

CELEBRATING 25 YEARS WITH THE SHORENSTEIN CENTER
EXPLORING: THE MEDIA AND POLITICS FRONTIER

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MR. JONES: Xeni Jardin is self-described on the Boing Boing website, the website that she helped found, as a tech culture journalist and intranet explorer. I think that that is an understatement. Xeni is one of a kind really. And Boing Boing, if you are not familiar with it, is a wonderful site for kind of interesting things, goofy things, scientific things, fascinating things of all kinds and is always the most eclectic of sort of an assembly of stuff. For instance, from yesterday's top four stories, the top one was Tom the Dancing Bug, definitely not gay man meets his arch nemesis. Number two, Using Chocolate to Teach Calculus. Three was excerpts from a short story collection by a musician whose style has been reviewed as a combination of Mexican style curitos, stomping blues, shit kicking country and western and other forms of great American music.

And then came Xeni's piece yesterday, which was actually a video of a hapless television producer in Sacramento, California, being assaulted by a turkey. And I mean being assaulted like Jaws went after, you know, those guys in that boat. It was really quite fascinating and hilarious. I guess my point is that Xeni is an eclectic thinker, a serious person with a sense of humor and a lot of knowledge about the web. We are very, very glad to have you with us today.

MS. JARDIN: Thank you very much.

(Applause)

MS. JARDIN: Well, I want to in turn introduce you to our esteemed guest today. Miles O'Brien, I first met Miles, I don't know, I think it was maybe six, seven years ago when I was a guest on his American Morning Show on CNN. For those of you in the room who are not familiar with Miles he is a 30 year veteran broadcast journalist. I know you hate the word veteran, but you have been doing what you do for three decades, 17 of those were with CNN as an anchor and a reporter, primarily focused on science and technology and space. Miles, when I think of space reporting, I think of Miles, covered how many space shuttle launches was it?

MR. O'BRIEN: Oh, about 45 or so.

MS. JARDIN: Forty-five or so space shuttle launches and many other historic events related to our exploration of space. When CNN shut down its science and technology division -- personal disclosure here, I had hoped to work with CNN and I actually went to interview with Jon Klein and some of the other guys there and met Miles around that time. A little side note, when I went in for my big interview with Jon Klein I told him -- the first thing he asked me was what does 1-3-3-7 mean, Xeni? What does 1-3-3-7 mean? Because you wrote something about one of our anchors. You said he was 1-3-3-7 and I really want to know what that means. Were you trying to insult our anchor?

MR. O'BRIEN: He was looking for an excuse to fire me at that point.

MS. JARDIN: I said no, I was just making a joke that Miles O'Brien, despite the fact that he is with a big TV network is leet. It's a hacker slang for someone who really knows their stuff. And Miles does. I didn't end up getting the job at CNN and Miles ended up leaving when the closed down science and technology. At Boing Boing we started an online video project called Boing Boing TV. We ended up collaborating a few times and there was this interesting period for you where you began exploring the internet as something that was just as valid and far more freeing than what you had been doing with this news network.

And from there Miles went on to PBS. He's done work for Discovery, for -- and then on PBS with Frontline, with News Hour, to work with Nova as well, lots of different stuff. But I feel like your work has become even more interesting since you've left CNN.

MR. O'BRIEN: Well, thanks. In the absence of gainful employment I figured out something to do.

MS. JARDIN: So I thought it would be interesting for all of you here since the theme of this event is politics and media, but also looking forward to the future about what -- where our news will come from. What platforms will emerge as viable platforms, not only in terms of their ability to disseminate information and to generate conversation but how folks like Miles and, frankly, like me will be paid for that work. Where is the business model? Where is the sustainability model? So to that end, I offer you a case study, Miles O'Brien.

And another little aside I want to share. Miles is a pilot and he reports a lot on aviation. He did this amazing series for Frontline. Flying cheaper, flying cheap, which was--

MR. O'BRIEN: And cheaper.

MS. JARDIN: --followed by a follow up, a sequel--

MR. O'BRIEN: There is a sequel.

MS. JARDIN: --called Flying Cheaper.

MR. O'BRIEN: Flying Cheap is just coming up, I think.

MS. JARDIN: Which should terrify any one of us who fly commercial here in the U.S. So he flies a two seater, four seater?

MR. O'BRIEN: Four seats.

MS. JARDIN: Four seater Cirrus and flew here today just barely missing a storm front that we are dealing with now. So, Miles, I thought we would begin if you could just share a little of how you ended up in the news business in the first place. What was it that brought you here? And I think there is a local connection, if I remember right.

MR. O'BRIEN: Yeah, well, I grew up in Detroit, outside of Detroit. And no one I knew was in the media business. But I always had a fascination with writing, with photography. I started a newspaper, an alternative newspaper at my high school. I was

editor of the yearbook and so forth. It was just something that fascinated me. But everybody I knew, one way or another, was involved in building automobiles. So it didn't seem to me that something as fun as this could actually be a job. And so one thing led to another, I ended up at Georgetown majoring in history. And again I found myself spending a lot of time at the newspaper offices there for no credit as the editor there and so forth.

And eventually it occurred to me that you could actually make a living doing this. And I took an internship at WRC/NBC at Nebraska Avenue and really never turned back. I became instantly fascinated by the business and the fact that you could actually make a living doing it made it very interesting to me. So at the end of the internship they offered me a job, midnight to 8:00, ripping wire copy. Remember those days? Actually distributed around the newsroom and I was off to the races. As a matter of fact I left with a semester to go at Georgetown. I figured I would go back and I just started going back last semester. So eventually I will get my undergrad degree.

MS. JARDIN: We're both college dropouts, but now I like to say just like Steve Jobs.

MR. O'BRIEN: And Bill Gates, for that matter.

MS. JARDIN: So take us to how you ended up at CNN from there. And you did not study science, you did not study technology as a major.

MR. O'BRIEN: No, I ran away from science. I thought it was terrible. We can talk about that later, because I think I was a product of the educational system in this country that doesn't teach it very well. I think I had a natural affinity for it, but I didn't realize that because I don't think I was taught it very well. I was here in Boston. I was working at local news at Channel 7. At the time it was operated and owned by Dave Mugar and there was this significant cutback to the newsroom, about a 40 percent cut. I survived the cut, but I wrote a little op ed piece which appeared in *The Boston Herald* and it was not very complimentary toward Mr. Mugar and his operation and so I was fired.

So I fell on my sword and I ended up over at the -- remember the Monitor Channel, the Christian Science Monitor Channel, which was a fascinating place. That was

an interesting story in its own right. And I was sitting in a cubicle one day working on the story of the day. And at the time it was fascinating because I was at the Christian Science Monitor Channel and Magic Johnson had just announced he had HIV and I was assigned that story. You can imagine the editorial complications that I had to deal with with the Christian Science Church and managing those scripts through the process. But I was working on one of those one day and the person next to me hung up the phone and she was kind of gasping. She said, do you know anything about science? I said no, why do you ask. And she said, well, you know, CNN is looking for a science correspondent and I said, hmm, I don't know much about science. I know a little about CNN however. And I said are you going to apply? And she said, oh, no, I'm afraid of science.

I said would you mind if I take that name and she said fine. So I called up Bailey Barash who was the science editor at CNN at the time, who is a former molecular biologist. She was a real scientist. And I managed to cobble together enough of a tape that had enough technical stuff on it to send to her and impress her enough to get an interview, which turned out to be a two day ordeal, a gauntlet, really. Written test, verbal test, they sent me out on a story that I had to produce and shoot. They made me of course read in front of the camera and so forth. And I flunked horribly. They asked me -- this is 1992 and they asked me about global warming and the ozone hole and how the two relate to each other and I knew nothing about any of those things. So I was the history major.

MS. JARDIN: Couldn't you just Google it?

MR. O'BRIEN: Oh, gosh, those days. It's hard to imagine what we did without it. And so I finally got to the end of the line after this two day ordeal to Bob Furnad and he kind of looks at my file and he goes, yeah, obviously you don't know shit about science. And I said -- this is being streamed out -- you don't know doo-doo about science.

(Laughter)

MR. O'BRIEN: And I said -- you know, it was one of those critical moments in anyone's career, what do you do? I just dropped back ten and through the Hail Mary and I said that's why you want to hire me. I said because you -- clearly because I had done this story, this story was fine. I said I'm not afraid of science. I may not be a scientist, but

you know, CNN is after all you're going after essentially fifth graders if you think about it in some respects, a lay audience. Certainly it's not like I'm writing for the *Journal of Science* here. You want somebody who is not afraid of the subject and that's why you want to hire me. And I thought at that time that that was a bit of a stretch, but it's actually very true. So I ended up having a 17 year education in science which would be the envy of anybody because I got to learn it from the Nobel Laureates, it was great.

MS. JARDIN: And much of that was focused on space.

MR. O'BRIEN: Yeah, well, I was already a pilot and I always had an interest in that.

MS. JARDIN: Your family, there is a family connection.

MR. O'BRIEN: I'm actually a third generation general aviation pilot on both sides. My grandfather, who was from Boston, had a 1933 Stinson ER Reliant which he kept at Logan Field back when it was grass. And he was a wool trader and he would use the airplane to fly around to the mills in upstate New York and sell wool. And so I guess it was in my blood.

MS. JARDIN: So, space.

MR. O'BRIEN: Space. Well, when I arrived at CNN, John Holliman was the space correspondent. He was a CNN original and a great guy, good friend of mine. And I was kind of, as the science correspondent I would buttress his coverage and helped him out in any number of ways. And when it came time for John Glenn to fly in the shuttle back in October of 1998, Holliman got his wheels turning and called up Walter Cronkite and asked him to participate in the broadcast, the CNN broadcast of John Glenn's return to flight and at that time Walter, CBS wasn't utilizing Walter at that time at all and he said yes.

And so that was -- everybody at CNN was quite excited about that prospect. Unfortunately and sadly John Holliman was killed in an automobile accident about six weeks before that launch. And so I got called into Tom Johnson's office, who was running CNN at the time, and literally on the day of Holliman's funeral and he said I need you to go up to New York and convince Walter to work with you on this launch. And Walter didn't really know me and he had had this relationship with Holliman, but

he did not feel comfortable because he didn't know me. And so I had to go up there and convince Walter Cronkite that I knew enough about space. So that was a rather interesting time in my life.

I managed to convince him that that was the case and I had the most remarkable experience working with him all throughout that launch.

MS. JARDIN: I remember there was one or more rather funny anecdotes of the actual launch day.

MR. O'BRIEN: Well, you know, it was interesting because one of the things, which I didn't realize -- I don't know, is Rick Kaplan still here? Apparently Walter didn't typically wear an earpiece during his broadcast. And if he did wear an earpiece he never had the producers in his ear because he always had Sandy Sokolove kind of underneath the desk handing him the cues. So we had to hire Sandy on top of that, which was great too. So there was kind of this hearing issue as well. He was at that point rather hard of hearing. And he still -- he was 82 during the mission, turned 82 during the mission and he was, you know, in Walter Cronkite style, you know, because he still thought he could -- he had the mojo. He would show up 30 seconds, 15 seconds before each live shot which typically was fine because I would just kind of cover until he got laced in and could hear and all that.

But we had an in flight interview planned, which is logistically a difficult thing when you are talking to a space shuttle that is circling around the planet at 17,500 miles an hour and you want to make sure the audio is just right so that he can hear the Senator and vice versa. And CNN had promoted this live interaction between Walter Cronkite and John Glenn as if it were the second coming or whatever you want to say. I mean it was just extraordinary the promotion that they put into it. So on that day we went to Sandy and said can we get Walter there? We can get him laced up and the audio is good and make sure that everybody is comfortable. Because when these things happen, when NASA says it happens at 10, 25 and 30 seconds, that's when it happens. And it's over five minutes later exactly. On the balls as they say in the NASA business.

And so naturally the event comes and I'm there ready to go and Walter shows up 15 seconds before, 30 seconds before. He plugs in. We do the IFB check and he can't

hear anything. And this is right down to the wire. And so I said to the control room, Sue Bunda was in the control room for us there, I said Walter can't hear anything. And she said, well, whatever you do include him in this live event, even if you have to be the translator and restate what Walter says and what John says back and forth. We are going to do this entire event. We've promoted this event, you must include Walter in this. Almost simultaneously Walter turned to me and said, whatever you do, do not include me in this event if I cannot hear.

(Laughter)

MR. O'BRIEN: I don't even want a two shot taken. Pretend I am not here. So what do you do at this point, right? At this point I said Walter still cannot hear. At this point I didn't realize how many people CNN had in Houston at the time until they were all at my feet doing this with cables, cords, turning everything, re-laying cables, test checks, test check one, two, three, four, five, he can't hear a darn thing. And so meanwhile they are in the control room going, whatever you do, please, please include Walter. So Walter said, you know, if I can hear I will tap you on the arm and you can come to me.

So the moment comes, the music plays, hello and welcome to Houston and the Johnson Space Center. I'm Miles O'Brien and we have a very special occasion. We're going to be talking to Senator Glenn and Commander Curt Brown and they start screaming in my ear, introduce Walter, introduce Walter. I'm surprised you couldn't hear it on the air. There was probably smoke coming out the other ear. And I'm just powering through because he is still sitting there just kind of like can't hear a thing.

So I started. I began my introduction. So this is at the point, what do you? Do you please the person who writes your checks, your paychecks, or do you insult and embarrass a national icon? Given the choice, what would you do? So it was one of those moments where it was like, you know, one of those 1930's movies when the headlines spin around on the newspapers and I saw this headline, upstart reporter embarrasses Uncle Walter. It was one of those things. And I was like there was no way in hell I was going to make him look bad. It was the last live shot I ever did for CNN, this will be it.

So I kept powering through. They're screaming at me and just as I introduced Senator Glenn and was about to ask the question I get the tap. And joining me is Walter

Cronkite, at which point I just sunk down under the desk and I do the rest of it. Truly there was somebody looking down upon me at that moment. I lost about five years of my life, I'm pretty sure.

MS. JARDIN: And about five decibels of your hearing. So that, no doubt, prepared you for all of the webcasts that you did when you left CNN. So when you left CNN you teamed up with this group, Spaceflight, now the guys from *Astronomy Magazine* in Florida. You started doing a series of live webcasts of events at Kennedy Space Center.

MR. O'BRIEN: It's interesting. When CNN in its infinite wisdom eliminated the science and technology unit and just quick little parenthetical on that. As altruistic as Ted Turner is, as much as he loves the environment and science and technology, the reason that there was a science unit at CNN goes back to the very beginning of CNN when they were happy to have Sanford the flute guy advertising on CNN at that time, right? And the record ads and everything. AT&T approached CNN and said we would like to sponsor three science spots a week in a weekly show to bring it all together. And each of these spots would be directly linked to an ad, to a commercial. And at that time they were like, yeah, of course. So they created the science unit based on that whole thing.

Well, over time the linkage between the spots and the ads, which guaranteed that those science pieces would air in segments on CNN and gave us a specific show on Saturday mornings, when that went away we lost our footing at CNN. And we had to -- we were out there along with everybody else trying to get on shows. And frankly, newsrooms are not filled with a lot of people who love science. Back then there were a lot of science-phobics, like my former self. And so over time it became very, very difficult for us to get science pieces on the air and eventually the shoe dropped.

So when I realized that CNN was going to get rid of us all, we didn't know enough about Michael Jackson or Charlie Sheen or whatever so I can see why they would get rid of us. And I didn't know what to do and where to go. But one of the things that came up almost immediately was there was going to be a shuttle launch and I didn't want to miss a shuttle launch. So it occurred to me, you know, I have obviously a lot of friends in the space journalism community. And it occurred to me that technology had progressed

such that really with a laptop and a camera augmented by NASA's video feeds it would be possible to stream out a webcast of a launch in the, you know, inch wide hundred mile deep way as opposed to the opposite at CNN where they would give me about two minutes, just long enough to get the solid rocket boosters off, basically there to see if it blows up, to do the opposite kind of coverage, very focused niche coverage for very little money. Just basically the cost of a plane ticket and a T-1 line with enough bandwidth to stream this thing out.

And so I approached spaceflightnow.com, which already had a good healthy audience of space lovers and we started doing these things. And it was just fascinating to me how, first of all, how the playing field had leveled. There we were with our McIntosh and our little camera and you look over and you see the trailers and the trucks and everything like that. And we developed an audience. We would at any given time have 250 to 300,000 people watching our stream and a global audience, 160 nations. So the lightbulb went on in my head that this is really the notion of broadcasting has its place, but there is also a space for providing a very tailored type of coverage and audience will find you, an audience that has a deep interest in something like that.

MS. JARDIN: These were fascinating, by the way. I watched as many as I could remotely from Los Angeles and I joined your team on a couple of them. It was very strange sitting in the -- I don't know how many of you have been to Cape Canaveral and been to the launch site, but there's a little square cinder block structure called the fish bowl. And this is hallowed space in the history of broadcast journalism. It's where the very first launches were covered by news crews.

MR. O'BRIEN: This is where they conducted all the news briefings before the launch of Apollo 11 and so forth is in this little squat cinder block building.

MS. JARDIN: Five feet away from this is where Miles and his crew were doing this live webcast with a T-1 line, a whole bunch of coffee and a few Macbooks and what they did was richer and more informed and for me more fun than any of the major news networks coverage.

MR. O'BRIEN: Well, in full disclosure, we monetized it in a novel way, which I would be interested in your thoughts and questions on it. Instead of rolling spots I

approached Lockheed Martin and Boeing and United Space Lines, all the big contractors in the shuttle program, basically all the people that I would go to to populate a six hour webcast with guests. And I said would you like to sponsor a block of time with me for your guests. In a sense, sort of an advertorial approach. And I said you can't -- I'm not going to -- I'm still asking the questions, you can't provide the questions. We're going to disclose to the audience that this is an advertisers supported segment.

I was walked into this with a lot of trepidation. I had never talked to anybody on the phone about paying for ads or spots or whatever. I would have been fired immediately at CNN of course. So what was interesting about it was -- and I deliberately did this -- was I would sit these guys down, these were guys who I would interview anyway and we would have 15, 20, sometimes 30 minute interviews with them and I would ask them every high hard one I could come up with. But I also -- it was in the context of a 15 or 20 minute interview, which allowed for a full range of questions.

What was interesting about it was to a person they would walk away feeling it was a fair shake. And what I realized was is that in the course of doing those two minute CNN drive-by's where you only ask the one or two gotchas, people walk away feeling very abused. And they have a point. You are left with only the questions that are just the really out of context and really unfair because they aren't set in the context of other questions and a full treatment of the story because it's just too quick. And so what was interesting was you can ask those questions, but people feel it's a fair shake if it's in the context of other questions. I was pretty impressed with the way that worked out. I walked into it a little concerned about the nature of the relationship frankly.

MS. JARDIN: These were, by any definition in my opinion, some of the most successful and well produced live event webcasts I've seen and I've spent a lot of time with online video. One thing, I want to get to some broader questions that speak to the theme of the event. But I really want to share with the audience too the story of how you, yourself, almost became an astronaut.

MR. O'BRIEN: Yeah, well, what happened was actually it really began with John Holliman who spent a long time at CNN. Actually he was pushing very hard on the Russian side of the program to go to space. This is before Dennis Tito flew. And he got

pretty far down the road until the Russians named the price and that was the end of that as far as Ted was concerned. I think the Russians were willing to do it at that time, before Dennis Tito flew, for about six million bucks, which would have been a bargain actually. But Holliman came back from Moscow. He had gone with Ed, no relation to Ted Turner. They came back and they were convinced they had a deal. They went right up to Ted Turner's office and said, hey, only four million bucks. He started laughing and that was the end of that.

When we lost Holliman and I moved into the full space position, then Dennis Tito flew and that changed the equation a little bit and the thinking. And at that time Eason Jordan at CNN approached me and said why don't we start pushing this. And literally for three years I went back and forth between Russia and Houston and Washington trying to negotiate it. The truth was that CNN would -- they had told me that they would not do anything with the Russians because they felt it wasn't as interesting a story. But I didn't tell NASA that. And eventually, under Sean O'Keefe, previous NASA administrator, they agreed to do it. And we were set to announce this about ten days after Columbia would have landed in February of 2003. And of course when we lost Columbia that was the end of that agreement. But what can you do?

That's one thing Walter and I have in common. He would have flown on the shuttle were it not for Challenger, for me it was Columbia.

MS. JARDIN: But it's not too late, Miles. The Shuttle Program may have ended but there are many more craft.

MR. O'BRIEN: I'm doing an event with Richard Branson on Tuesday in Las Vegas. I'm going to pin him down right there.

MS. JARDIN: You need to be on that first Virgin galactic--

MR. O'BRIEN: Yes, that's right.

MS. JARDIN: Well, much of what you will be talking about throughout this event here at the Shorenstein Center, all of you here in the audience has to do with media and politics and thinking about that theme, I started thinking with you, Miles, about the role of government in promoting and ensuring science literacy. Without a science literate population, without education that gets people excited and engaged and feeling

confident about science, math, technology, space as subjects that they can own, would you have a job?

MR. O'BRIEN: Well, this is -- this one is a little bit above my pay grade, I think. But I do think that the National Science Foundation does a fair amount of outreach. Certainly NASA has huge PR apparatus, which engages the public on several levels. But I think you have to sort of step back and look at the educational system that turned me into a history major instead of a biology major or physics. We don't teach science very well to kids. We take what is actually as exciting a subject as you can imagine, about adventure, about exploration, about mysteries and we turn it into memorization of the periodic table. And we lose people along the way.

So until we address this in a fundamental way at the early stages of education, we lose kids at the middle school time is when we lose them. That's when science becomes uncool, it becomes a little too complicated, it becomes less interesting to people. And until we can keep people at that point everything else will not follow, including interest in science in the mass media and getting the U.S. public behind the notion of science in a more educated way. I mean, we have -- we do have a fundamental issue here if you look at the political campaign on the Republican side there seems to be a vehemence against knowledge, in particular, science. You've got a candidate who is running for president who doesn't believe there is global warming and his state is on fire. There is a little disconnect there.

MS. JARDIN: They may as well be flat earthers. They may be.

MR. O'BRIEN: They may be. That's possible. We should ask them, I don't know.

MS. JARDIN: Well, when CNN shut down the science and technology division it felt like it was really downhill from there, not only for CNN but for other networks as well. There seems to, you know, broadcast news was never very kind to these topics. And with this market becoming increasingly competitive, with the economic situation becoming increasingly dire, this is the first baby to be thrown out with the bath water. But do you feel like -- do you feel like there is overall worse access, less access to science information because of that? How much of a difference has that made?

MR. O'BRIEN: You know, looking at it now with a little more perspective I can see why science doesn't fit in to the business model of cable news right now. Cable news, it's about politics, it's about people, lots of live shots and people opining on various things and offering their spin. They don't go out and spend as much time and effort on stories as they used to. And that goes for any subject. So science became the fish nor fowl thing. So I get that for the cable news entities. There still is a lot of good science programming out there. I've learned the value of public broadcasting and maybe that goes back to what some of the government role should be is in supporting public broadcasting and not making it a political football.

But there is really excellent science programming on PBS with Nova and Nature. And on the News Hour, the grants that we have, some of it comes from the National Science Foundation, going back to your point, some of them from foundations, make it possible for us to do science programming that, frankly, I couldn't do at CNN. I do 10, 12 minute pieces for the News Hour and they're just pleased to have them. To do a 10 or 12 minute science piece on CNN, that would require an act of Congress.

(Laughter)

MR. O'BRIEN: I mean, you know, I still don't understand how you can be on 24/7. I think that's the most time you can have.

MS. JARDIN: Wait, let me Google that.

(Laughter)

MR. O'BRIEN: And yet if I got two minutes for a science piece I was happy. So it's out there. Going back to your question about whether people are interested, it's whether people want that content. I think there is an audience out there. I wish it were a little bigger. But there is stuff out there. The stuff you see on Boing Boing, while we are making fun of the turkey and all that, you have a science correspondent there, Maggie.

MS. JARDIN: We do. We have a full time science editor.

MR. O'BRIEN: Extraordinary. And a full time science editor. It was extraordinary. Her pieces are insightful, excellent, in depth. And that's just one example of the kind of content that is out there if you are interested in finding it.

MS. JARDIN: So online is one place. It's kind of independent publications.

MR. O'BRIEN: I think these niches are being exploited by people like me, like you. And the world, because of the changing nature, because of the tweets and all the ways we have to connect with each other people will find you, people who are interested in that subject. The concern of course that everybody has in all this is that we become -- we are all preaching to our individual choirs and we're not -- the serendipitous nature of learning something just by casually turning on the TV, it may be gone. But I'm convinced that the 250 or 300,000 people who are watching out six hour webcast of the shuttle launches, they weren't all the choir. That was expanded and amplified in the exponential nature that social networking affords.

So I think the content is out there. I think if you want to learn about science or technology you can. There's a lot of places to go. I still think we've got to work on the problem of making Americans a little better science educated.

MS. JARDIN: You have a college age son and daughter, 16 and 18, how do they get their news and do you feel like they have the same kind of access, the same kind of ambient access to space technology and science information that you did at that age in your life?

MR. O'BRIEN: They are -- they don't watch television in the sense that we all watch television. They're on the screens and they are -- what is it? Is it stumble?

MS. JARDIN: StumbleUpon?

MR. O'BRIEN: StumbleUpon. That's what my son loves, StumbleUpon.

MS. JARDIN: Boing Boing gets a lot of traffic from StumbleUpon. It's like a link sharing service.

MR. O'BRIEN: The bottom line is I think anything my kids do, my son is a plebe at the Naval Academy, so right now he is kind of locked down. But my daughter is a senior in high school. Everything they do involves a two-way transaction. The notion of broadcasting, of a one-way trip of information, I think, is an anathema to them. And I discovered that doing these webcasts, how powerful it is to have a conversation. We would be doing -- as we would be doing these six hour webcasts we would be getting tweets and comments in. And I would literally, if I forgot the mission or the person who

was on a mission I would ask the audience and they would give me the answer in a millisecond, so it really was a two way street.

It was an extremely powerful experience and so different than broadcasting. And I think that generation, my kids' generation absolutely demands that kind of interaction. News is something to be shared, not to be consumed.

MS. JARDIN: So this idea that the internet is making us dumber, you're not buying it.

MR. O'BRIEN: No, I don't buy it. I don't buy it.

MS. JARDIN: Let's take some questions from the audience, shall we?

MR. JONES: I've got one. You started to

talk about Boing Boing as a place for serious journalism as well as crazy turkeys.

MS. JARDIN: Now be kind.

MR. JONES: No, I'm quite serious about this.

MR. O'BRIEN: She calls herself the cat lady of the internet.

MR. JONES: As you think about models for delivering news of all kinds, in your case, science. Is the Boing Boing model one that is going to be something that is going to be emulated and copied repeatedly and is that in your opinion an effective good and big way of delivering important information? And how do you go about the mix of turkeys and other stuff.

MS. JARDIN: We like to joke internally that Boing Boing is a mix of kittens, news and righteous outrage. And on any given day, I haven't seen the post today, I have been preparing for this, but I imagine you will find goofy internet pictures, righteous outrage about, you know, Apple or Dell doing something bad and some big news event. We have been doing a lot of coverage of the whole Occupy Wall Street movement and WikiLeaks, which Ken Auletta was talking about a little earlier. The shortest answer is that Boing Boing is whatever its editors and contributors are obsessed with on any given day. We're wonky and obsessive about science and politics and technology, but there is one editor who is nuts about ukeleles and another one who you can't get him to shut up about homemade clocks. I have tried. And then there is me with the animated chips.

The business model behind Boing Boing is very much a happy accident. I wasn't a founder of Boing Boing in the '80's when it was a zine but I was one of the founding partners when it became a business. I don't know -- I don't know if we will emulate Boing Boing's business model five years from now. Because so much, so much is changing in ways that are sometimes frightening to us about the online advertising market. We're thinking about new models of sponsorship along the lines of what Miles was inscribing earlier for the webcasts. I don't know exactly where display advertising rates will go in the future.

The shortest way to describe kind of where we are and what instructive lesson there may be for anyone else is that we have always kept our overhead as lean as possible. We are a virtualized company, we don't have one physical location where anyone -- more than one person works at a time. And we have always thought of this as a business that we would like to support a lifestyle where we get to do work that we love. We've been offered opportunities to cash out, to sell, and we always just ask ourselves what would we rather be doing than this. This, which also gives us freedom to do work in other organizations or write books or do whatever. There's nothing. So keeping things lean, truly, truly doing what you love and keeping at it and waking up every day and doing that work. That's the best instruction I can offer anyone.

MR. O'BRIEN: But I think key point is there is no editorial hierarchy at Boing Boing. Each of the individual partners, people involved, post on their own and you don't approve their copy and vice versa. So that kind of haphazard nature I think becomes a charm.

MS. JARDIN: Yes. It certainly becomes the character of Boing Boing. On some days that's a good thing, on some days perhaps--

MR. O'BRIEN: But if it's filtered through one individual it probably wouldn't be the same at all.

MS. JARDIN: It's a fun experiment.

FROM THE FLOOR: Hi, Shirley Lord Rosenthal. My late husband, Abe Rosenthal, created Science Times for *The New York Times* and the business department said he stole Tuesday. They were furious.

(Laughter)

FROM THE FLOOR: But in the end--

MR. O'BRIEN: They are still going, thank God.

FROM THE FLOOR: --it was a great success. And Joan Ganz Cooney created Sesame Street. It was only today sitting at breakfast that someone said the *LA Times* had canceled its science coverage and I was shocked. I just had no idea until hearing you about CNN. Do you, particularly, as it's a time, I mean, Marvin's camp that I don't understand half of what is said in the technological world, that science is something that I gravitate to and want. Isn't it the kids that are really going to push for this and perhaps comics. It's interesting that Abe introduced this and at the time it was a shock. Will you take a column on computers, back late '60's, '70's. So today trying to think of this shocking news to me thinking that everybody would be more interested in science, is it going to come through the children?

MR. O'BRIEN: You would think they would be more interested in science, wouldn't you? But I think, first of all, I've never met a kid who isn't a natural scientist. Why is the sky blue, daddy? That's a scientific question, right? So somehow we get that wrung out of us along the way.

MS. JARDIN: We have a feature on Boing Boing every Saturday called Science Questions from a toddler and I think that was actually one of the questions.

MR. O'BRIEN: And so, yes, I think if we can sort of capture that enthusiasm that young people have and keep that going I think we are going to be better off. I think, you know, there are places now, there are more and more places for kids of any age and adults to find that kind of material. I still feel like the classroom has to change in order to make really science literate adults in this country. But having said that I don't believe we have a dearth of content. And my kids know how to find what is of interest to them and they will find it.

FROM THE FLOOR: I'm Ed Baumeister. I was Fellow here in 1993 and at the time I was a high priest.

(Laughter)

FROM THE FLOOR: I was an editor, a gate keeper so I'm, what do you call it, old school. What I'm not -- all this distribution, connecting, democratization, all these functions of the technological change are wonderful, but what I don't hear is the effect on the formation of what we used to call news. And I hear news, to me, was definable. But I hear people talking about data and information as if they had a single positive value. So I'm wondering -- I think you are probably both old enough to remember the old system or I can recommend a couple of books that would tell you. Is there, as there is a revolution in distribution in democratization, is there any similar movement, I won't ask for a revolution, in the generation of high quality verified -- that's what we high priests used to do -- verified information that is then put on this marvelous new system?

MR. O'BRIEN: So how were things edited, in other words, without an editor.

FROM THE FLOOR: No, no, no. Not only that. How is -- is there offered by this new system an advantage? Are there advantages in gathering in the first place, then verifying editing, if you will, and then distributing? I mean, where is the quality advantage for the stuff that people consume however?

MR. O'BRIEN: First of all, I will never forget. This happened to me on more than one occasion on CNN where I would, back in the days of tape, before any CNN science piece would air I would have to play it for the supervisor and producer. And on more than one occasion I would pop it in, they would watch the two and a half minutes and they would go, wow, I know that's science, but that's interesting. So the gatekeepers can be an impediment--

FROM THE FLOOR: I was one.

MR. O'BRIEN: And so what I think has happened as all of this has sort of flattened out is that you have a collective audience of natural editors that gather around the areas of--

FROM THE FLOOR: Now wait a minute. What's a natural editor?

MR. O'BRIEN: Well, I just think that anything that is posted and is wrong you are going to hear about it in a millisecond.

FROM THE FLOOR: Well, that's reacting. An editor, a high priest, if you will, was someone formed as such, either on the job or in school.

MR. O'BRIEN: And of course they are infallible, aren't they?

FROM THE FLOOR: No, no, no, no. I'm just looking for the quantitative advantage and there must be. There must be because -- there just must be. What is it?

MR. O'BRIEN: I think there is an advantage because you end up with people who really know something becoming the de facto editors of information, of what we call news. Your thoughts on that.

FROM THE FLOOR: Well, is a de facto editor as good as a guy who went to Columbia Journalism School--

MS. JARDIN: A de facto editor may well be somebody who is out of work and went to Columbia Journalism School.

FROM THE FLOOR: This is really not my question. But in the identifying of material that should be gathered, verified and shared with fellow citizens, press, politics, public policy, is there at the moment or is there developing an advantage in that process which comes before this marvelous distribution process?

MR. O'BRIEN: I think the advantage is you have physicists weighing in on articles about physics instead of an editor who went to the Columbia Journalism School. That's what happened. Because everybody weighs in. Everybody checks you. There is an instant reaction to the world on things that are wrong. You hear it all the time, right?

MS. JARDIN: I would agree and I would just add I love high priests. I love editors. My mother was a copy editor for a big arts publication. We're not doing what we do at Boing Boing and our peers aren't doing what they do on other new media sites and new media ventures because we hate the old way of doing things. We're doing this because the old system and these old established companies don't have jobs or roles for us. Or if they do they are not jobs or roles that we want. It's not a platform that makes sense for us. I worked at NPR, I've contributed to *The New York Times*, to wire, to many other publications that are part of that conventional media establishment, I guess by any other description.

And I found myself frustrated time and time again by having to go through a hierarchy of editors who I felt didn't understand this world that I had adopted as my own. And the great thing about this site that I run with friends who are now business partners is that gives me the freedom to explore those stories and be paid for telling those stories in a way that doesn't limit the geekiness, that doesn't limit the specificity. I think that that process, that kind of naturally evolving process puts more pressure on the reporter to do their job right. And within five seconds of putting out a post every day, even if it's just something stupid about one of the animated cat ships, if there is any lack of specificity or if I've blown a little detail, five seconds, ten seconds, I'll get a correction.

I'll give you an example. Dennis Ritchie, the C programming language, the computer scientist from Bell Labs who co-created Unix, I had a little glitch in the headline, I think I said that he co-developed C and ten seconds later 20 guys on Twitter and in the comments were saying he didn't co-developed C, he was the godfather of C, he wrote it with his bare hands. How could you do that to Dennis M. Ritchie?

(Laughter)

MS. JARDIN: But I don't think an editor would have responded with such passion. They probably wouldn't have responded so quickly. And damn it if I didn't correct that while the fire was lit.

FROM THE FLOOR: Carl Heckerine and a/k/a Roaster Boy. The point that we're discussing, one is this is a very new -- I'm not even sure we can call it a process yet, but it reflects more of the peer review process in real time with a much broader audience. So instead of having a panel of 12 selected experts reviewing an article you now have the Twitter-sphere, which can bring down wraths as needed or spread the good word very quickly. So while it is a new and evolving model from the old editorial structure the vetting that goes on in real time for lots of this content is I think very, very intense with people who are passionate about what they are doing and also damn smart. And that's the important thing.

And what it means is that for some of this stuff it will not be settled. I mean, there are lots of nuances regarding climate change. There are lots of nuances regarding

the data produced by government on any manner of things, some of which is fueled politically, some of which is fueled, you know, as we look at, for example, the recent rulings or recommendations regarding screening for prostate cancer, a couple of years ago mammograms, intensely fought debates over what should be matters of science because it is your real people. You have Jeff Jarvis going off the rails really on some of the discussion regarding the prostate screening.

But based on taking science as we understand it now in all of its murkiness, in all of its muddiness and trying to apply it to real life. You know, what do I do today as a guy in his 60's. You know, do I have that screening or not. And those are hard questions and those real questions, but that is being slugged out because science is not a settled thing. It's not an encyclopedia, it's not given down from the high priest. It's an evolving process. And this new system which is also -- the wonderful scene from Wallace and Gromit, The Wrong Trousers, where they are building the railroad bridge as they are driving over it. That's what we're doing. And I think we've got to, you know, we don't know where the other end is going to touch down.

FROM THE FLOOR: George Moakrie, independent scholar and fellow happy mutant.

MS. JARDIN: Right on. Hi.

MR. O'BRIEN: Do you guys have a secret handshake or something like that?

MS. JARDIN: If I told you -- thanks.

MR. O'BRIEN: I'll find it on WikiLeaks.

FROM THE FLOOR: If we're talking about politics and media you brought up something in passing that I think we should spend a little bit more time on. The fact is that by my recollection there is one Republican candidate for president in the debates who actually believes in climate change and other parts of science. There may be -- Buddy Roemer doesn't get in the debates, so I don't know what his position is. But you do have a kind of political tribal system now where one tribe rejects a lot of science. How do you talk to those people? How do you interview politicians who don't believe in facts and figures that are down in black and white that 97 percent of the experts in the

field who devoted their lives to it say this is what's happening to the best of our knowledge and the best of our ability?

MS. JARDIN: You talk to them very slowly, one syllable at a time.

(Laughter)

MR. O'BRIEN: Bring a translator, I don't know. It always reminds me of Pat Moynihan's famous comment, you're entitled to your own opinions, not your own facts. And that's where we are right now. And somehow that it has devolved into that. But politics and science don't mix well because the processes are so different. It's debating society versus peer review. And it's an apple and an orange. It doesn't mix well and the fact that the debating society doesn't appreciate what peer review really means is a real problem. And frankly, I hate to harp on it, but it goes back to our fundamental lack of appreciation for science in this country and the fact that we are not scientifically as well versed as we should be collectively. And I think as long as the American people don't understand science fundamentally that political gamesmanship will continue.

MS. JARDIN: I don't know which frightens me more, having a candidate like that in the office is a very real prospect with the fact that we may end up with another four years of a president who is currently investigating my friends' e-mail. You know, Jake Appelbaum, that case, terrifies me. This is a guy I know. They are going after e-mail data for the past two years from one of the developers of the Tor Project. My e-mail is in that batch. Am I an enemy of the state? It's not good times for technology research.

FROM THE FLOOR: NSA has a large warehouse where they are storing a lot of information.

MS. JARDIN: I hope they have Boing Boing's archives in their too.

MR. O'BRIEN: They are capturing this as we speak.

FROM THE FLOOR: Hi, my name is Ed Nicko and I'm an Adjunct Lecturer here at the Shorenstein Center. But in the earlier kind of discussion about editors and the role of editors, it seemed like -- from what I understood, you said about the Boing Boing model, it's like an economic necessity that you can't really afford editors, right? Not necessarily about the potential value they might add.

MS. JARDIN: You said it more succinctly than I did. That's exactly right.

FROM THE FLOOR: And so I'm kind of wondering about when I look at online models for journalism, I don't really see any that support any real scale. Like I don't know how many people are employed by Boing Boing but it seems like it's not more than ten.

MS. JARDIN: You're correct.

FROM THE FLOOR: And so I'm just wondering about, you know, do you think that's mostly the future of online models for journalism, at least ones that make money. Is it they are relatively small scale and what are the implications of that for the kinds of coverage that's possible?

MS. JARDIN: Are there any *Pro Publica* people in the house? So we love *Pro Publica* and we look to you as an inspiration. We look to you as an inspiration and hope and an experiment that is kind of living itself out in real time that might point the way towards something else that is possible. You asked about the future, I don't know about the future but I do know that that is a pretty good reflection of the now, that a number of the other organizations that we consider, that we, Boing Boing consider to be peers are kind of functioning on that as lean as possible, as small as possible. Unfortunately there is not a lot of room for secondary editorial staff to sort of support the main reporting staff. But we're -- I, individually, am as interested as anyone in a diversity of models. I think diversity is good. We don't have the same kind of funding structure or the same mission that an organization like *Pro Publica* does.

But the fact that there are a lot of semi-disenfranchised, frustrated, talented writers and reporters and editors out there trying to figure out a place in the world for their work, for their ideas, for their passion. I think that's a good thing.

MR. O'BRIEN: You know, I think I always like to make the kind of the retail analogy. I think we're in the boutique era of journalism. And boutiques can coexist with Wal-Mart as long as we are offering true value added. So it's kind of like the long tale. We're in a long tale era because technology has enabled Boing Boings and Miles with his camera and his laptop to reach an audience. And it's hard to imagine what I do scaling up because it has kind of got this little narrow niche, but there is a business to be had there, a smaller business. On top of that there will be people that will aggregate all those

little boutiques and make it easier for you to find them. But I think that's where we are now. And I see -- I don't see that trend changing anytime soon. We've got one minute, so this will be the last.

FROM THE FLOOR: Hi, my name is Alexia. I'm a student at the Kennedy School. My previous education was in mathematics and science. My question is about, I guess, you were speaking about, first of all, the sort of poor state of science understanding in the public and the U.S. and I completely agree. But you also mentioned sort of this science technology is leaving sort of mainstream media because it's -- there just aren't enough people who are asking for it and sort of this idea of the media is driven by supply and demand. And I guess my question is how much can we sort of just pass this off in a way as, well, there just aren't people up there who want this and how much is it really a fact that, you know, if you're not hearing about this as a child and media isn't telling you about science and technology and society isn't telling you that it's important, I mean, isn't that just self-reinforcing the cycle?

If we really expect people to go out as adults or even as young people and ask about science and technology, well we've already created a system where they can't do that because we haven't given that option to learn about it. So do you think there is any sort of, I guess, especially for public airwaves, I mean just for television I guess, less so than the internet, is there any sort of moral responsibility that should come in to play in this or is it simply a sort of supply and demand, you need to make money at CNN, so you should show sex and violence because that's what sells.

MR. O'BRIEN: It's a dive to the bottom. There is no question. And it's all about profit. We know how that all works. And when Marvin began at CBS the news divisions were there for other reasons besides profit. And those days are long gone. So I think to look to the mainstream media and say why don't you do this because some sort of noblesse oblige or altruism, that's not going to happen. What heartens me is my kids don't watch that anyway. So if you're concerned that my kids are not getting enough science because it's not on the CBS Evening News or on CNN, they're not there anyway. So we'll find them by other means. And we are finding them by other means. And let the

mainstream news entities march on and do what they do and make their money, but just, you know, consider that the content is narrower than it used to be.

MR. JONES: Thank you both.

(Applause)