

Catherine Interviews Dale Dougherty
The Maker Movement
The Solari Report: July 5, 2012

Catherine Austin Fitts: Dale, are you with us?

Dale Dougherty: Yes, I am. Can you hear me?

Catherine: Hi! Well, welcome to the *Solari Report*. We're thrilled that you would do this, and we know because of the holiday that it's a special effort for you. I can't tell you how much I appreciate it.



Dale: Oh, you're welcome. It's nice to be able to chat with you.

Catherine: Well, I've already introduced you before you got here.

Dale: Okay – good.

Catherine: So why don't we just dive in and tell us what – who are the makers? What is a maker? How do you become a maker? How did this all get started?

Dale: Okay. Well, you know, in many ways, making represents kind of a reengagement with physical things like objects and the processes that we use to create and build things. I started *Make Magazine* really in about 2005 – 2006 because I saw people, particularly people who had worked most of their life in software and being reengaged – or reengaging in hardware and physical things, whether you call them robots or rockets or all kinds of things.

And I just saw kind of a renewed interest in tinkering and the practices of, oh, just take something apart and figure out what's inside of it and how to use that. And I think in some ways there's always been people doing that kind of thing. I sort of gave it a new name and kind of a freshened up identity. But if you go back to the early days of the personal computer, people were building kits – Heathkits and others to really build their first computer. It was a chance to get something they could not buy.

And I think we've had a strong streak in engineering and even other disciplines like industrial design of people who really – they not only have ideas, they wanna realize those ideas in particular objects. And I think when we reintroduced this idea and called it “make” and kind of intentionally said, “Our audience are makers; they are people who make things,” we allowed people who had specific fields of interest to kind of all gather together.

And it almost came from looking at open source in software and thinking about – you know, some of the magic of the open source software movement has been people are aware that there's lots of

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different projects, whether it's MySQL or PHP or PERL, and yet they kind of feel a certain affinity across those projects for – you know, you can get together and talk about your project. You can talk about who's working and what they do with it.

And I thought that's kind of the community we wanna build is people and their projects and give them a chance to talk about it. It doesn't really matter whether they're really into optics or they're into acoustics. They actually would like to get together and talk to each other.

Catherine: I remember when I was a kid my uncle describing to me the fact that when he was a kid he'd taken a whole summer to take apart and put together a Model T Ford. Then they'd taken the next summer and took apart, put together bicycles and how cool they thought that was. And I remember thinking, you know, "Why don't we do that?" It's so strange that we don't do that.

Dale: The other side that I think is really important is what do you discover by doing that? Not only simply that the – how a Model T works or a bicycle works, but you really are taking apart the world understanding that things can be broken down into components and put back together and even put back together a different way than what you disassembled them.

Catherine: In 1978, I rode a bicycle cross country, and to do it I had to learn to take apart and put together the bicycle. And for a summer, you know, whenever I had a problem with my transportation, I just took it apart and fixed it again and put it back together. And right afterwards I got on a plane to fly someplace, my first plane trip afterwards, and I had this terrible feeling that if anything went wrong, I couldn't fix it, and it felt terrible.

Dale: Yeah.

Catherine: So I think – I think –

Dale: You're very passive and –

Catherine: What is your expression? Yes – you can make your world. That's your expression, right?

Dale: Yes – yes, something like that. Yes. But I think it – you know, if you – I think we're used to this idea in software that we can change things easily, like, "Where's the profile or preferences? Where do I change the color or change the visibility of something?" And I feel like we've – as a generation we're getting so used to computers that we now kind of look at the physical world – or you get in a car and – you know, I think Prius kind of did something like this, but, "Where's the menu? Where do I change what's on that dashboard?"

And you kind of think about your house like, "Well, how do I control these lights? I don't like the way they come on – or I like to do that." And we start thinking – and it was kind of the seminal

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idea I think behind the magazine, was hacking your world. That you would start to apply the ideas of hacking that we have from software to the physical environment that we spend all our time in.

Catherine: Right. How much of this has come out of new technologies? I mean, if you look at what's happening in new technologies, whether it's robotics or 3D printing or any of these things, suddenly we do have new tools that could be very powerfully decentralizing.

Dale: Well, I think in ways that I didn't really appreciate at the time – sort of when *Make* got started and then I think some of this new technology started to take off almost coincidentally, but I think it's very important to the growth of the maker movement and what it means for people and innovation. You know, 3D printer I think, if you recall – because this is kind of how I got started in technology – really it wasn't the computer itself that got me engaged; it was the laser printer.

Catherine: Really?!

Dale: The laser printer allowed you to create something on a computer that then you could share with other people. I'm a writer, and O'Reilly as a company really got started doing computer manuals and computer books because, hey, we have all the tools we need on a computer to do that. But it's – the laser printer is the key piece there. And the laser printer comes out of Xerox and is sort of popularized by HP and Apple. You kind of think about what that did is it really opened the door for creative people to begin using computers – people that had graphics arts background.

We needed – you think about it. We needed new software like PageMaker. We needed standards like PostScript. And we had kind of a – pretty quickly a rich ecosystem for creating your work, and I call it kind of the “rise of creatives.” And those creatives went on to do – they moved from page design to web design pretty easily because the second wave of creatives were really doing things that just existed on the computer. So I think makers are like a third wave that is now looking to say, “Oh, once again we can use computers to design and model things, but we can also push a Print button and get a 3D object out of that.”

Catherine: Well, I also think of makers as people who are punching through the force field that says, “It's only good if you buy it in a store. It's only good if it's slick and comes from a big corporation.” Somehow we've lost the ability to do it ourselves as a sort of commitment to the power of our own imagination and ability to build a higher learning metabolism.

Dale: Right. It's almost a surrender. It's almost like, “Well, we – who are we to build it?” and this is where I think making is connected to other things. I think, for instance, you know, like, “Why do you raise your own – grow your own food? Or why do you make your own dinner instead of just going out and buying something from the store?” And I think some of the answers to that I think are very similar to why we wanna make things, is because you like the way it tastes, or you like to know where your food comes from.

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You feel connected – you feel differently about that, and you feel more invested in the process, you know, say of cooking your dinner. I kind of – one of my ways I thought of *Make* early on is I said, “Well, think of it as like Martha Stewart for geeks.” And what I kind of meant by that was that, you know, she’s sort of got that – you know, you do these things and even aspire to do these things because of sort of what it means to you to make a pie, for instance.

You know, people are coming over, and you take the time to make bread or make a pie. It’s something that you like to do inherently, but it also means something in a social context. And I think of making in a similar way, is it’s a demonstration of what you can do, and it’s something you can be proud of. But it also leads to interesting places, and in particular leads to relationships with other people, which is something that hobbyists have always done for us.

I think when you engage in a hobby, you’re a rank amateur, and you’re embarrassed practically to talk to anybody else, but you begin meeting people who are just like you, and you meet a community that wants to share their ideas and welcome you and – and that’s a really positive experience to have.

Catherine: Now, you started the Maker Faires. I’ve never been to a Maker Faire, but I’ve encouraged a whole bunch of people in my network to go, and I keep getting these great reports, including from the last one – I think it was just in San Francisco.

Dale: Yes, in May. Mm-hmm.

Catherine: So could you explain the history – what a Maker Faire is and the history of how this got going?

Dale: Sure.

Catherine: And if we were to go – walk us through a Maker Faire. Who would we meet, and what would be going on?

Dale: Increasingly the particular one here, it’s – you know, we had over 100,000 people over 2 days. So first of all, you’d see a lot of people. But the core of the idea when I started the magazine was I was fascinated by what people were building and making and the reasons they had for doing that and how it – I just said, “This is stuff we don’t get to see every day. There’s no other place that it sort of becomes visible.

And a lot of this stuff is private. It’s done in your garage or it’s done in a basement. So I wanted to kind of create this fun event where people would bring what they’ve been working on and set up a table and talk to other people about it. I wanted the – not only the thing that they’re making, but I wanted the maker themselves to talk back because I find makers are enthusiasts, and I think it’s – it’s just a wonderful trait that when you see it in someone it’s infectious.

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You can't help feel something for them. And they're enthusiasts about the knowledge they have. They're enthusiasts about the tools they use, enthusiasts about the kind of participation they have in a community. And it sort of turns out that almost everybody of every age can connect to that. You know, you don't really have to care about someone who'd doing this, but when they're building a tank to raise jellyfish in their yard, you know, you go like, "That – I've never thought of doing that, but it's fascinating to talk to someone who's doing that and working out.

And like, what are the problems? Why are jellyfish different than guppies? And how long do they live? How do they breathe? You know, it just leads us into a brand new world. And so Maker Faire, I really wanted to kind of find those people, and I knew they kind of existed, and a lot of times I think of it as these are creative people doing interesting things with technology. They're often spanning one or two fields in a kind of interdisciplinary way. They're amateurs, but that doesn't mean what they do is amateurish.

And so I – you know, I just thought – well, I meet these people through the magazine. I find them fascinating. Do you think they would like to meet each other, first of all, and do you think we could get them together in an event and the public would enjoy it? And we kind of shaped it as a fair because of almost the heritage of fairs in an agricultural society is people lived on remote farms, and they got together to share their work, you know – their pigs and their pies – and they got a chance to learn from each other.

And I thought, "Well, you know, a fair is still a relevant context here, but a lot of the existing fairs are really still about agriculture and not about what people are really doing today." And so I think if you walked around Maker Faire, you'd kind of have this sense that you were seeing a bunch of things you normally don't get to see. You'd see stuff that's fun, crazy – you know, fire arts. People have lots of reasons for making, and some are – they have business reasons for doing.

They're trying to make something that they hope one day they can sell. But a lot of people are doing it because they love what they're doing. They just – they wanna make you smile. They wanna capture your attention. We have things like a 19-foot tall giraffe – robotic giraffe that moves around and is all lit up with lights. And we have Arc Attack, which takes giant Tesla coils and they play live music through them so that you have rock-and-roll and you have these lightning bolts in the sky.

Catherine: And you have traveling cupcakes.

Dale: Yeah – the muffins – but the interesting thing of the Maker Faire is we're trying to also – we want you to become a maker, and we have lots of activities, lots of places where you might sit down and amidst all the hubbub and roar you're learning to solder, you're learning to embroider, you're learning to do things that are part of sort of the DIY skill set.

Catherine: There's a wide selection from very low tech to very high tech.

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Dale: Yes.

Catherine: So you don't need to be a technologist to get involved.

Dale: No, and I think that's kind of what – I mean, one of the reasons – you know, I wanted to be inclusive of even traditional crafts and arts and – you know, I feel some of them are getting a bit lost in our busy world, and they still have value to us. There's still people practicing them, but particularly for the next generation there's something meaningful about using your hands and doing things in an analog way. You know, our brain is really geared to working that way, and I think we forget that sometimes.

Catherine: The first Maker Faire was in 2005?

Dale: I think it was '06. I think it was 2006.

Catherine: 2006.

Dale: And it was in –

Catherine: Okay – so this is 2012, 6 years later, you're up to 100,000 people.

Dale: Yeah, yeah, yeah.

Catherine: Wow!

Dale: Yeah – and I mean, you know, I wasn't sure even the first year how many we'd get, and we got something like 20,000, and then it went to 40,000 the year after. So this year there'll be 60 Maker Faires around the world. So there's – it's – they're smaller. They're not 100,000. They might be a couple thousand people, but after the ones in May – last June, I visited Sol, Korea, where they had their first Maker Faire, and while it was just a couple stories of like a gallery, it had kids there. It had families there.

They had lots of fun, exciting projects. And the makers are just excited to be there and doing this and sharing with each other.

Catherine: Now, can you explain what “hackerspace” are?

Dale: So hackerspaces and – there's really kind of a class of things that go by different names such as makerspaces, Fab Labs, TechShop – there are kind of little differences, but they're very similar. It's really like a community-based workshop where you have tools, specialized 3D printers or laser cutters, you have materials, but probably more importantly you have some set of experts and people who can help you there.

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It might – a hackerspace tended to be like a private club. Ten people get together, say, “We’ll rent this couple thousand square feet. We’ll work together on building it out, and we’ll share our tools, and we’ll have workshops now and then, invite people in to teach something.” And TechShop is a commercial model where it’s – you know, as a company they’re building out these spaces. They have three in the San Francisco Bay area. They’ve opened one in Detroit, and it’s a membership model – gym membership model. Like you pay \$100 a month, and you can go there and use the space and use the tools or take workshops.

And Fab Lab is a bit more of an academic version that has – but roughly the same set of equipment, but placed in – you know, it could be at a community college or four-year college. I’ve been working on sort of makerspaces as an idea for education, both formal and informal. Like, how do we get – in a sense kind of reinvent the shop class and –

Catherine: Right.

Dale: -- replace some of the old machinery with new tools like 3D printers. How do we get kids creating and building and producing things? And this is my key – I think key idea for them is I really want them to see themselves as makers, as creators, not just as consumers – even in education not just as consumers of content, but really people that are creating and making things.

Catherine: Well, it’s interesting. I was looking at the classes at one of the TechShops, and a lot of the class is centered around learning the individual tools, and what you could see is if you took a – I guess the youngest you can go into TechShop is I think 12 unless – or you have to be a certain age unless you’re with your parents. But I could literally see a child sort of learning tool after tool after tool, and then once they had a certain number of tools, the range of what they could make with it is pretty amazing.

Dale: Yeah. Well, you know, the interesting – the thing that you’re onto there is, you know, we can – we can talk to kids like, “Do you have a rich imagination?” Many kids do, but do you know that the other idea we’re trying to teach kids is how to realize something that’s an idea – how to take advantage of it. And sometimes being more familiar with tools or being familiar with materials allows us to sort of realize, “Hey, this is the way to go. This is how I could do it.”

And even when we were talking about earlier about taking things apart, you go, “Well, this thing that I wanna build is a little bit like a bicycle because there’s rotary motion,” you know, or something. It’s – you begin to build a vocabulary for how things work, and more importantly how you would in a sense remix the physical world by putting something together with something else that nobody has ever thought of.

Catherine: One of the things – as this kind of automation rolls out throughout the economy, you have more and more people who have less and less income, but the interesting thing is they have more and more time. And the fundamental economics are changing where it just makes much

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more economic sense to make a lot more for ourselves. And so I think one of the questions is can the maker movement help people inspire people, particularly young people, to see that opportunity?

I – after the Housing Act passed in 2008 – I used to be Assistant Secretary of Housing, and this Housing Act passed, and it was hundreds of pages long, and I sat down, and I read it, and I live near an intentional community in Tennessee called The Farm, and they have homebuilding courses, and I always thought, “Oh, you know, it’s much too hard to sit down and learn how to make your own home.” And I read this new housing bill, and I called my attorney whose son at the time was 16.

I said, “You know, we ought to have Christian take the courses on homebuilding because if you look at how complex this system is becoming, you know, if you’re 16 it’s just easier and much more practical to learn how to build your own home.” So the economics are changing.

Dale: My son did that.

Catherine: Really?!

Dale: Yeah.

Catherine: He did that course, or he learned how to build a home?

Dale: No, no, but he built his own home, and – you know, he’d never done it before, but by a combination of tapping the expertise of other people and a desire and persistence to do it himself he figured it out.

Catherine: Oh, how wonderful!

Dale: And I think – you know, one of the things that this also ties into is really once you have a certain level of confidence in learning, and you know how you learn, you begin to see where the resources are that you need, whether it’s people or books or websites. And this is what I think of just like this golden era of DIY now – you know, we talk about other eras like the ‘50s, but we have so much information online that we could never think of accessing. And the kid that grew up in a neighborhood in the ‘50s, you know, if their father knew how to handle tools and how to workshop, you were – again, you might have picked that up from that person.

But what if you didn’t? What if you – like mine. My father didn’t really do that. I didn’t really pick it up that way. But the – through the Internet, it doesn’t necessarily matter who your father is or who your neighbor is or who your teacher is. You know, if you get exposed to something and you figure out what you wanna do, you can find people out there who can help you.

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Catherine: Well, this is why I think the open source community has really helped us remember all these things, because it's really demonstrated how collaborative efforts through time and space can get an enormous amount accomplished, and it really does work.

Dale: Yes – and we don't all have to – you know, when I kind of think of some things like maker and when you say open sources, there's a lot of activity that happens say in a city or in our lives that is not commerce that we share because – for lots of reasons. We get something out of it, you know, or someone asks us a question, and we give them the best answer we know. And I think of like this – you know, almost a lot what's happening in the maker – these enthusiasts, they're like pre-commercial – it's pre-commercial activity.

You know, a lot of it leads to business. But open source – it isn't necessarily like you make money on open source, but it's a kind of – it's a foundation for lots of people working together who don't care what business you're in or what your title is or – you know, and you work together, and you create things that you're able to use in different ways to create value.

Catherine: Well, unfortunately, right now we have a financial system that more often than not is stripping value out. So I think people are looking to say, “Okay, well, where can I make and contribute value where it won't just be destroyed or harvested and where we can circulate? There was a – I can't remember his name, but there's a wonderful software developer who put up – he's working on plans for the – I think it's “the 50 tools that make an agriculture community go,” and they're the plans for the hardware of how to build your own tractor, how to build your own – and I love it be – yeah, because it's a vision of complete economic independence that is absolutely feasible if enough people get together and start making things together.

Dale: It's hard, though. I think there's a lot of –

Catherine: Yeah!

Dale: I think in the '70s a lot of sort of DIY stuff was driven by the goal of self-sustainability, and it – and I think it – you know, that's a lot of work and pretty hard for a lot of people.

Catherine: Oh, but I don't think it's a zero-to-one thing. I think you make for yourself what is energizing to make for yourself, and you – you know, it's not zero or one. It's every little bit counts. I was going to ask you has there been any sort of real networking between the homeschooling community and the maker movement, because I come from a part of the country where the homeschooling movement is huge and growing. And to me, makers share the –

Dale: Where? Where is that?

Catherine: I live in Tennessee.

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Dale: Tennessee – okay.

Catherine: And if you look at something like TechShop, it's every homeschooler's dream come true.

Dale: Well, you know, here's the interesting thing, too. I think in California you have a pretty healthy homeschooling community, and we have an education day on Maker Faire – on the Friday before Maker Faire, and we get a pretty good turnout from homeschoolers, because they're – they're able to leave the school day and join us. And the other interesting things like TechShop, makerspaces and hackerspaces is I think one of the ways they would be used in communities is by people that homeschool.

I guess they often – they often don't – homeschoolers don't have labs and workshops easily accessible, and I've had some interest from folks there. And I think the other side of homeschooling is it tends to promote self-directed learning, which is what I feel is almost like the ultimate trait that you're trying – you know, if you can teach a kid how they learn so that they're learning to learn and they begin to realize that they get to drive the car, it makes a big difference to them rather than sit down and listen and be – just stay in your seat.

I think there's some interesting innovation coming from homeschoolers. And some of them say – you know, even rethinking how kids spend their time in the say is part of that way of rethinking what kids need to be able to do.

Catherine: Okay – so I'm sitting here, and I'm listening to you, and I've never been to a Maker Faire, and I haven't really thought about this. And I think, “Well, you know, this – I hear this, and this is really cool, and this is something I might like to check out or get involved.” How do I dip my toe in the water? How do I start? Where do I go? What do I do?

Dale: Sure – well, I think – yeah, I think there's a couple of things. One is you just have to start talking to people that you know. I – almost the way I sort of figured out the magazine was worth doing was just talking about the idea of making to people, and they already started talking about what they were doing. So that's – you wanna kind of look in your own community physically. I think of is there a hackerspace or a makerspace around? Is there a mini Maker Faire nearby?

These are good ways to sort of get introductions to making. Online, there's not only our site, Makezine.com, but there's Instructables.com. There's a lot of places you can go to get information about projects and things. And I think it doesn't necessarily matter whether you are – you know, I'd say like find something you're interested in, and look for communities that are doing something. And some are online, but a lot of them are in your neighborhood.

And DIY workshops and other things – like if you wanted to learn to program Arduino, you know, start seeing if there are any workshops in your area. So there's – I think some of that is like

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reengage with the community around you. There's a lot of – certainly online we provide a lot of stuff there. We provide the magazine in print and online. But I think, you know, sometimes the first step is like, "How do you get making something?"

Catherine: And what about your kids and grandkids?

Dale: Well, I don't have grandkids yet, but – but in general, there's kind of an interesting thing – I say the big surprise for me is every year Maker Faire and all that we're doing here seems to get younger and younger. It seems to be reaching a younger audience. The magazine particularly seems to strike a chord with teenagers who think this is cool like the way a skateboarding magazine would be cool. And they look at it and, "Hey, I'd like to be able to do this stuff." I wouldn't have predicted it when I started it because I didn't necessarily see the connection.

Catherine: And what are the kids interested in making? Are they – did they show a different –

Dale: I think – I think – well, you know, the magazine's pretty broad. The simple idea sometimes is – often some of the basic projects we start people with is just, you know, here's a battery, here some wires, and here's LEDs, and lighting a light – you know, you watch them do it. "Oh, it went on! Look at that! It went off. It went on. It went off. It went on."

And it's just – they are manipulating, controlling, changing something, and I think it's – it is – but they kind of see where that is – that they're directing that and not something else. So I think those basic things, like working with LEDs – music is a rich area. Another area –

Catherine: Do they make their own instruments?

Dale: Yeah – and synthesizers and speakers and amplifiers.

Catherine: Uh-huh.

Dale: Another area that's kind of fun is sort of fashion where it's sort of – it's called e-textiles where they're incorporating elements like LEDs into something that you might add to a hoodie or add to a scarf or add to a glove. And it's – I think the idea –

Catherine: So you're wearing lights.

Dale: Yeah, yeah –

Catherine: Yeah?

Dale: – or a little display that says something. You know, we had one project in the magazine that was called the pulse sensor headband, and, you know, it's just like you wear a little thing on your finger that was picking up your pulse, and the headband had lights on it that flashed in rhythm with

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your pulse. So one way of thinking about it is a lot of the projects have to do with sensing the physical world and translating that into something that expresses something fun.

Catherine: So it sounds to me like what you want to do is find the local place, whatever it is, get your kid down there and get them making something.

Dale: Right – and to realize that there’s a lot – you can get started with cheap materials. You can be inspired by hundred-year-old *Popular Mechanics*. You know, I did – when I started the magazine, I went back and looked at those, and I just thought, “You know, shooting off a rocket in your backyard – old soda bottle rockets is still kinda fun. We don’t get over that.” So I was about to say with kids, you know, the younger kids I think making is a way for parents to have sort of meaningful interactions with their kids.

You know, how do you build this? Working together, letting them do it, and if they get frustrated you help them out a bit, but try to get them – you know, let them take control as much as they can. But it’s something – it’s playful, and I think from an education perspective, we’ve sometimes been taking play out of kids’ lives. I’d like to put it back in. In a sense, it’s not the packaged toy that’s so interesting; it’s the toy you build yourself, and it’s the toy you get to play with.

And a lot of things – I don’t care whether they’re race cars or other things, you know, once you start playing with them, you wanna improve them. You wanna figure out what makes it go fast, and how do I change the wheels, or how do I change the motor? And that’s the human mind just at work kind of figuring out how to invent and create.

Catherine: Well, the video I put up on the blog for tonight was the little movie, the documentary short, *Caine’s Arcade*, about the 9-year-old in Los Angeles who makes a penny arcade out of cardboard boxes from an auto parts supply store. So it’s just what’s recycled from the back of an auto parts – you know, there’s no fancy materials. He’s just that and Scotch tape.

Dale: Yeah, absolutely. It doesn’t take much.

Catherine: No, no – I mean, you see from that thing that what it takes is really a child having confidence that they can apply their imagination, and if they just keep building and learning and building and learning – you know, because this kid just never gives up. He just keeps going until in fact the thing somehow catches on.

Dale: Yeah – and I think the important thing is that there’s a social context for this that makes a difference. It isn’t just a kid working by themselves. They’ve – you know, and I think this is what you get from Maker Faire, is when you see all this work from all these people, it inspires you. You look at bicycles differently. You look at robots differently and say, “I never thought of that,” and it gets your mind going, and it makes you think about what you could do.

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Catherine: Caroline Casey, who's a radio show host on KPA Radio, had a suggestion once where she said, "Look, take your home, pick a room, and over time just try and convert the furniture in that room until everything in that room comes from somebody you know who made it and you have a personal story to the person who made it, and you have the personal story of how they made it and how it came to be, and you create an intimacy in your space which completely changes the feel of your life."

And so over the next couple years, I tried it, and it completely converted the nature of the room to something completely different because it was really part of – you know, everything connected me to a community of people who made things.

Dale: And I think that's kind of the antidote to sort of disposable consumerism where you just buy, buy, buy and throw things away. And I think partly, we've almost – we've almost kind of lost the connection to physical objects – that they don't have any meaning to us because we just think of them as cheap things we throw out, and I think that example is, well, you know, if you made that thing there's a story behind that, and people walk into that room, and you say you made that, and they say, "Really? How did you do that?"

And you – not unlike the pie or the bread, people want to know more about it. If you say, "I just got that at IKEA," they go, "Yeah, was it hard to assemble?" you know. That's the kind of conversations you have. You know?

Catherine: Okay – well, tell us – just take a moment and tell us a little bit more about you – in addition to being the editor of *Make Magazine*, you also run the Maker Division, so if you could just introduce us to what O'Reilly's doing – both the magazine and anything else in the Maker Division and how we plug in and connect. I just subscribed to the magazine, so now I get to say I'm a subscriber.

Dale: Yeah. Thank you. Well, the mag – Makezine.com is our main website and our sort of active community for makers, and you can get information about the magazine there. We also have something called Maker Shed. That is, we see kits and other things that help people get started making things, like "Getting Started with Arduino," which is sort of a book and a kit that tell you – provide the physical pieces you need to make stuff along with some of the expertise.

And then the Maker Faire is our division for running events. Our next Maker Faire will be in New York City in mid-September, and MakerFaire.com – "faire" has an E in that –

Catherine: Where in the city is it going to be?

Dale: It's at the New York Hall of Science in Queens. It'll be our third year.

Catherine: Wow!

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Dale: It's the site of the old World's Fair, you know, from '67.

Catherine: Uh-huh – that's going to be amazing!

Dale: It was a building that was designed as the Hall of Science for the World's Fair. So we do most of the fair outside on the grounds around the fair, but we use a few of the facilities indoors. But it's a very nice site.

Catherine: And at your website we can find – if we can't make New York, we can find links to events all over the world, really.

Dale: Well, next year's event – but you can also find mini Maker Faires that might be closer to you, and they're – they're really good family experiences. Everyone seems to have fun at them.

Catherine: Well, you didn't hear because I did it before you came in, but every week we have a hero on the *Solari Report*, and our hero is always somebody who finds a way of decentralizing the economy, but in ways that are wealth building. And this week, you were our hero.

Dale: Well, thank you. That's a good thing. I think that's a really good – I appreciate that. I like – I do like how this sort of – makers are taking back a bit of small business and trying to figure out how to create value. And I think one of the lessons I say to people that ask me, "What can I learn from the maker movement?" I say, "Well, one of the things is anybody can join it. There's no central bureau for being a maker. You just decide that this is what you wanna do, and you connect to other people who are doing it."

And I think that's kind of the – at the heart, this is the lesson of empowerment. People – you know, you have information, you have tools, you have ways of people to connect, but ultimately DIY is about getting started yourself and then helping – figuring it out with the help of other people and other resources.

Catherine: It's a Curtis Mayfield thing; "You don't need a ticket; you just get onboard."

Dale: That's right.

Catherine: Well, give us your website again, because I want to make sure – it's a wonderful website. It's a wonderful magazine. I want to make sure everybody –

Dale: Sorry. I missed that.

Catherine: So one more time, just give us your website again, because it's a wonderful website, and it's a wonderful magazine, and I want to make sure that everybody can tap into it.

Dale: Thank you. Makezine – MAKEZINE.com. Makezine.com.

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Catherine: Dale, thank you again so much for joining us.

Dale: You're welcome. Thanks, Catherine.

Catherine: It's always great to hear from one of our heroes, and you have a wonderful holiday weekend.

Dale: Thanks a lot. I appreciate it. You, too, and –

Catherine: Okay.

Dale: You know, I grew up in Kentucky, not too far from Tennessee, so I like – you live in a beautiful part of the world, too.

Catherine: Yes, it is!