Report in Brief

How Art and Research Inform One Another,
or Choose Your Own Adventure

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ABSTRACT *Conventional artist statements and scholarly method statements can be inadequate for representing the intersections and overlaps of art practice and research. This essay employs autobiography to narrate relationships between the author's art practice and scholarly research, and draws on feminist methods and histories of technology to assess the usefulness of this exercise. In contrast to modes of writing in the arts and humanities that emphasize clear outcomes and the production of single-authored works, the author documents how ideas and projects are collectively shaped, and how failures and socially-situated turning points inform the trajectory of any given work.*

KEYWORDS *Art; Research; Autobiography; Sound; Feminism; Technology*

RÉSUMÉ *Les déclarations d'artiste et de méthode académique conventionnelles peuvent être inadéquates pour représenter les intersections et les chevauchements de la pratique et de la recherche artistiques. Cet article a recours à la forme autobiographique pour élucider les rapports entre l'art et la recherche académique de l'auteure et a recours à des méthodes féministes et des histoires de la technologie pour évaluer l'utilité d'un tel exercice. À la différence de manières d'écrire dans les arts et lettres qui mettent l'accent sur des résultats clairs et la production d'œuvres réalisées par un seul auteur, cette auteure souligne comment ce sont des collectivités qui développent des idées et des projets et comment des échecs et des tournants situés socialement orientent la trajectoire de toute œuvre.*

MOTS CLÉS *Art; Recherche; Autobiographie; Son; Féminisme; Technologie*

Following a recent presentation on my work, I was asked how my art practice and scholarly research inform one another and how I would explain the resonances between them. I responded that I don't think much about it; that the two trajectories run simultaneously, but mostly on separate tracks. After this exchange, my answer felt not inaccurate but inadequate, and I wondered how to better characterize the nonlinear and deeply social nature of my work. What follows is an attempt to rewind and fast-forward through a path of art and research, narrated through autobiography.

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When the composer Milton Babbitt passed away in early 2011 (Kozinn, 2011), I went digging through my old notebooks from Mills College, where I studied electronic music between 2003 and 2006. Wasn't it Babbitt who visited one of my composition classes via speakerphone? I was curious to revisit my notes on the occasion. It turned out that the guest was Max Mathews (Grimes, 2011), and I had taken virtually no notes in class that day.

As Bruno Latour (1996) might have it, my old notebook proved to be more revealing as a map of social networks and dreams of partially-realized projects than as a record of discrete events attended or things accomplished. Searching for the nonexistent notes on Babbitt, I found a trace from the day in 2005 when I met the performance artist and scholar Praba Pilar, who became a good friend. She had written her name and phone number in my notebook at the beginning of fall semester, when we were both sitting in on a feminist philosophy class taught by Elizabeth Potter. Pilar and I recognized each other from the "Powering Up/Powering Down" conference in San Diego which we both attended the previous year, a gathering of artists, scholars, and activists interested in radical engagements of technology in the arts (Teknika Radica, 2004).

I went to "Powering Up" to write a review for a music magazine of a performance by the inimitable and famously reclusive sound artist, Maryanne Amacher. For a few years following, I would pursue an interview with Amacher for my book, *Pink Noises: Women on Electronic Music and Sound* (Rodgers, 2010). We spoke by phone a handful of times over those months, often when I was visiting family in upstate New York, not far from Amacher's home in Kingston. She was generous in our informal conversations, but adamant that I should not come visit her home unless all of her preferred speakers were present and in working order. The speakers were necessary to provide the full experience of her multichannel sound compositions, renowned for their intense explorations of extremes in frequency range and volume. On one occasion, a blown-out speaker had been sent off for repair; another time, she informed me that several speakers had been shipped to Mexico City for her next installation, in advance of her trip. (This installation is documented on her album, *Sound Characters vol. 2*; Amacher, 2008.) When Amacher passed away in 2009 (Kozinn, 2009; Gann, 2009), I regretted that we had never met in person, but remained inspired by her fervent and meticulous devotion to her craft, evident in her San Diego show, and even in our fleeting exchanges on the phone.

As it turned out, my review of Amacher's performance was never published, and the interview for *Pink Noises* never materialized. I also didn't stay in Elizabeth Potter's feminist philosophy class at Mills. In the few sessions I attended, she urged me with enthusiasm to revisit Luce Irigaray's work, which I hadn't read in the decade since I was an undergraduate (more on this later). After reconnecting with Praba Pilar in class, I went on to contribute a short piece of music to her performance, "The Church of Nano Bio Info Cogno." Pilar (2011) describes this piece as "offering fantastical prophesies, outrageous sermons, incantations, neo rituals and a freshly minted techno-communion with emerging technology." To accompany a brief segment of her performance, I recorded a chorus of synthesized voices singing together as in a church hymn. This was in the same semester as Max Mathews's visit to my composition class,

when his whimsical accompaniment for the singing computer in "Daisy Bell (*Bicycle Built for Two*)" (1962) was surely fresh in my ear (Alcatel-Lucent, 1997).

Instead of the course in feminist philosophy, I completed an independent study using the software environment NetLogo, a useful tool for modeling self-organizing systems. I had become fascinated with butterfly migrations after my mother and I each spotted a monarch and had a conversation about it. She was on the east coast of the U.S. and I was in California, and we wondered together about these butterflies' paths. She followed up by mailing me a newspaper clipping on monarch migrations (Murphy, 2005). I decided to make this the focus of my MFA thesis, "Butterfly Effects," which grew into a four-channel sound installation developed in the programming environment SuperCollider. "Butterfly Effects" has a generative, open-ended structure that unfolds with subtle differences each time it is executed. Its structure is derived from behavioural aspects and ecosystem dynamics of migratory monarch butterflies; it is also inspired by the butterfly effect concept of chaos theory, which suggests that the flapping of one butterfly's wings can cause significant changes in how a weather system unfolds over time. Like elements in an ecosystem, all synthesized sounds in the composition are dynamically generated and interdependent.

As part of my preparation for this project, I studied with the composer and improviser Fred Frith and created an instructional score for the Mills Contemporary Performance Ensemble, a group of improvisers who played acoustic instruments. This score, called "Butterfly Ecosystem," provided the improvisers with written instructions for generating environmental sounds like wind and rain, and sounds associated with butterfly behaviours like clustering and flying away. This was a way of doing preliminary "programming" in dialogue with other musicians, to test out ways of producing sound through descriptive text and metaphor before I approached the similar task of composing in a computer language. I learned from the improvisers about the range of sounds made possible by improvisational techniques on acoustic instruments, as well as the need for rigorous precision when describing sounds with words. Along with my experiments in NetLogo, this process informed the structure I would construct in SuperCollider code for "Butterfly Effects."

Soon after completing the MFA, I arrived in Montréal to pursue a PhD in Communication Studies at McGill. Eager to extend the concepts I developed in "Butterfly Effects," I initiated a collaboration with Irene Gregory-Eaves, a biologist who studies long-term ecological changes to fish populations (Gregory-Eaves, Selbie, Sweetman, Finney, & Smol, 2009). We were finalists for a major grant in which she would contribute data for me to render in multichannel sound; however, following an economic downturn, funding was eliminated and no awards granted that year. In the process of preparing the application, I amassed numerous resources on fish migrations and underwater animal communications, and drafted a computer music piece that emulated the sound of ocean waves using white noise. With no dedicated funding to realize the installation, and increasing demands of my doctoral research, I set this project aside.

My research engages fields of sound studies and feminist science and technology studies (cf., Haraway, 2004; McCartney, 2006; Sterne, 2003), and my dissertation took

up as its central question how metaphor has informed historical developments in synthesized sound. I surveyed acoustics textbooks, inventors' correspondence, and synthesizer product manuals, and identified two significant metaphors in audio-technical discourse from the early twentieth century on: electronic sounds as waves and as lively individuals.

In analyzing sound wave metaphors, I recalled Irigaray's (1985) work from the feminist philosophy course that I did not take. In "The 'Mechanics' of Fluids", she claims that fluids have been associated with female corporealities in phallogocentric thought, and have thus resisted logical apprehension and adequate representation in Western sciences. She offers this infamously nonchalant footnote: "The reader is advised to consult some texts on solid and fluid mechanics" (Irigaray, 1985, p. 106; see also Hayles, 1992) to see what she means. This vague citation is immensely frustrating for those of us who rely on tracking sources for historical research; and yet, its bold rhetoric impressed her claims on my mind. When I opened acoustics textbooks to read about the behaviour of sound waves in air and water, sure enough, I encountered the phenomena Irigaray wrote about. The physicist Lord Rayleigh, for example, devoted no fewer than thirteen chapters of *The Theory of Sound* (1877-78) to explicating acoustic radiation in fluid media. In the introduction to a later edition, Robert Bruce Lindsay acknowledged: "This is by far the most difficult part of the subject matter of acoustics and has remained so to the present time" (Rayleigh, 1945, p. xxviii). In my assessment of this and other sources, I relied on Irigaray's argument to show that sound waves have been routinely figured in audio-technical discourse as feminized, unruly, and in need of technological control.

In researching the metaphor of electronic sounds as lively individuals, fish resurfaced as well, in underwater references by the acoustics researchers Hermann von Helmholtz (1954) and James Jeans (1937; see also Helmreich, 2009), and in Charles Darwin's (2003) accounts of electric fish, which use a specialized organ to generate electrical fields for communication and orientation (see also Rodgers, 2011). Maritime themes and questions of life and liveliness came into focus as I read a wide range of archival material, at least in part because these concepts were already present in my art making, even in projects that had been left behind.

In the spring of 2011, I taught a feminist media studies course at the University of Maryland. I assigned an essay that I first read in Carrie Rentschler's graduate seminar at McGill, which creatively re-imagines "waves" of feminist movement as radio waves. Both feminist waves and radio waves can be interpreted as technical modes of communication, and as overlapping, modulating signals (Garrison, 2005). One of my students, an engineering major, offered a sharp critique: "Waves don't work that way," she said, and explained in detail how mechanical engineers understand wave behaviours differently. This interaction delivered a whole new set of concerns about the limits of my scientific knowledge when writing about waves, and I am now researching which physics textbooks to read next. In the meantime, in response to a recent call for works, I re-opened my draft composition of white-noise water waves from the deferred fish-population project in 2006. I completed a revised version of this piece that floated on a raft in the Delaware River in the summer of 2011, as part of an event pro-

moting dialogue about the environmental politics of hydraulic fracturing (EMF Pro-
ductions, 2011).

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What do these travels through autobiography reveal? Donna Haraway (1997) compares
the open-ended practice of doing feminist technoscience to a game of cat's cradle, mak-
ing string figures around one's fingers:

> Cat's cradle is about patterns and knots; the game takes great skill
> and can result in some serious surprises … [it] invites a sense of col-
> lective work, of one person not being able to make all the patterns
> alone. (p. 268)

In the above narrative of the patterns and knots in research and creative work,
where does one idea or project end and another begin? Which parts fall under the
oft-separated categories of "arts," "humanities," and "sciences," and at what point do
those categories cross-pollinate and become irrevocably hybridized or indistinct? At
the risk of indulging the anecdotal, I turn to autobiography not to supplant more tra-
ditional artist or method statements, but rather to demonstrate their incompleteness
in representing research and creative processes on their own. Left out of these other
genres of writing are webs of impactful social influences and material traces (the
handwritten phone numbers, passing butterflies, newspaper clippings, and so on),
and vestiges of shelved projects that precede and inform the more cohesive works
that happen to emerge.

As Haraway (1997) implies, one person cannot do this work alone, and there is a
politics to acknowledging the myriad ways that social networks nourish creativity and
the production of single-authored works. My work is inspired by feminist research
methods, pedagogies, and activisms that emphasize the collective production of knowl-
edge. (For two disparate examples of feminist projects that define themselves in this
way, see Smith, 2005 and subRosa, 2012.) Moreover, I have learned from historians of
technology who embrace multidirectional models of technological development. Mov-
ing away from linear narratives of "progress" and individual claims to invention, they
foreground the relevance of failed ideas and devices, as well as the influence of various
social groups on the evolution of an artifact (Pinch & Bijker, 1987; see also Gitelman,
2006; Latour, 1996). In this article I have presented an example of how the winding
progress of art practice and scholarly research can be narrated similarly, by sketching
some of my work's trajectories in social context and acknowledging meaningful failures
and incomplete efforts along the way.

The title of this article references the children's interactive fiction series "Choose
Your Own Adventure," which positions the reader as protagonist and agent in how a
fictional narrative unfolds. At various points in the story, the reader chooses to turn
to one page or another to take the narrative in a different direction. Like a tale of
"Choose Your Own Adventure," research and creative practice are full of meaningful
convergences and turning points, although these tend to be glossed over or omitted
in formal accounts of a project that are oriented toward "outcomes." To locate turning

points in one's work, and narrate the social circumstances surrounding them, is a useful heuristic for taking stock of the multiple lines of inheritance and possible futures of any given project or fragment of an idea. It can move the work forward in new and unexpected ways.

In her work on queer phenomenology, Sara Ahmed (2006) emphasizes this crucial role of turning, and turning points, in subject formation: "Turning … take[s] subjects in different directions. Depending on which way one turns, different worlds might even come into view" (p. 15). Artist and scholarly-method statements can render a messy process retrospectively neat, namely, when the linear progress narrative shows up as a project summary, and a mirage of solemn intentionality covers up occasions of improvisation and surprise. Alongside these other quasi-fictional forms of professional writing, an autobiographical focus on false starts, social encounters, and open-ended patterns in one's work may indeed bring alternate creative and intellectual worlds into view. To be sure, I had forgotten about my abandoned stash of resources on underwater animal communications. Why not take another look, and start from that point now?

Acknowledgment

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