

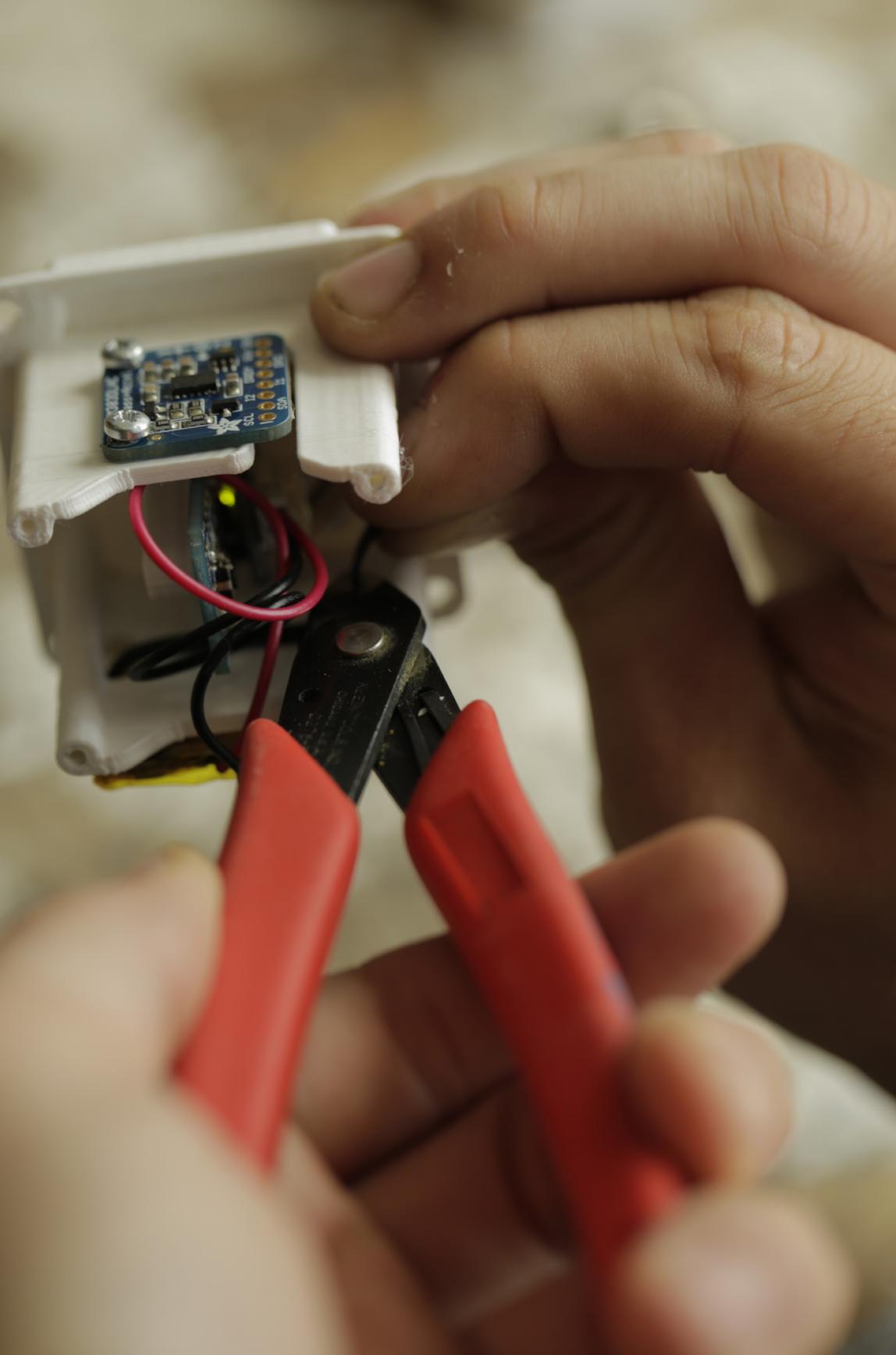
Conversations in Critical Making

Garnet Hertz, Editor

BLUESHIFT SERIES
CTheory Books

Contents

| | |
|---|----|
| Preface by Garnet Hertz | 1 |
| Critical Technical Practice: Phoebe Sengers | 8 |
| Engineering Anti-Techno-Fetishism: Natalie Jeremijenko | 21 |
| Defining Critical Making: Matt Ratto | 32 |
| Humanities and Critical Approaches to Technology: Jentery Sayers | 53 |
| Critique and Making: Alexander R. Galloway | 65 |



Preface

by Garnet Hertz

Critical making, as a term, was initially used by Matt Ratto in 2008 and first published in 2009 to describe the combination of critical thinking with hands-on making, a kind of pedagogical practice that uses material engagements with technologies to open up and extend critical social reflection.¹ In Ratto's words, "critical making is an elision of two typically disconnected modes of engagement in the world—'critical thinking,' often considered as abstract, explicit, linguistically based, internal and cognitively individualistic; and 'making,' typically understood as material, tacit, embodied, external and community-oriented."² Ratto wanted the term to act as glue between conceptual and linguistic-oriented thinking and physical and materially based making with an emphasis on introducing hands-on practice to scholars that were primarily working through language and texts, like in the fields of communication, information studies, and science and technology studies.³

Because of its stress on critique and expression rather than technical refinement and utility, Ratto acknowledges that critical making has similarities to the practice of "critical design," a term popularized by Anthony Dunne and Fiona Raby⁴ Critical design comes from the background of industrial design and builds objects that work to challenge the narrow conventions and biases that products play in daily life, primarily those that determine that products need to be convenient, affirmative, soothing, and empowering for the user. Critical design is focused on building

industrial design prototypes that question the way products reinforce a banal and comfortable status quo by being efficient, optimized, or comfortable, and instead pushes users into more complex emotional and psychological territory by questioning social norms and stimulating discussion and criticism of design itself.⁵ For example, critical designers often build products for a dystopic future, with the prototypes professionally documented and communicated through narrative video or images: “Products . . . as a special category of object, can locate these issues within a context of everyday material culture. Design today is concerned with commercial and marketing activities, but it could operate on a more intellectual level, bringing philosophical issues into an everyday context in a novel yet accessible way.”⁶

A number of key differences between critical design and critical making exist, however. Critical making, as envisioned by Ratto in 2011, was much more focused on the constructive process of making as opposed to building an artifact. While critical design is focused on building refined objects to generate critique of traditional industrial design, critical making was initially conceived as a workshop framework with the final prototypes existing only as a remnant of the process.⁷ Critical design, on the other hand, tends to be focused on building objects that document well, and the artifacts do the work of challenging concepts like optimization, efficiency, social norms, and utopianism. Critical design is object-oriented; critical making is process-oriented and scholarship-oriented: “Critical making emphasizes the shared acts of making rather than the evocative object. The final prototypes are not intended to be displayed and to speak for themselves.”⁸ Ratto’s emphasis is on using hands-on techniques to augment the process of critical thinking, while Dunne and Raby’s critical design is primarily focused on building props for the construction of a speculative narrative.

As a process and scholarship-oriented practice, Ratto's critical making resembles values in design, a concept most closely affiliated with Helen Nissebaum.⁹ Values in design is an approach to studying sociotechnical systems from the perspective of values, and starts from the assumption that technology is never neutral: "Certain design decisions enable or restrict the ways in which material objects may be used, and those decisions feed back into the myths and symbols we think are meaningful."¹⁰ Values in design is an approach to scholarship and a workshop method that strives to unpack the assumptions behind technological designs and increase understanding in how technological objects shape social values. Although objects are at the heart of this process and scholarship, the understanding of these objects is of prime importance. Like critical making, technological objects are primarily to be studied, worked through, and understood through a value-oriented process of scholarly inquiry. Critical making explicitly names making as an important part of this process, while making is optional in the process of values in design. Critical making is like values in design, but the former clearly emphasizes the value of material production as a site for critical reflection, following the "material turn" that highlights material objects as a key part of social processes and conceptual frameworks.¹¹ Ratto's term of critical making is like a constructionist approach to work through values in design, information studies, or science and technology studies.¹²

My interest in the term critical making comes from a perspective of hands-on technology development and studio practice: flipping the emphasis of the hands-on augmentation of critical technology studies to appeal to "makers" to be more critically engaged with technology. In other words, I saw that the term as useful in encouraging makers—whether they are engineers, industrial designers, or technology-oriented artists—to step back and reevaluate the assumptions and values being embedded into their designs. While Ratto's emphasis is on having making

improve critical inquiry of technology, I saw critical thought about technology as improving the process of making. Along the lines of critical design, my interests are more object-oriented instead of process-oriented.

With the objective of expanding the term critical making as an appeal to hands-on makers to be more critically engaged with technology, I set out to interview a number of people on the topic of how hands-on technology development interrelates to critical theory. I also felt that Ratto was not following through with the process of making enough, and that objects had a powerful force beyond their process of creation—they could circulate as art objects, product prototypes, or visual documentation that could reach far beyond the process of development. Focusing primarily on the development process limited the reach of critically made things to challenge the wider public's understanding of the relations between society and technology. In other words, I felt that Ratto's framing of critical making as a process limited its ability to disseminate critical thought through objects. Objects are effective as things to think with, can link concepts in a different way than language can, and can have a life of their own and can travel through different contexts. Although constructed objects are often imprecise in communicating ideas in comparison to language, things have the strength to hit you powerfully and forcefully. Critically engaged language can do detailed surgery on a topic; critical objects can hit like an emotional sledgehammer. To stop short of documenting and disseminating objects that are made in a critical way cuts the audience off from the impact of things to think with.

To dig into these topics and to draw links between the related concepts of critical making, critical design, values in design, maker culture, art and technology, critical technical practice, and others, I interviewed a number of people working in these fields, including Ratto, Phoebe Sengers, Natalie Jeremijenko, Alexander R. Galloway, and Jentery Sayers. All of these individuals work at

the intersection of critical thinking and hands-on practice: Sengers develops new kinds of interactive technology that respond to and encourage critical reflection on the place of technology in culture;¹³ Jeremijenko blends art, engineering, and environmentalism to create real-life experiments that enable social change;¹⁴ Galloway is a philosopher and media theorist who also works as a programmer and artist;¹⁵ and Sayers works in digital humanities with a “tinker-centric” approach to pedagogy.¹⁶

The key theme driving these conversations was to collect critical responses to the maker movement, which can be defined as a “convergence of computer hackers and traditional artisans . . . [that] tap into an American admiration for self-reliance and combine that with open-source learning, contemporary design and powerful personal technology like 3-D printers.”¹⁷ The starting point for these conversations was to take reflective stock of the DIY maker movement, which has emerged over the last decade through publications like *Make* magazine and related Maker Faire events, open-source hardware projects like the Arduino microprocessor platform, and new developments in low-cost 3D printing. Other topics include the interplay between critical theory and hands-on practice, contemporary art, the process of developing new technologies, open source hardware, tactical media and politics, interdisciplinarity and academic institutions, critical and speculative design, mass-produced consumer culture, and hackers and hackerspaces.

In conclusion, I hope that these conversations bring forward an expansion of the concept of critically engaged making, and in turn expand Ratto’s term to bring critical inquiry to augment the process of hands-on practice. This is vitally important, since critically made objects have the power to be evocative “things to think with” that can be documented online, exhibited in public art galleries, or published as case studies in academic papers—and can work to expose the hidden assumptions and values embedded in

technological systems to a wide audience. Critically made objects can enable individuals to reflect on the personal and social impact of new technologies, and to provide a provocative, speculative, and rich vision of our technological future that avoids the clichés of consumerism industrial design.

Notes

1. Matt Ratto and Stephen Hockema, “Flwr Pwr: Tending the Walled Garden,” in *Walled Garden*, ed. A. Dekker and A. Wolfsberger (The Netherlands: Virtueel Platform, 2009).
2. *Ibid.*
3. Ratto, “Open Design and Critical Making,” in *Open Design Now: Why Design Cannot Remain Exclusive*, ed. P. Atkinson, M. Avital, B. Mau, R. Ramakers and C. Hummels (The Netherlands: BIS Publishers, 2011). <http://opendesignnow.org/index.php/article/critical-making-matt-ratto/> (accessed July 16, 2015).
4. Anthony Dunne, *Hertzian tales: electronic products, aesthetic experience and critical design* (London: Royal College of Art computer related design research studio, 1999), 177; Ratto, “Open Design and Critical Making.”
5. Dunne, 147; Dunne & Raby, *Critical Design FAQ*, <http://www.dunneandraby.co.uk/content/bydandr/13/0> (accessed July 16, 2015).]
6. Dunne & Raby, <http://www.dunneandraby.co.uk/content/bydandr/42/0> (accessed July 20, 2015).
7. Ratto, “Open Design and Critical Making.”
8. Ratto, “Flwr Pwr.”

9. Helen Nissenbaum, "Values in the design of computer systems," in *Computers in Society* (1998), 38-39.
10. Nissenbaum, "Values in Design: What is Values in Design?," <http://www.nyu.edu/projects/nissenbaum/vid/about.html> (accessed July 16, 2015).
11. Dan Hicks, "The Material-Cultural Turn: Event and Effect," in *The Oxford Handbook of Material Culture Studies*, ed. Dan Hicks and Mary C. Beaudry (Oxford: Oxford University Press, 2010), 25-98.
12. Seymour Papert and Idit Harel, "Situating Constructionism," in *Constructionism*, (New York: Ablex Publishing Corporation, 1991), 193-206. Retrieved from <http://www.papert.org/articles/SituatingConstructionism.html> (accessed July 20, 2015).
13. See <http://www.cs.cornell.edu/people/sengers/>.
14. See, for example, https://www.ted.com/speakers/natalie_jeremijenko.
15. See <http://cultureandcommunication.org/galloway/bio>.
16. See <http://www.jenterysayers.com/2012/tinkering/>.
17. Joan Voight, "Which Big Brands Are Courting the Maker Movement, and Why: From Levi's to Home Depot," *Adweek* (March 17 2014), <http://www.adweek.com/news/advertising-branding/which-big-brands-are-courting-maker-movement-and-why-156315> (accessed July 20, 2015).

Critique and Making

Alexander R. Galloway in conversation with Garnet Hertz

GARNET HERTZ: In your opinion, what do you see as being wrong with the maker movement?

ALEXANDER R. GALLOWAY: There are a lot of things right with the maker movement. Most definitely. At the same time I may have a more polemical position on this. You could view the maker movement as the last period at the end of a very long sentence. And in this sense it's less surprising, even if it brings a certain kind of shift in our culture and technology. That larger transformation has to do with how modern society has shifted since the early 1970s, how a spotlight has been shined on individuals and turned individuals into makers in a much broader sense. Our society today is founded on a new form of production that originates from individuals, from their own expression, from their own presentation, from their own performance and self promotion. A production through affect, and behaviour, and comportment. We are all makers of our own presence in the world. And we can think of this as a new productive capacity—as a lot of economists already do.

What's the similarity between Facebook and the explosion of the TED talks phenomenon, or the way video games are designed these days, or even in something like the memoir which has mushroomed as a branch of literature? These all show different facets of the same larger social phenomenon, which is that we now

focus a lot of energy on the elevation of the individual's productive capacity, its performative-expressive capacity. This would be a way to connect Joan Didion with Diablo 3. It's a kind of generalized narcissism (in a non-pejorative sense). Facebook as a narcissistic machine, etc. We are all makers of things. So, if we were to evaluate what is wrong with the maker movement, I think we cannot simply limit it to just this isolated movement; we need to think much more generally about things like Web 2.0. In sum, everyone today is a maker.

GH: So you don't view the maker movement as reverting back to handmade craft and self-sufficiency, like what was more popular in material culture maybe a hundred years ago, as in homesteading culture?

AG: That's happening, yes. We're a really rich country here in the United States, but at the same time we are completely impoverished. We're completely impoverished in our minds and in our bodies. That is why you see a turn now, as there is periodically in modern life, back to a more authentic or sincere way of living. Hence a new authentic hacker ethos where people are building things.

Look at the 1980s and the explosion of punk rock and indie punk labels. That was a similar kind of instinct. Today, everyone is a maker, but no one is really making anything. We have this sense of universality, but I'm not sure we really fulfill the promise of collectivity.

GH: I see a thread in DIY culture as gesturing toward what people were doing a hundred years ago—at least in terms of being self-sufficient, making things by hand and looking for alternatives to “Walmart culture.” However, what I see in the *Make* magazine brand of making usually involve building things with Arduinos, making LEDs light up, and using 3D printers—in many ways, this seems like just of another style of technology consumer.

AG: A lot of people are interested in the idea of the so called “prosumer.” That is, a consumer who is also productive and, moreover, is obligated to be productive. As you’re hinting, this has a long history in American and commercial life. A hundred years ago, furniture designers, like Gustav Stickley, would send you things that you would have to assemble yourself. They were outsourcing part of their assembly labour to the consumer. And of course the larger craftsman movement also connects with DIY culture and these related topics. Maybe it’s very American too; I’m not sure. We have such a strong mythology, the Emersonian myth of self-reliance and the Protestant ethic and the spirit of capitalism: pull yourself up by your bootstraps; be self-sufficient. Part of me loves all of that; I am definitely seduced by self-sufficiency and can see the appeal.

GH: Right. What is your perspective on open source? Something that was brought up to me by Natalie Jeremijenko was the idea of open-source licenses replacing or standing in for the idea of being critical or thoughtful. We had talked about it in terms of people saying “Well here’s my gizmo; here’s my gadget and it’s open source so that means that I’m critically engaging with culture.” Do you have any thoughts on open-source hardware, or how it’s been developing over the last half decade?

AG: Open source is a tricky subject. On the one hand, we should acknowledge that open-source software is one of the single most important things that has happened in our time. Think of it: the idea that one of the largest corporations on the planet—Microsoft or whoever—could actually be threatened by a completely self-organizing, open-source project. It’s marvellous to contemplate. And sometimes not simply threatened but bested—look at the Apache server and its historical dominance in the web server market. As a thought experiment, imagine if there were an all-volunteer, open-source, non-commercial airplane project that

was threatening Boeing. The idea sounds ludicrous. We have to acknowledge that, as a chapter in industrial history, open-source software is tremendously important.

Still, I can sympathize with what you are suggesting in your question. Simply to stamp something as open-source is not at all sufficient for qualifying it as a critical project or a project that has some kind of progressive or political sensibility. Not at all. In this day and age we need to be cautious. We need to ask ourselves: who wants the world to be open source? In fact, Google wants the world to be open-source. Facebook wants the world to be open-source. (And of course the NSA wants your data to be “open-source” too!) There are whole new production models, whole new modes of value production based on opening things. Whether it means opening up one’s own life, opening up social networks, or, in the case of Google, opening up vast reservoirs of untapped data. So it’s a double-edged sword. We need to do a more granular analysis of the contours of each individual case.

GH: Are you aware of this DARPA grant that O’Reilly and *Make* received in 2012, and what do you take out of the rapid professionalization of the DIY electronic field? Is it inevitable that DIY or hobbyist types of culture align with larger institutions, or do you see this as going against some of what *Make* had started . . . or is it actually following in line with what they were always doing?

AG: No surprise there. Let’s remember that DARPA has been funding this since the very beginning. Have no illusions about it. At the same time, I don’t want to be a hypocrite. O’Reilly’s books on coding are the best in the business—everyone knows that. I first learned how to code Perl using that blue camel book, and I first learned about the details of TCP/IP with the help of O’Reilly books. I think people appreciate how they don’t try to pander or patronize the reader. Yet the DARPA funding issue and professionalization is no surprise. The deeper question is, what are

the politics of hacking? Or, what are the politics of coders? That's a much more difficult question and there aren't any easy answers to that.

I get a lot of flack when I say this, but I honestly think that hackers tend to be either agnostic or neutral about politics. They are simply uninterested in politics a lot of the time. "We just want code that runs"—that kind of ethos. Anonymous gets a lot of press, but most coders and hackers do what they do because they are into code, not politics. They want to make cool stuff. Thus they tend to be scattered across the political spectrum. In fact, when they're on the left, they tend to be centrist liberals, or sometimes left-libertarians. Only a minority of hackers are what we might call left-progressives in the traditional sense. Authors like Fred Turner have tracked the history of cybernetics and shown how the rise of new media is essentially coterminous with the rise of the new technocratic, neo-liberal, global systems of government. So a DARPA-O'Reilly is not very surprising if you look at some of the deeper trends.

GH: Sure. What role do you see hackerspaces or makerspaces having within a university? Have you been involved in any spaces like this, or how do you see this kind of thing being put into universities?

AG: A tricky issue. Let's not forget that, after the church, the university is the most conservative institution in society. And I'm not sure that's a bad thing! [Laughter] I think there is a reason why universities are traditional and conservative. Certainly I support institutional critique and the deconstruction of the university system and its staid organization, for example with the culture wars in the 80s and 90s and the quest to diversify the canon. But I'm also a person who teaches classes and says "No devices in class. No laptops; no devices."

The problem is that these forms of “hacking the university” sometimes produce, perhaps unwittingly, a new makeover of the university along neo-liberal lines. Ideas like “Let’s turn seminars into laboratories for entrepreneurship”—I don’t think that’s a good idea. I’m not against entrepreneurship, but I don’t think that, outside of business school, this is what universities are for, particularly the liberal arts and humanities parts of the university. I’m quite traditional on that point. Having said that, I’m also a staunch advocate of digital literacy. As Kittler said, to be a person in the modern world, one should know at least one foreign language and one computer language. So let’s learn how to code, but let’s also read Plato. Ultimately these two domains can be contemplated together—think of Plato’s special relationship to mathematics, for example.

GH: Can you comment on the idea of the difference between critical work that you do and critical theory as defined by the Frankfurt School? What I’m getting at here is more of an idea of the term “critical making”—whether that’s a valuable term, or perhaps too academic, negative, or maybe should be updated into something else. What are your thoughts about the term “critical making” and do you think it is a useful label to embrace?

AG: I think “critical” is a good term. Like a lot of labels, it can be vacuous sometimes and, certainly, it can turn into a certain brand. I use the word critical to describe the kinds of projects I aspire to—whether that be the critical study of software, or an interest in tactical media, or the politics of code.

Consider the origins of critique. Two sources stand out. There’s the one that comes from Kant and the one that comes from Marx. If you read Kant, the idea of critique has to do with the rejection of dogma. Kant had an anti-dogmatic interest in self-knowledge, the self-reflective quality of knowledge, the ability to validate knowledge without appeal to external scaffolding (in, for example,

an appeal to dogma). Kant's legacy has coloured our entire modern experience.

At the same time, there exists a similar but slightly different sense of critique that comes from Marx. This also concerns the anti-dogmatic, self-reflective, modern position. His is a rather mundane, terrestrial, and non-transcendental position. But of course Marx was driven also by polemic or antagonism. Hence the dialectical relation in which something is always in contradistinction with something else.

Marx's sense of critique is about taking a position. Consider something like Wikipedia. Wikipedia would be an instance of the opposite vector. There's not one sentence of critique on Wikipedia. This is because of the principle of neutrality that guides all writing on the site. They have very specific editorial guidelines that prohibit what we know as critique, and for good reason. Critique means you have to take a position, and you have to defend it. Likewise, you have to be against something. This produces a dynamic or differential. To return to your question, I am definitely interested in the legacy of the Frankfurt school and critical theory. I don't see a dramatic shift in that kind of methodology or approach. Part of what I am trying to do is take the legacy of critical theory (while adding bits from larger questions in continental philosophy) and reconnect it to contemporary questions, particularly ones having to do with digital media.

GH: What useful things can be taken from the concept of critical design as established by Anthony Dunne and Fiona Raby?

AG: Critical design is a bit silly. Designers have always been great at branding, and this is no exception. Design is a fundamentally critical process from the get-go. That's what the design process means. Design is an iterative process in which one revisits ideas, refashions them, recalibrates them, and produces multiple versions. That's why

people say “everyone is a designer” today. We live in the age when everyone is a curator, everyone is a DJ, and everyone is a designer. We need to take seriously the notion that, whereas a generation ago critique was more or less outside mainstream life, today critique is absolutely coterminous with the mainstream. Hence a designer might engage with a so-called critical design project on Monday, but on Tuesday produce client work for IKEA. It’s normal.

GH: Do you have the same response to speculative design?

AG: I’m interested in communism. And love. And darkness. I’m interested in smashing the state. And the total elimination of petroleum. I’m interested in the end of racism. I’m interested in the next 44 presidents being women—fair is fair! Speculation is mostly harmless, I suppose. But speculative thinking has been affiliated with idealist philosophy and bourgeois thought for so long—think of Marx’s aversion to Hegel—that it’s difficult for me to see much hope there. I’ve said it many times before: we don’t have a speculation deficit; we have a motivation deficit. We should keep imagining new worlds, yes absolutely! But it’s supplemental. Any child can tell you how to make the world just and fair and joyful. This is not to denigrate the creative work of Dunne and Raby, who are very talented at what they do. But rather to direct the focus where it should aim. The problem is not in our imagination. The problem is in our activity.

GH: For maker or DIY culture, what are some interesting projects, groups, directions, themes or trends that you’ve seen lately. Is there anything you’ve recently seen that has been unexpectedly provocative or interesting?

AG: Well, I’ve tried to keep up, but I’ll admit I’m not a hardware guy. I’m not a physical computing guy, so I haven’t been able to participate in some of the really interesting spurs that have come

up recently like 3D printing and microchip coding and Arduino and things like that.

In terms of interesting projects, the holy grail is still ad hoc networking. Once we have truly viable ad hoc networking, rolled out to a significant number of machines and mobile devices, at that point, we will see a major shift in technology and modes of sociability. It's starting to happen with apps like FireChat. But it's still not completely mainstream, unfortunately. Imagine if the Occupy Movement was not a quote-unquote "Twitter revolution"—which is such a ridiculous and problematic notion to begin with!—rather, imagine if it was completely ad hoc, imagine if the network itself was local and ad hoc. Things would be very different. (It would send the NSA into a tizzy, for one thing, and completely force state surveillance to reorganize itself around compromising hardware and OS software, some of which they've already accomplished, instead of simply hoovering the Internet backbone—but that's another conversation entirely.) I suspect ad hoc networking will have the kind of transformative impact that something like Bittorrent had in the past.

That doesn't answer your question directly, but I think that it may be a part of DIY. I think it is, particularly since it embodies the spirit of a bottom-up, grassroots movement. We don't need a backbone. We don't need an information backbone. With an ad hoc network, just by turning on a device, we fortify the backbone, the grassroots network.

GH: Yes, and I'm glad you brought up the Occupy Movement because it's something that has been a contrast to the apolitical and family friendly tone of *Make* magazine. Many interesting things have happened in what could be termed as DIY culture through the Occupy Movement, Idle No More, or other movements that are screaming politics, controversy, and justice. It seems a bit

odd—or perhaps a bit “affluent white suburban dad”—to think of DIY culture as being apolitical.

I see the maker movement as taking the controversy and politics out of hacking. It’s not quite Disney-fying it, but making experimental electronics or hacking practices family friendly has been, in some ways, key to its adoption and spreading a decade ago, and may be essential to being taken up in a popular way. But in the process it loses a lot of that punk aesthetic, hacker attitude, and rawness that is so rich and interesting.

AG: I think you’re onto something. One could do a whole historical sociology of aesthetic and political techniques, let’s say from the 1960s to the present, and show how they constituted genuine counterculture, even antisocial behavior, critical of the mainstream and so on. Then, at the same time, one could trace these same techniques and show how (or if) what was once more radical or countercultural has become normalized. Or even how certain techniques may have been co-opted, in essence playing for the other side.

GH: Sure, I think a good source on that process is Rachel Maines’s work. Maines talks about this flow as the hedonization of technologies and of practices that once were labour-oriented and the process of how they transform into a pleasure-oriented leisure activity.

AG: Think about the status of desire. In the 1970s Deleuze and Guattari talked about desire as a radically liberating capacity—the Situationist International, too. But think about how Facebook works today. Activity, affectivity, performativity, and other modalities of desire are completely embedded in the contemporary mode of production. This is one reason why I’ve always kept my distance from Affect Theory. Not that I don’t respect the kinds of thinkers affiliated with that theoretical emphasis. The problem is

that capitalism has already wised up. Sure, it was a radical position for someone like Judith Butler to take in the early 1990s. But now it's completely sewn into Facebook's business model. Facebook is Butlerian in this sense! So a lot of things have changed in the last twenty, thirty years or more. Critical theory needs to readjust accordingly.

Take interactivity for example. If you talked about interactive media in, let's say, the late 1960s, you were a radical by definition. Interactivity meant that media should be bi-directional, it signified an alternative to the broadcast model, the notion that should be bi-directional. So simply talking about interactivity meant a kind of radical democratic stance. But that was a generation ago. A generation and a half, even. Today, interactivity is, at best, completely normal and, at worst, slightly reactionary. I'm not sure I want Google to be "interacting" with me when I don't want them to be interacting with me. I'm not sure I want Gmail to be interacting with the emails I write, to say nothing of my "interactions" with the NSA.

In fact one could say the same thing about remix culture. I was looking recently at some early experimental film and video projects. And they are so surprisingly similar to watching an MTV bumper from the 1980s. It's exactly the same technique, hyper-quick edits, and so on. Such are the strange twists and turns of history. At one moment something is marginal, critical, even antisocial, and then a generation later it becomes normal or mainstream.

GH: So what are your thoughts about contemporary use of the term "DIY," whether through Mark Frauenfelder, Matthew Crawford, or other people? Do you have any thoughts on how that term has changed, or where it's at now? Because when you say "DIY," it can mean everything from going to Home Depot to buy lumber to programming an Arduino or a whole range of things.

Where do you think is the most useful way to take that term, where to go with it or what to do with it?

AG: Here in New York rooftop gardens are all the rage. We have so many rooftops and they're all empty. My parents were back-to-the-landers in the 1970s, and I grew up on a farm in Oregon. So I'm a product of the DIY ethos to a certain extent. I'd love to have a chicken coop again in my backyard if I could.

As I said before, we're an incredibly rich country but at the same time we're extremely impoverished. Even in our making, we've lost the essence of making. It could be physical knowledge, or it could be spiritual knowledge. You mentioned Crawford, and we could discuss others, like Richard Sennett's book on the craftsman, and so on. In continental philosophy right now people are talking about carpentry—I kid you not. Tools are very fashionable right now. We mentioned Etsy. Even in music you see a return to the DIY, hand-made ethos. Ten, twenty years ago, it used to be the height of cool to be on a small label like Sub Pop. Today it's even cooler to self-release.

GH: Right, or on cassette or vinyl, too . . . to self-release on vinyl.

AG: Right, I find that kind of humorous. We're seeing it in all aspects of culture, and of course it's still generally a good thing, whether it's in music or with Linux or Occupy. These are good developments. But we should also frame them within a larger landscape. Romanticism never gets old; there's a basic phenomenology that people never lose interest in. What I mean is that people seem to crave a sense of authenticity, a sense of sincere presence in the world. When our social relations fray and become alienated and commodified, we often see people return to what they view as a more authentic, sincere existence. It began with Socrates and it's happened periodically ever since. Phenomenology and romanticism are maybe only the most recent emblems. I think

this is a way of framing what you're getting at with the return to the handmade, maintaining a personal relationship to one's objects and, as those objects disseminate, a personal more sincere social relationship to one's friends and relations. I'm a woodworker; I make furniture in my spare time, so I get why people feel this way.

GH: I see part of it as people, in a simple way, just being tired of buying stuff at Walmart and being sort of sick of that. They're returning to using—for example—some hand-carved spoon that their grandparent made, or a quilt. And I think that it's very difficult to replicate that genuine sort of handmade, or sentimental type of object that you'd have in handmade culture.

AG: You mean, if it's computer-based?

GH: Well, that's a good question as to whether that could be computer based. I think you see some replication of sentimentality in software through things like Instagram, which adds sentimentality through software. Physical objects do have a weight to them that is maybe more difficult to replace through software.

AG: Media always play that role. We often think of media in negative terms: "Oh, these are the aspects of modern life that are impersonal." But look at what media do and how they work. I am thinking of something like the invention of anti-aliasing. The invention of anti-aliasing was precisely to add a soft, authentic, smooth visuality to images. Or you could even look in the reverse, because the flip side to romanticism is a naïve sentimentality or nostalgia. That's a trap; romanticism is an ideology in itself, of course, we should acknowledge that. But I love observing these small nostalgias that reappear here and there. People are nostalgic now for the CD as a music format because MP3s tend to be compressed and CDs have a richer, deeper, sonic spectrum. People are nostalgic for—as you mentioned—vinyl, or the pops and hisses that you hear when you drop the needle on a record. Such media

artifacts return because they furnish a more immediate authentic experience. Or at least they seem to.

GH: Right. So if you had to spit out some sources for a reading list related to either DIY culture or making or maybe critical making or handmade craft, what would it be? You mentioned Sennett and Crawford and some other sources. What would you add to that list?

AG: Related to the idea of phenomenology, a favorite of mine is the architect Christopher Alexander. In terms of the immediacy of production and design, Alexander is a legendary figure. But thinking more contemporarily, a real hero of mine is Geert Lovink—and I'm sure he's a big influence on you too. Especially that early book of his called *Media Archive*, which he co-wrote under the pseudonym Adilkno. He's been writing on this stuff for a very long time and has been thinking about critical media practice more deeply and with greater subtlety than anyone I can think of. What's so great about his work is that he doesn't fall into the two typical camps. Either people are geeks who are into hacking, and their response is generally thumbs up; or people are knee-deep in the proprietary commercial world and give it a thumbs down (when it threatens their profit margin). But someone like Lovink—or others, like Matthew Fuller, or Tiziana Terranova, or certainly the Critical Art Ensemble—is a huge influence to a lot of us these days. That kind of work remains absolutely crucial for me.

Another book that gets better and better every time I read it is McKenzie Wark's book *A Hacker Manifesto*, a text influenced greatly by Guy Debord and Deleuze. I think it's one of the few good books on digital media and digital culture. It's one of a handful of books that still stands up, now that the web boom of the late 1990s has come and gone.

Interview July 6th 2012. Edited by Garnet Hertz, Alex Galloway, Amelia Guimarin and Jessica Kao. Initially published in a different form in Hertz, "Critical Making: Interviews" (Telharmonium, 2012). Revised and updated for CTheory May 2015.

Alexander R. Galloway is a writer and computer programmer working on issues in philosophy, technology, and theories of mediation. Professor of Media, Culture, and Communication at New York University, he is author of several books, most recently *The Interface Effect* (Polity, 2012) and *Laruelle: Against the Digital* (Minnesota, 2014).

Galloway has given over a hundred lectures both across the U.S. and in ten countries around the world. His writings have been translated into German, French, Italian, Spanish, Portuguese, Slovenian, Swedish, and Polish. He is recipient of a number of grants and awards including a Creative Capital grant (2006) and a Golden Nica in the 2002 Prix Ars Electronica (Linz, Austria). He is a founding member of the software collective RSG and creator of the data surveillance engine Carnivore.