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INTERVISTE

# Conversation with Helen Longino

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*Helen Longino received her PhD from Johns Hopkins University in 1973. Her teaching and research interests are in philosophy of science, social epistemology, and feminist philosophy. In addition to many articles, Longino is the author of* Science as Social Knowledge *(Princeton University Press, 1990),* The Fate of Knowledge *(Princeton University Press, 2001), and* Studying Human Behavior *(University of Chicago Press, 2013). She is C. I. Lewis Professor in Philosophy, emerita, at Stanford University. This interview offers an accessible and wide-ranging overview of Helen Longino's intellectual trajectory, her scientific contributions, and the central themes of her philosophical thought.*

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*1. Hi, Helen. Thank you for accepting this interview for APhEx. Can you start telling us about your academic journey? What led you to pursue philosophy?*

**HL**: Hi, Silvia. Thank you for inviting me to do this interview with you. I was always interested in philosophical issues; I don't know why. I think I just took things seriously as a child and asked many questions. But as for my university studies, as you know, in the United States, you are exposed to many different topics. My parents wanted me to get a law degree. So, about halfway through my university studies, I had taken courses that would lead to law school, but I found them all really awful and started taking literature courses because I thought that was a key to understanding things, literature. I ended up receiving my degree in English Literature.

I also thought I wanted to write literary material. I took some philosophy as an undergraduate, but I was going to pursue graduate work in comparative literature. However, I realized that I had deep questions about language, about how the words I used related to reality. Well, those are philosophical questions, so I thought I'd better do philosophy and switched my graduate degree to philosophy.

I was planning to go to the University of Sussex in England and do comparative literature, in particular, 15th- and 16th-century Italian, French, and English poetry, but having made this realization about my real intellectual interests, I wrote to the relevant department heads and the provost, and got permission to change.

*2. This is really interesting. You entered into a graduate program in philosophy without having a serious background in philosophy. How was your experience?*

**HL**: Well, I would say it was mixed. It was a very intense year of study. There were just maybe five of us pursuing the Master's degree. And there were a couple from the UK and other Americans, someone from New Zealand, and myself. Of course, they all had a much greater background than I did. My advantage was in the Plato and Aristotle part because I had learned some Greek when I was in high school in Italy. I did the Ginnasio in Napoli. But that was a long time ago.

My Master's thesis was on Tarski's conception of truth. I concluded that it would be really hard, if not impossible, to provide formal equivalents

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with Tarskian truth functions for ordinary language expressions containing indexicals.

*3. A question related to your first comment. You said you went into literature because you thought literature was the key to understanding things, but later in your life, you became interested in science and the philosophy of science. Science is often thought of as the key to understanding things. So, what do you think about these different modes of understanding reality, through literature and science? Are they interactions between each other or somewhat complementary?*

**HL**: In most respects, I think they are complementary. I think literature really examines human reality as it is perceived and experienced by humans. So, there's always an affective dimension. It's always intentionally perspectival, even if an author tries to assume an objective point of view. I'm just talking about narrative prose, whether it's fiction or non-fiction. So, I think science and literature are doing different things.

If we can think of science as doing anything, I think of science as attempting to develop models or representations of our world that we can collectively act with. We don't want it to be perspectival in the sense of representing some individual or group perspective. We want something that is really shareable, that represents something collectively accessible.

I don't think that in literature we want representations we can collectively act on. We want representations we can identify with or that somehow can give expression to our own feelings and thoughts, or that give us access to others' feelings and thoughts. I think that's one difference.

*4. Let me ask you a little bit more about your biography. You said how you went from a law degree to philosophy, but what led you to philosophy of science? Did you have any particular interest in science itself?*

**HL**: No, I did not. What happened is that I was really headed towards doing philosophy of language. Before my Ph.D., I read a paper by two American philosophers that I really liked. It was on Nelson Goodman's *grue paradox* – they introduced the notion of "context," and that made a lot of sense (Barker and Achinstein 1960). I thought that there was something very smart about how they treated the problem. So, I applied to the university where they taught.

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This was in the mid-60s, and I was trying to decide what to do. At that point, I could probably have gotten some kind of teaching job just with the Master's in the UK. I was trying to decide whether to return to the US and get a Ph.D. I decided to do so to participate in protests against the US engagement in Vietnam.

I applied to the University where these two people taught, Johns Hopkins. One was Peter Atchenstein, who later became my thesis advisor, and the other was Stephen Barker, a logician. I also applied to Chicago, where Richard McKeon, an Aristotle scholar, taught. I really liked Aristotle. I didn't get in. These were the only two places I applied to.

I really didn't know anything about graduate school. It is different today. Many young people entering the profession now are starting graduate school with much more information. If they could see the kind of ignorance with which many of us embarked on graduate study, they would be surprised. Now there's so much information available and easy to access. There wasn't then.

So, I got into Hopkins. When I got there, I discovered that Steven Barker was really a philosopher of mathematics and a logician, and Peter Asher Stein was a philosopher of science. And so, while at Hopkins, I took several courses in the history of science, and I continued to think about and learn about the history of science. At that point, that was really history of physics. After I'd been out in the world for a couple of years, that is, after the Ph.D., I switched to really thinking about biology.

*5. Let's return to the philosophy. You said how you became interested in the philosophy of science. Your work is now widely recognized not only among philosophers of science but also among feminist philosophers. How did your interests in these two different areas develop, interact, and converge?*

**HL:** In the early 70s, at my first position at the University of California, San Diego, the feminist movement was taking off. There was something more of a collective consciousness about sexist practices. I joined the *Women's Liberation Movement*, which was a student movement at the time. I was the only faculty member at first, but other women joined that group from the faculty eventually.

I was just kind of following my nose. Just doing the next thing that seemed the reasonable thing to do. One thing that the Women's Liberation Group decided to do was to develop and offer undergraduate courses. And because I do philosophy of science, they asked me to do something about

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gender and science, feminism and science. I started reading up, and it was really interesting. Especially what these feminists in biology were writing about. And I realized that, because of the ways in which they were invoking philosophy and philosophical ideas, there was a role for someone to intervene. So, I thought, well, that's what I'll do.

And I thought that the ideas I was developing about the relations between evidence and hypotheses, the kind of contextualism I was starting to articulate, could be really useful to address the kinds of questions that these researchers were concerned with. At the time, they had only positivism or Kuhn and Feyerabend, and they would invoke them simultaneously, wanting one to do one thing and the other to do something else. That really offended my sense of logic.

*6. So let's talk a little bit more about how you managed to integrate different traditions when you first articulated your Critical Contextual Empiricism in* Science as Social Knowledge *(1990). Can you briefly explain the key tenets of your approach and how it differs from more traditional views?*

**HL:** I developed this view thinking about Hempel's logic of confirmation. I realized that the formal definition he gives of confirmation only works for hypotheses that are generalizations of individual observation statements. And the hypotheses and theories in physics go far beyond anything that we can observe. This raises a problem. The formal logic assumed in Hempel's definition cannot apply in these cases.

How can you continue to respect the demands of logic and still think about this relation between observation statements and hypotheses as having any kind of logical properties? The only way to do that was by appealing to background beliefs.

It's a little bit like the bridge principles. When I think about it now, I can definitely see a family resemblance, but the ways in which bridge principles were introduced by the positivists and the logical empiricists was really very different. It was about manipulations within a theory, within a system that had nothing to do necessarily with the actual world, just observation statements connected to the world.

So, I suggested that what linked individual hypotheses and the statements of observations that served as evidence had to be some kind of background assumptions and beliefs brought to the situation by the researchers who were doing the work.

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*7. How did others react to your work when* Science of Social Knowledge *came out? Was it an immediate success, or did the recognition come only later?*

**HL:** That was 1990. In a way, I criticized both communities. Of course, I also took a lot from both communities, but I pointed out some problems.
I wouldn't say it was immediately a success. It was certainly a success in certain arenas, and I think as far as a book goes, it did pretty well for a philosophy book. The publisher made back their advance. And more, we shall say. But it didn't sell like *The Structure of Scientific Revolutions* (Kuhn 1962). Not anything like that. However, it did make a splash in certain communities.

I think this is because it helped to make feminist critiques of science intelligible to those analytic philosophers of science who were willing to actually pay attention to their arguments. I'm really glad it succeeded in doing that. There's been lots of feminist work that's been done since then, and establishing a kind of legitimacy to their inquiries to the philosophical community was very important. I guess my book helped.

But, you know, I remember an APA author-meets-critics session, maybe in ’91 or ’92, where Philip Kitcher, who has since become a friend, appeared to be, as we say in the United States, “taking me to the cleaners.” You know, giving me lessons in logic. I was a relative unknown, and he was a senior professor. He was responding to my book and to a book by Joseph Rouse called *Knowledge and Power* (1987), which is also a critique of conventional philosophy of science.

Even before my book came out, I had given a paper at the Central APA on my ideas about objectivity, and the commentator was so hostile. It was just incredible. I was just not prepared; I had read the written remarks he sent me, and they were bad enough. But when he actually responded orally, it was even worse. So yeah, I would say it was a mixed response.

I had left UCSD after four years because it was clear I would not get tenure and a position had opened at Mills College, a liberal arts college for women in Oakland, California. For a number of reasons, after about fourteen years there I started to seek positions elsewhere. My partner, too, needed to find a new institutional home. In 1990 I went to Rice University, then followed my partner to the University of Minnesota. I enjoyed good colleagues at both institutions, became more integrated into the profession, and saw greater attention paid to my work. We still pined for California, however, and were thrilled to accept an offer from Stanford where I began teaching in 2005. I had had good relations with members of the Stanford Philosophy Department when I taught at Mills and, even though the personnel

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were almost entirely different, found it was still characterized by openness and civility.

*8. I think some of your ideas can be applied to mathematics. What do you think?*

**HL:** Absolutely. Just looking at mathematical practice, these ideas make sense, at least if you understand mathematical practice broadly enough, including the actual reasoning that goes into mathematical thought. I think once these ideas are out on the table, they seem so obvious that they are open to anybody. And mathematics, like science, is done by humans, after all. So, these actors should enter somewhere.

Even if you think that mathematical entities exist in some Platonic universe, we as humans don't have access to that, so we do the best we can with what we have. I am pretty sure that any complex piece of mathematical reasoning does not assume the status of mathematical knowledge unless reviewed critically by other mathematicians. And it would be interesting to see how ideas about background beliefs might find a home in thinking about mathematics.

*9. In recent years, there's been a lot of discussion on the role of diversity in scientific communities and this is something you emphasize a lot both in your earlier work, but also in later work such as* The Fate of Knowledge *(2002). Do you think scientific practice has changed in this respect over the years?*

**HL:** Certainly it has changed, and not just for intellectual reasons. Well, until let's say, the end of 2024, diversity came to be valued both broadly for political reasons and for intellectual reasons.

Political reasons are obvious: it's just important to have a full range of perspectives in a democratic society engaged in the production of ideas that are going to be available for discussion. That's the political reason.

Intellectually, there's John Stuart Mill's argument, which is that as humans we are fallible, we believe things often for no reason, or for bad reasons, we believe falsehoods, and so we need correctives. And the correctives come from engaging with others who will criticize our ideas. So, that's the intellectual reason.

I think there has been much more recognition of that partly because of the political movements in the surrounding societies in democratic countries

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of the world, not just Europe and the United States, but Asian countries as well.

That's been true in philosophy. That's been true in the sciences. There have been deliberate efforts to bring into scientific communities, in the United States, persons of color, persons from disadvantaged economic backgrounds, women.

That is not sufficient. But it's a start that can build on itself. It's not a start with a dead end; it's a start that generates individuals and groups of individuals who together can move the diversification enterprise forward.

*10. I wanted to ask you about social epistemology. Social epistemology has gained a lot of momentum, but my impression is that the discussion remains limited to analytic epistemology, not encompassing philosophy of science. Do you think nowadays philosophers of science are sufficiently sensitive to the social dimension of science? Should they maybe interact more with social epistemologists and vice versa?*

**HL:** The current situation is very much a continuation of the situation between these two sub-disciplines when analytic philosophy first came on the scene. Epistemology and philosophy of science did not inform each other at all. Epistemologists had primitive ideas about scientific reasoning.

Philosophers of science just didn't pay any attention to epistemologists, and epistemologists didn't pay any attention to the literature of philosophy of science – they never paid much attention to what happened after logical empiricism, so they continued to think that logical empiricism was equivalent to philosophy of science.

Many opportunities were lost, of course. And I think the same thing has persisted with respect to thinking about the social dimension of science and of epistemology. I have criticized much social epistemology as it's done in the analytic world for still being too individualistic (Longino 2022). I think there's starting to be a broadening of perspectives there.

*11. We talked about epistemology and philosophy of science. What about feminist philosophy?*

**HL:** There are many different directions in feminist epistemology and in feminist philosophy of science. One thing that mainstream philosophy of science picked up on was the critique of masculinist assumptions in the

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sciences, especially in biology, anthropology, and so forth. They were less sympathetic to the kind of critique that Evelyn Keller made when she was pointing out the deep conceptions of nature that were at work in Barbara McClintock's approaches to genetics, for example. Keller wrote an intellectual biography of Barbara McClintock called *A Feeling for the Organism* (1984), which I think is a fabulous work. It's a really wonderful example of intellectual biography. Keller exhibited her own philosophical orientation but also gave full credit to McClintock.

Going back to your question, I think there was considerable uptake among philosophers of the feminist critique of androcentric bias, but less of the more challenging kind of work.

*12. Now a hard question. You made contributions to different fields. If you had to pick one, what would you think is your most important or philosophical idea?*

**HL:** I think the most important philosophical insight was the idea that given the contextualist analysis that I had developed, the way to guarantee some kind of objectivity, the way to anchor our representations in something reliable, was through a very thoroughgoing practice of criticism, criticism emanating from different points of view. Criticism that wasn't simply expressed, but which was also taken up and responded to. This meant that there wasn't just criticism but critical interactions among different points of view. That is the key idea, for me.

*13. I want to ask you something about current scientific practice and how some of your ideas can relate to the advent of AI in our lives and in science. Do you think AI poses specific challenges to this idea of scientific objectivity?*

**HL**: It depends on how AI is deployed. If we simply give over our authority to AI, then who knows what's going to happen? But so far, AI makes as many mistakes as humans do. So, it needs correcting. Could that come from other AI systems? That's imaginable, but not yet implemented. And as far as perspective-based criticism (to coin a phrase) how do you create an AI system that will bring different perspectives into conversation? No idea. I'm not a computer scientist, but I don't think that the advent of AI will eliminate the need for critical interaction.

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*14. Can you tell us more about your new book project?*

**HL**: My new book project is about interaction itself. I want to provide an account of the concept of interaction that makes interaction as a concept more available for researchers to think about.

I think we have a default way of thinking about our world as constituted by individual objects. When we try to understand the world, we try to understand it in terms of objects and their properties. Objects are measurable: you can count objects, you can measure their sizes, measure duration. I want to show that you can do the same thing with interactions. You can count interactions. You can measure interactions in different ways. You can measure different kinds of things when you're measuring interactions: you can measure asymmetry, for example, which is harder to measure with objects. The book will talk about the variety of interactions that appear in scientific work. Biology is full of interactions and is probably the science where many kinds of interactions are really central. But there are interactions from fundamental physics on. So, I want to talk about that. I want to talk about the different ways in which interaction actually gets described, about the different roles that interactions play, and the different kinds of interaction. For example, there's a real difference between statistical interaction and causal interaction. And then I want to provide a vocabulary by using the logic of relations as a starting point to classify different kinds of interactions. This is also related to Kant's categories. The analogies of experience include substance and causality, and everybody writes about those when they're writing about Kant. But there's a third one, which is reciprocity or interaction, and I don't know that anyone has really talked about that. Certainly not to the extent or depth they have talked about substance and causality.

*15. What advice would you give to young scholars interested in pursuing research at the intersection between philosophy of science, epistemology, and feminist philosophy? Are there particular literature suggestions you would like to give, maybe some paper or book that had a real influence on you?*

**HL:** It's really important to follow the questions that interest you intellectually. This is a very difficult time to pursue an academic career everywhere. And you should pursue intellectual questions because they interest you, not to have an academic career. As far as books that had a real

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influence on me, the material I engaged with at University of Sussex has stayed with me throughout: the 20th century analytic philosophy of the first term (Russell, Quine, Carnap, Strawson, Austin) and Plato's later dialogues and Aristotle's *Categories* and *Metaphysics* of the second term. After those, Kant's (1998 [1787]) *Critique of Pure Reason* and Wittgenstein's (2009 [1953]) *Philosophical Investigations.* While these historical figures are marked by their historical context, they engaged deep and ongoing questions in compelling ways. There is a lot to learn from them. And their lessons can help us find the philosophical heart of the seemingly more immediate issues that perplex us. And, so as not to leave the field entirely to men, Simone de Beauvoir's (1997 [1949]) *The Second Sex* is inspiring in its reach and ambition, even if one doesn't agree with some of her particular analyses.

*16. Final question: is there anything else you want to share with us?*

**HL**: I am conscious of being based entirely in the Western tradition, and in a version of that tradition made salient by the development of science in the West. I think there is a lot to be learned from philosophy as pursued in other civilizations. For example, just staying close to home, as it were, it would be interesting to consider what philosophical preoccupations characterized the South Asian and Islamic civilizations that nurtured mathematical thought.

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