A Conversation with Alan Alda: Communicating Science

I had a chance to talk to Alan Alda at my home in Westwood during a workshop on communicating science to the public.[1]

PSW: Where do your interests in science originate?

Alan Alda: I have no idea—somehow at the beginning of my life. I used to mix chemicals when I was six years old. Not chemicals, just things I found around the house—face powder from my mother's dresser, soap, and things. Fortunately, I couldn't reach anything that if I mixed it together would explode. They were just harmless things that I was mixing together, but I called them "experiments" and I was trying to see what would happen.

When I was around 10, I was an amateur inventor and I would make models of things I invented and make drawings of them. I was always curious and always interested in how things worked and how they got the way they were.

In my twenties, I started reading *Scientific American*, every issue, every article. I had no idea what it meant, but I just read it because once in a while I could understand something. Then, little by little I got more of the lingo. It was exciting for me to realize that people could understand so much about nature that was hidden to me. And I was really thrilled by it.

PSW: What did you invent?

Alan Alda: I invented a five-way can opener.

PSW: Did it work?

Alan Alda: Well, it had to be a five-way because the first four did not work that well.

I also invented—this was an amazing thing—I figured out a Lazy Susan for the refrigerator, so that you wouldn't have to reach into the back—just spin the wheel and it would come around to the front. A couple of years later, a refrigerator company actually put one on the market, just like that. And then, a couple of years later, they took it off the market, I guess because there were bottles of ketchup spinning around kitchens all over America.

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Alan Alda at the California NanoSystems Institute opening the Kavli/CNSI Workshop in Communicating Science.

PSW: Who was the scientist you found most engaging to interview?

Alan Alda: So many engaging ones, but I think maybe the most surprising and fascinating was Geerat Vermeij. He studied seashells and was *not* interested in beautiful shells. He was interested in shells that had been partially drilled through by a predator, but only *partially* drilled through because that meant that the shell had a thickness that the predator couldn't handle. Those shells interested him because those were representative of a turning point in the evolution of that animal inside that shell. And he developed a theory of evolution, I guess a sub-theory of evolution, based on the importance of the predator in the development of species.[2] And he did all of this, even though he had been blind since he was three.

He was a striking person because he had accomplished so much and was amazingly determined to not give an inch to his disability. I was very, very struck by it.

PSW: Have you found a way to put scientists at ease when you interview them? (I'm asking selfishly.)

Alan Alda: Because you want to put people at ease?

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PSW: Of course.

Alan Alda: Well the thing is, one thing that I never did was to work from a list of questions. I realize that's efficient, but it doesn't put most people at ease because it requires an answer. You would think that if you're going to ask questions, of course you'd want an answer, but a conversation doesn't require an answer.

A conversation is an interaction in which something emerges, I don't have to manufacture an answer in a real conversation; I can respond to you, and not always in a logical way. Not always in a way that seems to make sense, but you can ignite something in me with your curiosity that makes me come up with something that I didn't know I was going to come up with.

I have found in my so-called interviews with scientists, which are not really interviews, I found that if I can just be curious about them, little by little they'll reveal themselves, but not just their science, they'll reveal themselves. That's a combination that's kind of irresistible because scientists are very interesting people, and to suddenly become aware that a scientist is also a fellow human is often a revelation. The smarter they are and the more you realize they're human, the more interesting that becomes. And I find the only way, for me, the only way to do that is to just shoot the breeze with them. Just keep asking them out of curiosity.

PSW: Were you disappointed in many of your conversations with scientists' inability to express themselves?

Alan Alda: Not many, it wasn't many. I've actually had mostly wonderful conversations with scientists, because they responded really well to someone being genuinely interested in what their work was, and what they were interested in. I mean, they're doing the work because they're interested in it, so if somebody else is interested in it, then it's a kindred soul, and so they open up. And I'm truly interested in what pretty much any scientist does.

Once in a while, we weren't able to have a real conversation. Once in a while, a scientist would tell me what questions to ask, or would tell me what to not ask. And I get a little pissed at that because I really prefer to just follow my curiosity, because my experience has been that leads to good stuff coming out. But, anybody you interview whether it's a scientist or not—and I've interviewed various kinds of people—anybody you interview who has an agenda, who has a list of PR points they want to get printed, they're very boring to interview and they're a little annoying. But I've had very few scientists like that.

PSW: What was the driving force for the workshop that we are having today, tomorrow, and Friday?

Alan Alda: When we started the Center for Communicating Science, we had a dream that someday other universities would be interested, in addition to Stony Brook where we started it, in teaching the skill and the art of communicating to scientists. We really didn't understand at the time how much of a hunger there was for it and how, within a very short time, we'd be asked to go to other universities to show them what we're doing and to help them start programs of the same kind on their part.

I thought we wouldn't see this start to spread until after I was dead; I thought it would take that long. And I'm amazed at the response. So, we're trying to catch up and we're trying to keep up with everybody's interest.

PSW: For people who can't come to such a workshop, at least not yet, is there some advice you have for them?

Alan Alda: That's an interesting question. We're trying to develop a program that's very specific and very useful. We're trying to evaluate that and make sure that we're doing the most useful things to help scientists communicate. Some of the things we do are innovative, so it's hard to just give tips.

I would suggest, though, that they think of it as something that has to be learned over time—it's not something that you can accomplish in a few afternoons when you're finished with the science education and just before you send them out the door you say, "Don't forget to wear your galoshes." It's not galoshes. Communication of science is not the galoshes; it's changing the weather. It's really a big, fundamental question that has to be fixed. And a short course of brief tips is not going to do it.

As I said earlier today, you don't say to somebody, "You're going to play piano at Carnegie Hall day after tomorrow—here's three things to remember." What you have to do is practice and learn how to play the piano, if you're going to play in Carnegie Hall. And scientists, if they'll take the time, can actually, no matter what level they're at, whether they're poor communicators or great communicators already, through sustained, organized effort, they can become better communicators, and we'll all benefit from that. I'll benefit because I'll understand more.

PSW: Why are improvisational skills important for scientists? Why is your training based on that?

Alan Alda: First of all, it's a surprisingly effective way to get scientists to be powerful presences when they're talking in person to the public, or to anybody—the public, to policy-makers, and even to other scientists—because it opens up a channel between who they really are and the audience they're talking to. So, the audience gets to hear the real person, the authentic person. And there's a greater chance that they'll trust what they say, because they're not hearing somebody who's selling them a bill of goods or talking over their heads as if there's no hope that they'll understand or that they don't even care if they'll understand.

Beyond that is actually some possibility, we're not sure of this yet, but there's some possibility that going through a course of improvising opens you up and makes you available to fresh ways to say what you know. And if you only say what you know one way, then people who can hear it that way are the only ones who are going to get it. And you may not even really understand it as well as you think you understand it if you can only say it one way.

I've noticed interviewing scientists that heads of departments could say it many ways. Their students tended to only say it one way—the official way. Maybe they don't want to get in trouble by adding anything to it. But, to be able to see it from different directions, to see it, in a way three-dimensionally, gives you the chance

PHOTO COURTESY TODD CHENEY AND UCLA

As part of a workshop on communicating science, participants ranging from graduate students to senior faculty learn improvisational skills and tools in a group led by Alan Alda.

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to communicate it to people who are not conversant (a) with the jargon and (b) with your point of view.

PSW: Could the department heads' overview be part of being required to explain other people's work?

Alan Alda: That may be; I don't know. I'm not sure they can explain things better, but I have noticed that they can use different kinds of imagery to help me understand it—they can come at it from different directions. I think that indicates that they have more comfort with seeing it from different angles and they're not afraid to have a go at it in a different way.

It's not that easy to explain something complex to somebody who's not familiar with it. It is not the fault of anybody on either end of that equation. If I don't know all of the terms that you use, each of which is a compacted version of a dozen other terms, or a dozen elements in a process, but you've reduced it to one term that you use so you can get through a paragraph without saying a hundred different things. If I'm not familiar with all of that, I have no hope of getting it.

So, you have to find a way to communicate to me that doesn't betray the truth of what you're talking about—the facts, doesn't betray the facts—but it doesn't confuse the crap out of me. And that's very difficult. To some extent I have to learn some of your words. But it's more likely, if you're talking to civilians, that you have to learn how to say it in their language. That's where I think improvisation really helps, because you begin to learn that you can say it many different ways and it can still be accurate. I always say this over and over again, because I don't want people to misunderstand me: I really don't want science to be dumbed down. I say that in a personal way: I don't want you to dumb down your science when you tell me about it because I'm not going to get the real science. I really want to understand it, so don't dumb it down for me. But introduce me to it in terms that I'm familiar with, if it's at all possible. One of the problems is the same words are used with many different meanings in various branches of science.

PSW: One of the points of the workshop and this training is connecting with your audience. Can you elaborate on that?

Alan Alda: Well, I think that one of the things that this program tends to do, and all of the aspects of the program, whether it's improvising, or distilling the message, or writing for the public, is that it focuses you on being aware of what's going on in the head of the person you're talking to. That seems to be an essential ingredient, a deeply essential ingredient, of communication. I'm not communicating with you if you are to me a mannequin standing in for somebody and I'm just talking *at* you. It doesn't matter what I want to communicate nearly so much as it matters: am I tuned in to your frequency? You're a radio picking up my signal. What difference does it make what great music I have broadcasting if you can't pick up my signal? I've got to get to *you*; I've got to know what you're tuned to and broadcast on that frequency. And when I say something to you, I've got to find out, in some way, if and how you're receiving that, so that I know when the next thing I say is going to follow and not seem like some strange thing.

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PSW: That's a great analogy. Based on what we did in the afternoon, people on both sides are trying to tune to find a common frequency

Alan Alda: Yeah, that's right. Everybody's doing the best they can to tune. It's not so much a radio dial as it is a crystal set: we're all hopping around on that little crystal trying to find one another. That's one of the reasons why you've got to be able to say it in many ways.

PSW: Is there a plan to scale this up?

Alan Alda: I think one of the things we want to do is make sure we are doing the best that we can do, first. Every time we meet with another group and every time

we institute a course at Stony Brook, we're trying to make it as strong as we can, and as useful and effective as we can. We're hoping to get funding soon to be able to have an assessment of what we're doing, so that we not only can find out what works, but we can tell people at other institutions with some legitimacy, "This does seem to work", because we've got these figures that show that it does.

Once we have that, I think we can start accepting even more of the invitations we're getting to spread this. Because I personally don't want to see it spread just on hope. To me, it's especially important if you're talking to scientists that you don't tell them you have a way to communicate better unless you've scientifically examined whether or not you have.

PSW: You want to show them the data.

Alan Alda: Exactly.

PSW: Are there some scientists who shouldn't be talking with the public?

Alan Alda: I don't think there are any scientists who shouldn't talk to the public. That would be crazy for me to say that. And also, I just don't believe it.

I don't think there're any scientists who shouldn't make a conscious, organized effort to communicate better, no matter how well they communicate now. At my age, I'm still learning to act better and to write better. Since I've been involved in trying to help promote the communication of science, I'm constantly trying to figure out how to teach it better. It's so important to communicate science. To not seriously figure out how to do it as well as you can seems to me to not be prioritizing something that's really worth putting way up near the top.

I don't think there're any scientists who shouldn't make a conscious, organized effort to communicate better, no matter how well they communicate now.

PSW: Can you tell us something about your new play about Marie Curie and her life?

Alan Alda: Well, don't tell anybody, but I'm in love with Marie Curie. So far, she hasn't answered my letters. I really admire that woman so much and she's been, she's a hero of mine. She's helped me through some of the pain and the discouragement of trying to get a play that works. It's very hard to write a play, and probably everybody who's written a play has gone through periods of discouragement. Not only writing it, but trying to get it produced.

Whenever I get discouraged, I remember what Marie went through and how she refused to do anything but survive, and to finish her work, and make her work as rigorous and powerful as possible. She's a hero.

What I hope is that people will see the play and realize she can be a hero for them too. There's almost nothing in your life, whether you're a scientist or not, there's almost nothing in anyone's life that can't benefit from learning from Marie. You know, the Chinese say, used to say, "Learn from work unit #1." Well, we can learn from Marie.

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PSW: How did you gather the information that you used as the basis for the play?

Alan Alda: I just read a lot of biographies and read her papers and walked the streets where she walked in Paris, went to the building where she had an affair—the affair that both saved her life in a way because she was so depressed after her husband died she could hardly work, but the affair that nearly ruined her career, because it unfortunately went against the social norms of the time. The press turned on her. They had once lionized her and now they hated her. She had a very hard time. Even the Nobel committee turned on her.

PSW: What's next for you after your play comes out this fall?

Alan Alda: I have no idea. I think I'm going to go to Paris and sleep for a year.

I wouldn't mind going to Paris to see the play performed in Paris. That's sort of a dream of mine that will probably never come true, but that would be nice.

PSW: I'm sure that will come true.

Alan Alda: Look at all these dreams that come true; that's kind of nice.

[References and figures were added after our conversation.]

—Paul S. Weiss

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