of race still remains firmly in a typological mold"[34(p.S160)].

In 2022, Morris published *Bones and Bodies: How South African Scientists Studied Race.* While Morris's introduction states that he was against the historical racism in physical anthropology, the body of the book does not offer a critical approach to the field and its early practitioners. In fact, Morris documents and defends the contributions of physical anthropologists, including Matthew Drennan, much more than he critiques them. Morris states that Dart had a "complicated legacy", and suggests that Dart believed that "politics was separate from science"[56(p.186)].

In 2014, science writer and author Christa Kuljian began research for *Darwin's Hunch: Science, Race and the Search for Human Origins*. While Tobias had previously protected access to the Dart papers, they were now more fully available. Inspired by Dubow, Rassool, and Hayes, Kuljian searched for information about how /Keri-/Keri's skeleton became part of the Dart Collection. Looking through the Dart papers in the Wits Archives page by page, she found alarming correspondence explaining that Dart, back in 1939, had secured /Keri-/Keri's remains before she died of pneumonia in a hospital in Oudtshoorn.[8]

In addition to shining more light on Dart's disturbing anthropological practices, *Darwin's Hunch*, published in 2016, focused extensively on Tobias's body of work. The book illustrates that Tobias's prolific writing left out parts of Dart's history, and aspects of Tobias's own work and practices. Especially in the wake of apartheid, they were being recognised and described as scientific racism.[8,18,24,28,33,53,54]

Dubow wrote that Dart was liberal and that he didn't have strong political views.[24] Derricourt and Morris said that Dart was politically moderate and that he drew a line between his politics and his science.[28,34] Kuljian, however, focused on how there was an interactive relationship between the social and political context and the science. She wrote that Dart's mix of thinking about skeletons, race, cultural hierarchy and human evolution "did not stay in the laboratory at Wits"[8(p.56)]. Dart took his beliefs into the public realm. One example of this is Dart's decision to give evidence about race in court. Kuljian cites two newspaper articles from the Dart papers in the Wits University Archive dated in 1929, the same year that Dart argued that Great Zimbabwe was not built by Africans. On the witness stand, he gave a technical statement on "the question of 'colour' in Europeans and natives". *The Rand Daily Mail* reported that Dart examined a Mrs Neff and declared that she was not white and had "coloured blood in her veins", resulting in her being charged with the illegal possession of alcohol.[8(p.56)] At the time, the term "coloured" was used to describe people of mixed ancestry, and was later used as an apartheid racial classification.

Dart testified in a second case against another woman, Mrs Batty. *The Star* reported that Professor Dart "swore that she was not coloured", thereby defending the three liquor stores that had sold her alcohol. As a witness for the defence, Dart declared he "could find no physical feature in her constitution which could be considered diagnostic of a coloured person". He produced a skin colour chart used by ethnologists and concluded that Mrs Batty's skin colour proved that she was European.[8(p.56)]

Kuljian further reflected on Dart's legacy of scientific racism in the Steve Biko Bioethics Lecture in September 2023, and the related article in the *South African Journal of Bioethics and Law*.[8,41,57]

## Conclusion

In the 1990s, Dubow suggested that historians of science were beginning to explore the area of science studies and the sociology of science, and that they were departing from the "great man" tradition of scholarship.[24(p.26)] What Dubow suggested 30 years ago is important to historians of science today; it is important to view Dart's career as a whole, not only by looking at its most prominent part. It is important to understand Dart, not only as a hero, but also as a human scientist shaped by the colonial thinking of his time. In the last 30 years, many scholars have explored multiple aspects of his scholarship, and have described Dart's more complex legacy.

How will scholars view Raymond Dart in 2075 on the 150th anniversary of his description of the Taung Child skull? They will certainly look back at this 2025 special issue and see our mistakes and blind spots. Hopefully, future scholars will accept that science is influenced by its social and political context, and agree that Dart's painful legacy of scientific racism stands alongside his legendary legacy of having described the Taung skull.

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## Data availability

All the data are included in the article itself.

## Declarations

I have no competing interests to declare. AI was not used in the preparation of this paper.

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