

Annual Reviews Conversations Presents

An Interview with Susan Gelman

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Host: Anna Rascouët-Paz

Anna Rascouët-Paz: Hello, and welcome to Annual Reviews Audio, part of the Conversation Series from Annual Reviews, where insightful research begins. I am your host, Anna Rascouët-Paz. In each episode of our show, we speak to top scientists in fields ranging from astrophysics to sociology.

Today, we are talking to Susan Gelman, professor of psychology at the University of Michigan. Professor Gelman is also the director of the conceptual development lab, where she and her team study how children learn concepts, who they learn them from, and how they categorize this knowledge. Professor Gelman was elected fellow of the American Academy of Arts and Sciences in 2008 and, in 2011, fellow of the American Psychological Association.

She is the author of many books, but one in particular has had a significant impact on the field, *The Essential Child: Origins of Essentialism in Everyday Thought*, which she wrote in 2003, correct?

Susan Gelman: That's right.

Anna Rascouët-Paz: Welcome to our show, Professor Gelman.

Susan Gelman: Thank you.

Anna Rascouët-Paz: You are the author of two articles we published. One appeared in the 2009 *Annual Review of Psychology*, and it's called *Learning from Others: Children's Construction of Concepts*. The other appeared in the 2011 *Annual Review of Anthropology* and is called *Concepts and Folk Theories* [coauthored with Cristine H. Legare]. How do you define essentialism, and what role does it play in our understanding of concepts?

Susan Gelman: Essentialism is a cognitive bias that people across a wide range of cultures seem to have, and across a wide range of ages too. It's a belief that the everyday categories in the world around us have some deep underlying basis to them. If you look around the world and see different birds, you'll notice that they're all very different from one another, from ostriches to penguins to sparrows, and so forth. But if you're an essentialist, you think that there's some quality that they all have in common. Some may be hidden, nonobvious qualities that make them all birds—that make them what they are and gives them their identity and is responsible for why they all have certain ways of behaving and certain properties. It's an assumption that the world is not just how it looks on the surface but that there's another layer underneath that can explain the structure of the world.

Anna Rascouët-Paz: Your research has shown that this cognitive bias exists in very young children. This means that children aren't passive receivers but that they actually process the information that they learn from others. Can you tell us a little bit more about how thinking about children has changed?

Susan Gelman: Yes. In some ways, the view of children that we've seen in psychology has undergone a tremendous change over the past 30 years or so. It used to be thought that children were fairly passive receivers of whatever it was that they were told. You could tell a child anything, and that would be the content of their beliefs.

Furthermore, the idea was often held that children are captured by the superficial appearances of what they see. That's the sum total of how they reason about the world. But with various studies that people have done looking at the kinds of beliefs—for example, essentialist beliefs, but also beliefs about causality, beliefs about how the mind works, and so on—we see that even very young children, and in some cases even babies, are thinking about the world in a way that can't simply be attributed to what's on the surface.

Anna Rascouët-Paz: There must be something good about essentialism if we're born with it.

Susan Gelman: There's something good, and there's something bad, so it's an interesting mixture. Often with the cognitive biases that we have in thinking about the world, they're useful but they're not 100% accurate. A bias like essentialism is good in the sense that it motivates us to look for more structure to the world.

You could think of it as one of the reasons we expect science to work. Why spend years studying salamanders, or fish, or any other species, unless there's some belief and commitment that there is structure there for us to discover? That's really useful if we go around the world thinking that there's more to discover than meets the eye.

It's very consistent with a scientific approach to the world, but at the same time we tend to

“essentialize” not just categories of living things but also social categories, for example, gender and race. There, essentialism can really lead us astray and fit in with stereotypes and biases about these social categories that are not actually rooted in reality.

Anna Rascouët-Paz: What you’re saying is that racism and sexism are born of essentialism? They’re a form of essentialism; is that correct?

Susan Gelman: That’s correct.

Anna Rascouët-Paz: How do you prevent that? How do you prevent children from going so far as to assume that all women are alike and all people of a different color are alike?

Susan Gelman: That’s a great question, and it’s one that a lot of people have been wrestling with for a long time now. There are two ways of thinking about it. On the one hand, essentialism, as far as we can tell, does seem fairly resistant to attempts to eradicate it. There are cases where people have been well meaning and attempting to provide counteressentialist information to children. Sometimes that can backfire.

For example, when we’re thinking about gender essentialism, there are studies showing that if you show children, say, pictures that go against the stereotype—a woman firefighter, for example—you would think that’s great. That’s giving children information that should change the way they think about that category. But often children will misremember the information you gave them, so in their memory of what you showed them it was a male firefighter, for example. Sometimes the information you provide gets distorted because of the preexisting beliefs, and then they end up reinforcing the beliefs even further.

Another complication—I’ll give you all the negatives first, but I think there is some light at the end of the tunnel, which I’ll mention in a minute. Another point is that the messages that we give to children are layered. There’s what we say on the surface explicitly, but then there’s also what we imply implicitly.

One way that we’ve looked at that in my lab is, again, taking the example of gender essentialism. Often when parents are trying to be nonessentialist and open-minded, they might say something like, “Anybody can be a firefighter. Boys can be firefighters; girls can be firefighters.” Explicitly that is a counterstereotype statement. Implicitly what they are doing is emphasizing that boys and girls are categories that you can make inferences about and that you can make generalizations about. It turns out that when children hear words like “boys” as a group or “girls” as a group, they do make inferences about these categories being very distinct.

The light at the end of the tunnel that I promised is that there’s been some very exciting work looking at ways to change how people think about categories they might have essentialist beliefs about, and nudging them toward a different view. I’m thinking of some really excellent work by Carol Dweck, a psychologist at Stanford who has looked at people’s beliefs about intelligence. Some people have a more essentialist view of intelligence that she calls the entity view: You’re born either smart or not smart, and there’s nothing you can do to change it. You’re immune to any kind of environmental influence. Every time you take a test, it’s telling you your level of intelligence. That’s an essentialist view.

Other people have more of what she calls an incremental view, where they think intelligence is flexible. It’s something that can be exercised. It’s something that can change, be modified. It’s not fixed. You’re not born with it, and you can really put in effort to improve your mental functioning, for example. The really optimistic thing is that Dweck has found that if you can identify which

perspective a person has and then intervene, you can shift how people think about something like intelligence or math ability.

Anna Rascoët-Paz: That's really interesting. I wanted to ask you precisely about this: how you can get children to think about themselves by specifically countering this essentialist bias.

Susan Gelman: Part of it is providing an alternative framework, where they can understand not just that essentialism is wrong but, as I said, that there is an alternative that takes its place. One way of doing it would be, for example, showing that a category that they think is fixed can be changed as a result of experiences, in the way that Dweck talks about intelligence.

Another way might be to provide children with information about variability. If you can instruct children about all that variability that exists, and then link that to environmental causes, for example, that starts to open their minds a little and help them to see that they can't just think about these categories in terms of inborn, fixed essence. It's a slow process, and it's one that requires a lot of different kinds of information over an extended period of time. I don't think it's something you can fix with a single intervention.

Anna Rascoët-Paz: You've talked about how children learn from adults: how they learn, how they listen, and how they select and process that information. Specifically, you've talked about credulity and skepticism. Can you tell us a little bit more about that?

Susan Gelman: I find that a really interesting topic because—first, I want to make one point, taking a step back, which is that the field of developmental psychology owes an enormous debt to Jean Piaget. He was the father of developmental psychology. He focused on what was inside the child's head and didn't spend a lot of time worrying about the social context in which children are learning.

Anna Rascoët-Paz: Right.

Susan Gelman: He was aware of it. He did discuss it to some extent. But for a long period of time, we tended to look at children's beliefs unto themselves. More recently there's been a lot of interest in how children are part of the social environment. As you say, being part of a social environment means that you have to, on the one hand, be open to the kinds of information that the people around you are providing.

This is why our species has been so tremendously successful at gaining knowledge and building technologies and undergoing cultural change: because we learn from our elders. We build on knowledge from prior generations, so we are very open to learning from others. That's a hallmark of our species, and it's one of the really exciting things about looking at development: the openness that children have to the kinds of experiences that other people provide.

On the other hand, if children were to believe everything they heard in a completely uncritical way, that could be disastrous. Sometimes people try to deceive us; sometimes people try to entertain us with fiction; sometimes people are just plain wrong. We have to be selective in the information that we take in. If children weren't selective, then they could be led down a very misleading path.

It's a really difficult problem that every child faces. They have to learn from the people around them, or they're not going to be full-fledged adults with the kinds of knowledge—cultural knowledge, linguistic knowledge, and so on—that we expect to obtain by the time we're adults.

They have to have a certain degree of skepticism there from the start. So there's been a lot of interest lately in how children tread that path between taking in information but not taking in too much information.

Anna Rascouët-Paz: What are some of the specific ways in which they do this?

Susan Gelman: There are some general approaches children seem to have about others around them. It's fair to say that, all else being equal, children are somewhat biased toward deferring to the adults around them, to assuming that the adults around them are well meaning and providing useful information.

This comes out in some rather dramatic ways. There have been some interesting studies recently looking at children's powerful tendency to imitate the actions that people produce for them. If you sit a child down and make it clear that you are addressing the child and demonstrating something, so there's that intention to engage and communicate with the child, the child is very, very prepared to imitate rather precisely what it is that you present. They're very good at learning in that sort of context.

But if there's any clue that this adult doesn't know what he's talking about or doesn't have access to the appropriate knowledge—say, someone who's blindfolded and telling you what's inside of a box, or somebody who expresses doubt, or somebody who has a history of telling you the wrong thing that the child knows is wrong, such as mislabeling objects the child already knows the name for—the child will pick up on that at a very young age. In those cases, children refrain from learning from those adults.

Anna Rascouët-Paz: Right.

Susan Gelman: Those abilities are somewhat crude at a young age, and they're not really subtle distinctions on the part of toddlers or early preschoolers. But they're there, and they get increasingly refined as children get older and more knowledgeable.

Anna Rascouët-Paz: I want to go back to causality. You were talking about how essentialism affects causality. It seems that this is something that sticks with us as we grow up. There are certain beliefs that stay with us. This is when we talk about rational and irrational beliefs. We have competing explanations for a lot of things. How do we as human beings and adults reconcile all that?

Susan Gelman: That is a really fascinating question. People have sometimes framed this as scientific beliefs versus supernatural beliefs, for example. Supernatural beliefs could be anything for which we don't have a scientific explanation. It could be a belief in ghosts; it could be a belief in magic; it could be a belief in luck; it could be a belief in religion.

In all of these cases, as adults we're willing to entertain beliefs that aren't rooted in rational scientific inquiry. You can look at that and say, "Well, these are completely diametrically opposed." But from another perspective I can look at that and think, "There's a lot in common between what scientists do and people who are trying to explain the world in supernatural terms." In both cases, someone's trying to understand and provide an explanation for what's going on.

Of course, in the case of science we're wedded to the truth and to empirical evidence and testability and falsifiability. You can run an experiment and see if it confirms your hypothesis or not. If you believe in something supernatural, you're not going to go through that same process,

but you're still looking for an explanation.

There's been increasing interest in this question of how these two different frameworks fit together, if at all. What we can say from what we know so far is that these can be coexisting systems. You can have someone who, for example, believes that AIDS is caused by a virus, the scientific approach, but also believes that AIDS is caused by witchcraft. This is a common belief among certain groups in South Africa. If you ask people, "How could that be? You said it was a virus this time. You said it was a witch that time. How could that be?" Often you will get ways in which these two positions are woven together. "The witchcraft put the person in the path of a lover, who turned out to have been infected with the virus."

Anna Rascouët-Paz: Right.

Susan Gelman: They can be combined in this way. If you don't look closely at the actual belief systems, you might just think they are incompatible systems. But once you examine them up close, [you find that] people find ways to make these two seemingly incompatible system actually fit together.

Anna Rascouët-Paz: To conclude, what does this do to our ability to evaluate our own knowledge?

Susan Gelman: Psychology in part is a process of coming to understand our own knowledge in new and more sophisticated ways. I take from this that sometimes when we think we're being knowledgeable and bound to the truth, we may actually be operating with some biases that we're not even aware of. We see this in the case of children: There are some fairly blatant essentialist biases that they're not even aware of but that we can see if we ask the right questions. I think the same is true for adults as well.

It doesn't mean that we can't do science or that we can't uncover our biases. I think that's part of what this enterprise is about. But we're often bound by some subtle underlying assumptions that we're not always aware of.

Anna Rascouët-Paz: Professor Gelman, thank you very much for being on the show.

Susan Gelman: Thank you.

Anna Rascouët-Paz: It was a real pleasure talking to you.

Susan Gelman: Thanks, I really enjoyed it.

Anna Rascouët-Paz: You've been listening to Annual Reviews Audio. For 80 years Annual Reviews has guided scientists to the essential research literature in the biomedical, life, physical, and social sciences. Learn more at annualreviews.org. I'm Anna Rascouët-Paz. Thanks for listening.