

But Why: A Podcast for Curious Kids

Why aren't babies just little adults?

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Jane 00:20

This is But Why: a Podcast for Curious Kids from Vermont Public. I'm Jane Lindholm. On this show, kids ask the questions and we find the answers. Now, it will probably not surprise you to know that I'm not a kid. But I still kind of remember what it felt like to be a kid. And I remember that sometimes when I was little, my friends and I found adults a little baffling or confusing. Sometimes the way adults behaved, it just didn't make sense to us. But let me tell you something, adults sometimes feel the same way about kids. We look at you and wonder, why are you doing that? But you usually make sense to yourself, right? Same for adults. I think some of you have already kind of forgotten what it was like to be a baby, because you've been sending us a lot of curious questions about why babies do the things they do, and what babies might be thinking, and even if babies know they're babies. It makes sense that you'd be wondering about babies because even though the younger you are, the closer you are to having been a baby, it's really hard to remember what it was actually like when you were one. The way the human brain develops, most memories from when you were a baby, or even a young child don't stick. When you're an adult, you probably won't remember much from before you were about age six, or seven. So we're going to try to answer some of the questions you've sent us right now in this episode with a really cool baby researcher named Celeste Kidd. She's a professor of psychology, that's the study of mind and behavior, and she works at the University of California, Berkeley.

Celeste 02:11

I run the Kidd Lab at UC Berkeley. So we specifically study infants and kids, but also adults, because growing and learning continues throughout the lifetime.

Jane 02:22

Running the Kidd Lab sounds fun, but I'm picturing, you know, a big romper room with lots of toys, it's probably not what you do.

Celeste 02:27

We do some of that. So one of the things that we study is how play leads to learning. So we do have a big romper room, full of toys. We also make our own toys, in order to study how kids deal with things that are new that they haven't seen before. How do you approach playing with something that you are not sure exactly how you're supposed to play with? It's very fun.

Jane 02:50

So let's get into some of the questions that our kids have sent us because I find them fascinating. So one of the first questions is basically just why aren't babies smaller versions of grownups?

Amelia 03:03

Hi I'm Amelia and five years old. I live in Acton, Massachusetts. I'm wondering, why do babies be kids? Why don't babies just turn into kids when babies are born? Bye. Thank you.

Jeremy 03:19

My name is Jeremy. And I'm five years old. And I live in Westfield, New Jersey. And I want to know, why do we have to be babies first?

Maratea 03:31

Hi, my name is Maratea. And I am five and one quarters years old. I am from Chicago, Illinois. And my question is why are baby small and grownups big?

Madelin 03:46

Hi, my name is Madelin. And I'm five years old. And I live in Cranford, New Jersey. And my question is, why are baby little?

Jane 03:53

What makes babies different? And why?

Celeste 03:56

That is a really excellent question because it gets at something that is unique and different to humans specifically, there are a lot of other animal species that when they're born, they are essentially just tiny versions of the adults. They're not very different in terms of their capabilities. If you look at other mammals, for example, a giraffe is born and a giraffe is essentially a teeny version of a grown up giraffe. Initially, they can't walk but within just a couple hours, they're able to get up and move around. And if a predator, if a bigger animal comes in is going to try to eat the giraffe, the baby giraffe can run away. That's very different from a baby human. So humans are different from other animals, specifically because we are born and more helpless than the full adult versions of ourselves.

Jane 04:50

Is there a reason why we are born more helpless than other animals are born? I mean, why wouldn't we want to be born able to run away from our big brothers and sisters or feed ourselves or talk to our parents and say what we want when we're babies?

Celeste 05:06

That is a really great question. And it's one that we've wondered for a long time, it seems like it's not a good plan to have babies that are born so helpless, they can't do anything for themselves, what we think is going on there, and there's still a lot of theories out so people aren't entirely sure, is that because we are very intelligent, we have bigger brains, we need bigger brains in order to account for all of the things that we can do that other animals can't do. If you have a big brain, and you are born via live birth, meaning that you are you are not born from an egg, then there's an upper limit on how big your head can be when you go through the birth canal. And given that constraint, the bigger your head and your brain and your head needs to be ultimately, the more you immature, you have to be born.

Jane 05:57

In other words, we need big brains to do all the things that make us humans, that our brains would be too big to fit through the birth canal of our parents body, if they were fully formed before we were born. So we're born with some of our brain power, but the rest of our brains have to grow after we're born. That's partly why we're not born like that baby giraffe who can walk on its own and run away from danger just minutes after it comes out. And in fact, even our closest primate relatives are not as helpless as human babies. But Celeste says there's actually another reason it's kind of helpful for us to grow our brains over a long period of time, and to be reliant on our parents for years after we're born.

Celeste 06:47

If you require dependence on your parents for a really long time, which humans do, that creates the opportunity for you to learn a lot of stuff about your culture and about other people that you're being raised with. So we have a lot of knowledge that is unique to us as a species that's unique to us as our social groups. And the long childhood that we have, that's a an artifact of the necessity of requiring help from your parents in order to survive allows for a lot of what is sometimes called cultural transmission. So it's learning stuff like tools, learning about bows and arrows, learning your language, learning what's polite in your society, learning music, all of those things are things that often exists in other animal species. Other animals have tools, they have differences in their communication systems that they learn socially. But the human systems are a lot more elaborate.

Jane 07:45

Well, so good, because one of the questions that I had was, okay, so if you have to come out of somebody else's body in a certain way, why don't you then get bigger, fast, really quick? Like I think about baby birds, they're pretty helpless when they're born, but they get not so helpless really fast. And we rely on our families, if we can, for a long time. I mean, we're not even thinking about driving ourselves around until we're 14, 15, 16, at least in the United States. So we have a very long childhood compared to a lot of animals. But you think a lot of that is so that we can get to know what it means to be a human in the culture we're growing up in?

Celeste 08:27

There's different types of intelligence. There's a particular kind of intelligence that humans are very good at, but that is slow developing, meaning it takes a lot of time and a lot of experience in order to gain that knowledge. One of the areas in which humans are much more intelligent than other animal species is that we understand what other people are thinking. This is sometimes called theory of mind. So humans are very good at inferring, that means like taking a good argued guess what somebody else is thinking on the basis of their behavior of their facial expressions of just small little clues so...

Jane 09:09

Tone of voice?

Celeste 09:10

Tone of voice, but even even less direct than that. So it's more obvious how you would learn an association between like emotions and behavior and a facial expression. What's less clear exactly how

it develops is how people make guesses about other people's knowledge and thinking about the world from small clues about their behavior. No other animal can do that level of smart guessing about what people are thinking and about what it means for what's true in the world. Humans are much more interconnected socially in that way. And we really rely on each other in order to gain truth, to operate our strength as a species, is the fact that we can build on each other's knowledge. That's why we have laptops and airplanes and all sorts of really sophisticated technologies that no other animal species comes anywhere near creating.

Jane 10:03

Can I give you another example and see if this fits with what you're saying, too? When I was younger? If my mom got annoyed with me really quickly, I would wonder why. What did I do? I do this all the time, I never pick up my room. Why is she so annoyed about this right now? Now, as I've gotten older, I start to realize things like, oh, maybe my mom is actually upset about something that happened at work. I haven't cleaned up my room, but it's not really about me. But I didn't realize those things when I was younger, it only started to occur to me that there were other things that might change the moods of the people I lived with, that would then change how they interacted with me, but that's something I had to learn as I got older.

Celeste 10:50

That is a really great example of knowledge about other people's minds, that's slow developing. And that's a great example also of why it takes so long to learn. Initially, kids are what's known as egocentric, meaning that they're thinking mostly about themselves. They're tending to interpret things in terms of what they have access to what they're thinking in the world is. So if someone is being mean to you, you think about like, what did I do that caused this? It takes a long time before you eventually have enough experience in the world to figure out that there's lots of things that can impact people's mood that isn't you.

Jane 11:30

Let's talk about another question that a lot of listeners have sent us. And this is an interesting one, and it might be related to what we've been talking about, about why babies are so helpless.

Eli 11:43

My name is Eli. I live in New York, Manhattan. I am five years old. And my question is, why are babies so cute?

Natasha 11:58

Hello, my name is Natasha. I am seven years old. I live in America. And my question is, why do people pay more attention to babies?

Audrey 12:08

Hello. My name is Audrey. I am six years old. I live in Minnesota. And my question is, why are babies so adorable?

Jane 12:18

So Eli and Natasha, and Audrey, all want to know a little bit more about why babies are so cute, and why we pay so much attention to them. I mean, anybody who has seen a baby knows that adults seem to gravitate to the baby, they are drawn to the baby and they talk differently to the baby. And babies are cute in a different way than kids or adults. Why is that?

Celeste 12:43

Yeah, that's a really, really good question. And actually, it's not just adults and kids that think babies are cute. Babies think babies are cute, too. If you look at a baby who sees another baby, that's one of the most exciting things that can happen. And for many years, when I saw that happen, I didn't think about it too deeply speaking of making good guesses about other people, and I kind of thought that what was going on when a baby gets excited about seeing another baby is that they recognize that that baby is like one of them. Because like I thought that what was going on, it's a baby like sees another baby. And there's some sort of like solidarity, they share a moment for both babies. That's exciting. But now that I know more about babies, I know that we have a lot of evidence that babies probably don't realize that they are babies in the way that we recognize them as babies. So when a baby gets excited about a baby, it's probably because they are thinking the same thing that a kid or an adult is. A baby sees a baby and thinks like, wow, you're cute. That's very exciting.

Jane 13:45

That's a question we got from Charlie.

Charlie 13:47

I am four years old. And my question is, do babies know they're not big? And do they know, we don't understand them?

Celeste 14:00

They do not initially, probably they're not aware of very much when they're first born, they gradually gain the awareness of what they're they are able to do and also the things that they're not able to do. And they learn over time to ask for help from other people who can help them out. So that's initially what they know, but they still don't really have an awareness of: I am fundamentally different from the people around me. Initially, their concerns are like, how do I get the things that I need? Who can give this to me? Who is it who is paying attention to me? That's the person that I'm going to going to try to coax into doing stuff for me which that's, now we're getting to the bigger question, which is why are babies cute? Babies have to be cute in order to get people to take care of them and do stuff for them. They lure people in by making cute sounds. And this encourages people around them to speak to them and interact with them and that's how they learn about the world and eventually become capable.

Jane 14:56

Where does cuteness end? When does somebody stop being cute? Because babies are very cute and kids are cute. I mean, some adults I guess we would call cute but adults are different. When where does the cuteness stop?

Celeste 15:09

I'm worried this will be sad for some kids. But empirically, age four. That doesn't mean that you're not cute. Also to the people that love you in the world, you are cute forever no matter what. But if you measure how cute humans rate other humans to be, it goes up and up and up through age four, and then it's it starts declining after age four.

Jane 15:31

Well, I guess you trade cuteness for more things you can do, and more ability to be your own person. And that seems like a fair trade.

Celeste 15:40

Yeah, that's exactly the right way of thinking about it. So you don't have to be cute. You don't have to trick people into doing stuff for you once you're around age four, four year olds and up tend to get increasing joy from being able to do stuff by themselves.

Jane 15:58

I love what Celeste said about the fact that people who love you will always find you cute, but that as you grow older, your independence means you no longer have to look adorable and helpless. In order to get what you need from the world. You start being able to do things for yourself. When we come back, we'll talk about how babies grow and learn to talk and why it's not just okay, but actually it really important that we all have different skills and abilities.

Jane 16:31

This is But Why: a Podcast for Curious Kids from Vermont Public. I'm Jane Lindholm and today we're talking with psychologist Celeste Kidd who runs the Kidd Lab at the University of California Berkeley. The kid lab is actually named after Celeste, not after young humans. So it's the K I D D lab. But it's pretty cool that it works both ways. The Kidd Lab that studies kids. Celeste is helping us understand why babies are so helpless when they're born, and how they learn and grow into kids and then adults. Here's a question from Ellery.

Ellery 17:10

I live in Asheville, North Carolina. And my question is, how do babies grow?

Jane 17:16

Broadly speaking, how do babies grow?

Celeste 17:18

An infant as they grow and gain experience in the world, they gain more motor function, they're better able to move around the world and grab stuff reliably. When a little baby is first born, they don't know how to reach out their hand and grab stuff. They don't know how to control things. Eventually, they're able to learn that through practice, and they play with stuff like rattles, but they're imperfect. Like I don't know if anybody out there has a baby sibling that they've ever seen. Love rattles, but when a baby is first using rattle, they tend to accidentally hit themselves in the face quite a bit. Like it takes time and experience to learn how to grab objects and move them around in the world. Once you can do that, that

gives you access to learning all sorts of other important concepts that you need throughout your lifetime.

Jane 18:06

Once babies learn how to explore and play, they start to understand how the world around them works. Our bodies grow best when we get nourishing food to eat, and plenty of sleep, and movement and affection. The physical growing that we do helps with other kinds of growth, the way our brains grow and how we start to learn things. For babies, a lot of learning is done through exploration and playing with stuff. Here's a question we got from several of you.

Evie 18:37

My name is Evie. I live in Stanton, Virginia. I am five and my question is, why do babies not talk?

Austin 18:47

Hi, my name is Austin. I live in Watsonville, California, and I'm four years old. And my question is how do babies talk when they don't know words?

Rona 19:02

My name is Rona. I am 12 years old, and I live in California. And my question is, how do babies learn to talk? When they don't have any words to begin with?

Nick 19:15

My name is Nick. I'm eight years old. And I live in Litchfield, Connecticut. And my question is, how do babies learn language?

Celeste 19:27

That's a really interesting topic that we could probably spend an hour on also, just like what I described with motor development. Learning to talk is a really long process. There's a lot of concepts that have to build on each other, for you to eventually learn how to speak when you are a little baby. You actually are born with a lot of knowledge about how your particular language works. You can't be born knowing how language works because every culture as a group of people speaks a different language. But during the third trimester in the womb, babies actually can hear quite a bit and they start learning about their language then. So they learn about the rhythmic properties of their language. They can even identify particular stories that they heard so long as the stories are, rhythmically unique. So something like Dr. Seuss, once you're born, you start learning about the sounds that are relevant for your language.

Jane 20:22

Or languages.

Celeste 20:23

Or languages. What sounds are meaningful for my languages, which people speak which language if you're learning multiple languages, that's a really good cue for keeping them separate. Babies are capable of learning not just one language, but many languages simultaneously, much, many more than

two. Once they learn the sound systems of the language, then they have to start figuring out where the words are, which is a whole nother challenge. We take this for granted, because we know words. But if you listen to a language that you don't speak, it becomes more obvious that there's no spaces in between the words. So you just have this continuous stream of language and you have to figure out, which is a word, what's not. In a stream like, pretty baby, we know that that's two words pretty and baby. But if you don't know what the words are yet, that could be four words. That could be pre tee bay be. Like those could be, that could be one word, that's just a really long word. You don't know. So babies figure that out by listening and paying attention to the regularities and the patterns and what they're hearing, they're eventually able to figure out, for example, that pretty is one word, and baby is another word, because when they hear ba, it tends to be followed by be, they noticed that baby tends to move together as a unit, just like a Lego or a building block. That's one piece. And they learn that the words around baby now are probably also that's that's a border. So those are other other words, once they know where the words are, and now they have to figure out what objects in the world refer. Which sounds map onto which objects.

Jane 22:01

Right, what's a baby?

Celeste 22:02

That's right, what is the baby?

Jane 22:03

Oh, I'm the baby.

Celeste 22:04

Is this a baby? Oh, I'm a baby. That's yeah, this process takes a really long time. And actually, you never finished with it. So adults are still learning new words as like language also changes over time. So we continue to learn new ways of speaking and to adjust how we're speaking, depending upon what's around us. And what we're hearing and the people that we're talking to, while all groups of people talk slightly different from other groups of people.

Jane 22:30

Celeste one thing that I want to say as well is that there are typical patterns for how babies and children develop and how you learn language. And when you learn language, and when babies and children start to walk or are able to tie their shoes. But those are just averages, kids develop different skills at all different times. And so we sometimes talk about this is when a kid learns to do this, or this is when a kid learns to do that. And if a child is listening, and feels like wait a minute, I can't do that yet, or I haven't lost a tooth yet, or I don't know how to tie my shoes. That doesn't mean anything is wrong. People develop at all different paces.

Celeste 23:10

That's exactly right. People develop different skills and abilities at different paces, in part, because the order in which they choose to focus on those things is different. Some kids are very into language, they're very into talking, they're very into socializing. Those kinds of kids might learn language first, they

might know more words first. But there's some other sets of things that they weren't doing while they were learning those words while they were learning language that a different kid focused on instead. So a kid who chooses to play more with building blocks will develop more knowledge about what makes a strong structure, how do you make a tall tower. This is one of the things that makes us very cool as humans is the fact that we can do this, we all pick different things that we are going to specialize in based on what is interesting to us. And the fact that there is such diversity in terms of what we choose to focus on means that as a group of people, we're all stronger.

Jane 24:10

And in fact, it's okay if you're a kid who can't speak, or either you don't have the ability physically or there's something else that's different in your brain and you can't speak or if you are born without sight or you are never able to walk. There are a lot of different ways to be and everybody has different strengths. And that's okay too.

Celeste 24:31

Yes not everybody will acquire the same knowledge. Not everybody will learn the same stuff. Everybody has different abilities. And those abilities lead to all sorts of cool new inventions. Those differences are not just okay. They're they're really important.

Jane 24:48

One of the other things that I've been thinking about is we keep talking about all of the things that babies have to do to become kids and then kids have to do to become adults and I think you know, everybody wants to become an adult and have independence and learn new skills. But sometimes we forget that babies and kids also have skills and knowledge and things that they can teach the adults. So I don't want to lose sight of the fact that even if you're a kid, and you're waiting to be able to do these things, or your adults are saying, come on, can't you learn how to put on your own sweater? There are some really cool things that kids can do that adults can't do. What have you learned about babies and kids that maybe the adults have taken for granted? Or should be reminded about?

Celeste 25:37

Yeah, there are, like you said, a lot of things that kids can do, that adults can't. We have a lot of scientific studies that show that kids are better at discovering things than adults are in many different situations. And the reason why that's true is actually because they know less about the world. If you don't know, because you haven't lived in the world for as long, what normally happens, it means that you are better able to have ideas about things that could happen, but haven't yet happened before. For that reason, kids are really good inventors. They're really good imaginers.

Jane 26:15

That's right. You have amazing skills, and adults could learn a lot by hanging out with you. So don't let them forget it. That's it for today. A big But Why thanks to UC Berkeley, cognitive psychologist, Celeste Kidd, for giving us so much cool information about babies. I'm kind of still laughing about the idea that when a baby sees another baby, it thinks, oh, that baby is cute. But it doesn't really see itself as a baby too. Now Celeste also gave us an experiment we can do to see what the babies around us know. She says you just need a baby and two objects for this experiment. So for little babies who are younger than

about six months old, Celeste says you can try holding up two different objects in front of your baby and see which one the baby looks at more. For older babies, you can put both objects in front of the baby and then say the name of just one of the objects and see if the baby looks at the one you said the name of. If the baby looks at the right object most of the time if you keep doing this experiment, you can probably bet that the baby knows the meaning of that word you're saying and attaches that word to the right object. Now you're doing your own research. You're discovering what a baby you know, knows. But Why is produced by Melody Bodette and me at Vermont Public. Our theme music is by Luke Reynolds and we're distributed by PRX. We'll be back in two weeks with an all new episode. Until then, stay curious!