



The Leakey Foundation Oral History of Human Origins Research: Owen Lovejoy

Interview conducted by
Bernard Wood in 2024

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Interview: 09/06/2024

Bernard Wood (00:00:00):

Today, I'm talking to Owen Lovejoy, who I have known of for a long time, and Owen, it's very good that you've agreed to do this. For the record, could you give us your full name and your current position and the name of and location of the institution?

C. Owen Lovejoy (00:00:30):

[00:00:30] Yes. Full name is Claude Owen Lovejoy. I usually sign all of my publications as C. Owen Lovejoy.

Bernard Wood (00:00:40):

[inaudible 00:00:41]

C. Owen Lovejoy (00:00:42):

Very few people know of the existence of the Claude part. I'm a Distinguished Professor of Biological Anthropology at Kent State University in Kent, Ohio.

Bernard Wood (00:00:58):

Thank you, Owen, very much. I remember coming to see you a long, long time ago, and we may get to that later in the interview.

C. Owen Lovejoy (00:01:05):

I remember it well.

Bernard Wood (00:01:15):

I see from your CV that you come from Kentucky, and I'm not going to attempt to pronounce the town that you have on your CV is where you were living, but could you do so and explain to us? Could you give us a word picture of what your childhood was like?

C. Owen Lovejoy (00:01:36):

Yes. There two towns that figure prominently in my life. Lexington, Kentucky was where I spent nine months of the year, and Presque Isle, Michigan, is where I spent three months of the year. My parents were extremely religious and I was raised in a religious situation, but they were also comfortable economically, and we had a summer home in Presque Isle.

Bernard Wood (00:02:13):

Okay.

C. Owen Lovejoy (00:02:16):

That is where I spent every summer doing naturalistic things. My life was turtles, frogs, snakes. I had a pet crow at one point, which I revered. It was just exploring the world in a natural way. I should, of course, include fish. Our cabin was on a lake, and every morning I'd get up and explore the world, except on Sundays, when I was required-

Bernard Wood (00:02:57):

Okay, so-

C. Owen Lovejoy (00:02:58):

... to attend services.

Bernard Wood (00:03:00):

... so do you have brothers and sisters?

C. Owen Lovejoy (00:03:03):

I had two older brothers and I have two younger sisters. My eldest brother passed away years ago in an automobile accident many, many years-

Bernard Wood (00:03:15):

Oh, I'm sorry.

C. Owen Lovejoy (00:03:16):

... and my immediately elder brother passed away just last year, and he was an English professor at Carleton College in Ottawa, Canada.

Bernard Wood (00:03:30):

Okay.

C. Owen Lovejoy (00:03:30):

My sisters are... one of them is an art historian at the University of Kentucky, and the other is married to a former navigator for the United States Navy. Both of them have one child each. I have no children. I was married previously to someone who is dear to me still, and she passed away 25 years ago.

Bernard Wood (00:04:06):

Oh, Owen, I'm sorry. I'm sorry.

C. Owen Lovejoy (00:04:08):

... but I still remember her well-

Bernard Wood (00:04:09):

Oh. Yeah, okay, and then-

C. Owen Lovejoy (00:04:11):

... and I've never remarried.

Bernard Wood (00:04:13):

... yeah, and when you were up at the lake in the summer, were you all close enough to your siblings that that was a world that you made for yourselves?

C. Owen Lovejoy (00:04:30):

That world was I made for myself.

Bernard Wood (00:04:33):

Oh, you made it yourself? Okay.

C. Owen Lovejoy (00:04:35):

Yeah. My older brothers were not interested-

Bernard Wood (00:04:38):

Okay.

C. Owen Lovejoy (00:04:39):

... and my sisters were too young during my formative years to really participate. I should say that my current wife is Director of Anatomy at Michigan State University and is a former Kent State student. It's where she got her PhD degree-

Bernard Wood (00:04:58):

Okay.

C. Owen Lovejoy (00:04:59):

... and [00:05:00] she has-

Bernard Wood (00:05:02):

Well, I know her. Yes. I mean, yeah. I wouldn't say I know her as well as I know you, but I certainly know her, and she's a distinguished academic in her own right.

C. Owen Lovejoy (00:05:15):

Yes.

Bernard Wood (00:05:20):

You did your undergraduate degree at Western Reserve University and your major was psychology.

C. Owen Lovejoy (00:05:29):

Yeah.

Bernard Wood (00:05:29):

Now, could you explain how you get from Lexington, Kentucky, to Western Reserve University-

C. Owen Lovejoy (00:05:34):

Yes.

Bernard Wood (00:05:35):

... and why you chose psychology?

C. Owen Lovejoy (00:05:42):

Choosing psychology would probably be the toughest of the answers. The first part of the answer is that my family insisted that I attend a religious university, which turned out to be Wheaton College in Wheaton, Illinois.

Bernard Wood (00:05:58):

Right.

C. Owen Lovejoy (00:05:59):

Famous for Billy Graham and Associates. After two years, I switched to Western Reserve, where my brother was in the graduate program there getting his PhD in English, and so I lived in a coach house with him for two years there as an undergraduate. I started out in pre-med. That didn't really continue to interest me that much because I really wasn't interested in clinical medicine as much as science, but I looked around intellectually for many potential pursuits. I did get interested in the process of learning and became temporarily what you would call back then a Skinnerian, as someone who is extremely

dedicated to the idea that much of behavior is learned, an attitude that I have completely forsaken in my later years. I think a lot of behavior's clearly genetic or, let's say, genomic.

Bernard Wood (00:07:27):

Yes.

C. Owen Lovejoy (00:07:30):

I intended to go to graduate school in psychology upon graduation, but I met an anthropologist named Olaf Prufer, who was a graduate of Harvard and was teaching at the Case Institute of Technology. He interested me in going on a summer excavation, and I went along and kind of that was the beginning of my anthropology career. I was at first a shovel hand, but then graduated progressively throughout the ranks as we'll call it, until he accepted me as a master's degree student at Case. Then, he moved to University of Massachusetts-

Bernard Wood (00:08:26):

Aah.

C. Owen Lovejoy (00:08:27):

... and I went with him [00:08:30] and signed up there for my PhD studies, which were largely under the direction of George Armelagos. Between the two of them, George and Olaf, I got my early anthropological training. Olaf then took a job at Kent State University as the Chair of Anthropology, and I was in the final phases of my PhD work there, so I returned with him and took a job as instructor, no, temporary instructor in the Department of Anthropology at Kent State.

Bernard Wood (00:09:17):

Okay. Well, you've answered my next three questions, but I would like to circle back to your parents.

C. Owen Lovejoy (00:09:24):

Okay.

Bernard Wood (00:09:26):

What did your mother and father do?

C. Owen Lovejoy (00:09:29):

My father owned a group of hotels.

Bernard Wood (00:09:35):

Right.

C. Owen Lovejoy (00:09:37):

He had hotels in Georgia, Kentucky, West Virginia, and Ohio. One of the things that I do remember is that he did a lot of traveling as part of the principal manager of each of the hotels, and he'd sometimes took me along. He'd come and get me out of school and put me in the car, and we'd go off to one of the hotels. Of course-

Bernard Wood (00:10:11):

Right.

C. Owen Lovejoy (00:10:12):

... when I saw him, I was overjoyed because, "Hey, it's a way to get out of school."

Bernard Wood (00:10:19):

What about your mother?

C. Owen Lovejoy (00:10:21):

My mother was a housewife-

Bernard Wood (00:10:23):

Right.

C. Owen Lovejoy (00:10:24):

... and a professional mother, essentially.

Bernard Wood (00:10:30):

[00:10:30] Was there any academic tradition in your family?

C. Owen Lovejoy (00:10:36):

One of my uncles was a physician-

Bernard Wood (00:10:39):

Right.

C. Owen Lovejoy (00:10:41):

... but other than that, nothing other than bachelor degrees. None to my knowledge pursued anything higher than the bachelor's.

Bernard Wood (00:10:55):

Okay, so we can go back to the University of Massachusetts. Could you remind me what the title of your PhD was or the topic was?

C. Owen Lovejoy (00:11:06):

Yes. The title was... Oh, boy, it's a long mouthful of various terms. It was Methods for the Investigation of Mechanical Variation with Application to the Problem of Euronemia Versus Platynemia.

Bernard Wood (00:11:33):

Oh, okay. It's-

C. Owen Lovejoy (00:11:35):

Something to-

Bernard Wood (00:11:37):

... in the tibia?

C. Owen Lovejoy (00:11:38):

... to [inaudible] about in the tibia, yeah-

Bernard Wood (00:11:38):

Okay.

C. Owen Lovejoy (00:11:38):

... something like that.

Bernard Wood (00:11:43):

Okay. Would you let-

C. Owen Lovejoy (00:11:43):

[inaudible]

Bernard Wood (00:11:43):

... a PhD student of yours get away with a title that long?

C. Owen Lovejoy (00:11:50):

I was proud of the title because I regarded it as unusually completely descriptive of what the contents of the dissertation were, and so-

Bernard Wood (00:12:00):

I think it is, and I was very cheeky to ask you that, but I think it is. If in doubt, just explain what it's about.

C. Owen Lovejoy (00:12:09):

Exactly. Yeah.

Bernard Wood (00:12:10):

Yeah. Yeah, so... Go on.

C. Owen Lovejoy (00:12:14):

I should add in that of the mentors, I'm leaving out a couple very important ones because during my early years at teaching at Kent, I engaged at simultaneously in a post-doctoral study program at what was then Case Western Reserve University School of Medicine, and it was with a orthopedic surgeon named Kingsbury Heiple-

Bernard Wood (00:12:42):

Yeah, Heiple.

C. Owen Lovejoy (00:12:43):

... and a biomechanical engineer named Albert Burstein.

Bernard Wood (00:12:49):

Okay.

C. Owen Lovejoy (00:12:51):

Would have insisted that I spell it. It's B-U-R-S-

Bernard Wood (00:12:56):

Oh [inaudible] yes.

C. Owen Lovejoy (00:12:56):

... it's not, B-E-R-N.

Bernard Wood (00:12:59):

I know, I know, I know, and I was going to ask you about the authors of the papers. The paper that I first was aware of you was the... I mean, I'm probably misunderstanding this, but essentially the conventional wisdom at the time was that in order to walk bipedally, you needed to essentially have a modern human morphology of the pelvis in the femur. You

guys showed in what I think is an absolutely classic publication that for various reasons, if you didn't have a large brain, the heads of the femurs were not so far apart, and so, therefore, they didn't need to be as large and the neck didn't need to be as substantial. Therefore, osteopaths might be bipedal. Now, have I garbled that completely? Or was that-

C. Owen Lovejoy (00:14:05):

I would make minor variation.

Bernard Wood (00:14:06):

Okay. Okay, but not major variation?

C. Owen Lovejoy (00:14:09):

Not major variation.

Bernard Wood (00:14:11):

Okay, and it was certainly, as far as I was concerned, it was just an eye-opening paper. You have been at Kent State the whole of your career [00:14:30] as an academic, as a professor?

C. Owen Lovejoy (00:14:33):

Yes. I believe the number of years is 56.

Bernard Wood (00:14:37):

Okay. What do you think are the advantages and what do you think are the disadvantages of that sort of consistency?

C. Owen Lovejoy (00:14:52):

Gee, I don't think I'm able to specify any advantage or disadvantage. I suppose the big advantage, I think, was that my start in teaching exposed me to undergraduates, and at the same time I was doing my postdoctoral, I was teaching three different sections of intro to biological anthropology. I was teaching a lot of individual undergraduates who would ask interesting questions that I would give the standard answer to, but I wasn't necessarily happy with the standard answers that I would provide. It's just all that I had, and-

Bernard Wood (00:15:52):

Right.

C. Owen Lovejoy (00:15:54):

... much of those years guided me into what became a more foundational paper for me, which was the one called The Origin of Man, which I published in 1981.

Bernard Wood (00:16:11):

Yes, so I was going to ask you, and for people who probably might be watching this and who might not be as familiar with your research interests as I am, I mean, my sense is that you have a long-standing interest in functional morphology, mostly in the functional morphology of locomotion, but then there's this other side of you which sort of came out in that paper in Science, which really exposed you as a biologist with much broader interests. Did those two sort of research personalities, did they interact? Or were they just proceeding in parallel in you?

C. Owen Lovejoy (00:17:09):

No. Actually, it was a result of an intimate interaction because in my formative years, I excavated a very large Amerindian skeletal population. It was, to my knowledge, the largest excavation of that type, I think, that is yet extant.

Bernard Wood (00:17:37):

That's the Levin Collection?

C. Owen Lovejoy (00:17:39):

Yes-

Bernard Wood (00:17:40):

Yeah.

C. Owen Lovejoy (00:17:40):

... and-

Bernard Wood (00:17:40):

Yeah.

C. Owen Lovejoy (00:17:41):

... I became fascinated with the issues that we would call forensic now of establishing age and sex from the skeleton. I was also interested in development, so when we excavated [00:18:00] that collection, we spent a special amount of time on the subadults, the infants, and I collected each specific epiphysis that I could find in a two-year-old and a four-year-old, what have you. As a consequence, we found some interesting cases. We found a tubal pregnancy, for example, down in the abdomen region. We found a transverse lie. We found a shoulder dystocia, and so the whole issue of maternal mortality figured prominently, and I began to wonder how homo sapiens had suffered so obvious a crucial source of mortality.

There must be an enormous advantage to the rest of our body type, meaning relying on a high level of intelligence, but also in being a biped. The whole issue of the origin of bipedality began to circulate in my brain, but at the same time, it did so with this concern with forensics and demography, and so I became interested in the whole issue of life history strategy. I remember one of the most important works that I read was Mountain Sheep by Valerius Geist, and he was an authority on the development and demography of mountain sheep, and-

Bernard Wood (00:19:47):

Okay.

C. Owen Lovejoy (00:19:49):

... that started me off down the other road, so to speak. I had Heiple talking in one ear, and I was trying to solve all the problems that Burstein assigned to me in terms of mechanics, and on the other ear, I was teaching myself developmental biology in a crude sense.

Bernard Wood (00:20:15):

Right. Right. One of the many things I admire about you, and it was surely on display in that paper, is this sort of command of a wide range of topics, and to have the ability to bring them together for a central argument. Did that come naturally to you? Or was that something that you learned to do?

C. Owen Lovejoy (00:20:46):

That came naturally from my early years. Every living thing in Presque Isle, Michigan, was of interest to me.

Bernard Wood (00:20:57):

Okay.

C. Owen Lovejoy (00:20:57):

From crawfish to fish to frogs, to toads, to turtles-

Bernard Wood (00:21:03):

Okay.

C. Owen Lovejoy (00:21:03):

... to crows, to migrating birds, the whole vast natural world I found fascinating.

Bernard Wood (00:21:16):

Okay.

C. Owen Lovejoy (00:21:18):

My current peak interest right now is dart frogs because I think they almost make the perfect model for human evolution. Will it be-

Bernard Wood (00:21:30):

Okay. Well, maybe we could circle back to dart frogs later.

C. Owen Lovejoy (00:21:39):

... yeah.

Bernard Wood (00:21:39):

Your employment history is sort of boring in the sense that you are in one institution, you rise through the ranks at Kent State. Some people, they move around, they go from one institution from the other and they meet people, and their research reflects that interaction. My sense, and I've always in my head compared you to Darwin down in Kent sitting in your office in a sense the world comes to you as opposed to you going out and seeing the world, but you might or might not be flattered by that comparison. There are a whole bunch of questions about career here. What advice do you remember getting from people like George Armelagos and your colleagues, your orthopedic and biomechanics colleagues?

C. Owen Lovejoy (00:22:57):

I would, in terms of making career choices, I got very little advice from others. During my formative years as an academic, I was interviewed and offered several positions that I interviewed for and thought seriously about. One of the things that I did during my postdoc was take gross anatomy at Case Western. I had an interest in gross anatomy. I know that I got offered a position by Alan Walker at... oh -

Bernard Wood (00:23:51):

Was that at Hopkins or Penn State?

C. Owen Lovejoy (00:23:53):

... yeah, at Hopkins. Yeah.

Bernard Wood (00:23:54):

Right. Right.

C. Owen Lovejoy (00:23:54):

I drew a blank there for a minute, and I got offered a position at Illinois. I was interviewed at University of Chicago, and probably would've gotten an invitation there. None of the... Well, let's just say that I preferred the comfort of the small town-

Bernard Wood (00:24:21):

Right.

C. Owen Lovejoy (00:24:21):

... to the problem that I would have met living in Bolton. You know where the med school-

Bernard Wood (00:24:29):

I know.

C. Owen Lovejoy (00:24:30):

Bolton is, and it wasn't exactly safe back then.

Bernard Wood (00:24:37):

Right.

C. Owen Lovejoy (00:24:37):

I don't know what it's like now. Same with the University of Chicago. I do remember, well, when I interviewed at the University of Chicago with Russell Tuttle, he carried around a whistle and the whistle-

Bernard Wood (00:24:50):

Oh.

C. Owen Lovejoy (00:24:51):

... was to get help if we were attacked or something like that, so the thought of just staying in Kent, Ohio, loomed large in my and-

Bernard Wood (00:25:03):

Okay.

C. Owen Lovejoy (00:25:05):

... that Kent State has always been appreciative of me, and so the feeling has always been mutual.

Bernard Wood (00:25:11):

Okay.

C. Owen Lovejoy (00:25:13):

I've never accepted a position anywhere else.

Bernard Wood (00:25:17):

I think that's an interesting story for people because sometimes there is this urge to move around. I mean, I've moved around for various reasons. I remember coming to see you in Kent State because for my Bachelor of Science project, I was given the old Divine Tailors to work on by Michael Day. Somehow I got in touch with you and you said, "I could come and study the Levin Collection." Indeed, I think you and I had plans to do some research together, but I'm not quite sure what happened to this. I remember you saying I was making a lot of the morphology of the OH tailors, and you said, "Well, that's all very well, but I can find you sort of in the Levin Collection that have the same neck angle and the same angle of torsion of the head, and the same this and the same that."

Being a smart ass, I'm not sure whether I wrote it to you, but I thought, "Yeah, but not in the same individual," but the Levin Collection, that lesson of yours from the Levin Collection, that there is a lot of variation in just this one population of modern humans. That's really influenced my attitude to taxonomy. I have to say that, so whether you want to hear that or not, it's true. I mean, that was an interesting lesson. I also remember us having a pizza or somewhere in a restaurant and we started to talk about Monty Python.

C. Owen Lovejoy (00:27:16):

Yes.

Bernard Wood (00:27:19):

You are the only person that I have ever eaten with who laughed so paroxysmally, or whatever the word is, that you fell off the banquette because you were laughing so much.

C. Owen Lovejoy (00:27:34):

That restaurant was top of the end, and we were doing the spam, spam, spam.

Bernard Wood (00:27:41):

Yes, yes, so I have no idea what the other people at the restaurant thought, but that has stayed with me through my whole life. You had this interest in locomotion. How did you decide how to bring that interest to bear on the hominin fossil record? Then, how did you get linked up with Jim White, who I also admire greatly, and get involved in the *Ardipithecus* analysis?

C. Owen Lovejoy (00:28:29):

Oh, that's a lot of history. The first one of the things that I did in my first year with Olaf, or maybe the second year that I was with him, and he was always running an excavation. Like I said, I began as a shovel hand, and by way, I was a superb shovel hand. I with a round blade, and if you're an archaeologist, I with a round blade could produce perfect walls to each of the five by five squares. We were Americans, we didn't do anything in the metric system, and absolutely flat levels at two-inch intervals without damaging anything, and I could do it quickly. As a matter of fact, I remember my grandfather ran an agricultural equipment manufacturing company in Iowa, and-

Bernard Wood (00:29:37):

Was this your father's father?

C. Owen Lovejoy (00:29:39):

... my mother's father, actually-

Bernard Wood (00:29:40):

Your mother's father.

C. Owen Lovejoy (00:29:43):

.... and one of his sons, which was one of my uncles. I told my uncle of the problem of having to constantly have two people with you when you were shoveling to shake, to mobilize [00:30:00] the screen to get all the debris through so that you could find the artifacts. He built me a gas-powered automatic shaker machine that Olaf-

Bernard Wood (00:30:11):

Oh.

C. Owen Lovejoy (00:30:12):

... thought was the cat's meow. Now, you only needed two people to dig a square, one to operate the machine and look through the material as the machine shook the shaker screen. I mean, those are common now, but I think the one that we built back in 1965, I think it was, was one of the earliest. I would do all the digging, and we would go through a lot of five by fives in a single day, but I digress.

Bernard Wood (00:30:47):

No. Okay, so how did you go about selecting research problems? I mean, was there an overarching question? Or were there a series of questions?

C. Owen Lovejoy (00:31:02):

I think it was largely a product of the Levin Collection and its excavation because King Heiple, the orthopedic surgeon, and a couple of his associates would come out to the site in Western Ohio, and he would make diagnoses right there. Every skeleton that we found had some minor pathology or damage or something that he was able to recognize, and I just listened intently to everything he described. We became very good friends and-

Bernard Wood (00:31:45):

Right.

C. Owen Lovejoy (00:31:47):

... he was probably had... He and Burstein have the most influence on my scientific career. Prufer and Armelagos got me started in biological anthropology, and so I had to learn all the standard things. I think I knew the name of every Neanderthal burial in Europe at some point for my comprehensive exams and that kind of thing, but in terms of the mechanics and the biology of skeletal tissues, that's what I got from Dr. Heiple. In order to see something in its total biological condition, you have to integrate a lot of different sciences, and I ended up straying around from one to another. That's essentially what the history that I remember.

Bernard Wood (00:32:57):

To go back to the research questions, how did you get linked up with Tim and the group again? Sure, the people who were working in Ethiopia because given your interest in the excavation and the Levin Collection, looking at your CV, there wasn't a lot of experience in the field after that, or am I misreading?

C. Owen Lovejoy (00:33:34):

No, you're quite correct. Tim was a student at the University of Michigan getting his degree when I moved back to Kent State in 1967, '68. He was working with some of the materials at the Cleveland Museum of Natural History. He would come down from Michigan, and I think we met at an AAPA meeting or something like that. Somehow we met as students. I was still a student, and I got my degree in 1970, so I was still a student technically when I was teaching in 1968. We had a common interest in Australopithecines. Both of us had a broad view of taxonomy rather than a narrow one, so we disagreed rather strongly with the research problem that was prominent at Michigan, which was the idea of a single species hypothesis.

Bernard Wood (00:34:56):

Okay.

C. Owen Lovejoy (00:34:56):

Time and I both thought that, yes, we understand that species are variable, but they're not that variable that

Bernard Wood (00:35:11):

Okay.

C. Owen Lovejoy (00:35:12):

... not that much difference between a male and a female within one single taxon. We just kind of hit it off as academic friends. He moved to Berkeley. He liked the paper that you mentioned, *The Gait of Australopithecus* I think is the title of the paper. He liked that very much, and at the same time, he was working with Don Johanson on some Ethiopian sites with which you are completely familiar. Don was at The Cleveland Museum of Natural History-

Bernard Wood (00:36:01):

Yeah.

C. Owen Lovejoy (00:36:02):

... so I met Don in trips to the museum. At the time, interestingly enough, I was working with Burstein. One of my mentors was working on a very large project. His lab was testing the reliability of ski boots and whether or not the release factor was significantly capable of freeing the limb before the huge moment arm of a-

Bernard Wood (00:36:42):

Sure.

C. Owen Lovejoy (00:36:43):

... of a ski wreck havoc with the knee joint-

Bernard Wood (00:36:47):

Sure. Right.

C. Owen Lovejoy (00:36:48):

... so I became fascinated with the knee joint as a consequence-

Bernard Wood (00:36:53):

Oh, now it makes sense to me. Okay.

C. Owen Lovejoy (00:36:55):

... and-

Bernard Wood (00:36:55):

Okay.

C. Owen Lovejoy (00:36:57):

... and I began to research the knee joints of monkeys. One of the things I did in his lab is he had a machine that would break bones and break bones and record all of the physical activity.

We'd look at the oscilloscope and we look at the torque curve, we'd look at the force, we'd look at Poisson's ratio, and all the things that you do when you do fundamental mechanics. I was fascinated by the whole issue of the human knee joint, and lo and behold, in 1973, yes, 1973, Don found-

Bernard Wood (00:37:43):

A knee.

C. Owen Lovejoy (00:37:44):

... a knee joint, and virtually perfect-

Bernard Wood (00:37:48):

Yep.

C. Owen Lovejoy (00:37:48):

... and I took that to Burstein and we both got very excited. We started to do instant center analyses of the motion patterns of the knee, and I ended up sharing authorship on some papers with Don at the meetings. He would present the paper, but I did the fundamental mechanics-

Bernard Wood (00:38:16):

Right, right.

C. Owen Lovejoy (00:38:17):

... along with help from Burstein, and that kind of got me started into fossils.

Bernard Wood (00:38:23):

Right, okay. Did that sort of comfort with a lot of difficult quantitative data, did that come naturally or did you have to work hard to get there

C. Owen Lovejoy (00:38:39):

It comes naturally to me, but I never had any formal training in mathematics as an undergraduate, so I had to train myself on everything. What Burstein did was give me a mechanical engineering book, and he says, "Take it home and solve the problems."

Bernard Wood (00:38:57):

Okay.

C. Owen Lovejoy (00:38:58):

I did, and when I got to problems that I'd come in with an answer, and he struggled a little bit, I felt really good.

Bernard Wood (00:39:06):

Okay, so where did you go in terms of research from that work on the knee?

C. Owen Lovejoy (00:39:17):

To the pelvis.

Bernard Wood (00:39:18):

To the pelvis?

C. Owen Lovejoy (00:39:19):

Yeah.

Bernard Wood (00:39:19):

Okay. Okay.

C. Owen Lovejoy (00:39:21):

It's a little foggy. Well, the pelvis paper was '73, and the knee was '73, so it was probably a simultaneous event that I was doing the top of the femur and the bottom at the same time.

Bernard Wood (00:39:43):

Sure. Okay. Okay. This is a cheeky question, but John Robinson, I think, published some research around that time on the pelvis-

C. Owen Lovejoy (00:39:55):

Yes.

Bernard Wood (00:39:56):

... and actually wrote a really interesting book about hominin locomotion. What was your impression of Robinson and the book?

C. Owen Lovejoy (00:40:12):

He had obvious familiarity with all of the fossils, many of which I did not have.

Bernard Wood (00:40:23):

Oh, sure.

C. Owen Lovejoy (00:40:23):

My knowledge of the physical structure was based on CAS and not on knowledge of the original. He, however, in my view was on the other side as opposed to Walpock in that he did not consider variation enough.

Bernard Wood (00:40:44):

Right.

C. Owen Lovejoy (00:40:47):

While the book was well-written and I think very authoritative, I did not think it was a major breakthrough in our understanding of the history of gait.

Bernard Wood (00:41:06):

Yeah, yeah. No, I would agree with you. I mean, there was... Yes, I think that's a very good summary. There wasn't quite enough sort of biology in it for me, I think-

C. Owen Lovejoy (00:41:20):

Correct.

Bernard Wood (00:41:21):

... in that sense.

C. Owen Lovejoy (00:41:22):

Yes, I fully agree.

Bernard Wood (00:41:27):

You've been interested for a long time in developmental biology, and where did that interest come from? You explained, or at least partially, or maybe the whole reason was the opportunities that the Levin Collection provided for looking at the results of development that didn't go according to plan. Where did your interest in almost molecular developmental biology come from?

C. Owen Lovejoy (00:42:10):

That is... Surprisingly, it's a very easy question to answer, and I kind of owe it to Kent State University. I don't remember the dates, but at some point I've got promoted very rapidly to full professor. Then, with the publication of the paper Origin of Man, two or three years after that, I was appointed University Professor by the president of Kent State University, and essentially was a position that didn't require me to teach. I said, "Well, I'm going to have to really do something significant." I said, "I'm going to write a book about bones."

Now, in fact, John Curry wrote, as we know, and he was a few years ahead of me, but I said, "I'm going to start from the very beginning." I began to research the embryology of the skeleton, and that was the earliest manifestations. I knew from Heiple, for example, that six weeks was our first calcification, and it was the clavicle and things like that, but I didn't know the histological details. There were some very classy papers out there to read and understand, and at about the same time, the group at University College London headed up by Cheryll Tickle and Luke Wolpert were publishing what I found in the journal Nature to be strikingly significant papers on understanding the emergence of the limb skeleton.

Bernard Wood (00:44:37):

Yes.

C. Owen Lovejoy (00:44:40):

As you know, there was a whole research group, and they discovered things like the ZPA and eventually the role of morphogens in assigning three-dimensional structure. It was Wolpert's work that really got me started, and then the homeobox phenomenon just is... I think the term is gobsmacked that-

Bernard Wood (00:45:16):

Okay, that's a-

C. Owen Lovejoy (00:45:17):

... [inaudible]

Bernard Wood (00:45:18):

... Liverpoolian term, but yes, yes.

C. Owen Lovejoy (00:45:23):

... and I had a student applied to Kent State named... I'm blanking again. I have this familial [inaudible]-

Bernard Wood (00:45:37):

Philip Reno.

C. Owen Lovejoy (00:45:39):

... Philip Reno was one, but he was a little bit later.

Bernard Wood (00:45:41):

Oh, okay.

C. Owen Lovejoy (00:45:42):

The one I'm thinking of is Marty Cohn.

Bernard Wood (00:45:49):

Oh. That's... Okay, because I mean, you may not know this, but I was at The Middlesex [00:46:00] Hospital Medical School-

C. Owen Lovejoy (00:46:02):

Aah.

Bernard Wood (00:46:03):

... Lewis moved from King's College to The Middlesex to be the professor of cell biology as applied to medicine. Lewis and I were in the same department, and Cheryl Tickle and I used to get to work early because we were very junior, and it was the only way to get a parking space. I knew Lewis for years, and so that explains my familiarity with this, but one of the things that always impresses me about you is that I'm not sure you need all the fingers of one hand to list the biological anthropologists or the paleoanthropologists who understand the significance of that stuff.

C. Owen Lovejoy (00:46:55):

Aah, and Marty came because he was interested in knuckle-walking, and he said-

Bernard Wood (00:47:09):

Okay.

C. Owen Lovejoy (00:47:10):

... he wanted to work out on a basis of mechanical stimuli what the trabecular structure of chimpanzee and gorilla metacarpals was going to be like using what I would call an extreme form of the application of Wolf's Law.

Bernard Wood (00:47:38):

Right. Okay.

C. Owen Lovejoy (00:47:40):

As I emerged into Wolpert's insistence on positional identity and every cell must respond to the cells next to it, and you know the French flag problem-

Bernard Wood (00:47:56):

Sure. Yeah.

C. Owen Lovejoy (00:47:57):

... and all that. I said, "Marty, we got to take a different approach." We would read... These were the days when all of that material was just flooding... About every two months, Nature would publish another breakthrough, and Marty wrote to, I think, Cheryll. He was a superb student, and they offered him a summer position to work in their lab. I said, "Well, you've got to go and learn the lab techniques." I was doing a little work in growing bones in culture. I was suffering from some Wolfism myself, and with Al Burstein, we made these little jigs and we were growing chicken tibias in culture. There's a long story.

Bernard Wood (00:49:02):

Okay.

C. Owen Lovejoy (00:49:04):

You have to feed the bone, the progressive development of the egg, by homogenizing eggs in the proper sequence and then providing the nourishment to the bones. I made a lot of mistakes and I'd walk into the lab and hear, "Beep, beep, beep, beep." You know?

Bernard Wood (00:49:27):

Yes. Yeah. Yeah, that's-

C. Owen Lovejoy (00:49:28):

[inaudible 00:49:29]-

Bernard Wood (00:49:28):

... always bad. Yes, yes.

C. Owen Lovejoy (00:49:29):

... that's very bad.

Bernard Wood (00:49:30):

Yes, I remember that. I had one of my teachers was an embryologist, a guy called Peter Silva, and it looks deceptively simple to do all this stuff, but it's not. I remember meeting Marty Cohn when he was there in the summer.

C. Owen Lovejoy (00:49:57):

He wrote back and they loved him, and Cheryl and Lewis, they said they offered him a position as a graduate student there. I said, "Oh, you must take it. They're going to teach you things that I can't teach you. They're way ahead of me." He took them up on it, and he ended up working on snakes, and one of the things, of course, that he was interested in is multiplication of somites. He has wonderful stories about getting python eggs from pregnant female pythons in zoos and things like that, but he ended up becoming a very prominent developmental biologist. He's at the University of Florida, and I talk to him every now and then, but that's where the homeobox-

Bernard Wood (00:51:00):

Okay.

C. Owen Lovejoy (00:51:02):

... and then when Reno came, Phil Reno, we began to work with Marty with mice doing digits and looking at homeobox impact, especially on the digits, the thumb, and the distal parts of the forearm. That's how that work ended up with our work in the hand.

Reno has continued that work, and it found all sorts of interesting things among which that most people don't realize it, but that the pisiform is actually a complex bone in the sense that it used to have an ossification. The secondary ossification center used to have an epiphysis, and the current pisiform may, in fact, just be the epiphysis and not the original [inaudible]

Bernard Wood (00:52:19):

Okay. Okay-

C. Owen Lovejoy (00:52:19):

... so-

Bernard Wood (00:52:20):

... so there's another bit of conventional wisdom that-

C. Owen Lovejoy (00:52:23):

... exactly.

Bernard Wood (00:52:23):

... bites the dust. Okay, so you knew Tim, you were sympathetic. You both saw the world in a similarish way. What was it like working with this research group on this remarkable specimen and this material for a long time? Give us an insight into sort of how you went about looking at this remarkably complete, but pretty bashed around sort of skeleton, sort of crushed skeleton. How did you go about this? Why did you accept that invitation? Did you know it would take so long and be such a large part of that part of your career?

C. Owen Lovejoy (00:53:20):

No, not at the start. The reason that it took so long is that, in my view, and as you know what my view is, is that that skeleton is revolutionary.

Bernard Wood (00:53:37):

Oh, no, sure.

C. Owen Lovejoy (00:53:39):

The problem I already had, I worked with Don on Lucy and the 333 material from Hadar, so I did the entire skeletal analysis. We did the description of the Lucy skeleton with Don and with Tim and with two other of my students. Bruce Latimer was there, and again, the anomia is getting to me in terms of the other student. He was at Arizona, and he recently passed away, and you-

Bernard Wood (00:54:24):

Oh, Bill Kimball.

C. Owen Lovejoy (00:54:25):

... Bill Kimball. Bill Kimball was part of that group.

Bernard Wood (00:54:28):

Yes. Okay. Okay.

C. Owen Lovejoy (00:54:30):

I had a lot of experience with the original specimens there because they were in Cleveland, and then we did the reconstruction of Lucy's pelvis. That kind of got me started, and so when Tim found *Ardipithecus*, there were certain aspects of it that made it clearly revolutionary simply in what was preserved. One of the striking things is that it still had an opposable hallux, something which Lucy did not have. Gradually, I realized that the Lucy skeleton didn't provide much information about the evolution of our postcranium because Lucy was so advanced. I regard Lucy as a very advanced biped with a pedal arch and inducted hallux, a beautifully-adapted pelvis, just not one that's adapted to giving birth to a large-brained or a large-shouldered infant.

(00:55:43):

The opportunity to work on *Ardipithecus* was obvious to me. I mean, it was thrilling, and the other thing was Gen Suwa, who was a former student of Tim's, and I remember slowly as we went through the skeleton, our whole understanding of the evolution of the skeleton changed radically. I went into the *Ardipithecus*, a study with the nutritional viewpoint that the last common ancestor was going to be a good representative of the last common ancestor would be something primitive. Of course, the only thing that we had to work from would be chimpanzees and gorillas, and to a certain extent orangs, but orangs are taxonomically quite divergent, so it would have to be chimpanzees and gorillas. Slowly but surely, I realized that what we were looking at in *Ardipithecus* was something much more primitive than we ever imagined.

(00:57:08):

Now, I've realized that chimps and gorillas are highly evolved, and *Ardipithecus* probably represents our best representative structure of what the last common ancestor might have been like. It certainly was not like *Ardipithecus* because *Ardipithecus* was a completely evolved biped, not a completely evolved biped, but a taxon that was bipedal by habit when it's terrestrial. As a consequence, Gen and I, he was in Tokyo and I was in Kent, we did email after email after email trying to figure [00:58:00] out what the limb proportions of this thing were. If you don't know what's primitive and what's derived, it's hard to figure it out.

(00:58:15):

We would send hypothesis. No, that doesn't work, and slowly but surely, *Ardipithecus* emerged in our minds as something totally different than we had envisaged when we started [00:58:30] working on the thing. As a consequence of Tim being fully acquainted with Gordon Getty and The Leakey Foundation, Getty financed two trips of the entire *Ardipithecus* group, and we were able to go look at original fossils in Italy and in South Africa, and in Kenya and in Tanzania, and, obviously in Ethiopia and put it all together. That took a lot of time-

Bernard Wood (00:59:08):

Yeah. No. No-

C. Owen Lovejoy (00:59:09):

... [inaudible]-

Bernard Wood (00:59:09):

... I know. I can appreciate that.

C. Owen Lovejoy (00:59:11):

... Which is why, in fact, took so long.

Bernard Wood (00:59:14):

Yeah. Well, I mean, certainly you won't have me grumbling about that because it's a hell of a lot better to do things carefully, even though it takes a long time, than to do the opposite. Can I ask you a bunch of more general questions?

C. Owen Lovejoy (00:59:36):

Sure.

Bernard Wood (00:59:36):

What sort of research achievement or research achievements are you most proud of?

C. Owen Lovejoy (00:59:47):

Huh.

Bernard Wood (00:59:48):

Given your family background, lets assume that pride isn't a deadly sin.

C. Owen Lovejoy (01:00:00):

I think early... Okay, I would say the importance of life history strategy and understanding human evolution. I think that The Origin of Man paper, that was the key to there. I think the pelvic model for the origin of bipedality that you mentioned in the beginning of the interview, I think the work on Ardipithecus in terms of its gait pattern, what its pelvis looked like, and how that integrates with our understanding of human evolution.

(01:00:56):

I have a new interest, which is the mesolimbic reward pathway, which I think is absolutely critical to understanding all of human evolution. I think it probably should be the central focus of all of biological anthropology now because I think it should be the central focus of all organic evolution. If you don't have the dopaminergic pathway that's providing reward

for behaviors, I don't think we understand motivation, whether it be C. Elegans or drosophila.

Bernard Wood (01:01:34):

Anything else.

C. Owen Lovejoy (01:01:35):

Anything else.

Bernard Wood (01:01:35):

Yeah. Sure.

C. Owen Lovejoy (01:01:36):

Everybody's got it, and I think that eventually we'll realize that the breakthrough in human evolution was neural, and it was in reproductive strategy that was rewarded by that pathway. If you look at the study of voles and the switch, that relatively easy switch from monogamy to polygyny and vice versa because of just introducing a new receptor in the... They know me. Okay. Let's just put it that way.

Bernard Wood (01:02:15):

Okay, but let me be even harsher and all your publications were in the building that was on fire, which publication would you want to retrieve?

C. Owen Lovejoy (01:02:32):

Okay. Is it only one?

Bernard Wood (01:02:34):

I'm afraid it's only one.

C. Owen Lovejoy (01:02:36):

Only one. Well, I'm going to impose a reverse choice back on you-

Bernard Wood (01:02:49):

Okay.

C. Owen Lovejoy (01:02:50):

... and say, is chronology important?

Bernard Wood (01:02:57):

No, I mean, [01:03:00] what I'm asking you for, what I'm asking you is that if sort of posterity had only one publication to link to the name Claude Owen Lovejoy, which publication would you want that to be?

C. Owen Lovejoy (01:03:19):

I'm going to have to go with Origin of Man-

Bernard Wood (01:03:22):

Okay.

C. Owen Lovejoy (01:03:24):

And not because I mean, it is out of date in terms of it's [inaudible 01:03:28]-

Bernard Wood (01:03:27):

That doesn't matter.

C. Owen Lovejoy (01:03:27):

... [inaudible 01:03:29].

Bernard Wood (01:03:27):

That doesn't matter. I don't-

C. Owen Lovejoy (01:03:27):

[inaudible 01:03:31]-

Bernard Wood (01:03:30):

[01:03:30] ... think it is out of date in many ways, because I think the ideas in it are still as current as they were then.

C. Owen Lovejoy (01:03:38):

Okay.

Bernard Wood (01:03:42):

Okay, and then I have a sense you want to squeeze in a later one.

C. Owen Lovejoy (01:03:49):

The later one would be its child, which is human evolution [01:04:00] from the point of view of Ardipithecus. I can't even remember the title of the thing. We wrote so many papers on Ardipithecus-

Bernard Wood (01:04:08):

Yeah, okay.

C. Owen Lovejoy (01:04:09):

... but it's-

Bernard Wood (01:04:09):

No, that I know the one and the listeners would know the one.

C. Owen Lovejoy (01:04:12):

... the Ardipithecus behavior paper. Yeah.

Bernard Wood (01:04:14):

Yes. Yeah. Can I ask you, which researchers of the past few do you particularly admire?

C. Owen Lovejoy (01:04:26):

Researchers?

Bernard Wood (01:04:27):

Yeah. Yes. Yes.

C. Owen Lovejoy (01:04:30):

[01:04:30] Okay. Oh-

Bernard Wood (01:04:31):

I mean, they needn't be of the past. It could be of the present, but you know.

C. Owen Lovejoy (01:04:36):

Yeah. Le Gros Clark.

Bernard Wood (01:04:39):

Right.

C. Owen Lovejoy (01:04:48):

Dobzhansky.

Bernard Wood (01:04:48):

Can I ask you why in respect of Le Gros Clark?

C. Owen Lovejoy (01:04:53):

I just thought he was a truly classic anatomist who understood functional anatomy in the same way that I think I understand it.

Bernard Wood (01:05:05):

Okay. Okay.

C. Owen Lovejoy (01:05:06):

I think I learned as much about the world from Le Gros Clark as I did from anyone else.

Bernard Wood (01:05:12):

Okay.

C. Owen Lovejoy (01:05:13):

He of all the people that I admire the most... Well, William Strauss.

Bernard Wood (01:05:23):

Oh, okay.

C. Owen Lovejoy (01:05:23):

Yeah. I learned a lot about how chimpanzees' forelimbs work just by reading William Strauss.

Bernard Wood (01:05:30):

[01:05:30] Okay.

C. Owen Lovejoy (01:05:32):

Oh, well, the ultimate who collected... Let me explain that I do have a familial anomia problem. All of my family are incapable of recalling proper names, so when it comes time to discussing films or anything like that, none of us can know the star or the name of the major character, but we can just gesture and that's all that's necessary. I've got an old human biology sitting behind me. He... Schultz, Adolf Schultz.

(01:06:22):

Oh, well, the ultimate who collected, let me explain that. I do have a familial anomia problem. All of my family are incapable of recalling proper names. So when it comes time to discussing films or anything like that, none of us can know the star or the name of the major character, but we can just gesture. And that's all that's necessary. So I've got an old human biology sitting behind me. Strauss Schultz? Adolph Schultz.

Bernard Wood (01:06:26):

Oh, Schultz. Oh, okay. Yes, yes, yes.

C. Owen Lovejoy (01:06:28):

Oh my God. All the stuff that I've learned from Adolph Schultz because he was so careful and understood variation and recorded it, so yeah. I mean, I wouldn't know half of the stuff that I know without Adolph Schultz. You know the term you stand on the shoulders of giants?

Bernard Wood (01:06:51):

Yes.

C. Owen Lovejoy (01:06:51):

Well, Adolph Schultz was a giant-

Bernard Wood (01:06:53):

Yeah.

C. Owen Lovejoy (01:06:55):

... and Ernst Mayr-

Bernard Wood (01:06:58):

Yes.

C. Owen Lovejoy (01:06:59):

... taxonomy.

Bernard Wood (01:07:00):

[01:07:00] I think you've done well, so you don't have to come up with any. Can I ask you a slightly strange question? Is there a paper by another researcher that you wish you had written yourself?

C. Owen Lovejoy (01:07:21):

That I wish I had written myself? All of them.

Bernard Wood (01:07:26):

Yeah. Yeah, [01:07:30] but sometimes I read a paper and I think, "Wow, I wish I'd come up with that idea."

C. Owen Lovejoy (01:07:41):

Huh, so it has to be an idea paper?

Bernard Wood (01:07:53):

No, no, it could be anything.

C. Owen Lovejoy (01:07:53):

Okay.

Bernard Wood (01:07:53):

I mean, there are papers by a colleague that I won't name, but who happens to be at the University of Chicago, that whenever I get to the sent them to review, I have really nothing to say. It's a very thoughtful research question. The experiments were clearly relevant, the interpretation is fair, and I can make some comments about the punctuation, but there's not much else for me to say. Is there anything... Does that ring a bell with you in terms of anyone?

C. Owen Lovejoy (01:08:49):

It probably does, but there are papers that I adore, but of late they're on dart frogs, so-

Bernard Wood (01:08:59):

Okay. [01:09:00] That's fine. That's fine. We'll just put down the good papers on dart frogs. Have you ever changed your mind about an important topic in human evolution? I mean, you've talked about chimps and gorillas being a... that was the conventional wisdom that they were the most appropriate model. You've put some important [01:09:30] arguments against that, but is there a topic that you've really changed your mind about?

C. Owen Lovejoy (01:09:41):

Oh, God, yes. Just about everything that I know has replaced something that I didn't know, but thought I knew.

Bernard Wood (01:09:52):

Okay. Okay. Okay.

C. Owen Lovejoy (01:09:53):

In terms of papers, I'm sure... Okay, one of the Wolpert series I would-

Bernard Wood (01:10:02):

Okay. Okay. Okay.

C. Owen Lovejoy (01:10:03):

... I would love to have read or written any one of those papers.

Bernard Wood (01:10:12):

Right. One of the last sort of general questions is that if you had the scientific equivalent of a fairy godmother or a fairy godfather, what would you ask them? You could ask them one question and you would get the answer. What question would you want to ask them?

C. Owen Lovejoy (01:10:35):

Can I ask for a fossil that we haven't found?

Bernard Wood (01:10:38):

Yes, of course. Yes. Yeah.

C. Owen Lovejoy (01:10:42):

Okay. Ardipithecus is 6 million at the bottom of what we have. Oh, please give me one that's 8 million.

Bernard Wood (01:10:51):

Okay. Okay. Okay. Well-

C. Owen Lovejoy (01:10:51):

[inaudible 01:10:52].

Bernard Wood (01:10:51):

... I'm sure they will oblige.

C. Owen Lovejoy (01:10:54):

Well-

Bernard Wood (01:10:54):

I'm sure they will oblige.

C. Owen Lovejoy (01:10:56):

... it has to be advanced enough to be recognizable as a hominid or-

Bernard Wood (01:11:00):

Aah, yes.

C. Owen Lovejoy (01:11:05):

... what we call a hominid, but on the other hand, primitive enough to tell us something that we don't currently know.

Bernard Wood (01:11:10):

Okay. Okay, and supposing you were really wealthy and you had \$5 million that you were willing to spend on a research project, what would you be [01:11:30] looking for? Would it be the money to do the field work to get the fossil? Or is there any experiments or

C. Owen Lovejoy (01:11:37):

I'd give the money-

Bernard Wood (01:11:38):

... would be interested?

C. Owen Lovejoy (01:11:39):

I'd give the money to Tim White.

Bernard Wood (01:11:41):

Okay. Okay. I think I would, too, so that... Yeah, I mean, sure. Okay.

C. Owen Lovejoy (01:11:50):

I don't know how close you've studied the Ardipithecus materials, but had it not been for Tim, [01:12:00] we wouldn't have them-

Bernard Wood (01:12:02):

No, no-

C. Owen Lovejoy (01:12:02):

... and he-

Bernard Wood (01:12:03):

... and also having been in the museum and others three or four years ago, it was just astounding how much material there is.

C. Owen Lovejoy (01:12:19):

Yeah, and the site from which that material came was very deep, very large.

Bernard Wood (01:12:28):

Yeah, yeah.

C. Owen Lovejoy (01:12:29):

It was full of gravel and we have almost every preserved bone from the hand.

Bernard Wood (01:12:36):

Yeah.

C. Owen Lovejoy (01:12:37):

All we're missing is the pisiform, and we all know what a primitive pisiform looks like. The fact that we have the entire hand and a good deal of the foot, I owe to, well, obviously to

everybody that worked with Tim, but in terms of his instruction and guidance and insistence on exactness-

Bernard Wood (01:13:03):

Yes.

C. Owen Lovejoy (01:13:04):

... I don't think we'd have nearly what we have today.

Bernard Wood (01:13:07):

Yes. You go back to your career, I mean, you're still in your career, and what are the aspects of it that you enjoyed most and what are the aspects of it that you enjoyed least?

C. Owen Lovejoy (01:13:28):

I don't like fighting.

Bernard Wood (01:13:30):

Right.

C. Owen Lovejoy (01:13:33):

It's extremely argumentative at times, and some of my coworkers, as you well know, can be quite ascorbic. It's difficult for me. I'm just a friendly guy.

Bernard Wood (01:13:54):

Just a friendly guy from a small town in-

C. Owen Lovejoy (01:13:57):

I'm a friendly guy from-

Bernard Wood (01:13:58):

... Ohio.

C. Owen Lovejoy (01:13:58):

... a small town that [01:14:00] got raised religiously to be nice to people. I don't like public speaking, and it's gotten worse over the years, and I'm really no longer interested in doing it, essentially.

Bernard Wood (01:14:21):

Right, right, right. You were elected a member of The National [01:14:30] Academy of Sciences, and deservedly so. What has that experience been like? Has it been something that you have enjoyed? I know it comes with responsibilities in terms of editing and things of that sort, but just give us the two-minute version of what being a member of The National Academy of Sciences involves.

C. Owen Lovejoy (01:14:57):

The big thing for-

Bernard Wood (01:15:00):

Or at least for you.

C. Owen Lovejoy (01:15:01):

... yeah. The big thing for me is meeting a number of other people in the formal meetings that we have. For example, Karen Strier, Karen and I have become very good friends. When you meet somebody who is immediately in touch with a group like Brachyteles and you can just have deep conversations about what's going on in her specimens, her groups that she watches, that is an opportunity that I never would have had without that election. Their cultural anthropologists who I think are quite brilliant and I find their work fascinating.

Bernard Wood (01:16:08):

Right, and if you hadn't become a biological anthropologist, what would you have done?

C. Owen Lovejoy (01:16:22):

Well, I wouldn't be a Skinnerian.

Bernard Wood (01:16:25):

Okay. You wouldn't be a Skinnerian. You told us that you weren't really [01:16:30] wedded enough with clinical medicine to be a surgeon, although to judge from how well you could prepare the face of an excavation, I'm sure you would have been an excellent surgeon, but what else were you thinking of or what else in your imagination might have been a career for you?

C. Owen Lovejoy (01:16:59):

I can't even imagine going back to the start of it and not taking all the diverticula that I ended up going down.

Bernard Wood (01:17:12):

Okay. Okay. Okay.

C. Owen Lovejoy (01:17:16):

At some point, I could have switched. Maybe I would have ended up being an ichthyologist or something like that.

Bernard Wood (01:17:28):

Or somebody interested in these dart frogs or-

C. Owen Lovejoy (01:17:33):

Oh, I don't know how much you know about dart frog behavior. Do you know that they're little hominids?

Bernard Wood (01:17:43):

Yeah. Okay. Okay.

C. Owen Lovejoy (01:17:47):

The

Bernard Wood (01:17:50):

The answer is I know almost nothing about their behavior other than frogs.

C. Owen Lovejoy (01:17:54):

Let me give you a one-minute rendition of why they're little hominids. They monogamously pair bond.

Bernard Wood (01:18:00):

Right.

C. Owen Lovejoy (01:18:01):

They are incredibly K-adaptive. Leopard frogs have 5,000 eggs in their egg

Bernard Wood (01:18:06):

Right.

C. Owen Lovejoy (01:18:07):

... and without any parental care. Dart frogs have 12 to 16 in their clutch.

Bernard Wood (01:18:15):

Right.

C. Owen Lovejoy (01:18:15):

Male takes each tadpole, goes into the trees, goes find a bromeliad and deposits the tadpole in each bromeliad. The female will come along and provide unfertilized eggs for that tadpole to develop. They have incredible parental care, and they have twice the longevity of a regular frog. You think of a frog as being K-adapted, my God, these things survive having 10 offspring in a clutch. It's all because they have a breakthrough adaptation, which is they're poison, but being poison doesn't do the tadpole any good because he hasn't consumed the necessary nutrients from which to make the toxin.

The parental care, getting the tadpole to that point to make it relatively inert to predation is, I think, a model of early human evolution. The reward pathway for us was cooperation with other individuals. That's how we survive and spread all over Africa, and chimps and gorillas did not because they don't have the same reward pathway that we do and, obviously, is really unique.

Bernard Wood (01:19:42):

Okay. Well, now I'm going to get interested in these frogs.

C. Owen Lovejoy (01:19:45):

They're fascinating.

Bernard Wood (01:19:48):

Okay. Could I-

C. Owen Lovejoy (01:19:48):

[inaudible].

Bernard Wood (01:19:50):

... ask you, would you like to add anything to this interview that I haven't asked you?

C. Owen Lovejoy (01:19:58):

I can't of anything that -

Bernard Wood (01:20:03):

What would you like our viewers-

C. Owen Lovejoy (01:20:06):

... I can't think of any -

Bernard Wood (01:20:14):

... to know about you?

C. Owen Lovejoy (01:20:14):

... that you haven't asked?

Bernard Wood (01:20:21):

Okay. Okay. Well, I have really enjoyed this, and it's been a good sort of bookend from the Spam Spam encounter, which must be well over half a century ago. I just want to thank you, Owen, for agreeing to do this and for being such a good sport, and wish you and your wife all the best.

C. Owen Lovejoy (01:20:47):

Well, Bernard, I've thoroughly enjoyed it. It is been kind of fun, but especially now that I get to have an effect on you, I'm going to end you with mesolimbic reward pathway and dark frogs. Those are the two things that you must investigate in great detail.

Bernard Wood (01:21:14):

Okay. Well, I will send you Lewis Wolpert's biographical memoir, which was done by Cheryl Tickle and another colleague of hers, and I'm sure you will be interested.

C. Owen Lovejoy (01:21:30):

Oh yeah. Yes, absolutely, and of course, so will Marty.

Bernard Wood (01:21:36):

Yes. Okay.

C. Owen Lovejoy (01:21:36):

Yeah.

Bernard Wood (01:21:37):

Okay. Well, goodbye and thank you, Owen.

C. Owen Lovejoy (01:21:40):

Thank you. I enjoyed it.

Bernard Wood (01:21:44):

Thank you.