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5, 4, 3, 2, 1 Things About Meara O'Reilly (<http://blog.makezine.com/2013/02/23/5-4-3-2-1-things-about-meara-oreilly/>)

By Goli Mohammadi (<http://blog.makezine.com/author/snowgoli/>) , 2013/02/23 @ 10:32 am



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Saying Meara O'Reilly (<http://www.mearaoreilly.com/>) is a sound artist is not just a fancy way of saying she's a musician — Meara creates visual art from sound and builds her own instruments, as well as sings and writes music. She's also an educator in residence at the Exploratorium, sharing her passion for auditory perception. Meara recently collaborated with design firm Snibbe Interactive to create sound-based cymatic (<https://en.wikipedia.org/wiki/Cymatics>) concert visuals for Björk's Biophilia (<http://www.mearaoreilly.com/index.php?/project/for-bjoerks-biophilia/>) world tour, and is finishing her first permanent exhibit at the Exploratorium based on related work. In addition, she's been a guest blogger on Boing Boing (<http://boingboing.net/2010/03/15/hello.html>), as well as shared many a tool and book review on the pages of MAKE (http://makezine.com/pub/au/Meara_O_Reilly), and taught us how to wind our own guitar pickups (<http://makeprojects.com/Project/Wind+Your+Own+Guitar+Pickups/1461/1#.USkH0lpASZ->) using a sewing machine in MAKE Volume 22 (<http://www.makezine.com/22>).

One project you're particularly proud of.

1. I think I'm always proudest of the project I'm currently doing. In this case it's an educational music project about auditory illusions. These are glitches in our perception of sound that, for example, allow us to be tricked into hearing something that's not there. I'm currently collecting examples of these illusions, from synthesized lab demos to indigenous folk games and songs. The next phase of the project is arranging these illusions for acoustic instruments. I'll be making educational blueprints for how the illusions are achieved, so that anyone can replicate them. Since illusions are so subjective and dependent on the listener's individual perceptual system, I'm working on an app that will allow people to focus the illusion for their particular ears.



Two past mistakes you've learned the most from.

1. Biting off more than I can chew and/or being a perfectionist! It's so tempting for me to create situations where I'm out of my depth and in a heightened infophilic state. I often feel like I have the best ideas when I can enter into a sort of work psychosis brought on by extreme challenges. However, the older I get, the more I've learned to build more appropriate challenge structures for myself and know when to simplify.

2. I'm always rather unsuccessfully trying to balance my love of living rurally with my fascination with technology and culture — it can make it hard to enjoy either! When I was 23, instead of living in a city, I was in the middle of nowhere on an organic dairy farm in Vermont. I had to climb a hill and stand on top of a parked car to make a phone call, and it took two years before I could get internet. Right now I'm living in the city, but miss farming and having space to build stuff. I'm hoping one day to find the right mixture — it's definitely a process!

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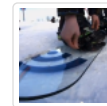
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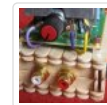
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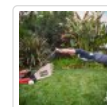
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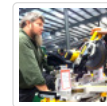
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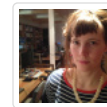
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5, 4, 3, 2, 1 Things About Meara O'Reilly
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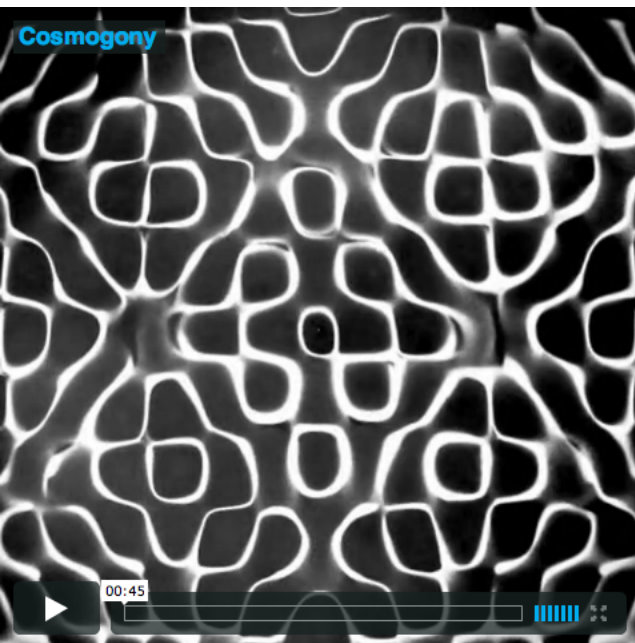
Meara was a member of the Trout Gulch land project where she hand-built a tiny house (<http://mearaoreilly.com/index.php?/learning/trout-gulch/>) with her partner.

Three books you think every maker should read.

1. *A Pattern Language* (https://en.wikipedia.org/wiki/A_Pattern_Language) by Christopher Alexander. I grew up with this book and I still come back to it again and again. This book is an amazing hybrid of infrastructure and ergonomics and social observation. Such an important part of building anything is understanding how it will fit in proportion with humans. I want a pattern language for everything, not just architecture!

2. *The Nature of Light and Color in the Open Air* (http://books.google.com/books/about/The_Nature_of_Light_Colour_in_the_Open_A.html?id=1xpeQ_RwEqgC) By M. Minnaert. Even though I'm a sound person, this book is the template for the perfect introduction to using your senses to make deductions about the environment around you. I think I reviewed it for Toolbox [section in MAKE magazine] a while ago, but I'll never stop talking about it! I first found it in a secondhand store in Vermont and have since gone through countless copies because I always give mine away to anyone who might be remotely as excited as I am about it.

3. *Simple Working Models of Historic Machines* (<https://mitpress.mit.edu/books/simple-working-models-historic-machines>) by Aubrey F. Burstall. Whenever you set out to build something, having access to what has come before is so invaluable. This book is like the beginnings of a "pattern language" for tools — what I wish I had been handed when I was learning about simple machines in grade school, but still get just as much out of now. Nothing beats thousands of years of hands-on testing with the simplest materials when it comes to making something strong, reliable, and awesome-looking. Simple physics at its finest.



Cymatics for Bjork (<http://mearaoreilly.com/index.php?/project/for-bjoerks-biophilia/>)'s Cosmogony (bassline).

4-3-2-1- By: Goli Mohammadi
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Four tools you can't live without.

1. My constant companion for the last 4 years has been some type of transducer. I can't stick with one in particular, I've yet to find one that can withstand what I put them through. When I was searching for a transducer to use in the exhibit I'm developing for the Exploratorium, I was thrown into the category of looking for something that either NASA or Disney would use. My test subjects on the floor of the museum had decimated everything previous! We're currently working with a vibration testing shaker by B&K called the V408.

2. Old bike inner tubes. Saul Griffith and Tim Anderson got me hooked on these as a fail-safe anything. I don't go anywhere without them around to lash things together, skip rope, etc.

3. Self-adjusting wire strippers. As someone who spent her youth ruining her teeth and countless pairs of scissors by stripping wires with them in cramped/improvised hacking situations, the simple magic of these is not lost on me. Do I need them? Probably not. Does it feel incredibly satisfying/luxurious to use them? Definitely!

4. Speedy Sticher (<http://www.speedystitcher.com/>) sewing awl. Sewing is a highly underrated engineering option in my opinion, and this is the first stop for making things both rugged and elegant.



Meara's Silver Conduction Instrument (<http://mearaoreilly.com/index.php?project/silver-conduction-instrument/>). Photo by David Garland.

Five people/things that have inspired your work.

1. Perception inspires me constantly. I'm fascinated by the idea that we are just this collection of highly attuned but ultimately limited sensors. We have really amazing powers of perception, and yet we can only perceive a small percentage of what is out there! I'm really excited by the idea of both giving people perceptual superpowers and especially alerting them to ones they already possess.

2. Max Weisel is one of those people that makes you feel like you haven't been making enough. He built apps for Bjork's Biophilia album, but my favorite one that I've seen is actually one of the first that he made, called Soundrop (<https://itunes.apple.com/app/soundrop/id364871590>). It's a super spare interface that allows you to create really complex and beautiful sounding polyrhythms very quickly and intuitively by drawing lines for a ball to bounce off of. It's a great example of good constraints yielding prolific results. He's been going to Maker Faire since he was a kid and made Soundrop when he was 19.

3. Whenever I think about designing an interface I like to mentally remove the technology from the picture and see what the posture of the user is and what gestures occur — are they using their body in good or new ways? Lucky Dragons (<http://www.luckydragons.org/>) (Luke Fischbeck and Sarah Rara) are some of my favorite builders of musical interfaces. Their most recent project uses moiré patterns and light to control a synthesizer, adding more harmonics to the tones whenever the visual patterns get more complex. The first thing I ever saw of theirs was their Make a Baby project (<http://www.luckydragons.org/?p=5>), where a group of people controls huge cascading rainbow synthesizer tones by holding onto these woven strands of conductive wire and then touching each other. In person it is really amazing, even just to watch a group of people discover the rules of what controls the sound together. I've only seen happy humans emerging from this experience.

4. Albert S. Bregman (<http://webpages.mcgill.ca/staff/Group2/abregm1/web/>) is a psychologist at McGill University who developed a concept very dear to my heart called Auditory Scene Analysis. The basic idea is that we separate what we hear into different streams according to similar characteristics: timbre, pitch range, location of the sound sources, etc. This is biologically useful in the sense that all the sounds of a predator get put together and help us run in the opposite direction, but it's also useful in music. In the end we can only pay attention to so many streams at once, which is where glitches and auditory illusions come in: our brain

starts multitasking and starts fabricating things that aren't there to fill the gaps.

5. Alexander Graham Bell. (https://en.wikipedia.org/wiki/Alexander_Graham_Bell) He was such a creatively integrated person he played with certain ideas his whole life, and they turned into amazing inventions. I love his notebooks. I love his kite drawings. I love his work with Melville Bell's visual speech system he used to teach deaf children to speak. Even though it ultimately didn't end up being useful for that purpose it became a foundation for so much of his work. Alexander Graham was one of the first people to get me really excited about vocal tract resonances and how musical they actually are, even in every day English.



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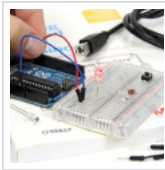
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Shauna Osborn (<http://astigmaticrevelations.wordpress.com>) on **February 23rd, 2013 at 11:54 am** (<http://blog.makezine.com/2013/02/23/5-4-3-2-1-things-about-meara-oreilly/#comment-890984>) said:
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