

Reanimating the Readymade

Peter Bussigel
Emily Carr University
520 East 1st Avenue
Vancouver, Canada V5T1G5
pbussigel@ecuad.ca

Stephan Moore
Northwestern University
Dept. of Radio, Television & Film
1920 Campus Drive
Evanston, IL 60208 USA
stephan@northwestern.edu

Scott Smallwood
University of Alberta
Fine Arts Building 3-82
Edmonton, AB T6E0T4 Canada
scott.smallwood@ualberta.ca

ABSTRACT

There is rich history of using found or “readymade” objects in music performances and sound installations. John Cage’s *Water Walk*, Carolee Schneeman’s *Noise Bodies*, and David Tudor’s *Rainforest* all lean on both the sonic and cultural affordances of found objects. Today, composers and sound artists continue to look at the everyday, combining readymades with microcontrollers and homemade electronics and repurposing known interfaces for their latent sonic potential. This paper gives a historical overview of work at the intersection of music and the readymade and then describes three recent sound installations/performances by the authors that further explore this space. The emphasis is on processes involved in working with found objects—the complex, practical, and playful explorations into sound and material culture.

Author Keywords

Readymade, Sound Installation, Intermedia, Marcel Duchamp, John Cage, Carolee Schneemann, David Tudor

CCS Concepts

Applied computing → Fine arts; Applied computing → Sound and music computing; Performing arts; Computer systems organization → Sensors and actuators; Hardware → Sound-based input/output; Hardware → Electro-mechanical devices;

1. INTRODUCTION

How does the pot pray:
wash me, so I gleam?

prays, crack my enamel:
let the rust in

- *Utensil* (1964) by A. R. Ammons [1]

In André Breton and Paul Éluard’s *Dictionnaire abrégé du Surréalisme* [2], Marcel Duchamp defines a readymade as “an ordinary object elevated to the dignity of a work of art by the mere choice of an artist.” His infamous “Fountain” (1917) performed such an elevation by rotating a urinal 90 degrees, but it is a slightly earlier work, “With Hidden Noise” (1916)—a spool of twine sandwiched between two brass plates and secured with long screws—that is perhaps a more direct forebear to the noisier works considered here.



Licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0). Copyright remains with the author(s).

NIME’19, June 3-6, 2019, Federal University of Rio Grande do Sul, Porto Alegre, Brazil.

What is already made in the readymade? Beyond their material composition, urinals and spools of twine have clear cultural roles – we know the function they perform and the context(s) where we expect to encounter them. Transplanting such everyday or found objects into an Art context encourages a collision between the object’s familiar identity and its new aestheticized role. The object’s original function is not lost but folded into a different context, and the observer is tasked with sorting through the various resulting readings. Readymades draw attention to the aesthetic qualities of everyday objects, but they also reflect the material and cultural systems from which they emerged. In using everyday objects, artists engage their audiences to draw lively connections between the various spheres in play.

This paper examines the readymade as it relates to experimental music and sound art practices. We start by looking at three important 20th Century works—John Cage’s *Water Walk* (1959), Carolee Schneeman’s *Noise Bodies* (1965), and David Tudor’s *Rainforest* (1968). We examine the formal dimensions of these pieces, along with the methods by which everyday objects are found and prepared. Next, we discuss recent works by the authors that also work to reanimate the readymade as a material for sonic exploration. *Losperus* is an improvised performance of found objects and mechanical devices precariously assembled into temporary amplified kinetic sculptures. *TRaNsMOGRiFiER* is a mysterious pop-up shop where objects offered by audience members are transformed into sounding, moving sculptures. *Chorus for Untrained Operator* is a switchboard-controlled assemblage of everyday mechanisms, modified so that their built-in functionality can “sing” its part in a many-voiced euphony of divergent noises. Each of these pieces is described with an emphasis on this contextual folding, showing how these works are animated by readymades, and how the concept of the readymade is reanimated through contact with sonic and electronic vibrations.

2. THE READYMADE’S MUSICAL PAST

Few themes in the avant-garde tradition of the 20th Century are as enduring as the idea of re-evaluation through recontextualization. Whether it is Duchamp’s urinal, the use of a pedestrian movement vocabulary by artists working at the Judson Dance Theater, Fluxus instruction pieces like Alison Knowles’ “Make a Salad”, or Andy Warhol’s paintings of Campbell’s soup cans, hidden layers of meaning are uncovered whenever a quotidian object or action is dislocated from its familiar context. Sound art and sampling practices, in particular, often succeed in colliding contexts to draw new information from existing structures. Familiar examples include the social and spatial transposition and intimate exploration of a disembodied choir in Janet Cardiff’s *40-Voice Motet*, the music extracted from architecture in Alvin Lucier’s *I Am Sitting in a Room*, and the sonic texture of the urban technosphere revealed in Christina Kubisch’s *Electrical Walks*. Each of these pieces starts with an available space or experience, and then enacts a transformation that grants us access to new perspectives and alternative readings.

However, while these pieces employ familiar settings (and perhaps familiarity itself) as a source material, they are not dealing with readymades in a strict sense.

In the context of sonic art, the readymade is either 1) an ordinary object with previously unexplored sonic properties, elevated through an artist's re-deployment of the object in a way that reveals those hidden capabilities, or 2) an ordinary object whose familiar sonic characteristics, usually regarded as a by-product of its function, are brought into focus through its use. In this section, we will look at three historical sound pieces that make use of such sonic readymades.

2.1 Water Walk



Figure 1: John Cage performs *Water Walk*

John Cage's 1958 composition *Fontana Mix* consists of a set of materials useful for creating other compositions: several sheets of squiggly lines of various thicknesses, transparent sheets speckled with dots, and then other transparent sub-sheets for describing and measuring the relationships formed by various combinations of the dots and lines. These readings could result in an infinite number of realizations, which were, in turn, to be used to describe musical parameters for fixed compositions. Cage himself used the *Fontana Mix* system to create several other of his compositions, including *Aria*, *Theater Piece* and *WBAI*.

Fontana Mix also served as the generative system for creating the composition *Water Walk*. Clocking in at a slight three minutes, it nonetheless makes use of a large battery of materials, including several readymades. While some of these are used primarily to perform their traditional function -- a squeezed rubber duckie squeaks and a bottle of Campari is used for rather quietly pouring Campari into a glass -- the audience also has brief opportunities to consider the musical properties of the clink of ice cubes being dropped into a glass, the grinding of an ice crusher, the resonance of a struck bathtub, and the hiss of steam escaping from a pressure cooker, among others. The overall impact of the piece centers on the heightened drama of the contrast between the performer's well-rehearsed, assured actions and the surprise of sudden re-interpretation, occurring as these everyday objects are re-recognized while undergoing a swift transformation into formal musical instruments. The laughter from the studio audience registers this surprise, though it may also indicate that the performance is being interpreted as a Chaplin-esque physical comedy. The humor of *Water Walk*, should one choose to be open to it, is not unlike those comedies, relying upon misunderstanding and misperception as the key to advancing a joke's impact.

Cage specifies that the piece was to be for television performance, and as far as we know he only performed it twice: in February 1959 on the Italian television program "Lascia o Raddoppia" and then a year later on an episode of the American game show "I've Got A

Secret". The initial performance has been lost to time, but following the rediscovery and web distribution of the highly entertaining second performance, re-mounting of this work for the stage (and YouTube) has become much more common, even if securing the full roster of readymade instruments continues to render this an ambitious undertaking. Some of the objects are now antiquated and harder to find except as "vintage" items, such as an old-fashioned seltzer bottle or "soda syphon". During preparations for a 2007 performance of *Water Walk* by David Behrman at Bard College, questions of the vintage and sonic appropriateness of the sourced pressure cooker and seltzer bottle were raised, adding a layer of interpretation as serious as it is funny in how it intersects with the concerns of "early music" practitioners: how important is it to the piece that these readymades be original "period" instruments?

2.2 Noise Bodies



Figure 2: Carolee Schneemann performs *Noise Bodies*

In 1965, as part of Charlotte Moorman's 3rd Annual Avant-Garde Festival, the performance artist Carolee Schneemann presented a work called *Noise Bodies* in collaboration with the musician James Tenney. For the performance, which took place at New York City's Judson Hall, Schneemann and Tenney wore complicated arrangements of readymade sound objects, designed such that each person's body presented a variety of cacophonous options to the other during performance. According to Schneemann's gallery, these objects included "refrigerator tubes, ice trays, carburetor vents, beer cans, necklace beads and flashlights." [3]

Schneemann referred to these objects as "sound-producing debris" and a "noisy collage." Years later, Schneemann said of the collaborative performance, "We improvised together regarding what made sound and what gestures would produce varieties of sound. The way my kinetic theatre pieces developed was that parameters were set in terms of certain kinds of duration, position and action and then from studying those we would improvise. So each performance was different."

Unfortunately, the only existing record of the performance is photographic, though the original objects used by Schneemann and Tenney have been preserved and have recently been exhibited widely as part of a resurgence of interest in Schneemann's oeuvre. (We'll note that in the space between the submission of this paper and its acceptance, Schneemann died at the age of 79. The resurgence of interest we note here has been taking place for years before her passing). We also have Schneemann's list of performance directives for the event, which gives us some idea of how the piece may have unfolded. [Note: all apparent typos are part of the original text.]

1. Bodies completely costumed in sound making debris; penlights and squeakers on both of us
2. In the dark we circle the space, lighting ourselves briefly (like fire-flies); sporadic noises of the metal and squeakers.
3. Slowly move towards each other in the dark, beginning very prad (stacca-to) light of the debris
4. Circling about six feet apart; a spotlight goes on in the center between us
5. Keeping eye contact we each pull out a gear cable from the assembled costume parts (from an old car, they look like wands); constant circling of one another.
6. Slowly reach out and begin to play each other, first very lightly striking the bells, then striking the tin cans; circling each other more quickly in rapid ex-change of strokes; increasingly cacophonous: metal pieces clang and crash together as the speed quickens (percussive, rhythmic).
7. A spotlight suddenly illuminates a large suspended metal wheel (bicycle rim) of “junk”; we begin to interpose strokes on the hanging wheel between strokes on each other.
8. One lifts the wheel down and begins to spin it as the other is striking debris on the wheel; the wheel is thrown in the air, caught by the other, and amidst a crescendo of shattering noise and stokes we exit.

It is evident that the audience was intended to hear these objects in advance of seeing them. By encouraging aural identification using the familiar resonances that would be emitted by, for example, beer cans or ice trays as a primary cue, visual identification becomes a confirmation of what is already suspected -- a reversal of the usual sensory order. It also seems that the costumes were designed more for their aural potential than their visual appeal, which fits with this reversal and with the apparent objectives revealed in the performance score.

2.3 Rainforest

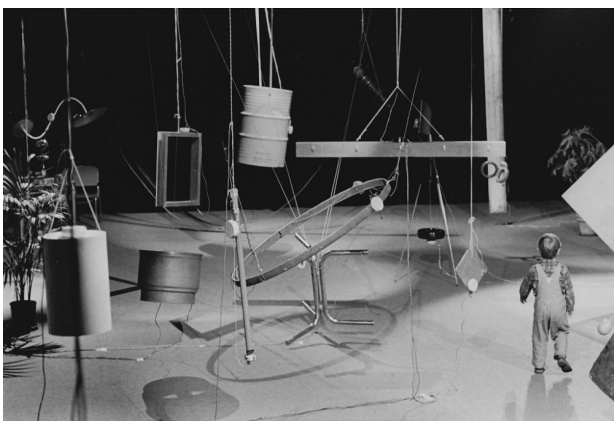


Figure 3: David Tudor's *Rainforest IV*

Perhaps the best-known of these historical works is David Tudor's *Rainforest*, an evolving piece that has enjoyed a long history, and has taken many forms. Matt Rogalsky, who worked with Tudor, places this work in a continuum with earlier pieces, and traces its lineage back to John Cage's 1960 work *Cartridge Music*, where phonograph cartridges were directly attached to objects to amplify very small vibrations. The first work to be called *Rainforest* was commissioned in 1968 to accompany the Merce Cunningham dance of the same name. Tudor took a small collection of familiar resonant objects and outfitted them with

transducers (essentially speakers without cones), allowing them to be vibrated directly by the audio signals he fed them. At another point on the object, he would affix a contact microphone, collecting the signals after they have interacted with the resonances and other peculiarities that the object's material structure introduced. The final amplified signal, then, is the product of whatever sound material the performer chooses to introduce, transformed by the object and further shaped by the limitations of the transducer and contact microphone employed.

What were the objects that Tudor used in these early performances? Early notes indicate that the lineup was constantly changing, but probably included sheets of various materials, such as aluminum, steel, fiberglass, and even plate glass, as well as metal pipes and other small objects able to be packed into a suitcase for touring purposes. There was no fixed list, so Tudor and his collaborators were always free to swap in new objects at their convenience. And what sounds were being put through the objects? In Rogalsky's recounting, "Sonic resources used to activate the transducers are variously electronic (live or otherwise), bio-electronic (gathered from research laboratories), or sounds of living things actively gathered in the field; frequently sounds in all these categories imitate each other." A selection of sounds that complements the idea of the readymade, then, in its eclecticism and its particular harmony of the natural with the human-produced.

The evolution of this piece is a fascinating subject, and deserves a longer exposition than this brief overview can provide. In 1972, *Rainforest* underwent another major evolution, becoming the large-scale installation and audiovisual spectacle we know today as *Rainforest IV*. This piece engaged multiple performers and could make use of much larger objects, and a greater quantity of objects, than would have been practical in the earlier versions. A perusal of the plentiful and readily available images of *Rainforest IV* shows that many sonic readymade objects have been used over the years, including car doors, 55-gallon barrels, cookware, and enormous discs taken from early hard drives, as well as more intentionally sculptural pieces such as John Driscoll's assemblage of a beautiful collection of toilet tank floats. While the visual appeal of the installation may be the first thing that grabs some visitors, it is the overall soundscape of the large spaces it inhabits that increasingly becomes the focus. In *Rainforest IV*, objects are not always amplified, as the sounds they are making are often loud enough to be heard clearly as part of the overall sonic texture of the piece. Visitors are encouraged to interact with the objects, touching them, putting their ear up to them, or even in some cases biting them to hear and feel the sound vibrations transmitted through their teeth into their skull.

This work forces us to consider the idea that objects have voices, and will "speak" when spoken to (or spoken through). Rogalsky notes that the "... conflation of the natural and the artificial is provocative and the essential technical concept of the piece - a transducer affixed to an everyday object, causing it to resonate - can be seen (and heard) as a metaphor for a less earthbound process of transformation, and an expression of Tudor's personal mysticism." Where *Water Walk* humorously and explicitly repurposes readymades as instruments, and *Noise Bodies* extends the human form, and human capability, through the sonic properties of readymades, *Rainforest* leaves the door open to accessing the animus within the readymade, prompting us to consider the voice, and by extension the spirit, of the objects that surround us.

2.4 ... and beyond

The preceding examples illustrate the avant-garde's fascination with readymade sound objects, and the potential for humor,

playfulness, and unexpectedly profound insights that they harbor. This fascination goes back at least 60 years, though doubtless other examples predating those we have chosen could be identified. Through the intervening decades, the readymade has resonated with countless other sound makers, including artists as divergent as Laurie Anderson, Zimoun, Kelly Dobson, Trimpin, and Achim Wollscheid. It is beyond the scope of this paper to give a full accounting of this history—it remains an exercise that merits a rigorous undertaking!

The next section discusses three works by the authors that attempt to reanimate the spirit of these earlier works through their conscious and conscientious use of the sonic readymade.

3. RECENT REANIMATIONS

We see the preceding works as the progenitors of, and the inspiration for, a set of recent works we will now describe. Like the previous works, each of the following pieces makes use of a wide range of sonic readymade objects, gathered through a process that is open and even opportunistic, as opposed to careful and curatorial. There is a quality of the “junkyard flaneur” to each work, as each is absorbed with and revels in the endless bounty of discarded material culture in what Rich Gold refers to as *The Plenitude*. [4]

Each of these works also engages in a play and display of agency, inviting the audience to perceive the sonic readymade’s voice as belonging to something that is speaking, not merely an object or a puppet, but an animate being possessed of some sentience and capable of volition. There is an ever-present tension between playing/controlling the readymades and listening/attending to them. This tension exists in many NIME projects and underscores broader questions about expressivity and control in a culture increasingly defined by its interactions with technological objects. Cage, Schneemann, and Tudor took on roles beyond those of composer and performer—trainer, medium, translator, transformer. In reflecting on our own roles within the following projects, it has been useful to think of this continuing practice as a form of reanimation, a process that openly and playfully acknowledges the liveliness of commonplace objects and electromechanical systems.

Animation is both a technical process that results in movement (and sound), and a poetic process of bringing something to life. Through this lens, the work of a sonic reanimator is not only indebted to Cage, Schneemann, and Tudor, but also Mary Shelley’s *Dr. Frankenstein* and the early automaton artists. In finding, selecting, modifying, and activating (playing with) found and discarded objects, we attempt to amplify their inherent liveliness. By “bringing them to life (again)”, this time on stage (or pedestal), our compositional decisions exist alongside of countless previous commercial, mechanical, and industrial design considerations. While we work to reanimate them, we never have complete control over what they are going to say. By intentionally attending to the idiosyncrasies in found objects, we hope to encourage a rich and pluralistic network of readings that engages with the complexities of our rapidly evolving technoculture. The means and methods vary between the works, but a thread of this new animism, which may resemble Tudor’s animism, connects all three.

3.1 *Losperus*



Figure 4: *Losperus* in performance

Losperus is a performance piece by Evidence (Stephan Moore + Scott Smallwood) that uses small microphones, resonant objects and commonplace motorized devices to create a dense, evolving texture of amplified sound. A typical performance begins with a large clean table in the center of a large space, equipped on either end with power outlets. A small mixer sits in the middle, and six tiny microphones are connected and ready. One oscillating fan, or maybe two, are placed on the table and turned on. After a while, a performer carefully alters one of the fans in some way. This may involve placing the fan on its back, or stopping it, attaching a small weight to one blade, and turning it back on, creating a vibrating, unstable situation. Soon, more objects are placed on the table: a metal bowl, a plastic letter tray, things that tend to produce interesting sounds when vibrations are introduced.

Over the course of approximately 45 minutes, the performers carefully build a sonic vibratory bed of rumbling, jangling sounds, all a bit unstable and on the verge of collapse. During the slow construction and modification of this rattling contraption, the performers carefully place and move the small microphones; into a bottle or under a soap dish, or dangling from the grill of one fan as it sways back and forth across a cheese grater. They adjust levels on the mixer, which is connected to four speakers around the periphery of the space. Gradually, agency within the performance shifts from the human performers to the objects, which move around the table and play out the scenarios they find themselves in. As this transition happens, the humans have less to do, and often will stand back and watch with the audience as a dramatic situation unfolds. Sometimes, fans and other objects are broken, falling off the table or burning their motors out due to the added weight and stress. Usually, a decisive action by the fans determines when the performance is over.

The original impetus behind this project was a shared fascination with oscillating fans, and wondering what it would be like to construct carefully controlled textural sounds using a lot of them. The discovery of fan preparation opened that up much further. After considerable experimentation, we found that we had created a kinetically driven noise synthesizer, made out of ordinary bric-a-brac from thrift stores. We soon discovered how powerful this readymade system is as a tool for creating interesting sonic textures, with easy access to subtle variation, and with considerable capacity to surprise. The theatricality of each performance feels as though it is suggested by the objects themselves, as though they want to let the audience in on exactly how the process works. *Losperus* has been performed in many locations, and always makes use of found objects from local thrift stores or “op shops” – anywhere that the plenitude of object culture is reintroduced to the stream of consumerism.

3.2 TRaNsMOGRiFiER



Figure 5: *TRaNsMOGRiFiER*

TRaNsMOGRiFiER is a collaborative project by Peter Bussigel and John Ferguson that encourages unpredictable collective art-making using randomly acquired objects. At times an installation, a durational performance, and an artistic practice, the *TRaNsMOGRiFiER* downgrade shop is a temporary space for collective experimentation and sound-making. Objects left on pedestals by the public are subject to transmogrification—an unpredictable process that involves collective improvisation, found materials, cardboard, electronics, and hot glue. Overnight, each object is transformed and returned to its pedestal. Owners pick up their objects^{TR} the following day. There is no charge, but in all cases, transmogrification is irreversible.

While the *TRaNsMOGRiFiER* installation ecosystem has many parts, the central dynamic is a curious exchange of objects. Neither the artists^{TR} nor the public know what objects will show up on the pedestals, let alone what they will become. Over the duration of the installation, this dynamic is amplified by audience members playfully pushing at the limits of the process. During the first installation of the project, the range of objects left for transmogrification included a fishing pole, a box of chicken nuggets, a tricycle, a pile of paper trash, an empty shampoo bottle, and an acoustic guitar. Through a process of collective improvisation, each object was inspected for sonic and kinetic affordances and then modified such that the object's original characteristics and functions were extended, subverted, or simply reframed.

In *TRaNsMOGRiFiER*, object curation is left to those passing by -- the audience or public. The process asks both the artists and the audience to see objects anew and to challenge the normative scripts of functionality and intention that we commonly project onto known things. The tension between how an object is intended to function and how it is asked to function extends the boundaries of Duchamp's readymade ideas and allows for playful and sometimes profound readings. *TRaNsMOGRiFiER* encourages a reconsideration of everyday objects as theatrical—always becoming—rather than static and well defined. This perpetual refiguring resonates with notions of new materialism as articulated by Karen Barad, Jane Bennett, and others. [5][6]

TRaNsMOGRiFiER has been installed only once, but it remains open and active as a mail-in service. Anyone can send an object to one of the two *TRaNsMOGRiFiER* shops, located in Brisbane, Australia and Vancouver, Canada. The object will be returned within one month, fully transmogrified. While the project began as a one-time installation, it continues as an artistic practice motivated by the rich tangle of meaning and play that emerged in attending to randomly collected materials.

3.3 Chorus for Untrained Operator



Figure 6: *Chorus for Untrained Operator*

Peter Bussigel and Stephan Moore's *Chorus for Untrained Operator* is a collection of discarded objects, each relieved of its original responsibilities and modified to emphasize its musical voice. The ensemble is operated via the patch bay of a repurposed 1940s telephone switchboard. The objects—an electric tie rack, an 8mm projector, an animated shoe, a sewing machine—are chosen for their audiovisual characteristics, and lightly modified to produce the varied voices of the mechanized chorus. Each time the piece is installed, new objects are found and older objects evolve (and break).

The installation is an instrument and all are welcome to patch and re-patch the choir by operating the switchboard. There are 22 cables on the patch bay, and each can be used to activate one of over fifty voices—thousands of possibilities. The switchboard also has 22 buttons that momentarily trigger another set of objects, allowing for more immediate modes of play. The result is a room-sized system of reanimating readymades that can be patched, performed, and abandoned in a wide range of states and textures.

Chorus for Untrained Operator has been installed four times and each iteration is quite different. Part of the process of installing includes visiting local junkyards and thrift stores to find discarded objects to add to the choir. New objects ensure that each version is unpredictable for the artists and in dialogue with the specific installation location. The success of a junkyard/thrift store excursion is itself inconsistent, and many of the most cherished objects have been discovered through chance, accident, and exhaustion.

The sonic aspects of the various “voices” emerge in a variety of ways. Some objects are chosen for their natural resonance, other because of their unique kinetic properties, and still others become part of larger bricolage sculptures. One of the few constants in the process is a willingness to engage with objects in non-standard ways—knocking on radiator grates, taking apart toys, and subtly modifying the circuitry of kitchen appliances.

Object modifications are often quite simple. The sonic complexity is emergent, relying on material irregularities and the combinatorial decisions of the operator. With as many as 80 voices in a single installation, there is little pressure for each object to be complete sonically or symbolically. In framing the system as a chorus, the piece encourages audience members and operators in engage with the agential aspects of objects – asking people refigure how they think about and operate everyday objects.

4. READymADE RELATIONSHIPS

In the pieces above, found objects are used in different ways. They become actors in *Losperus*, voices in *Chorus for Untrained Operator*, and materials in *TRaNsMOGRiFiER*. These different roles signify different degrees and modes of reanimation, but in all three cases there is an attempt to draw forth agency or liveliness from everyday objects. This mode of art-making is resonant with current discourses around new materialism and agential realism. Karen Barad writes, “Bodies are not objects with inherent boundaries and properties; they are material-discursive phenomena.” [7] Sound work that treats objects as agents, voices, materials, and/or language, gets at the fundamental messiness of our relationship with the things we make, use, and discard. Sound provides a playful and open-ended medium to refigure our relationship to everyday objects, attending to both the functional and symbolic interactions of material systems.

The various processes by which readymade sound objects become part of a piece inspire another type of animation. By encouraging artists to reexamine the affordances of an object, artists are also asked to reflect on their own value systems and tendencies. Artists working with readymades continually deal with disciplinary norms and taste as it relates to both sound/music and material culture. This navigation opens new spaces of musical and artistic expression that respond to Alexander Galloway’s call for a “counter-aesthetic to systemic efficiency”—a mode of music making that is less about control and predetermined destinations and more about active listening and transformative play. From the last chapter of Galloway’s *Interface Effect*, “There is one game in town: a positivistic dominant of reductive, systemic efficiency and expediency. Offering a counter-aesthetic in the face of such systematicity is the first step toward building a poetics for it, a language of representability adequate to it.” [8]

Music has a long history of instruments and technologies designed for precise control over sound parameters. Readymades provide an alternative to the primacy of control by calling attention to the rich and profound readings that emerge in giving a musical voice to objects designed for other purposes. The musical output becomes a playful medium to host discourses about technology, materialism, waste, and nostalgia. And, in treating inanimate objects as important interlocutors we discover new musical possibilities that speak to the frustrations and transformative potentials of friction, unpredictability, and play.

Critically engaged sound artists and instrument designers advocate for resistance and agency within our musical systems. Performer and inventor Laetitia Sonami’s personal guidelines for designing musical interfaces cut straight to the point, “Adaptable, Inefficient, and Unreliable.” [9] Game designer Jane McGonigal supports “ambiguity, multiplicity, and open-endedness in design, so that we perceive, rather than receive, our technologies”. In her short essay *The Curious Interface*, she concludes that “when what surrounds us confounds us, when the computable tends toward the inscrutable, only then we will become strategic, resourceful, poetic actors.” [10]

5. CONCLUSIONS

In his 1965 essay “Intermedia”, Dick Higgins describes a framework for art that “seems to fall between media.” [11] Higgins saw intermedia as an alternative to compartmentalization and the largely predetermined value systems of media specificity. Higgins believed that these differences paralleled social and political paradigms. The separation of media “seems characteristic of the kind of social thought--categorizing and dividing society into nobility with its

various subdivisions.” Higgins explains, “We sense this [irrelevance] in viewing art which seems to belong unnecessarily rigidly to one or another form. We view paintings. What are they, after all? Expensive, handmade objects, intended to ornament the walls of the rich or, through their (or their government’s) munificence, to be shared with large numbers of people and give them a sense of grandeur. But they do not allow of any sense of dialogue.” [12] This notion of dialogue is the primary affordance of readymade objects.

But, can anything be a readymade? Does the built-in complexity of the readymade enable work to be immediately relevant and interesting? The folding of meanings allows the spectator an individual experience, a personal dialogue with the work, a jolt from the “numbness imposed by them [mediums] on our senses”, but what is the role of the artist in this kind of work? In other words, what is the process by which objects become readymades? And furthermore, what politics and possibilities emerge in treating objects, appliances, and devices as lively, agential beings?

6. ACKNOWLEDGMENTS

We wish to express gratitude to the numerous individuals, institutions, and venues that have enabled, supported and presented our work. Principally, we wish to thank Brown University for commissioning two of these works and hosting all of them. Finally, we thank our colleague John Ferguson, co-creator of *TRaNsMOGRiFiER*, whose artistry and ideas have found their way into this paper.

7. REFERENCES

- [1] A. R. Ammons. “Utensil.” *The Complete Poems of A.R. Ammons: 1955-1977*. Edited by Robert M. West, W.W. Norton and Company, 2017, p. 511.
- [2] A. Breton and P. Éluard. *Dictionnaire abrégé du Surréalisme*. Paris, Galerie des Beaux-Arts, 1938.
- [3] Elga Wimmer Gallery. Accessed December 9, 2018. <http://www.elgawimmer.com/>
- [4] R. Gold. *The Plenitude*. MIT Press. Cambridge. 2007.
- [5] K. Barad. “Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter.” *Signs: Journal of Women in Culture and Society* 28, no. 3. 2003, pp. 801-31.
- [6] J. Bennett. *Vibrant matter a political ecology of things*, Durham: Duke University Press. 2010.
- [7] K. Barad. “Agential Realism: Feminist Interventions in Understanding Scientific Practices.” In *The Science Studies Reader*, ed. Mario Biagioli. New York: Routledge. 1998, pp. 1–11.
- [8] A. R. Galloway. *The Interface Effect*. Cambridge, UK: Polity. 2012.
- [9] L. Sonami. “And now we leave gloves and other wearables to (small) dictators” Accessed December 10, 2018. <http://sonami.net/writing-goldsmith/>
- [10] J. McGonigal. “The Curious Interface: A Design Manifesto in Favor of Play.” Accessed March 12, 2014. <http://www.avantgame.com/The%20Curious%20Interface.pdf>
- [11] D. Higgins and H. Higgins. “Intermedia.” *Leonardo*, vol. 34 no. 1, 2001, pp. 49-54.
- [12] D. Higgins. “Statement on Intermedia.” New York: Something Else Press, 1967.