LACMA Art + Tech LAB Conversations

Preserving Obsolescence

Julia Christensen and Geoff Manaugh

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CYBERMOTION Robot, LACMA, circa 1990

Artist Julia Christensen and author Geoff Manaugh discuss how dynamic shifts in technology and user participation impact our buildings and infrastructure. The conversation will explore how networked culture changes the role of long-standing institutions like museums and universities and examine how society's complex relationships with ubiquitous technology changes the way it interacts with these

institutions and their associated buildings. The evening will conclude with a discussion on how institutions can keep pace with a contemporary rate of technological innovation.

Christensen is a current LACMA Art + Technology Lab grant recipient. Her project Upgrade Available investigates how we encode our personal electronics with our memory, legacy, and identity, and how that is reflected in upgrade culture. Geoff Manaugh writes about technology, architecture, and design, with a focus on how systems and spaces can be transformed by unexpected user activity.

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At what point do we let go of needing to save everything and embrace the stream?

-Julia Christensen

A heist is actually a kind of revelation of forgotten infrastructure.

- Geoff Manaugh

Joel Ferree: Good evening. Hi, Welcome to LACMA's Art and Technology lab. I am Joel Ferree, I run the Art and Technology lab. We are thrilled to have Julia Christensen and Geoff Manaugh here in conversation tonight. I'm going to let Peggy introduce the speakers, but quickly, I wanted to give a plug for our Art and Technology lab and its current Call For Proposals. Which is still open for another 24 hours. If you have any bright ideas right now, there's still time! Sometimes, those last minute sparks can lead to a $50,000 grant. You can find information about our program and about our Call For Proposals at LACMA.org/Lab. You can email questions. We'll be trying to get

back to you as quickly as possible at lab at LACMA.org/Lab. I'd like to thank our advisor, Peggy Weil, for putting this together. And without further ado, here's Peggy.

Peggy Weil: Hi, thank you all for coming out on this abnormally cold Los Angeles night. Yes, please get your proposals in! I'm really excited to have LACMA Art + Tech Grantee Julia Christensen here from Oberlin, where she teaches. Julia is doing this spectacular project there right now, called *Waiting for a Break*. The project is tracking the ice on Lake Erie, she's not talking about it tonight, but I encourage you to look it up. The project she's doing here at LACMA is called *Upgrade Available*, and she's looking at how all these constant technological improvements and upgrades are affecting our memory, our legacy, even permeating our infra- and architecture. She's looking at how network culture is affecting institutions, and how institutions are responding to it. Specifically, she's looking at LACMA.

Geoff Manaugh, a writer recently resettled in Los Angeles is known for his writing and particularly a blog that many of you might be familiar with, BLDGBLOG, where he collects and curates observations on structure and infrastructure. I would say Geoff is somebody who just looks through walls altogether. Some of you might be familiar with his book*, A Burglar's Guide to the City*, which is wonderful tour through the modern city - looking through the eyes of atypical inhabitants; a toplogical view of the buildings.

The structure of the evening that the speakers will start with a short introduction: Julia will show a bit of her work. Geoff will talk a little bit about his interests. Then they're going to have a conversation, and in about 45 minutes, we'll open it up to questions. When we have questions, it's helpful if you come up here, because we're recording it and transcribing it. Thank you.

Julia Christensen: Hi. I'm Julia.

Geoff Manaugh: Hello.

Julia Christensen: We thought that it would make sense for us to begin this evening with me talking a little bit about the work that I'm doing here at the Art and Tech Lab. As Peggy said, I am working on an ongoing project investigating how upgrade culture is impacting us personally. But also, specifically here at LACMA, I'm looking at how upgrade culture is impacting institutions. And so, I'm working with the archives here at LACMA, and doing a project about the buildings. So, I'm using those entities as a lens through which to see and to think about upgrade culture and institutions. I'll talk about that momentarily. First, I'm going to tell you a little bit about what brought me into this realm of questions.

Years ago, I was working on another project, incidentally, about what happens to factory machines when factories close in Northeast Ohio. I was tracking what happened to those machines after these factories closed. One thing led to another, and the project took me to India. And when I was in India, trying to locate these machines in new factories, where they were functioning in their second lives, I never found the machines. But along the way, I was led into the world of e-waste processing in India. So, I've had three trips to India to visit both formal and informal e-waste processing centers. These photographs are taken in Mustafabad Market in Delhi, which is the largest informal e-waste processing center in the country.

I've learned a lot. I've done a lot of really personal research about the international e-waste industry. I've never shown these photographs, and I probably never will. But they hang in my studio and they drive a lot of the research that I've worked on since that first

trip to India. Seeing this massive heft of electronic trash, makes me question my own life. I'm a media artist, I work with this stuff all the time. And I began to ask my friends also what their relationships were like with their outdated computers and cell phones, et cetera. And people started to send me their stuff. Here's some stuff in my studio. And there's a fine line, right? Between this image, and this image? And so, I became very interested in sort of the intersections between technology and these products and waste.

And now, art. One thing that I've realized is that our relationships with our electronics and with our recordable media are very complex. People don't know what to do with this stuff when they're done using it. Very often we save it even though we're never going to access it again, et cetera. And it seems like as times goes on, we increasingly feel like we're encoding our electronics with our memory and our identity and our legacy. So, I started to make a series of art projects to investigate some of these questions. I'm going to show you a couple of those, quickly, and then we will get into the work that I'm doing here at LACMA.

I sent out an email to about 200 friends, asking them, as I mentioned, about how many laptops they've had in their lifetime. How many cell phones, et cetera. And one answer that I got back from a lot of people is that they had old iPhones in their drawers and closets. Because they're not exactly trash. They still work. But they aren't using them anymore, because they bought a new one, so they don't know what to do with them. So, I asked my friends if they would send me their old iPhones. And several people obliged and sent me their iPhones. And so, I built this series of video projectors with iPhones as the sole light source. This project is called *Burn Outs*. Here are the projectors. The lenses and mirrors are stripped from overhead projectors, also retired. The iPhones are the sole light source.

The cases are fabricated on industrial 3D printers at a factory in Cleveland. I was interested in juxtaposing these three different generations of technology to emphasize these cycles of obsolescence. Here's my design, and here's one of the projectors. They're about three feet long and a foot tall and a foot wide. Here are the iPhones, displaying the animations that they project, which are of retired constellations that are in the night sky, but they have been deemed irrelevant to the study of the celestial bodies because we can't see the component stars anymore from the Planet Earth. Because of light pollution. So, to be clear, the stars are still there. The constellations are still in the night sky. But our Earth has changed. And so, these constellations become invisible to us - it actually happens every now and then.

The International Astronomical Union goes through the list of constellations and crosses off the ones that are no longer relevant to the study of the night sky. There are actually 88 of them. I chose five of these retired constellations that had been named after technological innovations. I thought it was a fitting homage to project them using these iPhones, which are also still there and still work, but have been deemed irrelevant because people have upgraded to the new ones. I began photographing collections of recordable media that people had stored in their basements. For years or decades despite the fact that they might never access them again, due to obsolescence. We all have these boxes of tapes or zip disks or something that we just can't seem to throw away. It's like appendages of our identity that we just can't cut off.

This project also led to another project that I don't have any slides about. I started working with slide connections that I bought on eBay of people who had recently died. And you know, it was very moving and weird to have all of these slide collections that people had meticulously kept throughout their lifetime. But when they passed away,

family members are like, 'We don't who's in these slides, or what to do with them.' So they sold them on our online marketplace and they became a part of this ephemeral plane of forgotten vernacular photography. I started working with those photographs, too. I have a project on my website called *We Share Our Pictures.*

Working with those slides made me think a lot about how in our contemporary digital image culture we're so used to seeing the images of strangers all the time in this kind of dispersed global audience. And in the days of the 35mm slide, the intention, the audience was intended for the people in the living room? And so, intersecting with the slides of strangers, really brought up a lot of questions about how audience has shifted in our networked culture. And also, how as the ability to share images has increased, maybe the need to save images has shifted too. These are all the things that I was thinking about when I got here to LACMA. And I began to ask questions about how these issues were impacting an institution such as this. So I devised of trio of projects that are LACMA-specific.

The first being about the archives, the second being about the building and the third being about the future. These photographs represent those three things. Here's Jessica Gambling – who is in the back there – the LACMA archivist showing me through the archives. As you can imagine, an archive like the one here at LACMA has every media format from the last fifty, sixty years represented. How do you possibly maintain something like this? How do you continually upgrade, when the upgrade is always available? As you would imagine, Jessica lives her life trying to figure out how to maintain this archive. I've selected a box of ephemera that represents several of these media formats, and I'm making a media installation where I am transforming and transferring these moving images, files, et cetera to another format. I don't have a single format that I'm transferring them all to. I'm just interested in that process. In the end it

will be a media installation. I'm doing part of this at this really amazing place in Boulder, Colorado called the Media Archeology Lab. At the MAL, they have 75 years worth of functioning computers. You can head in there and make transfers of really crazy formats to other crazy formats, and they even have media specific to all of the machines. You can really go crazy. I'm going there in April with some of the ephemera from the archives to work on this project that has the eponymous title, *Upgrade Available.*

I'm also working on a project about the building here. I am observing the LACMA site to find moments of obsolete technology as they exist within the walls and ceiling of the buildings. Of course, as we invest in upgrading the technology that we need, the infrastructure that we need, especially in a museum setting, where it's about exhibition support and operation support, it's often very difficult to remove obsolete technology. So again, there are layers and layers of technology within the building.

This is everyone's favorite. For a while, in the late 90s, there were some robots called the Cybermotion Robots that were hired to help the security team. They were not here for very long, because unfortunately, they would bump into pedestals and things like that. But they had to install these portals around the galleries to communicate with the robots. And they are still there. So, if you're walking around some of the galleries, and you see one of these guys in the wall, it's a Cybermotion portal. So, I am creating – I'm using some WiFi beacons to create a Local Area Network (LAN) here at LACMA that you can log onto to take a walking tour of obsolete technology at the LACMA site in the Fall. Here's the new building plan.

It seems like an apt time, right? To think about and to look at the history of technological infrastructure, and in these buildings, to think about what the future has in store. Along

those lines, part of the joy of the Art and Tech grant is that you are connected. I'm connected as an artist with technologists at a range of area tech companies in the area. Including SpaceX and Jet Propulsion Lab. Honestly, when I started this grant, I thought, I have no idea how I'm going to really intersect with these people. But a couple of things have struck me about spacecraft design that have informed what I'm seeing, kind of as the third project here. At SpaceX, as we know, they're like trying to launch rockets continually. And they've yet to design a rocket that is the final rocket that will go up and come back down. And be a standard '747' rocket.

So, design right now is iterative, and evolutionary. And they're thinking of the rockets as opposed to architecture, which we often think of as this fixed structure. The rockets are these systems that are modular and adaptable, and can shift very quickly as research continues. I thought that was really interesting and it made me think, if we're thinking this way about rockets, and of course, they're also thinking about eventually inhabiting another planet in one of these rockets. So, in a way, it's like the first Martian architecture, these adaptable, modular space rockets. So, if we're thinking about building on another planet like that, why can't we retroactively think about how we build on Earth like that? In this sort of modular, adaptable way.

So I went out to JPL, and I was asking these questions. And someone there said to me, "Well, you want to talk about time? We're talking about admission to Proxima B, which is four light years away. And we're going to be able to do this in 25 years or so. It's going to take the spacecraft forty years to get there. And then, we want to take pictures and send them back to us in a readable format." So, they're trying to envision technology that can actually learn and shift autonomously in a little space pod over decades using AI and 3D printing, and any number of generative, additive sorts of processes. And so, again, how can we adapt this kind of thinking to our terrestrial endeavors? Our terrestrial

architecture? How can we build a spaceship museum? So, archives. Buildings. The future. Upgrades.

Geoff Manaugh: Yeah, there are so many themes just there that I think we could talk about them all night. That's really fascinating stuff. I guess I'll just give a really, really quick introduction to some of the things that I've written about, that I think are relevant in the general context of a conversation about preservation and obsolescence. Just one example that I think about a lot was one of my first gigs out of college. I was an intern at the Folklife archive at the Library of Congress in Washington, D.C. I got to go back through old tapes from everything back to oral histories of soldiers in WWII to old Woody Guthrie stuff, et cetera. We got to take a tour of the basement storage facility, where all of the old crazy, obsolete pieces of media are. So you've got these giant, shellacked discs that have people's voices from the 19th century inscribed on them physically.

The individual who ran the Folklife archive at the time was trying to show off and was showing everybody what was down there. And he reached in and grabbed one of the oldest, four-foot wide shellacked disks. And as he was pulling it out, it shattered in his hand. And instead of showing it – it was kind of an endearing moment, actually. Because he was so embarrassed, and he didn't know what to do, he just shoved it back into the wall. And then we walked on, and there were no comments. I think about that a lot; first of all, what was on that disk? Has it been found yet? This, at the risk of dating myself, this was quite a long time ago. And so, for the last twenty years, this thing has been hiding in the wall at the Library of Congress. But I guess what would interest me so much about preservation, and the kinds of things that I tend to write about, or be attracted to write to write about, are really things that are preserved either inadvertently, or unwittingly. Uncovering something that has been preserved, that we didn't know was

there in the first place. And so, a couple examples that I revisited just before coming out this evening were some archeological research items that really blew me away. Where archeologists had found villages that used to be basically razed to the ground about 1,000 years ago in the border region between South Africa and Zimbabwe. The entire region would be razed to the ground, and then they would start anew. But what the archeologists had found was that the fire was so intense and so hot, that it was able to discharge the magnetite in the ground so that it no longer carried the magnetic signature that that rock would have had naturally. And so, over time, it would be reoriented with the changing in the Earth's magnetic field.

You could actually read changes in the Earth's magnetic field from rocks that had been underneath burning villages, as a way of kind of reformatting a hard drive, in a very literal, geological sense. Or even tree rings are really interesting example of the things that get stored there, even evidence of ancient earthquakes. There were botanists who had found that pulses of carbon dioxide would come up from out of the Earth during seismic events near Yellowstone. That would change the growth patterns of the trees that were in the region. And so, you could actually find that pulses of CO2 would inscribe themselves in the tree rings, and would be evidence of ancient earthquakes in that region. They could piece together a seismic record of the Yellowstone region based on the tree ring data. Of course, those kinds of things, they're not even few and far between. They're all over the place, where someone finds another great archeological one.

Last year, I think it was solar storms that had actually inscribed themselves in pottery in Native American artifacts. Archeologists were able to work with astronomers to find evidence of solar storms in pottery from ancient North America. Stuff like that just totally blows me away. The reason why is because you're not expecting that kind of thing to be

preserved, and no one thinks it's there until you come up with the right device or instrument or interpretive model to even access that. But it was there all along, arguably, and then we just built the machines to find it.

I guess there are a couple other themes. You know, I've always been a big reader and viewer of horror as a genre. But one thing that really interests me there is that so much of the horror genre is about things that have been preserved and shouldn't have been. So, it's either a corpse that won't go away or a memory that can't be vacated, or a spirit or presence that has stuck around longer than it should have.

Horror in general tends to be this encounter with something that shouldn't have been remembered, or should not have been resurrected. Or brought back. Or should have left and didn't. It remained, and is not a remnant, or revenant. That also interests me very much from the point of view of preservation. I could go on and on with these kinds of details, but I end with just one.

The most recent book that I wrote is *called A Burglar's Guide to the City*, and it looks at burglary in its relationship to architecture. But beyond that, it also looks at burglary's relationship to infrastructure and how heists are planned and implemented. And one thing that I think really touches on some of this, some of the notions of the kind of embedded systems in the walls around us, is that we don't necessarily know they are there until we uncover them by breaking through the drywall or that kind of thing. And then, you find an entire data network that was installed twenty years ago.

A lot of heists operate in the same way, in the sense that a heist is actually a kind of revelation of forgotten infrastructure. And so, there are so many examples both from fiction and in real life, in which the heist is a design project, which is to say it's a way of

designing a new way to access a building that people hadn't been anticipating and thus weren't guarding against. That often relies upon the uncovering of remnant infrastructure that we no longer think about. Really interesting examples come from — in the news recently, there was one in Paris, where someone had broken into a fellow's wine cellar. They knew exactly where to go, and which wine to steal. But they had done it using the catacombs of Paris that go underneath, beneath. Subterranean Paris. This happens a lot.

You see it in London. Both in real life and in fiction, where tapping into things like underground rivers or to old plague pits and that kind of thing, that pop up In well-designed heists. And there was a great example that I won't go into too much detail about, because I tend to go into way too much detail when I talk about these things. But there was a really interesting one here in Los Angeles. It was actually an unsolved heist from June of 1986. Oh, and ironically, actually it was on Spalding, but not down here, further up, near Sunset Boulevard. There was a bank that was broken into, but it was broken into by taking advantage of infrastructure – subterranean infrastructure in wastewater distribution networks that had been built generations earlier, but yet happened to go basically within a block of a bank where these people could set up a kind of drilling station and drill into the vault. Using the vault, using the bank's own electrical network.

What I like about heists, whether it's fictional or in the real world, is that a heist often depends upon the discovery and finding a new use for something that would be obsolete, buried, or forgotten. And in that way, I think heists also have a lot in common with the practice of archeology. I sometimes joke that one of the best heist scenes is actually the opening sequence of *Raiders of the Lost Ark*. Where it's basically the ancient temple as bank vault. That idea of breaking into architecture, finding a way into

something that theoretically doesn't have an entrance, often relies upon uncovering something that we have forgotten. Or has been preserved and we no longer know is there. So those are just some themes that I thought would be interesting to throw out on the table. I'll just leave it at that.

We were joking that in my apartment in Brooklyn – I just moved out from Brooklyn, New York. But had an iPod doc in the wall, which in about nine months after moving into the apartment was obsolete. And I could no longer access the speakers, and so we had to get an entire new speaker system. But I'd love to just go back to your project with locating the obsolete ports of LACMA. Just to talk a little bit more about what you have found. What are the networks that are still in the walls and no longer have use? And is there some sort of -– to get into the ontology of the dongle – what have you found in terms of adaptive technology that be able to bring these old ports back into use?

Julia Christensen: Oh, that's a great question. I want to segue for a moment, though, and share a story that I shared with you earlier. I was at SpaceX today, and the engineers there were telling me that, they have to deal with generations of technology all the time on a huge scale. And one funny thing they were telling me is they have a rocket that needs to land at the International Space Station. And it's a brand new rocket, but the ports that they are locking to are very, very old. So, they had to build an adapter that would adapt to the space station; a rocket to space station adapter! A space dongle! Which, we were saying earlier should have been the title of this event tonight. I don't know. It's amazing how our life in the 21st century has, or maybe it's always been like this. But I feel like we are in the age of adapters now, more than ever before. Right?

Geoff Manaugh: Well, certainly in terms of electrical devices.

Julia Christensen: Right, right.

Geoff Manaugh: That kind of thing, yeah.

Julia Christensen: In terms of the project here, which is very much in progress, a lot of it is cable coaxial ports and WiFi. Access points that are no longer in use. And satellites, and telephone. There's a beautiful telephone wiring room that is still there but not in use. All the layers that you would imagine would be there, are there. There are a lot of servers that aren't being used. Servers in odd places. In the garage, there are some servers. So, for this walking tour that I'm working on, some of the ports are visible, and some of them are not. So sometimes, if you're doing this walking tour on your phone, you might be asked to look at a wall. And it will describe what's behind the wall and that kind of thing. That's been interesting, too. Looking at what is visible within the context of art galleries. And what is not.

Geoff Manaugh: Sure. That reminds me of there's a really interesting book called *Exploding the Phone* by a guy named Phil Lapsley. And it's about the old quote-unquote phone phreaks. The people who, back when you could, play tones into telephones and fool the telephone into thinking that certain things had occurred to connect to a phone server. Not a server, but a phone exchange. And then you could make international calls or calls across the country based on just making sounds with a little digital device into a telephone. But one of the strangest chapters of the book actually, is that these phone phreaks in circa early 1980s, late 1970s were able to find through the sounds they made into the telephone and calling around and getting all of these strange numbers, was that they could call into obsolete telephone machinery and then they could talk to one another like on a primitive conference line.

So, they could just call in and just talk. Like, there'd be 12 or 13 individuals just sort of yakking it up at nine o'clock on a Thursday evening. But they would be inside, not inside, they would be metaphorically inside an outdated telephone exchange equipment that hadn't been unplugged yet from AT&T, and that they'd found through this audio hacking. It's a really strange version of the kind of stuff that you're talking about.

Julia Christensen: Yeah, that's great. And you know, that's similar to when we landed on the idea of making a Local Area Network as the vehicle for this walking tour. Similarly, we're going to use outdated WiFi beacons that aren't in use anymore. And in a way, it's kind of like you have to plug into it. You have to be here in order to access it. We thought that something about that obsolete network and presence, I don't know, suggested speaking to all of these concepts nicely.

Geoff Manaugh: It's funny, another thing we were talking about before the event was that the Irish poet Seamus Heaney apparently used to send a lot of faxes. Biographers who are trying to chase down the complete Seamus Heaney archive are desperate to get in touch with people who received a fax from him because faxes were printed on thermo-chromic paper. So, the ink is disappearing. It's like the receipt you get at a gas station. And the idea is that some of the most important works of Seamus Heaney might be these disappearing faxes. I think it's quite fascinating. But I mention that because you talked about the outdated WiFi network.

It'd be interesting to imagine, I've thought in New York City, where you've got so many writers (this is a very New York City centric comment, actually, so, I apologize in advance) but this could also be true of Los Angeles; in New York City, where you have so many writers and authors who are living in Manhattan and Brooklyn, and writing things maybe using WiFi in their house, or WiFi in the public library. Could you make an

argument that you should preserve the WiFi network that Jonathan Lethem used to write *Motherless Brooklyn*? Or that somebody uploaded their prize-winning book of poetry to at the New York Public Library? But is there an electromagnetic preservation for these kinds of things, and are they not also part of, it's like, maybe you had a wonky WiFi system in your college days. It was an integral part of your, you know, it was so frustrating, that it informed your writing experience, but it's gone. In the same way that you can't boot up this old WiFi network. So, to re-preserve that kind of thing, as well.

Julia Christensen: Yeah. Questions about what do we preserve are super interesting, and I've certainly talked to Jessica a lot about this stuff. Our archivist back here. But, in terms of LACMA's operation, they want to save all of the email that comes in and out of the museum forever. How do you that? And then once you've done it, do you make it searchable? Is it an archive if it's not searchable? Is accessible the same thing as preserving? And so, it's the same with what we're seeing. Twitter and other forms of media that disappear. I mean, Snapchat. Yeah. At what point do we let go of needing to save everything and embrace the stream? Or do we continue with this mindset that we've always had previously? This idea of collecting and maintaining.

As I've seen with all of these collections of slides that are sold after people die, are we fooling ourselves that it's actually worthwhile? Is the elephant in the room that all this stuff is going to degrade eventually, anyway? Are we doing this for some existential sense that it makes us feel like we might live forever in some way if we continue to save everything? Just to ask some larger questions. Where do we draw the line in terms of what we save? In terms of art? I know people who deal with collections here are having to make pretty intense accession plans for when a technological piece of art comes into the collection, you know? What to do with it in the future.

There's a great book about Nam June Paik's works about how they function in collections. How many televisions do you replace before it's not a Nam June Paik work anymore? Or how many wires do you replace? Is there authorship in the hardware itself? And someone said to me recently it may have been Bobbye, you may have said this, "We've yet to have to come up with an accession plan for a book." There are these formats that we don't upgrade, that still work, which is also interesting. Pen and paper still works. In fact, with this slide project that I mentioned earlier, I pulled out triptychs of slides from across collections. From all of these slide collections of deceased people. And I found archetypal images across these slide collections?

Everybody took a picture in front of the national park sign when they visited the national parks. Or in front of their cars. I scanned all of these slides, and there's this idea of a digitization being a way to upgrade the slide. We think that somehow, it's a more stable document. Which of course, is just not true. But there's also the glory of a 35mm slide, the luminosity of the image is gorgeous. So much is lost when you flatten it to this digital plane. I thought that it would be interesting pull out sort of the common attributes of these triptychs. And so, I pulled out digital line drawings of them, and then I had a robotic plotter draw ink and paper drawings of the triptychs. I was thinking to myself, these drawings are actually probably more archivally sound than the 35mm slide. Or the digitized version. So, I don't know.

Geoff Manaugh: Yeah, I no longer remember how I got here, but I guess one evening I was on an internet rabbit hole. But for some reason, I still think about this. I should be embarrassed to say this in public, but for some reason I was reading about Phil Collins, the British musician. But at one point in his career, he was taking all of his old performance tapes, his old concert tapes, et cetera. He was porting them into CDs because he was really excited that he was building this permanent archive of his work.

But from the perspective of 2018, that just sounds so unbelievably ridiculous. The notion of Phil Collins surrounded by these obsolete CDs is kind of a funny image.

Julia Christensen: One of the photographs that I showed of that series of media collections was a photograph called “What Will Happen to All of Those Shows?” It’s a photograph of someone’s Grateful Dead tape collection. There’s this slice of Americana that was specific to this certain media format, but really is no longer. I’m sure people have digitized Grateful Dead shows but it’s a huge catalogue of this slice of Americana on this obsolete media format.

Peggy Weil: I have a question about what this suggests about time and the intervals between the requirements for upgrades. I think with music, over a long time, if we don’t go back to concerts in the parlor, but if we start with recordings, even fragile shellac recordings, I there were decades where they still worked. And now, how long? There’s a shorter interval. Also, are either of you addressing the justification, or our surrender to, or acceptance to this rapid, constant requirement to upgrade? And isn’t the justification for it often protection? We upgrade in order to keep ourselves safe from a heist? A cyber-heist, right? I’m interested in the timespan for upgrades or the demand for upgrades coming faster. And then, whether you’re questioning our acceptance of it?

Geoff Manaugh: Well, I guess, in terms of accepting it, I think that the inability to step off the upgrade train, so to speak, is pretty frustrating. I mean, to the point now where I often find that if you buy a technological good for your house, it’s literally out of date when you take it out of the box. Because it has to have a firmware update already. Which is so ridiculous, that it’s hard to really understand how that can happen. But yeah, I guess I don’t really know. I feel like there’s a consumer sort of bill of rights point of

view, where you feel that Apple shouldn't be able to do this to us and constantly upgrade things. But on the other hand, I feel like there are different temporalities built into different objects that we tend to use. And so, I think that if you're going to go into that world and make things with digital arts and do things with compression algorithms and make WAV files instead of MP3s or whatever, it is that you might do it.

I think that you're already saying that you're okay with that notion of the out of date, and move on from there. And I think that otherwise, you would go into intricate woodwork, you would develop some sort of craft. Which, just to be frank – one of the reasons why when I was younger, I did the internship at the folk life museum was that I was asking myself those questions about what exactly what is preserved. I knew I wanted to be a writer, but at the same time, what is it that we leave behind? And what does it mean to – can I travel around with just a notebook and a pen? And store things forever? I don't know. There's something about encountering the archive of things that have survived at that age in my life that was actually kind of my own version of trying to answer that question for myself.

Julia Christensen: Yeah, and I think one thing that's been interesting for me in thinking about this stuff is that it's easy to get stuck in the paradigm of it, conceptually, in our own minds. It's like envisioning adaptability or envisioning how things can change to reflect user input and that kind of thing. Is really exciting when we can somehow conceptually move beyond ports and walls and we conceive of them. And I think that's been exciting for me in talking to these spacecraft engineers, because, when the JPL guy is telling me about how he's trying to envision technology that can adapt and change autonomously over decades – if we can get our mind around stuff like that, then maybe we can effectively change the way we build. Or think differently about – I don't know. Just the paradigms that we are so much a part of.

Geoff Manaugh: It's funny, though, because I feel like – and the thing that comes up a lot, and that we even briefly mentioned before the event tonight – especially as someone who writes mostly about architecture and design, is the notion of trying to make architecture more flexible and adaptive. That vision, and especially coming out of the kind of oil rich 60s environment of the avant-gardes of the time who basically saw an energy rich future coming down the pike. And if they could just – we could make every building move, and turn around, and walls can do whatever kind of adaptation they might want to. And then, when we're looking at these ports, how do we keep things from not being obsolete? I think the vision is like, "Oh, we'll have even more adaptive architecture," but in many ways, I think buildings should just be, this is a ridiculous thing to say, but buildings should just be left as buildings.

And the idea of trying to constantly embed new technologies into them is a collapse of these two very different timescales. So, you're talking about something that is probably going to last decades, if not even centuries. And then, you're trying to stick an iPhone dongle in the wall. And it doesn't make any sense. And no vision of that that I've ever seen is either convincing or looks good after even a year. Let alone after generations. Like, the capsule tower in Tokyo, which looks so ridiculous. And is architecturally fascinating from the outside, but the minute you see these outdated technologies embedded inside the capsules, it doesn't look futuristic. It doesn't look useful. I feel like it's the wrong approach to take two timescales and make them overlap. And they don't. It's like polyrhythms that don't overlap.

Julia Christensen: Yeah, it's interesting. Obviously, none of these questions are new questions and architects have been thinking about these questions for a long time. But it's interesting what you just said. It made me think about three different scenarios.

We have buildings as they are, with technological infrastructure, stuffed into them and trying to mesh these timescales in that way. And then, there's the idea of making technological appendages. Or outside of the structure itself, so that there's sort of an exoskeleton of technological infrastructure that we can change. I guess we could think about buildings as not having walls or something. The third question is the idea of blowing open how we conceive of material. And building things not out of drywall. Or I don't know, that's the sci-fi version.

Audience Member 1: Hello. I'm curious if your research has given you any insight into like the so-called new analog movement, and people becoming more interested in actually buying more things like vinyl records and cassettes.

Julia Christensen: Yeah. And actually, even my teaching is even more involved in that, because I teach media at a college where students are very interested in the new analog movement. So, I'm always trying to figure out how to hook up a VCR with our computers and that kind of thing. I feel like people are drawn to hard copies. And kind of diving back into that world as a way of connecting, I guess. With the history of – I think it's good for people to think critically about the meaning of digital files, and what it means to have these ephemeral digital files that can be shared so quickly around the world. And I think that the hard copy gives us perspective on what that means. It's like the difference between an MP3 and like a radio transmitter. It's about audience, and there's so much embedded in the technology itself. It's good.

Geoff Manaugh: I think so much of it too is nostalgic. But I think about, especially the rise of records and LPs and that kind of thing. Because as someone who used to, maybe about 15 years ago had bought a lot of records, and now I regret that so much because they're so heavy; I've moved enough that I basically don't have most of

that music now. They do scratch really easily. It's like the heyday of Netflix when it was still getting DVDs mailed that you could never watch, because none of them worked, it was just scratched DVD after scratched DVD. But I feel like it's this kind of motivation to go back to a hands-on world. I think when it comes to those kinds of storage media, it will be interesting just to see what vinyl collectors feel in a decade from now. I have a feeling that a lot of them are going to wish that they hadn't bought all that vinyl. But I could be wrong.

Peggy Weil: Questions, or comments? I'm still interested in the cybercrime. Do you see any heist parallels?

Geoff Manaugh: Well, yeah. I mean, it comes up a lot. Like, what is the future of burglary and is the cyber heist the future of burglary? I guess there are a couple things that I would say there. One is that there's an interesting collapse of metaphors, because it's like burglary is a very interesting crime, and the reason why I got into burglary, so to speak, is that it only exists because of architecture. So, burglary is not the same thing as theft. Burglary is a crime that takes place within architecture and it requires buildings. So, if we got rid of every building in the United States tomorrow, it would be legally impossible to be a burglar. And so, that relationship is just something that really fascinates me. I mention that because the notion that cybercrime is burglary is, technically speaking, incorrect, although there would be a way to be accused of burglary.

But the hacking into someone else's computer and stealing things is not legally speaking, burglary, because it's not a spatial act. It's not an architecturally enclosed activity. There is a way to bust somebody for burglary. I mean, the funny thing about burglary is that it's any crime that is committed inside architecture where you don't have

permission to be. And so, there's also a great aspect of it called surreptitious remaining. So, if we were to stay in LACMA here before, or after it closes, and we surreptitiously remain, and then if we were to forge a check (which is also a felony) we would be burglars. But we haven't done any of the things are associated with the trope.

But in any case, I feel like the data thing is interesting, because there's a confusion of the spatiality of that act. And you're not actually going into someone's hard drive so to speak. Or you're not actually going into HSBC to steal millions of dollars. So, I think that's kind of interesting, actually. Because it raises the question of the topology of our metaphors for dealing with data, and how we describe them to each other.

Peggy Weil: Yeah. And yet, the reason I finally give up and surrender, and update, time after time, is this threat of identity theft. So, it's not burglary. So maybe that's the wrong term. But a lot of this relentless upgrading and our acceptance of it is justified because we're threatened with real or potential problems. The threat of identity or data loss. I don't know if you're finding that in the kind of work you're doing; it's very different, but is there a component of identity theft if you do something with someone's compendium of slides?

Julia Christensen: I feel like we have a hard time finding a sense of control over these things, since information and identity and all these things have become so decentralized. It reminds me of that critical art ensemble who wrote a great piece in the 90's called *Electronic Civil Disobedience*. It's all about the decentralization of power, and authority and information, and how activism, like burglary – I mean, it's like physical activism transferred to data streams is qualitatively different. And in a way, we try to think about it in physical terms. But it is qualitatively different. And I feel like that sort of dispersed sense of information and power, et cetera, makes us feel a little out of control.

And so, maybe upgrading gives us a sense that we're taking care of things or something.

Peggy Weil: Lately, we blame the institution (the bank, Equifax) for not protecting us because they have not patched or upgraded their system. Are are any parallels that you find in the spaceship or the museum in protecting us with their technologically un-upgraded, obsolete programs?

Geoff Manaugh: I personally love upgrading. I do it so much – I'm married, and my wife tends not to upgrade very quickly. Whereas for me, it's like the minute something's available, I'm so excited to upgrade my phone, or to download new software. It just feels like this object suddenly now has another couple weeks of being new. And so, personally I feel that I'm definitely a sucker for that kind of, the thrill of the upgrade. It's something that definitely interests me. But I love the question of Nam June Paik and the televisions, and whether or not it's still a Nam June Paik. Because you could imagine even that thing that Joel was showing me a couple weeks ago, that plays over in the corner, yet needs to be rebooted every time you turn it on. The question of, if you have upgraded the operating system of an artwork that's being preserved in a museum, at what point is it no longer the original artwork?

And you get into some really interesting preservational questions there: What was the intention of the artist? What if they specifically needed it to function on, Snow Leopard, and now it's on something else? Is that a violation of the artwork? I think those kinds of questions are actually really, really interesting. Especially when – my dad's about to have quadruple bypass surgery, so I've been thinking about medical devices. But even medical devices have that really strange question about upgradability and being obsolete, and how they are preserved and what happens to even our medical devices

after or if you die, and you have a perfectly functional pacemaker. Does it get shipped off to some foreign country and get thrown into a landfill? Or, what even happens to those kinds of things? Or, can I inherit medical prosthetics from my parents? And would I want to do that? But in any case…

Julia Christensen: Yeah, since we're at the museum, and I've been working with the museum, I know that at the museum and at my college where I work, it is really difficult institutionally to commit to technological infrastructure to preserve art, or even show art that involved technology, because of these very reasons. And I think somebody here once told me, it's really difficult to commit to buying five hundred iPods for a walking tour when, a year from now, they're going to be useless. And so, you know, it does make you question the future of art. What's going to be preserved? What's not going to be preserved? Because of technological infrastructure that's in place to be able to handle such upgrades or not.

I know that lots of really smart curators are working on these questions. It's really interesting. Even with the *Burn Outs* project, those are iPhone 4S's that I used, and the videos, I had found an app that loops the video forever. But yeah, you can't upgrade! You have to have it on airplane mode always, or it will hook on and it will try to upgrade the OS. And as soon as that happens, it's done. So the art piece actually has five extra iPhones that are all set. It's like: Don't mess with it.

Audience Member 3: What happens when Siri and Alexa are upgraded? And what happens if voice is integrated into the museum, which it is, right? And is in airports somewhere. Are you looking at voice control?

Julia Christensen: Not so far, but maybe.

Bobbye Tigerman: Hi, everyone. My name is Bobbye, and I'm a curator here at LACMA, and part of my job is acquiring technology as art for the collection. I wanted to put another angle on this problem, which you very eloquently described, which is how you acquire objects of technology and we don't have a hard and fast rule or protocol yet. And we probably never will, because the technology is changing. But in a recent conversation with a fellow curator, their policy is that they acquire the object. Two of them: one that remains static, and is kind of like the display object and then one that they continually upgrade, because they found that if you don't upgrade it, then you can never use it for whatever use you want. But what that also requires is that you have a person who keeps track of these updates, and knows the history of each object and knows how to use it. So, there's also this investment in people that you need to account for when you're worrying about all this stuff.

Julia Christensen: Totally. And you know, I work at an institution. I work at a college, where there is not the investment in labor to deal with the new layer of technology that we're all dealing with. And it comes back to a basic premise of all of this work for me which is this idea that technology is moving at a rate that is much different from the rate at which institutions are moving. Technology is moving much faster than institutions are possibly able to keep up with, this endless flow that we've come to know. This includes museums and universities, but also the law. And just like policy, or a Twitter bot in Russia, we don't have the laws to deal with such a thing. Or as you're saying, theft that's not burglary. We might not have even the conventions to talk about these things yet. So, it's like we're dealing with, talking about time. We're talking about multiple timelines unfolding at the same time. The technological timeline, and then, the institutional timeline.

Geoff Manaugh: This is one other anecdote that I keep remembering while we're speaking tonight. There was a commenter once on my blog a long time ago who told me about an urban legend that I wasn't able to find out too much more about. So maybe somebody in the room here knows. He was saying that the Eiffel Tower, every aspect of the Eiffel Tower, is required under French law to be preserved. Even pieces that have been replaced. But that means that over the lifetime of the Eiffel Tower, every single part of the Eiffel Tower has been replaced, and so therefore there is basically another Eiffel Tower somewhere that has yet to be put to – or is disassembled but cannot be discarded under French law. So, I love this notion of the ghost Eiffel Tower in a warehouse somewhere. Or the kind of control version of these artworks. Or it's almost like the Portrait of Dorian Grey or something. What?

Audience Member 3: Where would those pieces – I know that they got taken out …

Geoff Manaugh: I mean, presumably, at this time, according to this person, there's some warehouse somewhere, where French curator/manual artists wearing gloves have individually placed pieces of the Eiffel Tower. Like a rare insect.

Julia Christensen: It's interesting, like this conversation about preservation. And I'm glad when we spoke on the phone, a couple of months ago, in response to me talking about the upgrade and obsolescence, you brought up this idea of preservation. And I was talking to a friend of mine last night, who when I talk about upgrades, she calls it backup. You know, she's thinking about backing up. And it's kind of interesting how preservation and obsolescence, I mean, there're two sides of the same coin or something like that. But it also reminds me of thinking of these building parts, Eiffel Tower pieces that are being saved, even though I don't know what they're

going to do with them. Today at SpaceX, they were telling me about how, there are parts of the Apollo launchpad that they're using for the Falcon Heavy or whatever, that they're not allowed to touch, because they're on the National Register of Historic Places.

So, there are parts of the launchpad that they have to work around. They're like, "We could adapt this, and use it, but it's being protected. It's being preserved." So, it's interesting to think about how an initiative to build this brand new space technology also runs into this idea of preservation at the same time.

Peggy Weil: How many of you are going to run home and propose by – what time tomorrow? Noon?

Joel Ferree: Midnight.

Peggy Weil: By midnight tonight? Oh, midnight tomorrow. Oh, that's plenty of time. *Putting the Eiffel Tower Back Together.* I think we do a group proposal.

Geoff Manaugh: You've got to find the warehouse, break into it, steal it. Bring it to Los Angeles.

Peggy Weil: You can help us do that, right? Exactly. Find the hidden infrastructure under and around the warehouse. And putting the Eiffel Tower Back Together. Any other questions before we finish? Thank you very much.

End of recording.