

THE LEAKEY FOUNDATION

Origin Stories Episode 4: How to Document a Society
August 8, 2015

Meredith Johnson

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This is Origin Stories, the Leakey Foundation podcast. I'm Meredith Johnson.

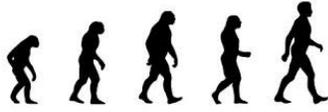
On the western edge of [Tanzania](#), along the shores of [Lake Tanganyika](#), there's a community where every waking moment of life is tracked and recorded. For the last fifty-five years, this community has records for every meal eaten, every mile traveled, every social interaction. It's all observed and written down in meticulous detail. Emily Boehm is a Ph.D. candidate at Duke University. And she's one of the observers there.

Emily Boehm

You wake up before sunrise and wait for them to wake up. The sun starts to come up, and you're waiting to hear those first rustles from the trees. And, also, a great time to collect urine and fecal samples because you know that's the first thing they're going to do. They come down. You, kind of, hope that maybe they'll hang out there for a little while and feed so you can get, at least, a little bit of data before they start moving. But, oftentimes, they're really, right off the mark, they'll take off, and that's when we're crawling on hands and knees through vines and thorns. And it's a lot of steep climbing, just following the chimp, just going where they want to take you.

Meredith Johnson

Emily Boehm is just one of a large team of researchers, students, and field assistants at the [Gombe National Park](#). She's one of the many people who've spent long sweaty days crawling through thorns and vines, watching chimps, and writing everything down. All these researchers are part of the longest-running study of any animal in the wild. The groundbreaking Gombe Chimpanzee Project. Jane Goodall started the study in 1960 with just a pair of binoculars, a notebook, and a pencil. And as the project's grown, they've collected the life stories of over 300



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individuals. The history of what every chimp in the community was doing every day. The detail is incredible, and it's shaped our understanding of chimpanzees in a big way. Maybe you have a gadget that counts your steps or measures your sleep habits. These chimps at Gombe have data like this for their whole life. It sounds something like this:

Anne Pusey

And here I'm reading, the first of October, 1968. So Goblin stamps on the ground at Miff. Suddenly, Satan starts another display, flailing branches, banging on boxes. And then, at 7:09 a.m., many [pant-hoots](#) south of camp, Pepe, Satan, chasing Sniff, who screams with a fear face, and Godi leaves south.

Meredith Johnson

Anne Pusey is a professor at Duke University and chair of the Department of Evolutionary Anthropology. She runs the Jane Goodall Institute Research Center, and she helps direct the research at the Gombe Stream National Park. Pusey went to Gombe as Jane Goodall's research assistant fresh out of college in 1970.

Anne Pusey

It was incredibly exciting. Of course, I'd never been to Africa before. But I'd always dreamed of doing so. And so here I was on the shores of Lake Tanganyika with these chimpanzees, which were completely used to people. And it was a window onto a whole new society. When Jane first arrived, the chimps were not used to her presence so she had to be very patient and sit up on hills and watch them through telescopes. But, eventually, they became more used to her. And then she set up a feeding station.

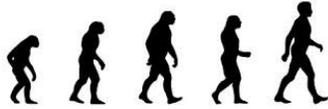
Meredith Johnson

The chimps could come to the feeding station and eat bananas, and get comfortable being around people. Jane Goodall and the other researchers could watch their behavior. At first, it was just a few of the chimps. But, eventually, the whole community started coming.

Anne Pusey

After Jane's initial couple of years, the observations were mostly concentrated at this feeding station. And so every day there would be people there, really, from dawn to dusk watching as the chimps came to that area, recording who came and then the interactions between all the chimps. And that was all written in a journal and in narrative notes.

Meredith Johnson



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The notes read like little snippets of stories. At the end of each day, the researchers would type them up. They were putting out 15 to 20 typed pages of these detailed descriptions every single day.

Anne Pusey

An enormous amount of data was collected like that. And then, in the late 60s, they started using more check sheets to records certain systematic kinds of behavior, like who came at what time, who groomed who, that kind of thing.

Meredith Johnson

By the end of the 60s, the chimps were so used to people that it was possible to follow them away from the feeding station.

Anne Pusey

And so then a new kind of data recording started where the researcher would follow a chimp, a particular chimp.

Meredith Johnson

It's how they still do it today. They stopped the banana feeding in 2000. And now all the observation data is collected by following.

Anne Pusey

Two people going out, following a chimp, generally from when it gets up in the morning out of its nest to when it makes its nest in the evening. So following them for, often 12 hours a day and recording where they are on a map, who they're with on a check sheet, and then a narrative description of the behavior of the focal individual and major events in the group, like who mates with who, whether they have an intergroup interaction, whether they hunt and so on.

Meredith Johnson

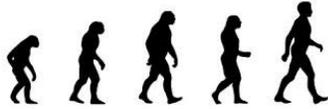
In this way, the scientists can track the daily lives of individual chimps and the changes in the social life of the group.

Anne Pusey

From 1965 onward, the data collection has been virtually unbroken.

Meredith Johnson

People watch the Gombe chimps every day, writing down massive amounts of information about them—even during the mid-70s when violence in the area escalated when rebels kidnapped a



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group of Western students from Gombe. Though the students were safely returned, foreign researchers couldn't work there for a few years.

Anne Pusey

Jane was able to keep the research going because the Tanzanians, by then, were well trained and were able to continue collecting the data. So the data collection continued and, in the mid-80s, Jane had spent years analyzing data and writing her big book, *The Chimpanzees of Gombe*.

Meredith Johnson

Goodall's book summarized 25 years of research. She celebrated the publication at a conference called *Understanding Chimpanzees* held in Chicago in 1986.

Anne Pusey

And then over the days where she participated in this conference, she heard about the incredible threats to the chimps and their conservation across Africa, the fact that there was the bushmeat trade, that there was a lot of deforestation. And the chimps were really suffering. And she went in as a scientist, at that conference, and she came out as an activist. So, after that, she really spent her time, more and more, advocating for chimp conservation and for understanding chimps more generally so that people cared about their plight. And she had less and less time to continue to analyze her data and write scientific papers and books.

Meredith Johnson

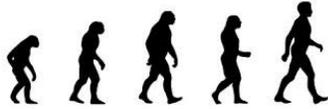
As Goodall's focus shifted towards saving the chimps, at Gombe, the chimp study continued. Every day, as usual, people followed the chimps from dawn to dusk, writing everything down. The data continued to pile up, literally. Jane Goodall was living in a larger city on the other side of Tanzania and visiting Gombe regularly.

Anne Pusey

She'd go to Gombe. She's come back with a suitcase full of data. And then she and her assistants in [Dar es Salaam](#) would sort it and put it into files. And the files were stored on open shelves.

Meredith Johnson

And in the same way that Jane Goodall realized the chimps were at risk if something wasn't done, Anne Pusey realized the files were at risk, too. These notes and records held things like the first documented tool use by animals other than humans, observations of hunting and warfare, of family life, the rise and fall of alpha males and the births, lives, and deaths of



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individual chimpanzees. It was 30 years of painstakingly collected information about an increasingly endangered animal.

Anne Pusey

I pulled out a stack of files from the pile on the shelf. And a mouse, or maybe Jane called it a rat, jumped over my shoulder, much to my shock. And right behind where I had pulled out this pile of files, there was a beautiful nest which was constructed from shredded paper, which was the edge of the datasheets. And so, luckily, they hadn't done a lot of damage. They'd just, sort of, chewed off shreds. But we realized that this was just not a safe place to keep the data, especially as people weren't working with it actively. And so this kind of thing could happen without people realizing.

Meredith Johnson

This helped Pusey convince Goodall to let her move the data somewhere safe.

Anne Pusey

I was, by that time, a professor at University of Minnesota. And I was able to start to computerize data and, you know, really store it, archive it safely rather than on open shelves in her house.

Meredith Johnson

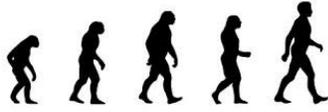
So in the early 90s, Pusey and her team started the long process of digitizing the data and entering it into a big database. When she moved to Duke University, the data came with her. She and her team are just now getting caught up to date with digitizing all the field notes, check sheets, and maps. In computerized form, decades of records are easily searchable, and the research possibilities are nearly endless.

Anne Pusey

So, yes, it's wonderful. I mean, we have over thirty years of data now, digitized so that we can really start looking at patterns over a long period.

Meredith Johnson

So what have they collected? According to the Jane Goodall Institute, it's 320 life stories told in check sheets, maps, photos, videos, audio recordings, and detailed field notes; 3,200 poop samples; and around 13,000 days, or 165,284 hours, of follows like the one Emily Boehm described. It's over 350,000 pieces of paper. The data's been used to publish 438 scientific papers about chimpanzee behavior.



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One thing that's really exciting about having so much information, and a database to handle it all, is that they can start to look at it in ways that weren't even possible when the study started. Take, for instance, the poop samples. They started collecting those in 1990. They're stored in a lab at the University of Pennsylvania. Researchers get DNA from the samples and they can find out all kinds of things, like who a chimp's father is. Before it was nearly impossible to know, since female chimps often mate with every male in the group.

Anne Pusey

There are many questions about paternity. What's the point of being alpha male? Do alpha males actually father more infants? Those kinds of questions we just couldn't answer until we had paternity. But now we can answer them. But that was just the start.

Meredith Johnson

They can track disease, and hormone levels, and stress levels.

Anne Pusey

Putting all of that kind of information together with the behavioral data is opening up all kinds of new questions that we can answer. Because new questions come up that you wouldn't even have thought of when you collected them. For example, the microbiome, that's such a big thing now. Now it's possible to look at chimps and look at how the microbiome has changed over 15 years.

Meredith Johnson

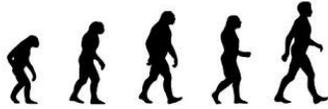
The microbiome is all the microbes that live on a body. It can change day-by-day, and it's different for every individual. Scientists are still learning all the ways the microbiome can impact health. So if you're studying the microbiome in chimps, because the Gombe study has such detailed records of who is eating what, when and who they were with, you can compare the collected samples from an individual chimp to their daily life history and learn so much.

Anne Pusey

I find this whole study and body of data incredible because it is a record of one population of chimpanzees over a—what are we now—55-year period where people have watched, almost, the daily lives of chimps for fifty-five years, keeping track of the same individuals and their descendants. So it's more detailed than you'd ever have of, say, a human village.

Meredith Johnson

The study of the Gombe chimpanzees that Jane Goodall started in 1960 is still going strong. Researchers like Emily Boehm are still watching, still following the chimps.



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Emily Boehm

Oftentimes, when you're out there when you're in it, you're just, kind of, grumbling all day and like, "Oh, my God. I can't believe that she's going up there, again." And, "I can't believe that she's taking me through this patch of vines." And, "What is wrong with her?" And, "I hate this." And then, you know, kind of, at the end of the day, it's—you realize what you've been doing. Or you have these little moments, you know, where you're just sitting quietly, and it'll just be me and one chimp. And I just feel like I really am getting to see what their lives are actually like. Sometimes it can feel, like, very, kind of, intimate and revealing, which I really love.

Meredith Johnson

The Gombe Chimpanzee Project has come a long way since Jane Goodall started it with a notebook and pencil. Through the study, we've learned that chimps make and use tools, that they hunt, what their family lives are like. We've been able to look at patterns of behavior and personality differences, differences between males and females, and so much more. And it's all possible because there have been several people watching the chimps every day for 55 years. And people like Anne Pusey plan to help keep the project going far into the future.

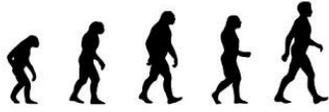
Thanks for listening to Origin Stories, the Leakey Foundation podcast. This month's episode was produced by me, Meredith Johnson. Our editor is Audrey Quinn. Original music and scoring by Henry Nagel. Additional music by [Kevin MacLeod](#).

This show is a project of the Leakey Foundation. The Leakey Foundation funds scientific research and shares information with the public. The Leakey Foundation is proud to fund long-term studies of primates in the wild and primatology fieldwork. You can learn more, and help support science, at [Leakeyfoundation.org](#). That's L-e-a-k-e-y Foundation.org. You can find and follow the Leakey Foundation on [Facebook](#) and [Twitter](#), too.

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Thanks to Anne Pusey, Emily Boehm, Joseph Feldblum and Kara Walker from the Jane Goodall Institute Research Center at Duke University. You can learn more about this amazing project on their website, [GombeChimpanzees.org](#).

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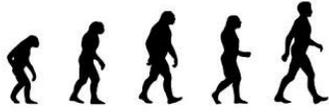
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show and rated and reviewed us on [iTunes](#). It really helps spread the word, and it means a lot. So thanks so much.

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