



## Origin Stories Episode 15: The Grandmother Hypothesis

***Meredith Johnson***

**0:00:15**

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

In almost every other species an animal's lifespan typically ends once they stop being able to have babies. One thing that's special about humans is that we live on well past our reproductive years, especially women. We can live to take on another special role; we can be grandmothers. Producer Schuyler Swenson has our story.

***Schuyler Swenson***

No matter where you're from at a certain point in one's adult life the social expectation to have kids sets in. Traditionally, no one puts on the pressure quite as much as dear old mom. Sometimes it comes in the form of a subtle gesture or casual offhand remark. Let's call them motherly micro suggestions. My friend Eli for example, he is in his late twenties and his parents recently decided to make a bold move from their home in a Jersey suburb to be closer to him in Brooklyn, where they're restoring an old Brownstone. Here's Eli and his mother Claudia.

***Eli***

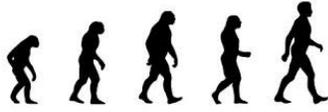
So I guess it was the first time I was really looking at the house after you bought it where you guys were touring me around and we were kind of like upstairs and the big, old guest room area and there's that little room off the guestroom area. It's a funny little room, like what you do with that little room?

***Claudia***

A crib?

***Eli***

Yeah. Very reasonably it would be a good room to have a little—



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***Claudia***

I never said anything like that, but I call it the crib room. (laughter)

***Eli***

I didn't even know that.

***Claudia***

That's the funny thing is that you didn't even know that.

***Eli***

Well, I guess I could infer. You didn't even have to say anything, I just—

***Claudia***

That's so interesting because I know we certainly showed you around this place that we had bought and all the rooms, but I very specifically recall suppressing any thoughts of describing anything like that, which just goes to show you that kids can read their parents minds no matter what.

***Schuyler Swenson***

Moms can try to suppress their grandmotherly thoughts, but is the microsuggestion unavoidable? Maybe it's just human nature. Professor Kristin Hawkes is an evolutionary anthropologist at the University of Utah and since the 1980s her work is focused on grandmas. Specifically, an idea about human evolution called the grandmother hypothesis. Hawkes says that not only is it in our nature to grandmother, grandmothing is what makes us human. So at this point, you might be picturing grannies and rocking chairs cradling babies and thinking, "That's adorable, but how could these old ladies really be the key to human evolution?"

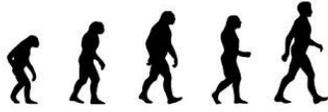
***Kristin Hawkes***

The grandmother hypothesis that I'm talking about isn't one about knitting booties. It's about making sure the kids are fed.

***Schuyler Swenson***

That's Professor Hawkes. About thirty years ago Hawkes was working as a behavioral ecologist observing hunter-gatherer communities and studying their foraging habits. She was curious about what they ate and why.

***Kristin Hawkes***



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I'm especially interested in hunter-gatherers because that's where people are living on wild foods which is what all of our ancestors did until very recently. So I went into that work kind of assuming what still is the sort of the textbook story about human evolution that it's all about hunting and the hunting hypothesis.

### ***Schuyler Swenson***

That hypothesis essentially argues that human evolution was shaped by our ability to hunt animals. That the act of hunting is what distinguishes us from other hominids. It really focuses on the male hunter as the primary breadwinner as the key to how humans got to where we are today.

### ***Kristin Hawkes***

Men hunt and women do the domestic stuff, take care of the kids and so we got that whole package as a consequence of a shift to hunting.

### ***Schuyler Swenson***

Makes total sense. In fact, Hawkes didn't really question the hunting hypothesis when she began studying the Hadza. They're a hunter-gatherer community in Tanzania and their one of the few remaining groups of people who live on wild food. She noticed that the men tended to go for the high risk, high reward food option hunting big game.

### ***Kristin Hawkes***

Women, on the other hand, tend to make choices about resources where the predictability is really high. You almost don't fail.

### ***Schuyler Swenson***

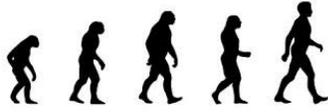
The women were gathering things like tubers from the ground getting a steady supply of food that the family could depend on and to Hawkes' surprise an unassuming family member was pulling a considerable amount of weight.

### ***Kristin Hawkes***

And you know there it was right before my eyes, you know? Accumulating in the notebooks and day after day these old ladies, these old ladies. I never thought, wow! The old ladies are going to be important, so important in their economic productivity.

### ***Schuyler Swenson***

Hawkes watched older women spend their days forging foods for their grandchildren and she started to see that the more a grandmother helped out the more the kids thrived.



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***Kristin Hawkes***

When moms moved on to have a new baby, the previous kid depended on somebody else and that dependence was really crucial in how well they did.

***Schuyler Swenson***

And this is where Hawkes got to the grandmother hypothesis. She saw that when older women helped gather food for their daughter's kids, it allowed their daughters to have more children, more quickly. Hawkes argues that women have two reproductive periods; when they're raising their own babies as mothers and when they're raising their babies' babies as grandmothers.

***Kristin Hawkes***

They're reproducing copies of their genes even though not having more babies, but it's that that allows the women in the fertile ages to have babies as fast as we do. Much faster than the other apes.

***Schuyler Swenson***

She says that women's longevity past the years of menopause is what really distinguishes humans from our closest living relatives. For chimpanzees and other apes, female fertility ends on average at about forty-five which is the same age as humans.

***Kristin Hawkes***

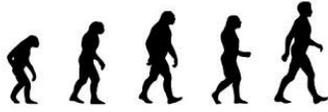
But the big difference is that it's really rare for a female chimpanzee or gorilla or bonobo or orangutan to outlive her fertility. They get to be old and display these kind of geriatric symptoms; frail, old, stiff and so on and are vulnerable to the kinds of things that mean they usually die before the end of their fertility.

***Schuyler Swenson***

Early hominids probably aged like chimps do, but at some point along the way a few of our ancestors must have lived longer and the grandmother hypothesis is specific about the conditions that would make these long lives pay off for our species. Like a lot of things in human evolution, it's related to food. When chimps and other apes are weaned, they're weaned to food the kids can handle on their own. They don't need help. But our ancestors were dealing with changing climates and they had to rely on things like tubers that aren't as easy to manage.

***Kristin Swanson***

If we imagine an ancestral condition that had a great ape-like life history and we had an ecological change in which the use of resources that little kids just really can't manage on their own was a payoff strategy, but what it would mean for any of those ancestors who did it, that using those resources, moms would have to be subsidizing their kids.



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Schuyler Swenson

So if there are some women around who are living longer and they don't have young babies of their own to deal with, they can help.

***Kristin Hawkes***

And if they help their daughters, so the daughters could move on and have kids sooner, then that variation in the direction of slightly greater longevity, those that have those longevity genes would pass those genes on to more descendants and so, across subsequent generations longevity would increase.

***Schuyler Swenson***

So women who stay alive and active longer have the most grandchildren and those grandchildren inherit her longevity-promoting genes. You might think that when women stop having kids they stop playing a role in passing on their genes, but it turned out that a grandmother's help makes all the difference. Without grandma, mom has to continue to support her infants one at a time until they're old enough to feed themselves. She has to wait to have the next baby, but if she has help then she can have the next baby sooner.

***Kristin Hawkes***

Mothering is not an independent activity for us, as it is for the other apes. You know, mom takes care of this kid and then when it's weaned it may still hang around, but it gets its own lunch and then she has another one. Well, that's not the case in humans. Mothers have help, others are contributing. The grandmothers story makes that start with grandmothers.

***Schuyler Swenson***

This style of parenting or grandparenting is what Hawkes says makes us human. Hawkes has been testing her hypothesis using mathematical models and simulations.

***Kristin Hawkes***

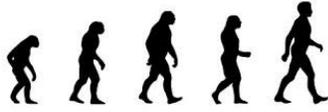
So now there's this little toy world that we're operating in in which there is an ape-like life history and as long as there is no grandmothers it maintains an equilibrium that looks very similar to the other great apes.

***Schuyler Swenson***

But if grandmothers is added to the model—

***Kristin Hawkes***

They start to move to another equilibrium that is just like what we see in in modern people hunting and gathering for a living. So there's the ape-like equilibrium and then with



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grandmothering— and that's all that's in the model. There are no brains, there is no hunting, there is no— and grandmothering is enough to take the populations to something that looks very much like what we actually see in the real world.

### *Schuyler Swenson*

Hawkes' grandmother hypothesis reframes the conversation about human evolution. When scientists were focused on the importance of big game hunters, women were overlooked, especially older women. What makes Hawkes' work so remarkable is this fundamental idea that older women, grandmothers might be responsible for everything we are today. Hawkes is going to keep focusing on grandmas. Her current research is looking at how grandmother's cooking help get us to where we are now, which reminds me of certain hypothetical babies in certain hypothetical cribs. Here's Claudia and Eli again.

### *Claudia*

Well, the other thing, Eli, is should you ever decide once upon a day in the future, know that I will be there.

### *Eli*

That's nice. I will use that.

### *Claudia*

Right, and the little room is there (laughter)

### *Eli*

I don't feel any pressure from this conversation.

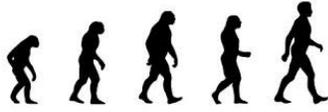
### *Claudia*

And you should not feel any, but talk to me in ten years. (laughter)

### *Schuyler Swenson*

For Origin Stories, I'm Schuyler Swenson and I'm Meredith Johnson. Thanks for listening.

Origin Stories is a project of the [Leakey Foundation](http://leakeyfoundation.org). The Leakey Foundation advances human origins research and offers educational opportunities to cultivate a deeper collective understanding of what it means to be human. We provide venture capital for scientists through research grants and share their ground-breaking discoveries through our podcast, website, and lectures. We also give scholarships to students from developing countries to attend field schools and earn advanced degrees. You can learn more at [leakeyfoundation.org](http://leakeyfoundation.org). That's L-e-a-k-e-y foundation.org. You can also find and follow the Leakey Foundation on Facebook and Twitter.



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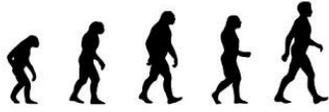
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### Suggested tags

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*Schuyler Swenson*, 1, 2, 3, 4, 5, 6, 7