Matt Cartmill

The Leakey Foundation Oral History of Human Origins Research

Interview conducted by
Bernard Wood
In 2025

THE LEAKEY FOUNDATION

Oral history is a method of collecting historical information through recorded interviews between a narrator with firsthand knowledge of historically significant events and a well-informed interviewer. The goal is to preserve substantive additions to the historical record. The recording is transcribed, lightly edited for continuity and clarity, and reviewed by the interviewee.

Because it is primary material, oral history is not intended to present the final, verified, or complete narrative of events. It is a spoken account, offered by the interviewee in response to questioning, and as such it is reflective, personal, deeply involved, and irreplaceable.

It is recommended that this oral history be cited as follows:

Cartmill, Matt. Interview by Bernard A. Wood, 03/24/2025. The Leakey Foundation Oral History of Human Origins Research: Matt Cartmill. The Leakey Foundation.

Retrieved from: https://www.leakeyfoundation.org/learn/oral-history-matt-cartmill

Interview: 03/24/2025

Bernard Wood (00:00:00):

Okay, Matt. Thank you very much for agreeing to do this. For the record, as they say, could you give us your full name and your academic affiliation?

Matt Cartmill (00:00:13):

Well, my full name on my birth certificate is Matthew Cartmill. I don't have a middle name. My parents decided that if I didn't like Matthew, I should be allowed to pick a name of my own choosing and make that my middle name. And I was perfectly happy with Matthew, but it's always been Matt to my friends and readers of my publications, because that's the name I publish under. And my academic affiliation, at the moment, I'm retired. Okay.

Bernard Wood (00:00:44):

And your last position before you retired?

Matt Cartmill (00:00:47):

My last position was Professor of Anthropology at Boston University, and now I'm a Professor Emeritus of Anthropology at Boston University, and I am also a Professor Emeritus of Evolutionary Anthropology at Duke University.

Bernard Wood (00:01:04):

Matt, thank you very much. Okay.

Matt Cartmill (00:01:05):

Because when I left Duke, I retired at the same time.

Bernard Wood (00:01:09):

So could I ask you about your name? What is the origin of Cartmill?

Matt Cartmill (00:01:15):

Well, it's probably from a little village near the British coast called Cartmel, North of Wales.

Bernard Wood (00:01:25):

Oh, yes.

Matt Cartmill (00:01:25):

And it's probably a folk etymology of Cartmel. And as far as I can tell, Cartmel means, in old Norse, something like, the place where you get the cart across the mudflats.

Bernard Wood (00:01:37):

Okay, that makes a lot of sense. If you've ever been there, that makes a lot of sense.

Matt Cartmill (00:01:43):
I have not, but my daughter has been.

Bernard Wood (00:01:46):
Okay.

Matt Cartmill (00:01:46):
And has sent me Cartmel t-shirts, and bottled Cartmel beer and such like. But there-

Bernard Wood (00:01:54):
So that was-

Matt Cartmill (00:01:55):
... you see both forms of the name, Cartmill and Cartmel.

Bernard Wood (00:01:59):
So Matt, was your family academic, or were you the first person? It sounds perhaps that you were not the first academic, or the first-

Matt Cartmill (00:02:10):
As far as I know, I am the first person in my family to graduate from college.

Bernard Wood (00:02:15):
Matt, how wrong could I be? Okay, so tell me something-

Matt Cartmill (00:02:23):
However, my mother, after divorcing my father, married a professor of physics at Caltech.

Bernard Wood (00:02:30):
Okay. So I can recover my dignity slightly, but-

Matt Cartmill (00:02:38):
Absolutely, absolutely. So my step-family is highly academic, but my genetic families are not. My maternal grandmother was a not very successful concert pianist, who studied with ... what's his name? Well-known, 19th century New England composer. Who was it? Not Chadwick, the other one. Anyway.

Bernard Wood (00:03:04):
Okay. And so where were you brought up?

Matt Cartmill (00:03:07):
Los Angeles. That's where I was born.

Bernard Wood (00:03:10):

Okay.

Matt Cartmill (00:03:10):

My mother's maiden name was ... My mother was born in Los Angeles, and her father was born in Los Angeles. And their names were Irvine, but we weren't part of the family that got any of the ranch. And so-

Bernard Wood (00:03:27):

Do you have brothers and sisters?

Matt Cartmill (00:03:28):

I have a half-sister and a stepsister. My half-sister is my mother's daughter by her second husband, my stepfather. And the stepsister is my stepfather's daughter by his first marriage.

Bernard Wood (00:03:43):

No wonder you're so smart, Matt, because even to understand your family requires a certain amount of smartness.

Matt Cartmill (00:03:52):

I'll give you an even more complicated example. My mother's brother married the same woman three times.

Bernard Wood (00:03:59):

Okay. So where did you go to high school?

Matt Cartmill (00:04:04):

I went to high school at a prep school in Los Angeles ... Well, not in Los Angeles, but on the Palos Verdes Peninsula, which sticks out of Los Angeles, called Chadwick.

Bernard Wood (00:04:16):

Okay. And so a prep school would be what in England we will call a public school, which means private.

Matt Cartmill (00:04:22):

That right. It was partly day students and partly boarding students.

Bernard Wood (00:04:28):

Okay. And were you a good student?

Matt Cartmill (00:04:31):

Yes, I was a great student.

Bernard Wood (00:04:35):
And when you were, say, 16, did you know what you were going to do?

Matt Cartmill (00:04:47):
16 ...

Bernard Wood (00:04:49):
Well, you know, all-

Matt Cartmill (00:04:50):
No, I didn't know exactly, but biological anthropology was one of the options.

Bernard Wood (00:04:57):
So how did you know about the existence of biological anthropology if you're at high school?

Matt Cartmill (00:05:02):
I read W.W. Howells' book, Mankind in the Making.

Bernard Wood (00:05:06):
Oh, okay.

Matt Cartmill (00:05:06):
And that-

Bernard Wood (00:05:09):
He was such a good writer.

Matt Cartmill (00:05:11):
He was a great writer. I should also mention that between the ages of roughly two and six, I was raised by devoutly fundamentalist paternal grandparents. And so I was acutely aware of the ideological interest of the issue of human evolution.

Bernard Wood (00:05:32):
Okay, okay.

Matt Cartmill (00:05:34):
So that probably helped propel me into an interest in human evolution.

Bernard Wood (00:05:41):
So you were an only child, in that sense, even though you have ...

Matt Cartmill (00:05:47):

Yes, my half-sister was born when I was 12.

Bernard Wood (00:05:51):

Okay. And so how did you make a decision about where to go to college, and how did you make a decision about what to study in college?

Matt Cartmill (00:06:03):

Well, by that time, I was interested in anthropology, so I decided I would major in anthropology, but I took just about as many courses in philosophy. I think if I hadn't gone into anthropology, I would probably have become an academic philosopher.

Bernard Wood (00:06:20):

Well, I think you are an academic philosopher.

Matt Cartmill (00:06:24):

No, I meant somebody who makes a living with it.

Bernard Wood (00:06:28):

Oh, okay.

Matt Cartmill (00:06:28):

So [inaudible 00:06:28] professor of philosophy.

Bernard Wood (00:06:31):

Okay.

Matt Cartmill (00:06:31):

As a matter of fact, I'm a doctor of philosophy. I didn't tell you that. A PhD. But I decided to go to Pomona College, simply because there was a recruiter from Pomona College who came to my high school, and it sounded good, and I decided to go there.

Bernard Wood (00:06:50):

And that's one of a group of private colleges, is it?

Matt Cartmill (00:06:54):

Yes, it is. There's a cluster of, I think it's now seven colleges called the Claremont Colleges. Pomona is the largest and oldest of the group, but has about 1,200 undergraduates.

Bernard Wood (00:07:04):

And so, how was it for you? Was it the experience that you expected, or was it lacking in some way?

Matt Cartmill (00:07:16):

No, no, it was terrific. I directed Gilbert and Sullivan, I acted in plays, I ran programs on the campus radio station. I learned German, and French, and Chinese.

Bernard Wood (00:07:41):

This must have been slightly intimidating for your colleagues.

Matt Cartmill (00:07:48):

Which colleagues?

Bernard Wood (00:07:51):

Your fellow students. Or was every Pomona undergraduate sort of overachieving?

Matt Cartmill (00:07:58):

Yeah, I guess so. I mean, I was kind of conspicuous. I graduated summa cum laude. Oh, I should tell you about the College Bowl thing. Back in those days, there was a television program called the General Electric College Bowl, but they had opposing teams, with four teammates on each team, from American colleges, each week. And it was a quiz show, and you would push a button and try to answer ... cross out questions, and then you'd get bonus questions, and so on and so forth. And I was one of four people on the Pomona team.

Bernard Wood (00:08:38):

And how did you do?

Matt Cartmill (00:08:40):

We beat everybody.

Bernard Wood (00:08:41):

Oh, okay, okay. That doesn't surprise me.

Matt Cartmill (00:08:44):

[inaudible 00:08:45] undefeated. And then for the 50th anniversary of the college, several years later, must've been about 1982, they reconstituted the Old College Bowl team, the students, and had them play against a faculty team.

Bernard Wood (00:09:04):

And you beat them?

Matt Cartmill (00:09:05):

Yes, we beat their pants off.

Bernard Wood (00:09:07):

Okay. The equivalent in the UK was called University Challenge, and Stephen Fry was on one of the teams. And he could just answer not only his questions, but everybody else's questions as well.

Matt Cartmill (00:09:31):

One team that we were ... had these very large buttons, big brass buttons. And there are four of them, one for each player on the team. And if you thought you knew the answer to a question, you would depress the button. And three of us on the team held our buttons down halfway, so as to reduce the reaction time. The team captain didn't want to do that, because he was afraid he'd hit the button accidentally. But in the rehearsal, we rehearsed these things with rehearsal questions, to get up to speed before going on the air. One rehearsal, he decided he'd try it, and he got the button pushed down halfway. But he leaned on it a little too heavily, and so the emcee said, "What Chief Justice of the United States ... Pomona, Holmes." "Earl Warren." "That's correct."

Bernard Wood (00:10:25):

Okay. Okay, so-

Matt Cartmill (00:10:27):

The other team was demolished and never answered another question. Anyway, go on.

Bernard Wood (00:10:32):

So I'm getting the impression of your intellectual firepower and the erudition that I link you with have an early ... they were-

Matt Cartmill (00:11:00):

Yes, I was a sickly child. I had very bad asthma. And I read incessantly.

Bernard Wood (00:11:09):

Okay.

Matt Cartmill (00:11:09):

My father, incidentally, was a science fiction writer, Cleve Cartmill. You can look him up. So I read practically nothing but science fiction until I was about 12.

Bernard Wood (00:11:22):

So you went to Pomona, you did well. When did you make the decision to go to graduate school? Or was that made when you were sort of age nine?

Matt Cartmill (00:11:33):

Oh, no, it was made ... I wanted to become a professor. Being an anthropology major, what else are you going to do? I intended to become a professor of anthropology. The question

was where I was going to go. I was given a Marshall Scholarship, and I turned it down, because the slot they got for me was at the University of Leeds.

Bernard Wood (00:11:55):

Okay. Wise choice.

Matt Cartmill (00:11:57):

Yeah. Was that a wise choice? I knew nothing about the University of Leeds. So I applied to three other graduate schools, Chicago, Yale, and Harvard, and I got into all three. And I had a National Science Foundation fellowship. And I decided to go to Chicago, because there was a girl I was sweet on who was going to Northwestern. I never did reply to the admissions letters that I got from Yale and Harvard. And for all I know, they're still waiting.

Bernard Wood (00:12:24):

Okay. So these were quite sort of aspirational universities, Chicago, Yale ... and the third one, I've already forgotten.

Matt Cartmill (00:12:40):

Harvard. It's a college across the river from Boston in Massachusetts.

Bernard Wood (00:12:48):

Okay, okay. So who did you have in mind to work with at Chicago?

Matt Cartmill (00:12:52):

You see, in those days ... Well, I vaguely had the idea of working with Clark Howell. That was the only name I recognized.

Bernard Wood (00:12:59):

Right.

Matt Cartmill (00:13:00):

Okay? But in those days, at least for me, that wasn't a question you asked. You didn't go someplace to work with somebody. Okay? And I think this is a very important difference between the science of those days and the science of today. I just finished writing an article for the special issue of the AJBA, that's a writeup of that symposium, that sort of Festschrift they had for me in Los Angeles last year. And Kaye and I wrote an article, entitled The Visual Predation Hypothesis, A Binocular Look Backward. And one of the things that we wanted to point out in the article was, we surveyed ... had a couple of hundred references in the bibliography to that article, from the period of time that Kaye and I were in academia, from the time that we entered graduate school and college, up until-

Bernard Wood (00:14:03):

You'll have to explain to our listeners and viewers who you are referring to.

Matt Cartmill (00:14:10):
Oh. Kaye? Kaye is my wife, Kaye Brown. She is a-

Bernard Wood (00:14:16):
And how long have you been working with her?

Matt Cartmill (00:14:20):
In various ways, since before we got married, which was in 1971.

Bernard Wood (00:14:25):
Okay. And where did you meet her?

Matt Cartmill (00:14:28):
At Duke. That was my first job, after getting out of Chicago. I was on the job market in the spring of 1969, and I got job offers from Duke and UCLA.

Bernard Wood (00:14:45):
Okay. Let's go back to Chicago, before we get into the job market.

Matt Cartmill (00:14:48):
By all means.

Bernard Wood (00:14:51):
So here you are, at Chicago. As far as I'm concerned, as a Brit, the University of Chicago has a really enviable reputation for being intellectually rigorous. And so what did you do-

Matt Cartmill (00:15:11):
[inaudible 00:15:11]-

Bernard Wood (00:15:11):
How did you decide on the topic for your thesis?

Matt Cartmill (00:15:18):
Ah. Well, I've told that story in various places, including this paper in press, but I'll tell it again. One day, I was walking across the University of Chicago campus, late in the afternoon. And a squirrel jumped out of a trash can, where it had been rummaging around looking for things to eat, ran across the lawn, and ran straight up the stone facade of Walker Museum, which was the building that housed the anthropology department. And I thought, "I couldn't do that. A monkey couldn't do that. A lemur couldn't do that." How come? If primates are so superbly adapted to life in the trees, all the animals I see in the trees around here are squirrels, and they can run three stories up a featureless stone wall. Something you-

Bernard Wood (00:16:17):

Can you tell me roughly how many years you had been in Chicago when you saw the squirrel?

Matt Cartmill (00:16:22):

Two, I think.

Bernard Wood (00:16:26):

Okay. And so, what came next?

Matt Cartmill (00:16:29):

Well, I talked it over with my thesis advisor, who at that time was Russell Tuttle, and I started dissecting squirrels and reading everything I could get my hands on. In those days, it was possible for me to read everything that had ever been written about primates.

Bernard Wood (00:16:48):

Yes, I can believe you.

Matt Cartmill (00:16:51):

Okay. So I spent day after day after day in the library, going through every volume of the Journal of Zoology, looking for anything having to do with mammals that lived in trees, or hands, or eyes, and so on and so forth.

Bernard Wood (00:17:18):

Okay, so let me wind back a bit more. You now say that your advisor was Russ Tuttle. How did you get into that relationship?

Matt Cartmill (00:17:27):

Well, I went there thinking, "Well, maybe I'll work with Clark Howell." He's the only name I knew. "And maybe I'll study human evolution," because that was what I had read about in Will Howells' book. But when I got there, I was assigned Charles Merbs as a ...

Bernard Wood (00:17:45):

Oh, interesting. Nice. In my experience, a really nice, kind guy.

Matt Cartmill (00:17:52):

He was. He was a very nice, kind guy. But he and I had no interest in common.

Bernard Wood (00:18:01):

Right.

Matt Cartmill (00:18:03):
So eventually, I was sort of boosted over to this young guy whose appointment was mainly in the anatomy department, where he had his office, Russ Tuttle. And then sort of he and Charles Oxnard sort of glommed onto me as co-advisors, but Tuttle was the formal advisor.

Bernard Wood (00:18:21):
Okay.

Matt Cartmill (00:18:21):
And I went off my second summer in Chicago. I went off to what was then Rhodesia, with Russell, to study baboons. And-

Bernard Wood (00:18:40):
Okay, so that was your introduction to field work?

Matt Cartmill (00:18:42):
That was my only field work ever.

Bernard Wood (00:18:45):
Well, I mean-

Matt Cartmill (00:18:47):
I take it back. When I was-

Bernard Wood (00:18:48):
... you got to count the squirrel.

Matt Cartmill (00:18:49):
Well, the squirrel, it was not in the field. It was only on a lawn.

Bernard Wood (00:18:54):
Yeah. You know, but it was ...

Matt Cartmill (00:18:59):
I had, in fact, done field work in archeology as an undergraduate.

Bernard Wood (00:19:03):
Okay, okay.

Matt Cartmill (00:19:04):
I went one summer to Teotihuacan and dug up a peripheral suburban Teotihuacano village.

Bernard Wood (00:19:12):

So how long did you spend in Africa with Russ?

Matt Cartmill (00:19:18):
Oh, just the summer. I think it was less than two months. We took-

Bernard Wood (00:19:25):
Was there anybody else, or was it just you and Russ?

Matt Cartmill (00:19:25):
It was me and Russ, and a medical student whose name was ... I forget his real name. We called him Butch. And the local Rhodesian photographer that Russ picked up, whose name was Milton Hill.

Bernard Wood (00:19:41):
Right. So what was Russ's interest, which I assume became your interest for two months?

Matt Cartmill (00:19:51):
Well, yeah. I wound up writing a master's thesis about it. And basically, we sat and watched animals at a waterhole.

Bernard Wood (00:20:00):
Okay, okay.

Matt Cartmill (00:20:02):
And then tried to make sense out of it later on.

Bernard Wood (00:20:05):
Okay. The impression I get was that this didn't really light your fire.

Matt Cartmill (00:20:10):
No.

Bernard Wood (00:20:11):
Okay, okay. Was that because of the animals you were watching, or was it because who you were watching them with?

Matt Cartmill (00:20:44):
I had no complaints about Russell.

Bernard Wood (00:20:49):
Okay.

Matt Cartmill (00:20:49):
The main problem I had was that I didn't see the point of the observations.

Bernard Wood (00:20:53):

Okay, okay, okay. So you started to think about arboreality, and you started to think about why the hell were squirrels so much better at finding their way around trees. And so-

Matt Cartmill (00:21:11):

Well, I don't know if they're better, but they're not conspicuously inferior.

Bernard Wood (00:21:15):

No.

Matt Cartmill (00:21:16):

You walk through the forests of the world, and there is not a rain of squirrels on your head as they fall out of trees because their eyes are facing in opposite directions and they haven't got opposable thumbs.

Bernard Wood (00:21:27):

Okay. So this caused you to think that there was more than one way of killing a cat, in the sense that if you were going to live in trees ...

Matt Cartmill (00:21:39):

It caused me to think that the story I had been taught to believe in, out of Le Gros Clark, which was, all the traits of primates and ultimately of human beings were due to arboreal life. And that explained it was wrong.

Bernard Wood (00:21:55):

Okay, so-

Matt Cartmill (00:21:58):

And so I dug into the history of that idea.

Bernard Wood (00:22:00):

Yes. And so what was the title of your thesis?

Matt Cartmill (00:22:05):

The Orbits of Arboreal Mammals, a Re-examination of the Arboreal Theory of Primate Evolution, I think. I'm not sure about the subtitle, but the title was The Orbits of Arboreal Mammals.

Bernard Wood (00:22:23):

And so basically, it was the orientation of the orbits, rather ...

Matt Cartmill (00:22:25):

Well, I did a lot of dissection, and there were conjectures in there that I had no means of testing, about the mechanics of the orbit, all of which subsequently proved to be correct. For instance, why the post-orbital bar, why the complete bony ring around the eye socket? Well, Le Gros Clark really didn't have anything to say about that, because he believed tree shrews were primates, and tree shrews had a post-orbital bar, and it somehow went along with being a primate.

Bernard Wood (00:23:00):

So to go back to the delicate situation of individual personalities. Did you ever meet Le Gros Clark, or what-

Matt Cartmill (00:23:12):

Yes, yes.

Bernard Wood (00:23:13):

And what view do you have of him now as a scientist?

Matt Cartmill (00:23:20):

Well, I think he was an excellent anatomist. If you read his original book, the original version of the Antecedents of Man ... I'm trying to remember what the name of it was.

Bernard Wood (00:23:34):

Yes, I can't remember either.

Matt Cartmill (00:23:36):

1937.

Bernard Wood (00:23:38):

Yep.

Matt Cartmill (00:23:39):

Something like the Primate Precursors of blah, blah, blah.

Bernard Wood (00:23:43):

I think the Forerunners of Man, or something.

Matt Cartmill (00:23:45):

Forerunners of Man, yes, that's it. If you read that book, he specifically says, "The primate evolutionary trends are orthogenetic. Thank you, Henry Fairfield Osborn. They have nothing to do with natural selection."

Bernard Wood (00:24:00):

Right, okay.

Matt Cartmill (00:24:01):

Okay? Then Simpson came along and said, "Oh, you think primates evolved as a polyphyletic grouping? That's what I think about mammals. I'm going to put your primates into my scheme of the class Mammalia. And by the way, you're not allowed to believe in orthogenesis anymore. It has to be natural selection." So Le Gros Clark, in his subsequent works, his later books, fell back on the arboreal theory out of Wood Jones and Elliot Smith, and said, "It's all due to natural selection from living in the trees. And that's why we got to be human beings, you see? Because if you live in the trees, you get more upright. And we're mostly upright. And if you live in the trees, you get big brains. And we've got bigger brains than anybody." See? That's the lingering afterburn-

Bernard Wood (00:24:50):

Right, I get it.

Matt Cartmill (00:24:50):

... of the Osborn orthogenesis. He wanted human beings to be the product of these trends. But of course, human beings can't be more primate-like than chimpanzees because they live in trees, because we came to the ground. So there was always this disjunction that he never quite managed to deal with. What do I think about Le Gros Clark? I think he was a very good anatomist.

Bernard Wood (00:25:10):

Okay, okay.

Matt Cartmill (00:25:14):

I don't think he was a very deep thinker.

Bernard Wood (00:25:18):

Oh, that's interesting. Okay. I think he was, but maybe he didn't think as well as he might have done about the topics that interest you, maybe.

Matt Cartmill (00:25:31):

Well, possibly. I mean, he was certainly very good on Australopithecus, wasn't he?

Bernard Wood (00:25:37):

Yes. Essentially, once he went and saw the evidence for himself, he ...

Matt Cartmill (00:25:46):

He had a conversion experience.

Bernard Wood (00:25:47):

He had a conversion experience.

Matt Cartmill (00:25:50):
You must remember that I'm the academic grandchild of Solly Zuckerman.

Bernard Wood (00:25:56):
Oh, but that's through Charles Oxnard.

Matt Cartmill (00:25:57):
Oxnard, yeah.

Bernard Wood (00:26:02):
Okay. And so how much influence did Charles have on you?

Matt Cartmill (00:26:07):
Charles and Russell, you must remember this was 1968.

Bernard Wood (00:26:12):
All right.

Matt Cartmill (00:26:14):
The anatomy department at the University of Chicago, like many other academic organizations, was engaged in civil war.

Bernard Wood (00:26:24):
Yes.

Matt Cartmill (00:26:26):
There was a pro-Vietnam war faction led by Ronald Singer, which Charles Oxnard was part of. And there was an anti-war faction led by Leonard Radinsky and Leigh Van Valen, which Russell Tuttle was a sort of ...

Bernard Wood (00:26:42):
Hanger on.

Matt Cartmill (00:26:43):
... lukewarm participant in.

Bernard Wood (00:26:46):
Okay, okay.

Matt Cartmill (00:26:55):
But in the early stages of my thesis work, I relied very heavily on Charles for methodological advice. For example, I wanted to measure the orientation of the orbits of mammals. And I

worked out a way of doing that, by taking linear measurements and doing a series of trigonometric calculations. Solid geometry. Oxnard wouldn't let me do that. He said, "Every time you make a calculation, you lose one significant figure."

Bernard Wood (00:27:33):

That's very Charles-ish.

Matt Cartmill (00:27:35):

Due to rounding error, so you want to measure it directly. So I figured out a way to measure it directly. Basically, I made a steel book with movable needles on one plate. And I fixed the skull so that the midsagittal plane was horizontal, and then I put the needles on the three reference points on the orbital margin. And the angle that the book was at was the angle of orientation of the orbital margin, and so on. So I had to get apparatus built.

Bernard Wood (00:28:06):

But to go back to Charles and the political sort of dynamics, was that around the time that Charles left to go to Australia?

Matt Cartmill (00:28:19):

No, he left after I did.

Bernard Wood (00:28:21):

Okay, okay. Okay. Because-

Matt Cartmill (00:28:27):

My thesis committee consisted of Russ Tuttle, chair, Clark Howell, Leonard Radinsky, Leigh Van Valen, and ...

Bernard Wood (00:28:43):

That was a tough group.

Matt Cartmill (00:28:44):

It was. I'm trying to remember who the fifth person was. And it's escaped my mind now.

Bernard Wood (00:28:52):

Okay.

Matt Cartmill (00:28:52):

It might've been Everett Olson, but I don't think it was.

Bernard Wood (00:28:54):

Wow. Okay, that is a tough group. So when did you defend your thesis, and when were you on the job market?

Matt Cartmill (00:29:03):

I was on the job market before my thesis was completed, because in those days, that was the norm.

Bernard Wood (00:29:10):

Okay.

Matt Cartmill (00:29:10):

I was on the job market in the spring of 1969. I went and gave a paper on the orbits of arboreal mammals, at the physical anthropology meetings. I impressed John Buettner-Janusch, who offered me a job. And I impressed some people at UCLA, who also offered me a job. I gave speeches at both places, job talks. While I was giving my job talk at UCLA, three people were shot dead in the adjoining building, due to a gang war. And BJ showed me the Primate Center, as it was then called. Primate Facility, it was then called.

Bernard Wood (00:29:47):

This is when BJ was at UCLA?

Matt Cartmill (00:29:51):

No, Duke. Duke.

Bernard Wood (00:29:53):

Oh, I see. I'm sorry, we're now at Duke. Okay. Okay, so you're saying that you ... Right, okay.

Matt Cartmill (00:29:59):

I was interviewed both Duke and UCLA.

Bernard Wood (00:30:01):

Oh, okay, okay.

Matt Cartmill (00:30:02):

Duke in anatomy, UCLA in anthropology.

Bernard Wood (00:30:05):

Okay.

Matt Cartmill (00:30:06):

And although I was from Los Angeles, and grew up in Los Angeles, and loved Los Angeles, I decided I would go to Duke, because they had all those wonderful lemurs.

Bernard Wood (00:30:15):

Right. And so-

Matt Cartmill (00:30:18):
But in order to do that, I had to agree to teach gross anatomy.

Bernard Wood (00:30:20):
And this was your bread and butter job for how long?

Matt Cartmill (00:30:29):
About 40 years.

Bernard Wood (00:30:30):
And so you've always taught gross anatomy?

Matt Cartmill (00:30:34):
Until I went to Boston, yeah.

Bernard Wood (00:30:36):
Until you went to Boston. And how much of your teaching obligation would be gross anatomy as opposed to biological anthropology?

Matt Cartmill (00:30:49):
Well, originally, it was just gross anatomy.

Bernard Wood (00:30:52):
Right.

Matt Cartmill (00:30:52):
Let me explain the landscape, if you have time.

Bernard Wood (00:30:56):
Yes.

Matt Cartmill (00:30:57):
Okay. In 1966, the trustees of this sleepy little southern university, called Duke University, which had a medical school devoted to turning out general practitioners for the local trade, decided they were going to become a research powerhouse.

Bernard Wood (00:31:14):
Right.

Matt Cartmill (00:31:15):
And to that end, they did several things. They bought distinguished scientists to head the basic science department. And they instituted a new innovative curriculum, called the

research curriculum. Now, in the traditional medical school curriculum, the first two years of the four-year curriculum are basic science, and the second two years are working in the clinics. The new curriculum at Duke, all the basic science was compressed into a single year, the second year was clinical, the third year you were supposed to go do a research project of your own that would make you into a scientist. And then in the fourth year, you did advanced stuff in the clinics.

(00:32:02):

Now, this meant that all the basic science courses had to be cut in half in terms of time. And the faculty labored mightily to do this, and did so successfully. Hooray for them. The one that did not work was gross anatomy. The gross anatomists could not figure out how to do a cadaver dissection in eight weeks.

Bernard Wood (00:32:23):

Right.

Matt Cartmill (00:32:24):

And they were accustomed to doing it in 14.

Bernard Wood (00:32:27):

Right.

Matt Cartmill (00:32:28):

Okay? So desperate expedients were tried. The first year, they did prosections. Students didn't actually dissect anything. This was not satisfactory. The second year, all the students dissected a stillborn fetus.

Bernard Wood (00:32:44):

Wow. That's a ... Okay.

Matt Cartmill (00:32:49):

See? It's smaller, so it'll go faster, right? Wrong. Wrong, it goes slower because it's-

Bernard Wood (00:32:56):

Slower, yeah.

Matt Cartmill (00:32:59):

The third year, in desperation, the head of the anatomy department handed the job over to John Buettner-Janusch, and Jack Prost. I don't know if you remember Jack Prost.

Bernard Wood (00:33:10):

Yes. Yes, I do.

Matt Cartmill (00:33:11):

Okay. And they came up with a list of structures, and handed it to the students and said, "Find these."

Bernard Wood (00:33:19):
Right.

Matt Cartmill (00:33:20):
"We'll help." And BJ didn't help a bit. Prost helped somewhat. But the result was chaos. And one of the older gross anatomy faculty, a man named Becker, started teaching underground, subversive, old-fashioned gross anatomy at night to the students so they'd learn something. He was promptly fired by the head of the anatomy department, who regarded this as gross insubordination. And BJ, in desperation ... Prost quit and went off to UCLA. No, sorry, went off to Chicago. Not the University of Chicago, but ... where was it? I don't know. It was a second-rank college downtown, I forget the name. Anyway, Prost went there, got a job there, leaving BJ with his hands up to the elbow in shit. Excuse me. Leaving BJ in dire straits.

And not knowing what to do, he cast around desperately, and he heard me give this talk at the AABA meetings. And he came up, he acquired a Ronald Singer who said, "Oh, you must hire our boy Jim Shafland. He'll be great with you." So BJ hired me and Shafland to teach gross anatomy. Now, you must remember, Shafland was an anatomy graduate student. He never published a thing. Okay? But he had assimilated Charles Oxnard's approach to anatomy, which was a very good approach. I had gotten a D in gross anatomy, but that was only an advisory for the first semester of a two-semester course. I managed to bring it up to a C the second time. It was a great shock. I had never had to study so hard for so few results. And I realized that it was because of the way the damn course was taught, which was starting with the head and neck, the worst possible way of doing it.

Bernard Wood (00:35:22):
Right, right.

Matt Cartmill (00:35:22):
Jim Shafland and I got together over the summer, before we were having to teach gross anatomy. We got out a cadaver, we dissected it. We figured out an approach to it, which we call the typical body segment. The idea being, human beings are segmental animals. The same pattern is repeated from one end of the body to the other. "Okay, what we will do is to teach the regions of the body as a series of regional deviations from the underlying archetypal pattern." And we did that-

Bernard Wood (00:35:49):
[inaudible 00:35:50], okay.

Matt Cartmill (00:35:49):

And we did that, and we managed to do an eight-week dissection course. And every single medical student in the freshman class signed a letter to the deans of the medical school saying how great gross anatomy was, and how great Cartmill and Shafland, so-

Bernard Wood (00:36:07):
Okay, okay. So that's a pretty interesting story. Just give me the two-minute version of Charles Oxnard's way of teaching anatomy.

Matt Cartmill (00:36:17):
It was basically the same thing. It was a typical body segment.

Bernard Wood (00:36:21):
Okay.

Matt Cartmill (00:36:23):
Okay? So you've got a cross-section through the body. There's an axial skeleton, there's a spinal cord, there is hypaxial and epaxial muscles with corresponding branches of the central ...

Bernard Wood (00:36:37):
Right, nervous system.

Matt Cartmill (00:36:39):
... nervous system, and the aorta. There is a visceral ... there's a coelomic cavity with mesenteries, and so on and so forth. And you just read that with complications derived from comparative anatomy, and-

Bernard Wood (00:36:55):
Literal deviations that have some sort of maybe post-hoc functional explanation.

Matt Cartmill (00:37:04):
Yeah. So three things are going on here, function, phylogeny and embryology.

Bernard Wood (00:37:10):
Okay, that's-

Matt Cartmill (00:37:12):
Our objective was to teach people to understand why the structures were the way they were.

Bernard Wood (00:37:23):
So that explains the teaching, but what was your research doing at this time?

Matt Cartmill (00:37:29):

I was doing various kinds of follow-up from my thesis, at that point. I was doing a project on the orbital mosaic in Prosimians.

Bernard Wood (00:37:45):

Why were you, in general, it seems to me, much more interested in the ... You're more interested in the primates that I'm less interested in. In other words, you were more interested in prosimians and all that stuff, whereas, because I was driven by the exigencies of trying to reduce our ignorance about human evolution, inevitably more interested in our closer relatives.

Matt Cartmill (00:38:20):

Well, I guess because I saw the study of the order of primates as being grounded in a great sea of mistakes. And I did not have that feeling about the study of human evolution.

Bernard Wood (00:38:41):

Okay. That's interesting.

Matt Cartmill (00:38:43):

Let me give you a very simple example. Solly Zuckerman, of honored memory.

Bernard Wood (00:38:49):

Yes, yes.

Matt Cartmill (00:38:52):

I asked Charles Oxnard once, "Was Zuckerman as nasty a man as he seems to be in his writings?" And Oxnard said, "Oh, he was a right bastard." But Zuckerman wrote a book called ... I don't remember. Again, it's something Apes and Men, or monkeys.

Bernard Wood (00:39:12):

Yes, yes.

Matt Cartmill (00:39:13):

And I read it, because I'd read everything that was ever written about primates. And I read that book. And it had glossy inserts with black and white photographs of primates on it. And one of them was a picture of a slender loris. And the caption said, "Lorises, like other prosimians, have eyes that point in different directions." And I looked at this, and a loris' eyes are like that, and they point exactly in the same direction. They're much closer together than your eyes and mine are, relative to the size of the eyeball. And I thought, "This is a man who looks at the world and sees what's in his head."

Bernard Wood (00:39:58):

Right, right. Okay.

Matt Cartmill (00:40:00):

And that was the feeling that I had in general about the study of primate evolution.

Bernard Wood (00:40:04):

Okay. I haven't really thought about that before, and I can see exactly what you mean. It seems to be an area where people seem to want to impose their worldview on things, and the evidence is a little bit secondary.

Matt Cartmill (00:40:24):

Let me give you ... Yeah, I think so. And of course, that's also true of human evolution, obviously.

Bernard Wood (00:40:28):

Of course.

Matt Cartmill (00:40:30):

I'll give you an example, again, out of this paper that Kaye and I just wrote for the special issue. In 1955 or thereabouts, everyone knew, it was a textbook verity, that human beings had diverged from the apes because they became carnivores. They took up predation. And then the whole feedback model of human evolution kicks in at that point. We don't have natural weapons for killing prey, so we have to use tools. And because we have to use tools, we have to learn to use tools. And we have to walk around on our hind legs, and we have to teach the young to use tools, and that means they have to have an extended childhood. And that's also true, because the females can't hunt, and so the females are burdened with the children. And so you get the nuclear family, with the male going out and bringing back the bacon, and the females staying home and churning out babies. And that was in all the textbooks.

Bernard Wood (00:41:32):

Yes.

Matt Cartmill (00:41:33):

Right? Then along comes feminism, roughly 1968, '70, a combination of feminism and reaction against the war in Vietnam. Okay? So this whole Raymond Dart, Robert Ardrey ... what's his name? Konrad Lorenz, business about man, the killer ape ... is suddenly politically suspect. And at that point, we have the birth of the notion of human beings as uniquely pro-social animals, kindly sharing and caring with one another, unlike the rough and nasty apes that are our closest relatives. Right?

Bernard Wood (00:42:14):

That was a very big shift. I mean, that was a lurch.

Matt Cartmill (00:42:18):

It was.

Bernard Wood (00:42:18):

[inaudible 00:42:19]-

Matt Cartmill (00:42:19):
And one of the things that probably went along with it, one of the people who was most insistent that early humans had not been hunters, was Robert Sussman.

Bernard Wood (00:42:27):
Okay.

Matt Cartmill (00:42:28):
And he was also very insistent that female ... and male infanticide, as an evolutionary strategy, was a myth.

Bernard Wood (00:42:39):
Right, okay.

Matt Cartmill (00:42:41):
And number three, he was very insistent that early primates lived on nectar and fruit.

Bernard Wood (00:42:46):
And so where did you encounter Robert Sussman?

Matt Cartmill (00:42:49):
Oh, he was a student at Duke.

Bernard Wood (00:42:51):
Right.

Matt Cartmill (00:42:51):
And I was on his thesis committee.

Bernard Wood (00:42:53):
Right, okay. So let's go back to Duke. So you were busy re-imagining the teaching of anatomy within the constraints of the Duke being a great research university, and you were continuing your research on primates. When did you start to have your own graduate students? And who were they? And did they benefit more from you, or more-

Matt Cartmill (00:43:26):
I didn't attract many graduate students during my entire career. Maybe less than a dozen, certainly. The best known ones, that were actually my–for whom I was the advisor–and the ones that had the most distinguished research careers were John Wible, Callum Ross, and Anne Yoder. I was co-chair of the committees of the last two. Other people whose

committees I chaired, that you may have heard less or nothing of, were Lap Ki Chan, who wrote an extremely interesting thesis that has been largely ignored, showing that hominoids do not have uniquely mobile shoulder joints.

A guy named Robert J. Russell who did a study of ... He was my first student. I think he graduated in 1976. He was one of those people that got dumped on me by somebody who left. In this case, BJ. BJ left and went off to NYU to pursue a career in the manufacture of illegal street drugs.

Bernard Wood (00:44:35):
Okay. Let's not go there. Okay.

Matt Cartmill (00:44:40):
What? Oh, don't go there. No, he's dead. It's safe.

Bernard Wood (00:44:43):
Yes. I know he's dead. But my only interaction with BJ was that Kay Behrensmeyer and I were at a conference, and there was a reception in BJ's-

Matt Cartmill (00:45:00):
His suite.

Bernard Wood (00:45:01):
... his apartment in Washington Square.

Matt Cartmill (00:45:03):
Yeah.

Bernard Wood (00:45:05):
He was a patron of the Metropolitan Opera. And he arranged for Kay and I to go to the Metropolitan Opera the following evening. And it turned out to be the first night of the delayed performance of Tristan and Isolde, with Birgit Nilsson and Jon Vickers.

Matt Cartmill (00:45:26):
Oh, nice.

Bernard Wood (00:45:27):
So although I'm conscious of BJ's subsequent career, I'm always grateful for him.

Matt Cartmill (00:45:41):
BJ was very good to me. I have no complaints to make about BJ. We remained friends, even after he was incarcerated. I had him review a book for the International Journal of Primatology while he was behind bars.

Bernard Wood (00:45:56):
Okay, so what do you think-

Matt Cartmill (00:46:00):
Rather, when he gave us a box of apples from his farm in Wisconsin.

Bernard Wood (00:46:05):
Right, okay.

Matt Cartmill (00:46:07):
We fed them to our horses.

Bernard Wood (00:46:09):
Okay, okay.

Matt Cartmill (00:46:11):
Because we weren't entirely sure that it wasn't going to be a repetition of the chocolates.

Bernard Wood (00:46:16):
Of the chocolate box. So let's get back to your long sort of professional association with the woman who became your wife. How did that start? And tell us how that long, long professional association worked, and works.

Matt Cartmill (00:46:40):
Well, I-

Bernard Wood (00:46:44):
And this is Kaye Brown.

Matt Cartmill (00:46:46):
... only certain aspects of this. We met when I gave a talk ... and I had an appointment in anatomy only at Duke originally. And there was, at that time, a Department of Sociology and Anthropology. And Kaye was a sociology graduate student. And I gave a talk over in that department on my thesis research. And she was impressed, and we started dating, and eventually, we got married. So ...

Bernard Wood (00:47:13):
But she was not a biological anthropologist.

Matt Cartmill (00:47:16):
No, no. She was a sociologist.

Bernard Wood (00:47:19):

Yet you have a close professional and intellectual collaboration.

Matt Cartmill (00:47:26):
Sociology did not work out for her for a variety of reasons.

Bernard Wood (00:47:29):
Right, right.

Matt Cartmill (00:47:31):
I'll leave it at that.

Bernard Wood (00:47:33):
So it was her who shifted in your direction intellectually-

Matt Cartmill (00:47:38):
That's right.

Bernard Wood (00:47:38):
... in terms of research interests, and not the other way round?

Matt Cartmill (00:47:41):
That's right.

Bernard Wood (00:47:42):
Okay, okay.

Matt Cartmill (00:47:45):
But while she was working on her thesis, she also had our daughter, Erica, who is currently a professor of biological anthropology, and various other things, at Indiana University.

Bernard Wood (00:47:57):
Who I met, once again, at the meetings recently.

Matt Cartmill (00:48:01):
Good.

Bernard Wood (00:48:02):
Okay.

Matt Cartmill (00:48:03):
So Kaye really devoted herself, to a large extent, to being a mother during Erica's childhood.

Bernard Wood (00:48:11):

And so what was life like at Duke? I mean, it seems pretty sybaritic, and so why would you ever want to leave it?

Matt Cartmill (00:48:22):

I'll tell you. So when I came to Duke, the place ... I mean, first of all, let me drop back 60 or 70 years and tell you about my father. My father was born in, I think about 1912. Somewhere in there. When he was three, he contracted polio. And he was paralyzed. He had one withered arm and one withered leg, walked with a cane, with great difficulty. So he wasn't drafted in 1942. So I was born in 1943. Okay? Three years ahead of the baby boom.

Bernard Wood (00:49:08):

Yes.

Matt Cartmill (00:49:10):

That meant that every place I came to, there was a big heap of money waiting for the baby boomers to come along.

Bernard Wood (00:49:17):

But you were there first.

Matt Cartmill (00:49:18):

But I was there first, because my father had polio. And the reason my father was there, was that my grandfather got the Spanish flu and avoided being shipped off to World War I.

Bernard Wood (00:49:31):

Right.

Matt Cartmill (00:49:31):

So disease has been my friend.

Bernard Wood (00:49:34):

Yeah.

Matt Cartmill (00:49:36):

Great plagues have benefited-

Bernard Wood (00:49:39):

But to go back to Duke, I mean-

Matt Cartmill (00:49:41):

Back to Duke, yes. So when I got to Duke, there was enormous amounts of money available for just about everything you could imagine. The clinical departments were fountainheads of money, and the surplus money from the clinical departments all went into the budgets of the basic science departments in the School of Medicine. So there was lots of money.

And therefore, they were willing to hire me to teach one course for eight weeks, once a year.

Bernard Wood (00:50:10):
Wow, okay.

Matt Cartmill (00:50:12):
That was it.

Bernard Wood (00:50:13):
Okay.

Matt Cartmill (00:50:14):
I was expected to do research if I wanted to get tenure, but I didn't have to, to keep my job. And Jim Shafland didn't, and wound up, oddly enough, going off to New York University with John Buettner-Janusch, where he taught anatomy until the end of his days. He's still alive.

Bernard Wood (00:50:35):
Exactly. And so how did you ...

Matt Cartmill (00:50:40):
But you asked me why I left. I hadn't gotten to that yet.

Bernard Wood (00:50:43):
Right.

Matt Cartmill (00:50:44):
Okay. As time went on, the fountainhead of money dried up, and the norm came to be, for people in the basic science departments in medical schools, the normal expectation came to be that you would bring in at least 50, and preferably 70% of your salary from external sources, on grants. And the university would pay you 20 or 30% for teaching. And if you couldn't do that, you shouldn't expect to hold your job.

Now, the problem is that, aside from Bill Hylander who had NIH money from the Institute of Dental Health, none of us in the gross anatomy program had or could obtain grants that would pay our salaries at medical school levels, so we were always a terrible nuisance. Once the fountains of money had gone dry, the medical school administrators found themselves forced to shell out money to these wastrels who were sitting around on their butts studying monkey teeth instead of swinging grants on how to cure disease.

Bernard Wood (00:52:09):
So-

Matt Cartmill (00:52:10):

But they had no choice, but they made it clear that although they couldn't actually fire us, they wished they could figure out some way to do it.

Bernard Wood (00:52:20):

So under those circumstances, how did Duke become this sort of powerhouse of biological anthropology? Because there were people who weren't in the medical school, who weren't subject to these constraints?

Matt Cartmill (00:52:33):

That's right.

Bernard Wood (00:52:37):

Or expectations from ...

Matt Cartmill (00:52:37):

There were relatively few. When Buettner-Janusch left, he left his lemur collection in the building that he had built on all of this overflowing science money, that he housed the Lemur collection, in charge of a veterinary surgeon named Jan Bergeron. And here, once again, we trespass on the domain of things to be excised later on. But I will say only that Bergeron hung around for a while, and then left. And I was shoved in, in desperation, to run the place for a year. And I was told to shut it down. "Get rid of the lemurs, nail them into crates, ship them off somewhere. We can't afford this."

I managed to find enough money to keep it going for a year. And with Rich Kay's help, we managed to attract Elwyn Simons, who was looking, at that time, desperately, for some way to get out of New Haven.

Bernard Wood (00:53:52):

Right, okay.

Matt Cartmill (00:53:55):

Durham, North Carolina held out the promise of hope to Elwyn.

Bernard Wood (00:54:03):

So when would they have been at Duke, Elwyn, you, Rich Kay, Anne Yoder, what sort of time are we talking about?

Matt Cartmill (00:54:24):

Okay, here's the lineup, the sort of classic lineup. Okay? I came first, along with Jim Shafland. Shafland wrote a thesis about fish. Leave him out of the picture. I attracted Rich Kay, whom I met at a conference. I said, "This guy's great. We've got to hire him." I

attracted Bill Hylander, whom I had known at Chicago. We were classmates. So Cartmill, Kay, Hylander, those were sort of the central elements of that program.

Over in the anthropology department, there was basically nobody after Jack Prost left, until Elwyn got there. Oh, no. There was Ken Glander, sorry.

Bernard Wood (00:55:10):
Yeah, okay. Yes.

Matt Cartmill (00:55:10):
Yeah, so Ken Glander was attracted to basically fill the position that Prost had vacated. The two finalists for that job were Ken Glander and John Fleagle, and the department liked Ken Glander. So Elwyn came in 1978, or seven, I forget which, after I had been in place for a year, as director of the Primate Center. And then we had Kay, Cartmill ... We attracted Ross MacPhee, we attracted a number of other very substantial people on a temporary kind of basis, as postdoctoral fellows to help teach gross anatomy. Peter Ungar. What's his name? Fossil whales.

Bernard Wood (00:56:17):
Oh, Gingerich?

Matt Cartmill (00:56:18):
No, the other one.

Bernard Wood (00:56:20):
No, the other one. Okay. Yes, I know who you mean, but that's not very helpful.

Matt Cartmill (00:56:25):
Dutch.

Bernard Wood (00:56:26):
Yes, yes, who's now at Kent State.

Matt Cartmill (00:56:29):
Yes.

Bernard Wood (00:56:31):
Hans ...

Matt Cartmill (00:56:31):
Thewissen.

Bernard Wood (00:56:31):
Thewissen, okay, okay.

Matt Cartmill (00:56:31):
Hans Thewissen.

Bernard Wood (00:56:34):
Okay, okay.

Matt Cartmill (00:56:36):
Yeah. We had him, we had Susan Strait, we had Michael Plavcan.

Bernard Wood (00:56:44):
Okay, so-

Matt Cartmill (00:56:49):
All a series of luminaries to be marching through, either as postdoctoral students, or as graduate students, like Callum Ross and Chris Kirk and Dan Gebo, and so on and so forth. Elwyn had his own stable of graduate students, which included ... Let's see. Okay, what's his name? You know, he married Elwyn's daughter.

Bernard Wood (00:57:17):
Yes. Oh, yes. I know who you mean, but it doesn't matter.

Matt Cartmill (00:57:22):
Okay.

Bernard Wood (00:57:22):
Well, you know, he matters, but the name doesn't matter for the sake of our discussion.

Matt Cartmill (00:57:27):
No, until you post this on the website at the Leakey Foundation, whereupon ... Oh, God. It's on the tip of my tongue.

Bernard Wood (00:57:39):
Yes.

Matt Cartmill (00:57:39):
He will be mortally offended that I couldn't remember his name.

Bernard Wood (00:57:43):
Oh. I think he will be sympathetic to the fact that people who are on the downside of life have that difficulty. So from my perspective, the Duke Primate Center, all these people were the sort of the world headquarters of primatology. Or at least one of the world headquarters of primatology.

Matt Cartmill (00:58:12):
Prosimian biology, I would say.

Bernard Wood (00:58:14):
I'm sorry, say again?

Matt Cartmill (00:58:16):
I would say Prosimian biology.

Bernard Wood (00:58:18):
Okay, Prosimian biology. Probably because of the lack of-

Matt Cartmill (00:58:22):
Nobody there was working on great apes, except David Watts, when he was there, as opposed to-

Bernard Wood (00:58:27):
Okay, okay, okay. But that's a pretty impressive exception, because David Watts is an impressive-

Matt Cartmill (00:58:34):
Oh, yes, yes. No, he was one of this lineup of really good people that kept marching through, because we had a good program, and it was a very congenial atmosphere to work in.

Bernard Wood (00:58:48):
So you had horses.

Matt Cartmill (00:58:51):
Did.

Bernard Wood (00:58:55):
Did, yeah.

Matt Cartmill (00:58:57):
Yeah.

Bernard Wood (00:58:58):
And so why move to Boston?

Matt Cartmill (00:59:01):
Oh. Well, let's see. I have to choose my words carefully here. As time went on-

Bernard Wood (00:59:15):

Was it-

Matt Cartmill (00:59:17):

As time went on, the situation in the medical school deteriorated further and further. Eventually, all of us who were in the medical school moved over to new digs in the biological sciences building, in the College of Arts and Sciences, and retained only a nominal connection with the medical school for the purposes of teaching gross anatomy. The medical school began to hire the sort of non-PhD people that are often hired to teach gross anatomy in medical schools. And that job is done largely by them nowadays, together with still a string of postdocs, under the direction of Dan Schmitt.

Bernard Wood (00:59:56):

So Dan is the sole survivor, really, of this-

Matt Cartmill (01:00:04):

He's the sole tenured member of what was, at one time, that community of biological anthropologists. He's the sole tenured track member teaching in the medical school, yeah.

Bernard Wood (01:00:15):

Okay, okay.

Matt Cartmill (01:00:17):

Until Rich Kay retired recently, however. He taught an undergraduate course in human anatomy.

Bernard Wood (01:00:22):

Okay. So let's move away from your career and think about the people that you hold in high esteem. I mean, if I think of the people that ... I mean, I'm a morphologist, so I think of people like Franz Weidenreich. If you go back even further, Edward Tyson.

Matt Cartmill (01:00:58):

I was about to say, I don't think you studied with Weidenreich. I'm sure you didn't study with Tyson.

Bernard Wood (01:01:03):

No, but these are people who I admire. So who are your equivalent?

Matt Cartmill (01:01:11):

Who do I admire in our discipline? I mean, I could-

Bernard Wood (01:01:16):

Yes.

Matt Cartmill (01:01:16):
The first name that comes to mind is George Orwell, but that won't do.

Bernard Wood (01:01:18):
No. No, no, no, no.

Matt Cartmill (01:01:29):
Well, on a personal level, or a professional level?

Bernard Wood (01:01:32):
Well, it can be both, but mainly professional. These are people whose work ... I mean, you're a very intellectually rigorous, well-read, very smart person. So this may be a short list, but who do you think are people who exceed your considerable firepower?

Matt Cartmill (01:02:09):
Ah. Oh, okay. Who do I look up to?

Bernard Wood (01:02:13):
Mm-hmm.

Matt Cartmill (01:02:22):
Well, I would have to say that I look up to this person for that, and I look up to that person for this.

Bernard Wood (01:02:27):
Okay, okay.

Matt Cartmill (01:02:30):
I think Steve Gould wrote very well when he was writing well. Towards the end of his life, he wasn't. But I do not admire his science, which I think is dishonest. I admire Charles Oxnard for his methodological rigor. I learned a great deal from him.

Bernard Wood (01:02:52):
Yes. Although Charles and I were very much on opposite sides of things, his books, I mean, they're just incredible, the books he wrote. Big, big books about form and function. Every page had something novel and original. I mean, there aren't many people like Charles.

Matt Cartmill (01:03:22):
No, there aren't. I admire W.W. Howells for his writing.

Bernard Wood (01:03:27):
Yes.

Matt Cartmill (01:03:35):

I'm trying to think of people that I admire for their science. And what I would tend to look for in that category are people who realized they were wrong about something. There aren't that many in our discipline. There are an awful lot of people who went to their graves believing that everything they thought when they were 23 years old was still correct.

Bernard Wood (01:04:14):

Okay. Well, why don't you be thinking about that while we just talk about something else?

Matt Cartmill (01:04:24):

Okay.

Bernard Wood (01:04:26):

What do you think has been the contribution of molecular biology to primatology?

Matt Cartmill (01:04:35):

Well, I think it's been invaluable and instrumental in resolving the phylogenetic relationships of living creatures.

Bernard Wood (01:04:44):

I agree, I agree. I think it's probably, if somebody asked me what were the most significant advances in human evolution research, I think they're nothing to do with fossils, but everything to do with the genome.

Matt Cartmill (01:05:02):

Yeah, I think so. And also, there are individual genes that tell us a great deal about the adaptations of ancestral forms. Okay? One simple example from your realm of things is the FOXP2 genes, and other now beginning to surface genes that may be related to language that we can identify in Neanderthals. But you can't go back very far with DNA, in terms of ancient DNA. So you have to reason backwards from modern DNA.

For example, were ancestral primates nocturnal or not? Well, it's been argued that they were not nocturnal, because they had two opsin genes. And nocturnal forms, like lorises, only have one. This is a bad argument, because most mammals are nocturnal, and most mammals have two opsin genes. So that's a crappy argument, but it's an argument. It's an argument of the sort that can function in principle here.

Early primates, what were their diets like? Well, I think one thing that's relevant there is that tarsiers seem to have preserved all of the ancestral mammalian chitinases, which means that there wasn't a period of exclusive frugivory there. But there's some debate about whether two of those tarsier chitinases are paralogs rather than homologs. That is, whether they're duplications. But this is not my area of expertise.

But I think things like that, looking for genes that have functional implications, that tell you about what ancestral forms must have had, is extremely valuable. However, it's quite possible to make bogus inferences. My favorite example of a bogus inference is the people ... Again, there's a citation in this paper that's been submitted to the AJBA ... the people several years ago who discovered that cats have lost all of the genes for being able to taste sweet things. Okay? Cats can't taste sugar. Interesting fact. They concluded from this-

Bernard Wood (01:07:42):

But what does it say about evolutionary history?

Matt Cartmill (01:07:44):

Yes. Guess what they concluded. You'll never guess. They concluded that that's why cats took to being exclusive carnivores, because they couldn't taste the sugar anymore.

Bernard Wood (01:07:53):

Okay, okay. Well, I always wish I'd taken a course in scientific logic, but I get your point.

Matt Cartmill (01:08:02):

Right. I mean, that's obviously nonsense, because if they had still been eating fruit, they wouldn't have lost the genes that enabled them to taste sugar.

Bernard Wood (01:08:10):

Absolutely.

Matt Cartmill (01:08:11):

Okay. The point here being that molecular biologists often don't know how to think about evolution.

Bernard Wood (01:08:19):

Well, there's probably more of the molecular and rather less of the biology. So if you had to, if there was a fire and you could only rescue one of your publications, what would that be?

Matt Cartmill (01:08:34):

A View to a Death in the Morning.

Bernard Wood (01:08:37):

Really?

Matt Cartmill (01:08:38):

Mm-hmm.

Bernard Wood (01:08:39):

Why did you write that book, and why would you want to rescue it?

Matt Cartmill (01:08:47):
Well, it was sort of a midlife crisis book.

Bernard Wood (01:08:50):
I sort of got that impression, I have to say.

Matt Cartmill (01:08:53):
But I will tell you the history of it.

Bernard Wood (01:08:55):
Okay.

Matt Cartmill (01:08:57):
Okay. I have always been an animation buff. In 1982, the Disney people put Bambi out on the theater circuit again. I had never seen it.

Bernard Wood (01:09:11):
Right.

Matt Cartmill (01:09:12):
I went to see it. I emerged stunned and blinking into the daylight, saying, "That's Robert Dart. That's Robert Ardrey. That's the Killer Ape. When did people start thinking like this?" I went back and saw Bambi 17 more times and took notes. And I went to the Disney Studios and begged permission to get into the Bambi archives, where I discovered so many interesting things. For example, the fact that Bambi had been translated by Whittaker Chambers, and that many of the early script drafts were based on Don Marquis' Archy and Mehitabel books.

But I wanted to find out, at what point in human history, western human history, people had decided that the wilderness was sacred and human beings were pollutants. And so I wrote a book about it. It was very difficult, because of course, that's not the area I was trained in.

Bernard Wood (01:10:25):
What was the reception for the book?

Matt Cartmill (01:10:27):
I won two awards. It won the Howells Award from the AAA, and it won the-

Bernard Wood (01:10:32):
I remember.

Matt Cartmill (01:10:33):

Marsh Award from the American Society of Environmental Historians. And I was very pleased that I was able to devise a second career as a historian in the middle of a career as a biological anthropologist.

Bernard Wood (01:10:53):

Well, it doesn't surprise me, because I think you have the brain to do both of those things. Most of us have to be content with one, but-

Matt Cartmill (01:11:06):

At the moment, you may be ... And I got so interested in Bambi that I developed an interest in animal locomotion, and I started studying gaits.

Bernard Wood (01:11:17):

Right.

Matt Cartmill (01:11:18):

And I developed a third career as an analyst of gait patterns, and footfall patterns. And at the moment, I am working on an animated music video.

Bernard Wood (01:11:31):

So where does this sort of intellectual restlessness come from?

Matt Cartmill (01:11:39):

Boredom. I'm so sick of primates. I can't tell you how tired of primates I am.

Bernard Wood (01:11:48):

Right.

Matt Cartmill (01:11:49):

Right? So ungulates are much more interesting, and prettier.

Bernard Wood (01:12:00):

So let's get back to the questions. I think I've done very badly at keeping us on track.

Matt Cartmill (01:12:11):

I won't tell anybody if you don't.

Bernard Wood (01:12:13):

Well, I was going to ask you if you have any hobbies, but I think hobbies and Matt Cartmill, it's not really the right word. But is there anything-

Matt Cartmill (01:12:27):

Sure. At the moment, as I say, I'm trying to put together a seven-minute animated film. I'm working with a composer friend. And we've hired the soprano to sing the vocal line. And I've got about three chunks of storyboard left to finish, to ship off to him. I just shipped off another one this morning. As soon as he gets the complete storyboard, he'll do a complete draft score with the vocal line in it. And then I start shopping it around to freelance animators, because I can't live long enough to animate a seven-minute animated film. And I'm a crappy animator, but I'm getting better. I'm almost there, I can almost animate. So that's a hobby.

Bernard Wood (01:13:09):
Right.

Matt Cartmill (01:13:10):
Until the COVID epidemic hit, I used to sing Sacred Harp.

Bernard Wood (01:13:21):
Oh.

Matt Cartmill (01:13:22):
I don't know if you know what that is, but if you Google Sacred Harp.on YouTube, you will see what it is. It's early American vocal music, and its southern descendants.

Bernard Wood (01:13:37):
So would you call it an esoteric interest? I mean, how many Sacred Harp practitioners are there?

Matt Cartmill (01:13:47):
Sacred Harp?

Bernard Wood (01:13:49):
Yeah.

Matt Cartmill (01:13:49):
Oh, I don't know. They're all over the world. Two of the biggest ones on YouTube are the ones in Ireland and Germany.

Bernard Wood (01:14:00):
Right, okay.

Matt Cartmill (01:14:01):
But it's not a performance art. It's an art for community sharing. It's kind of a substitute for church. It's all these 18th century hymn texts by Isaac Watts and company-

Bernard Wood (01:14:18):

Right, right, right.

Matt Cartmill (01:14:19):
... set to, originally, music that was written by late 18th, early 19th century composers in New England, who did not know how to write music. They didn't know what the rules were. But they knew what they liked, and then they produced this very distinctive sound.

Bernard Wood (01:14:39):
I will go to YouTube and ...

Matt Cartmill (01:14:43):
Look up Sacred Harp. I will be happy to send you a couple of URLs.

Bernard Wood (01:14:46):
Okay.

Matt Cartmill (01:14:46):
So I used to do that. For a while, I was a very enthusiastic Go player.

Bernard Wood (01:15:01):
You were?

Matt Cartmill (01:15:03):
Yeah.

Bernard Wood (01:15:04):
Right.

Matt Cartmill (01:15:04):
I don't have anybody to play Go with anymore.

Bernard Wood (01:15:09):
When you say go with ...

Matt Cartmill (01:15:12):
Go, the Japanese board game.

Bernard Wood (01:15:14):
Yes, yes. But who did you play with?

Matt Cartmill (01:15:18):
Oh, well, I played a lot in college. Mostly with my roommate, Harry Wyatt.

Bernard Wood (01:15:23):

Right, right.

Matt Cartmill (01:15:24):

I played a couple of games once with Nobuo Shigehara when I was in Japan. He beat the pants off me.

Bernard Wood (01:15:29):

Okay, okay.

Matt Cartmill (01:15:32):

But he had an advantage, because he was Japanese, so ...

Bernard Wood (01:15:35):

Okay.

Matt Cartmill (01:15:38):

Let's see, what else have I got as side interests? I don't know, a lot of stuff.

Bernard Wood (01:15:45):

So, Matt, is there anything that you would like to add to this conversation that you feel we haven't touched on, which-

Matt Cartmill (01:15:55):

Oh, sure, I could go on. Kaye and I hand-reared two lemurs, which was interesting. We've had all sorts of amazing pets. Possums, chinchilla, birds, rodents, dog, cat. I had turtles. Those animals are important in my life. I learned a lot from them. Both about animals, and sometimes about people.

Bernard Wood (01:17:20):

Okay, okay. Lorne Michaels, who's been reflecting on half a century of Saturday Night Live, said that, "If I'm the smartest person in the room, then I'm in the wrong room." That must be difficult for you.

Matt Cartmill (01:17:46):

[inaudible 01:17:48]-

Bernard Wood (01:17:47):

Tell me about a room that would-

Matt Cartmill (01:17:50):

In almost any room, there's somebody who knows something that I don't.

Bernard Wood (01:17:54):

Okay, okay. So is there anything that you would like to touch on that ...

Matt Cartmill (01:17:59):

Well, I would like to thank a couple of people who've been very important in my life. One is Kaye. She really has helped me produce a career trajectory that is more distinguished than I would've been able to do on my own.

Bernard Wood (01:18:17):

That's a very gracious ...

Matt Cartmill (01:18:20):

Well, it's true. I mean, we edited two journals together.

Bernard Wood (01:18:23):

Yes.

Matt Cartmill (01:18:23):

The International Journal of Primatology, which I co-founded with Gerry Doyle. And then the AJPA.

Bernard Wood (01:18:31):

Gerry Doyle was in South Africa, is that the Gerry Doyle?

Matt Cartmill (01:18:33):

Yes.

Bernard Wood (01:18:33):

Right, right.

Matt Cartmill (01:18:37):

Yeah, and another prosimian biology type.

Bernard Wood (01:18:38):

Yeah, yeah.

Matt Cartmill (01:18:41):

And we edited a book series for Wiley for many years, and we have collaborated on several research projects. And she has always supported me and promoted me as somebody who deserves to get good things, and has helped me get them. And I'm enormously indebted to her, also for the enormous amount of work she put into raising our daughter, who is a wonderful person.

And the other person I think deserves to be thanked here, for my career, is Russ Tuttle. Now in those days, as I said before, you didn't go to work with somebody. You went to an institution which had distinguished people, and you expected to learn from them. But there wasn't this idea of, "I'm going into X's lab, and X will have a project to give me." That didn't happen. Never happened. Didn't happen to any of the people I was in graduate school with. They always had to think up their own projects. And they were very diverse, and often had practically nothing to do with the interests of their advisors, which was the case with me. But-

Bernard Wood (01:19:59):

So what did you get from Russ?

Matt Cartmill (01:20:02):

Russ organized international conferences and invited me to them and showed me off. And he saw to it that I got a lead article in *Science* very early in my career with a cover illustration. And that probably did more to advance my career than almost anything else, that any external source ever did. So I'm very grateful to Russell.

Bernard Wood (01:20:27):

That's interesting. And could I ask you lastly about you are now ... you and Fred Smith collaborate on a textbook?

Matt Cartmill (01:20:38):

Well, we did, yes. We collaborated on a textbook.

Bernard Wood (01:20:41):

And how did that come about?

Matt Cartmill (01:20:42):

Well, when Kaye and I were editing this book series for John Wiley & Sons, we needed a human evolution text. And so I went to Fred and said, "Would you like to write a human evolution text?" And he said, "No, I won't, but I'd collaborate with somebody. You want to collaborate?" So I said, "Well, I don't know much about human evolution, but I can probably handle the australopithecines." And so that's the way it went.

Bernard Wood (01:21:11):

You spent a lot of time being an editor and an author. So what is it about you which is helped by these activities? Do you like explaining things?

Matt Cartmill (01:21:29):

Yes, I do. I like explaining things. As an-

Bernard Wood (01:21:32):

But that doesn't explain being an editor. Because being an editor-seems to me to be a pretty thankless task.

Matt Cartmill (01:21:42):

Yes and no. Kaye has a line of goods on this that, probably, she would be better able to articulate than I am. But she thinks that what I've done as an editor has really had more influence on the profession than practically anything else I've done, because of all the work I put into editing people's manuscripts. This was especially true for the IJP. I would rewrite manuscripts word for word, from end to end. If I thought they were interesting, but badly written. I've always done that with graduate students' theses, and just tear the thesis to bits, every sentence.

Bernard Wood (01:22:25):

Okay, okay.

Matt Cartmill (01:22:27):

"No, you cannot write that way. That is not the right verb to use. This is far too long. This doesn't belong in this place." And, "Have you ever read Mark Twain's comments on the prose of James Fenimore Cooper?"

Bernard Wood (01:22:43):

And what were they?

Matt Cartmill (01:22:45):

Mark Twain's essay on the writing of James Fenimore Cooper.

Bernard Wood (01:22:50):

Okay. Did I read that?

Matt Cartmill (01:22:53):

You could, and I will send you a URL.

Bernard Wood (01:22:56):

Okay. And I just want to give you a shout-out, because a few years ago, Rui Diogo and I submitted a manuscript to the Journal of Anatomy that was impossibly long, incredibly detailed. And if my memory serves me right, you were one of the reviewers, and you must have put hours, days, if not weeks, into that review. And I will always be grateful.

Matt Cartmill (01:23:29):

Yeah, I remember. It was the soft tissue issue.

Bernard Wood (01:23:30):

Yeah.

Matt Cartmill (01:23:32):

Yeah, I remember that. Yes, I put a fair amount of work into that. But you know, I do that. I mean, I usually do that with manuscripts that I review.

Bernard Wood (01:23:41):

Do you do it with every manuscript, or ...

Matt Cartmill (01:23:44):

Well, that one was particularly rich in fine detail, and so it took a lot of time to look up everything you had said and make sure it was true.

Bernard Wood (01:23:55):

I know. And by God, I mean, we put a lot of time into that, but there were still a bunch of things that needed to be corrected, and I was eternally grateful that you put the effort in.

Matt Cartmill (01:24:10):

Well, thank you. You see, when you say that editing is a thankless job, it isn't.

Bernard Wood (01:24:17):

Okay.

Matt Cartmill (01:24:18):

It's just usually thankless. Okay? But I have had graduate students, two of them, I won't mention which ones, that wrote terribly when they were writing their dissertations. And I tore their dissertations to shreds. And one of them was the child of a professional writer.

Bernard Wood (01:24:37):

Right.

Matt Cartmill (01:24:38):

That person took this poor, wounded manuscript that she had given me, and was now all covered with red ink, bleeding from every page, took it to her father and complained. And he said, "You are incredibly lucky to have somebody spend that much time going over your writing in that amount of detail." And that person brought that remark of her father back to me, and said that he's right. So I felt really good about that. I've had other people say that they wrote much better after I had showed them what was wrong with the successive drafts in their dissertations. So you know, that's editorial stuff too.

Bernard Wood (01:25:30):

Okay. I think that is a good way to end this conversation, because I think that the role of an editor is important and influential, especially with journals. It's influential on a discipline, but it's also influential on individuals.

Matt Cartmill (01:25:54):

Yes.

Bernard Wood (01:25:55):

And so I think we should probably call it a day. And I want to thank you for your time, and I want to thank you for being so candid. Yeah, I'm just very grateful, and I'm glad that you are included in the series.

Matt Cartmill (01:26:17):

Well, thank you. And I want to thank you for including me, because I appreciate the compliment that it involves, so.

Bernard Wood (01:26:28):

Yes. Well, there is a compliment sort of hidden in there.

Matt Cartmill (01:26:31):

There is, there is.

Bernard Wood (01:26:34):

Matt, thank you very much.

Matt Cartmill (01:26:36):

You're welcome. Thank you, Bernard, and thank you for having me as part of this series. I look forward to seeing not only my own contribution, but more importantly, everybody else's.