Performing and Listening Bodies

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Abstract

In the time before domestic electricity, the boundaries of music were clear. Due to the recent ubiquity of recording technology, our musical horizons have expanded greatly and the distinction between ordinary sounds and those considered appropriate to music has become increasingly muddled. The result is a sound world that would have been unimaginable only a century ago. As today's music is no longer exclusively the product of human physical gestures, I begin by exploring the significance of the body in music and consider how experimental electroacoustic music practices might alter the way we perceive and understand music.

I propose three broad categories of music production: traditionally embodied music, disembodied music, and *non-body music*. I contemplate the impact the perceived absence of the body might have for the reception of electroacoustic music. I also specifically address the role of the human hand, its part in the creation of meaning and beauty in art and music, and its contribution to the expression of musical personhood. I critique the pernicious body/mind dichotomy, review some of the developments in the burgeoning field of Social Neuroscience, and consider their possible impact on our understanding of music.

I discuss various aesthetic shifts throughout the late 19th and 20th centuries. Specifically, I survey the progressive disintegration of the boundaries separating art and life and the inclusion of the quotidian, increasingly deemed worthy of aesthetic contemplation. I argue that this new emphasis on the everyday was a century-long endeavor to defamiliarize perception. I also examine a central debate in electroacoustic music's relatively short history: the argument over the nature of perception itself. I posit this as a philosophical dispute between Pierre Schaeffer and Luc Ferrari. I also briefly treat the reception of experimental music and art in light of Bourdieu's theories of art perception. I close by outlining some of my own aesthetic principles and musical practices.

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Introduction

If you have listening (and production) habits similar to mine, you may be familiar with the experience of having to explain to someone within earshot, precisely what it is you are listening too and why. What is *that*, they ask? It is often difficult to answer. As a composer and listener, I don't often contemplate just how or why what we make is different, in essence, from what you might hear in a club, coffee shop, or a shopping center. The value of any body of music is ordinarily self-evident to its practitioners and fans. Further, it is often through a lifelong listening journey that you arrived at where you are in your listening habits. Discussions, in person and online, often revolve around the merits of individual works, performances, or recordings and their specific characteristics. It is common to discuss how a piece might fit into the larger ecosystem of the genre in which the work is thought to belong. How does a particular piece succeed or fall short? How does it compare, relate, or refer to previous work in that musician's output or to the music of others who inhabit the same sphere? How are certain genre expectations met or subverted? These are the types of questions usually considered when new recordings appear or in post-concert discussions or reviews. We might use the figurative adjective, *inside baseball*, to describe such talk, as it involves the detailed inner attributes of a genre. These details are usually only known, and appreciated, by aficionados and fellow practitioners.

However, it is also useful to step back and consider several broad questions about what distinguishes this musical practice. In what way might electroacoustic music be

considered unusual or experimental (or not)? How do we derive enjoyment and fulfillment from it (when so many others do not)? An examination of such questions allows us to see better where we fit in the broader musical environment that surrounds us.

In what follows, I will discuss primarily an experimental electroacoustic musical practice. Unavoidably, what I say will reveal my own partisanships and the boundaries of my knowledge. The world of electroacoustic music is large and diverse and, thankfully, becoming more so each day. Beyond institutional electroacoustic music there are the vast worlds of sound art and sound installations as well as various sub-genres of electronic dance music and electronica. In addition, there is a growing world of unaffiliated experimental and electroacoustic music such as found in the noise and improvisation world. This music is documented on record labels such as Mego (Austria), PAN (Germany), B-Boim (Austria), Potlatch (France), Another Timbre (England), Erstwhile (USA) as well as in music festivals around the world. There is a vast breadth of musical activity that falls under the labels *experimental* and *electronic* and there will be whole genres and sub-genres that I have little or no fluency in. But who can speak with equal proficiency of every genre? I will write what I know.

The music we choose to invest time in already tells us something about our passion, interests, and biases. Despite what will necessarily be an incomplete picture, I hope that some of the issues I address will be of interest for those who follow experimental electronic music and perhaps even those who inhabit very different musical domains. In what follows, I will explore the presence and absence of the body in music, and what the

implications of that might be for perception. Further, I will discuss the changing nature of musical language and the ever-increasing inclusion of everyday life in art. I will trace some of the history of the inclusion of the vernacular and quotidian in music and other arts, and the ways in which artists and musicians have tried to help audiences see and hear the ordinary as extraordinary. Finally, I will discuss what I call *musical personhood*, and detail some of my own aesthetic notions and ideals in the realization of my own musical practice.

The Sounding Body

> Even in the cultured detachment of today's world, however, when we are listening to a concert of instrumental music, except where the texture is very dense or produced in a way which is novel to our ears, we are always very aware of the instrumental source of the sounds we hear. We might, in fact, go a stage further and notice that in the tradition of the virtuoso performance our awareness of the source and the performer's physiological, balletic, and dynamic relation to the source can become part and parcel of our aesthetic reaction to the concert experience.
>
> —Wishart, *On Sonic Art*

The musician's body has been omnipresent in music for nearly all of human history. Long ago musical sounds were produced directly through the human body (the voice) or through an instrument, a mechanical transducer, activated by some exertion of the human musculature. There were a wide variety of such *transducers* that took various forms, but they all generally accomplished the same thing: they took energy from the human body and converted it into sound by setting some elastic object into vibratory motion. The hand hits an elastic membrane (a drum), the force of human breath blows a stream of air across a hole in a tube causing a vibration of air at the opening and this, in turn, excites the air contained in the resonant cavity (a flute), or perhaps a finger sets an elastic string into motion, through a plucking gesture and so on. This is movement rendered audible and musical instruments are tools that translate body movements into sounding gestures.

Further, in a traditional performance situation, listeners generally knew when the performance was underway and when it was over. The sounds of the singing voice or any

recognizable musical instrument would instantly alert listeners that they were hearing what was intended to be understood as musical sound. Before electricity, music was generally produced with a comparatively small choice of acoustic instruments and voices. The limited and recognizable timbres as well as the common musical language and familiar performance cues and gestures all worked together to delimit that sound as music within a specific culture and time. Musical sounds, and musical performance were marked as separate from the ambient sounds of everyday life. The boundaries were clear. People knew music when they heard it.

Because we have a long history of listening to these musical sounds we learn to hear these sounds in relation to the bodies and events that produce them. As Don Ihde notes,

> Sounds are "first" experienced as sounds of things. That was the sound of the jackhammer with all its irritating intrusion. There, it's Eric calling Leslie now. That was definitely a truck that went by rather than a car. This ease that we take for granted and by which we "identify" things by sound is part of our ongoing ordinary experience. This common ability of listening contains within it an extraordinary richness of distinction and the capacity to discern minute differences of auditory texture, and by it we know to what and often to where it is that our listening refers. (Ihde 2007, 50)

In 1969, John Cage recognized a distinction between "sounds themselves," that is sounds as aesthetic entities, and sounds as "sounds of things." He noted, "If I rent a car and when I put on the brakes they squeak and the whole car shakes, then the squeak is indicative of some malfunctioning of the car, and so stops me from using my aesthetic faculties. But otherwise I would include the very same sound if it didn't have all those other danger signals connected with it"(Kostelanetz 2003, 247). Indeed, we tend to identify *all* sounds,

traditionally musical and otherwise, in terms of the objects and events that create them. Independently, Vanderveer (1979) and Gaver (1988) both implemented studies that asked people to describe everyday sounds using short phrases. They both found that people tended to describe the sounds they heard in terms of the objects and events that were the cause of the sound. Only when they confronted with sounds for which the sources were unknown did they resort to describing the intrinsic sensory qualities of the sound. Furthermore, Gaver noted that the accuracy of some of the identifications and descriptions were remarkable. Some participants were able to distinguish between the sound of someone running up a flight of stairs with someone running down and some were able to denote the relative sizes of dripping water drops (Gaver 1993, 19).

As noted in the Wishart epigraph, this identification of the sound with its bodily source is likely a key part of our enjoyment of a virtuosic musical performance. This association is particularly strong for a musical instrument we are well acquainted with and able to imagine even if we ourselves cannot play it. We perceive that the body and the movements of the player are the source of the sound and are aware that those physical movements are intrinsically related to the nature of the musical gestures that we hear. In most acoustic music, the physiological gestures are transformed in a relatively direct manner into the morphology of the sounding gestalts in the music. The internal morphology of the individual sound events and shaping of musical phrases and groups usually shows a familiar and recognizable trace of the physical gesture that elicited those sounds and we therefore experience that music, at least partly, empathetically.

Until recently, the production of nearly all music sound was firmly rooted in the body.[1] Music has long been associated with human motor activity and with bodily gesture, and the experience of music involved the perception of intentional and organized sequences of gestures as the cause of the temporally synchronous auditory signal. However, soon after the appearance of mains electricity at the very end of the nineteenth century, there came the electromechanical signal and the possibility of generating sound without much human energy at input or without using mechanical devices.[2] Further, the ubiquity of magnetic recording allowed for the storage of a signal as data on a magnetized medium. So, while a sound wave coming directly from a flute and a reproduced flute sound wave coming from a speaker have the same general acoustical nature, the process that elicited those sounds are very different. Wishart would say that these two sounds have the same *landscape*, which is to say that they have identical real or imagined sources (here, a flute) (Wishart and Emmerson 1996, 139). Because that landscape is a traditionally musical one, the recorded flute sound is still easily understood as music, though it has now become disembodied.

With electronics, sounds from the world, sounds not traditionally thought of as musical, can also become aesthetic entities for audient contemplation. When they do, the line

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[1] A notable early exception is the organ with its pneumatic system and elaborate array of large pipes. This mechanism allows for a music that in many ways exceeds the limits of the body both in terms of duration and loudness. The suggestion of something superhuman perhaps partly explains its prominence in music of the church.

[2] Let us leave aside the semantic argument over whether speakers are mechanical devices, strictly speaking, the garden-variety dynamic cone speaker is mechanical as it produces sound waves through a moving voice coil (piston) and cone mechanism. Electrostatic transducers are also mechanical, while ribbon speakers however, do not have a voice coil.

between musical sounds and non-musical sounds is no longer clear and the boundaries between musical and non-musical territories are more easily crossed and more individually and idiosyncratically defined. There is no longer any broad understanding of what music is, what kind of cultural work it aids, and what lies outside of its scope. Whatever music had been in the pre-electronic past, it was going to be something quite different in the future.

Combine this profound technological rift with some of the other changes that music has undergone throughout the past century or so. Performance conventions have broken down, metric regularity is no longer always certain, tonality has eroded, and uniform stable timbre-streams have broken apart. Further, traditional forms and teleological structures are no longer always adhered to. The borders of music have become fuzzy.

In the art world, this confusion, of course, becomes fodder for many a smug cartoon lampooning the rube who can't locate the boundary between art and everyday life. See the recent example of two teenagers who left a pair of eyeglasses at the San Francisco Museum of Modern Art only to have that item confused as part of the exhibit (Mele 2016). There's also the case of Claes Oldenburg's 1961 store of simulated plaster and papier-mâché household goods. Some items were pilfered by neighborhood kids who were unaware that what they were stealing were actually small sculptures, simulacra, that were part of a hybrid art performance (Tomkins 1980, 177).

The same confusion has occurred in the world of music. With the arrival of electricity

and recording technology, the variety of sounds admitted into music is now vastly wider than ever before. Further, music has become asynchronous and therefore disembodied as recording technology has afforded the separation of the sound from any visual information, or any physical event or gesture that might have elicited or initially accompanied that sound.

With traditional musical instruments played in the conventional ways, we can still recognize the sound of a recorded performance as rooted in the body. Today, we have a whole universe of electronically produced music, part of which may be made up of musical gestures that closely resemble traditional acoustic musical sounds such as warm string ensemble-like synth patches, synthesized drums, and guitar string models. However, we also have newer, more unusual sounds that don't recall anything familiar from our purely acoustic musical past. These may be sounds completely dependent on electronic technology. Even the simplest examples of electronic sounds, such as a sine-tone produced from an oscillator are more alien to us. These sounds may seem peculiar and inorganic due to their extreme spectral purity and abnormal laser-like focus on a single very precise and unwavering frequency.

For the first time in human history, we have not only disembodied music but what we might call the music of *non-body*, music entirely generated by electronics or computer algorithm, synthesized, and played over loudspeakers. In this music the sounding gestures will not be tied to a physical gesture that produced it. This is music that could not have existed in the pre-electronic era and music that does not always simply mimic traditional

instrumental music. How do we understand this *non-body music*? Do we listen to it differently? And what do we attend to if we are no longer listening to and for human bodily gestures?

Body, Mind, and Body-Mind

One of the most entrenched and pernicious ideas we commonly hold is the profoundly mistaken idea that a person consists of two separate entities, in some way coupled together: a mind and a body. This Cartesian mind-body dualism is so entrenched in our culture, so much a part of our language and thinking, that it seems impossible to completely dispel. Hence the prevalence of computationalism, the cephalocentric notion that your brain functions like a computer, which may seem compelling as metaphor but paints a problematic and incomplete picture (Epstein n.d.; Piccinini 2009). That the brain explains the mind and that the mind is what the brain does may have an intuitive appeal, but it is not the whole story. Humans are fully integrated and deeply complex biologic organisms and we could no more live without a body than we could live without a brain. Further, body projection plays a key role in determining how the things we encounter in our world can be meaningful for us.[3] We should remind ourselves of just how harmful

[3] One fascinating example is pareidolia, a psychological phenomenon in which the perceiver responds to a stimulus, usually an image or a sound, by perceiving a familiar pattern where none exists. The most common examples are perceived images of faces in random images or in patterns of light and shadow or hearing indistinct voices in random noise such as that produced by air conditioners or fans. Since the quick perception of emotion through the recognition of facial expression is a key human survival skill, we have become virtuosic at reading facial expressions. Even modest stick figure faces and simply drawn emoticons are able to convey complex emotional information. We see faces on the moon, in clouds, and in fossils. We see faces everywhere, even in places where there aren't any.

this artificial body/mind division is if we wish to have a fuller understanding of human thought and meaning.

To undermine this body/mind dichotomy the philosopher and psychologist John Dewey coined the term *body-mind* to help us think more holistically and to remind us that what we call a body and what we call a mind are merely two aspects of a cohesive and inseparable whole.[4] Of this problem Dewey wrote,

> The very problem of mind and body suggests division; I do not know of anything so disastrously affected by the habit of division as this particular theme. In its discussion are reflected the splitting off from each other of religion, morals, and science; the divorce of philosophy from science, and of both from the arts of conduct. The evils which we suffer in education, in religion, in the materialism of business, and the aloofness of "intellectuals" from life, in the whole separation of knowledge and practice—all testify to the necessity of seeing mind-body as an integral whole. (Dewey and Sidorsky 2008, 27)

Humans are embodied creatures. We don't have bodies; we are bodies. Further, we have an environment that we interact with, and it is this bodily interaction with the world that creates meaning for us. Dewey wrote extensively about the inextricable links between body, mind, and environment, and he saw the need to investigate the implications of our embodiment for perception, experience, understanding, feeling and reasoning:

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[4] Though this idea of a body-mind, with some variation, is found in many other places, from the work of Pierre Janet, Sigmund Freud, and Wilhelm Reich, who developed it as vegetotherapy. It is also found in the Hindu and Buddhist concepts of *Namarupa*, and in modern alternative medicine, holistic bodywork practices, and psychosomatic medicine. It also is a key concept in the work of the literary critic N. Katherine Hayles (who preferred the compound coinage rendered *mindbody*). We can't trace all the appearances and variations of the concept, or evaluate them. I merely point out that other traditions and practices have a more holistic concept of body-mind and that this idea isn't unique to Dewey.

> Since both the inanimate and the human environment are involved in the functions of life, it is inevitable, if these functions evolve to the point of thinking and if thinking is naturally serial with biological functions, that it will have as the material of thought, even of its erratic imaginings, the events and connections of this environment. And if the animal succeeds in putting to use any of its thinkings as means of sustaining its functions, those thoughts will have the characters that define knowledge. (Dewey, Hickman, and Alexander 1998, 146)

The social anthropologist, Tim Ingold is in complete agreement with Dewey:

> We may of course describe as intelligent an animal whose actions manifest a certain sensitivity and responsiveness to the nuances of its relationships with the components of its environment. But it is quite another thing to attribute that quality to the operation of a cognitive device, and "intelligence," which is somehow inside the animal and which, from this privileged site, processes the data of perception and pulls the strings of action. Indeed, it makes no more sense to speak of cognition as the functioning of such a device than it does to speak of the locomotion as the product of an internal motor mechanism analogous to the engine of a car. Like locomotion, cognition is an accomplishment of the whole animal, it is not accomplished by the mechanism interior to the animal and for which is serves as a vehicle. There is therefore no such thing as an "intelligence" apart from the animal itself, and no evolution of intelligence other than the evolution of animals with their own particular powers of perception and action. (Gibson and Ingold 1993, 431)

Here, Ingold too is combatting computationalism, the pesky notion that perception is something that goes on inside a processor running inside the brain. He is also clearly against the associated idea that there can be anything called perception or intelligence independent of the behavior of the entire organism, or, its unique personal history of interactions with the world.

Image Schemas

If you make some simple phenomenological descriptions of your body and the way it interacts with the environment, you may observe what your resources are for making sense of the world around you. You might also notice some recurrent mental structures and fundamental symbolic representations. Mark Johnson (1987) and George Lakoff (1987), give these structures the name *image schemas* and the theory that is built around this notion of image schemas represents a rigorous attempt to relate conceptual structures to the nature of embodiment. Therefore, image schema theory most clearly investigates embodied cognition and the primary guiding principle of cognitive semantics, which asserts that conceptual structure is embodied.

Schemas are abstract representations. They are derived from the bodily experience of the everyday world around us. Johnson proposes that one way that embodied experience manifests itself at the cognitive level is in terms of these image schemas. An image schema is "a mental pattern that recurrently provides structured understanding of various experiences, and is available for use in metaphor as a source domain to provide an understanding of yet other experiences" (Johnson 1987, 2–4).

Johnson argues that these image schemas provide the conceptual building blocks for more complex concepts and can be systematically extended to provide structure for more abstract concepts and conceptual domains—even mathematics. Johnson defines and explains dozens of these image schemas in his texts *The Body in the Mind: The Bodily*

Basis of Meaning, Imagination, and Reason (1987) and *The Meaning of the Body: Aesthetics of Human Understanding* (2007). Here is just one image schema to show how they work. This is Johnson's description of what he calls the *container schema*:

> Because we must constantly interact with containers of all shapes and sizes, we naturally learn the "logic" of containment. … Containers have at least the minimal structure of a boundary, an interior, and an exterior. Through many experiences each day, we learn what the word "into" means, as we encounter the movement of objects as they pass from the exterior of a container across or through its boundary, finally coming to rest in its interior. We know, in a bodily way, that something that is inside a container is not outside it. We learn that if something starts moving within a container toward its boundary and eventually crosses over the boundary, then it is at least temporarily outside of the container. (Johnson 2007, 138)

We have this container schema, and we have what you might call *container schema understanding*. This fundamental image schema is a simple structure that we know via our embodied experience, and it has a specific logic and forms gestalts for us. It combines with other image schemas to create greater and greater levels of abstraction.

The body has and learns its own logic, such as the container logic above. These image schemas are learned automatically through bodily interactions with the world around us and they characterize the recurring structure of much of our sensory-motor experience. Consider, for example, how important verticality is for humans. Generally, we are creatures that stand upright when we are awake. This bodily experience creates a mental structure that influences how we experience the world. We have up/down orientation and because of the mirror symmetries of our bodies and facial features, we have left/right symmetries that we project on to other things. We are land-bound mammals

characterized by erect posture, bipedal locomotion, and high-level manual dexterity coupled with larger, more complex brains. However, if we were shaped like crabs or jellyfish and lived suspended in water or flying through the air, our bodily experience of the world, and the complex network of schemas we use to make sense of things, would be very different.

Johnson goes a step further; his radical claim is that sensory motor experience and meaning are central and form the basis of *all* meaning. Further, higher cognition is tied to sensory-motor function. Johnson agrees with Don Tucker:

> The brain evolved to regulate the motivational control of actions that are carried out by the motor system and guided by sensory evaluation of ongoing environmental events. There are no "faculties"—of memory, conscious perception, or music appreciation—that float in the mental ether, separate from the bodily functions. If we accept that the mind comes from brain, then our behavior and experience must be conceived of as elaborations of primordial systems for perceiving, evaluating, and acting. When we study the brain to look for the networks controlling cognition, we find that all of the networks that have been implicated in cognition are linked in one way or another to sensory, motor, or motivational systems. There are no brain parts for disembodied cognition. (Tucker 2007, 59)

We use our perceptions and motor sensory experience of the world for the formation of rudimentary mental constructs. We then apply and combine those structures for increasingly higher levels of abstract thought. I think that this has implications for our experience of music. But first I would like to address the body and specifically the human hand and its role in cognition and the making of meaning.

Hands To

> The hand speaks to the brain as surely as the brain speaks to the hand.
>
> —Robertson Davies, *What's Bred in the Bone*

Hand and brain function are interdependent. An examination of this hand-brain interdependence helps to problematize the notion that intelligence is entirely a phenomenon of the mind and helps dissuade us of the notion of disembodied cognition.

Where is the hand? The very boundary of the hand is difficult to define. I intuitively feel that the hand begins somewhere at the wrist, but if someone asks precisely where, I am already in some difficulty. And what of the arm and the shoulder? Years ago, I suffered a severe wrist injury. During therapy, I was surprised to learn that many of the muscles that control the movement of the hand are not actually located in the hand itself, but in the arm. An injury to the arm or wrist or to the tendons that run the length of the forearm can leave the hand almost entirely immobilized. An injury to the forearm, and to the median nerve which runs along its length, would leave roughly four fingers without sensation,[5] so it is difficult to say precisely where the hand begins. Anatomical debates aside, this boundary problem should already give an idea of just how deeply integrated our bodies are and how profoundly intertwined our sensory-motor experience is with our cognitive function.

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[5] More precisely the thumb, index finger, middle finger, and half the ring finger would lose neurological communication with the cutaneous ("tactical") receptors in the hand, leaving the injured with reduced ability to feel texture and temperature. The pinky and one side of the ring finger is served by the ulnar nerve which travels around the dorsal side of the hand. Rarely noted, but also significant to the musician, is the complete inability for the skin to harden and form calluses when nerves are damaged.

Since bodily movement and brain activity are interdependent, it follows that hands, brains and environments change each other. This is true at an individual level, throughout one's lifetime. It is also true that hands and brains have coevolved in us as a species. Surgeon and author Frank Wilson (1998, 290) notes, "We find evidence that, from the beginning, the hominid hand and its growing repertoire of movements were integral to what was happening in behavioral, cultural, and cognitive evolution" (1998, 290). Elsewhere he remarks, "Structure and function are interdependent and co-evolutionary. The brain keeps giving the hand new things to do and new ways of doing what it already knows how to do. In turn, the hand affords the brain new ways of approaching old tasks. That means that the brain, for its part, can acquire new ways of representing and defining the world" (1998, 146).

Wilson outlines how dynamic interactions between the hand and the brain became increasingly refined and how that process relates to the character of human thought and creativity. Wilson reviews many distinguishing features of the human hand, what changes occurred in the hand as we evolved (still an incomplete picture), when these changes may have taken place, the purpose these changes may have served, and ultimately how they apply to tool making, social interactions, and even their influence on human reproduction. Wilson traces the development of the hand through anthropological, evolutionary, biomechanical, and neurobehavioral perspectives, outlining and defining many of the anatomical features that have led to significant increases in power, precision and maneuverability in the human hand. Importantly, he also recounts the links between

speech[6] and other cognitive developments.

Patricia M. Greenfield (1991) suggests that the human brain organizes and directs the child's interactions with objects in nearly the exact same way that it organizes and manages the production of speech. These two specific skills, the intricate manipulation of objects and assimilation of complicated grammar, and the developmental progression associated with the child's mastery of those skills proceed in such a closely synchronous manner that Greenfield concludes that the brain must be applying the same logic or procedural rules to both and employing similar anatomic structures as it does so.[7]

Wilson (1998, 197) concludes, "The hand is involved from the beginning in the baby's construction of visuomotor, kinesthetic, and haptic representations of the world and the objects in it. This is a profoundly important role for the hand, whose importance in both cognitive and emotional ontogeny cannot be overstated." We often speak of *hand-eye coordination* and, as Wilson recounts, the brain teaches itself to synthesize visual and tactile perception. The brain orients the eye in a process of exploration. The hand, like the eye, is a sense organ. Touch is important for cognition and our whole blanket of skin is a sensing, estimating, logic-seeking organ of perception sending information from the world to our brains and from our brains back to our musculature. The density of nerve endings in our fingertips is especially high, allowing us to learn many things simply by

[6] Actually, language, not speech, as subsequent research into sign language attests.
[7] For a fuller story on the links between the development of neural circuits for complex grammar and the complex manual combination of objects see Greenfield's (1991) seminal *Language, Tools, and the Brain: The Ontogeny and Phylogeny of Hierarchically Organized Sequential Behavior*.

touching and moving objects in space. Wilson (1998, 98) recounts the neurophysiologist Charles Sherrington's assertion that the most sensitive portion of the skin at the tip of the thumb and index finger is treated by the brain in much the same way as the macula (the most sensitive part of the retina).

We use our hands to learn, but, as any musician or dancer knows, the hand is also "an articulate organ of expression" as Wilson puts it. He also writes of a lifelong "shared apprenticeship of the body," (1998, 275) which I think is a turn of phrase that any musician can instantly and intuitively appreciate. He gives his own account as a doctor of how the sense organs all work together to help us navigate the world and attain some proficiency with our manual work (1998, 275–76). Here I am writing about music, but it would be easy to substitute carpentry, calligraphy, sports, sewing, jewelry making, origami, cooking, or any other endeavor that might require manual dexterity and fine motor control and see its relevance.

Race car drivers and mechanics, when discussing their physical interaction with a car, refer to this learning and sensing as *mechanical sympathy*. Mechanical sympathy consists of a comprehension of how a tool, machine, or mechanical device works. It also includes knowledge of how that tool responds, and how best to use it. This sympathy, really a knowhow, is grounded in an understanding of the mechanism coupled with a familiarity of the object based on tactile feedback. If you take time and feel the mechanism, you get a sense of the physical interaction of parts moving in concert, and with experience you begin to understand how the tool functions and what its limitations are.

Mechanical sympathy is why we slow in blowing up a balloon when we sense we are reaching maximum air capacity. It is how we know when to stop winding a mechanical clock when we sense the spring building towards maximum resistance. In the days before automobiles were computerized and loaded with sensors, mechanical sympathy was how you could tell when something was wrong with your car. You might feel that your car was somehow off—somehow less stable or responsive than it had been previously—by taking it out for a drive on a familiar road. If your car was not running well you might see, feel, or hear that something was awry. It's a type of sensitivity that reads what can't be seen through the agilest of touches. Mechanical sympathy is knowing the system and sensing by feel. You know just how much pressure to apply without forcing it, just how much muscle you need to put into closing something without slamming it, and just how hard to crack an egg without it ending up all over your counter or filled with tiny bits of pulverized shell.

Ordinarily, mechanical sympathy is involved in the playing of a musical instrument. Every instrument is set up differently. As a musician, you may sit or stand with your hands on your instrument. Your hands send messages to your brain as your hands grasp, feel and measure the instrument. Your finger touches a string and you immediately sense how lively and taut the string is. You feel the texture and resistance to the pressure on your fingers and gauge how the string might respond if struck. That information is returned to the brain and "written in the tactile and kinesthetic language of manipulation" and then "compared with information coming from the visual system, as

part of a process through which the brain creates visuospatial images" (Wilson 1998, 276).

Inherent in the concept of instrumental music and related to the hand, embodiment, and mechanical sympathy is what Curt Sachs calls the *instrumental impulse*:

> The original concepts of vocal and of instrumental music are utterly different. The instrumental impulse is not melody in a "melodious" sense, but an agile movement of the hands which seems to be under the control of a brain center totally different from that which inspires vocal melody. Altogether, instrumental music, with the exception of rudimentary rhythmic percussion, is as a rule a florid, fast, and brilliant display of virtuosity. Unlike the distinct and clearcut melodies of voices, it consists of quick figures and passages, which often remind the listener of seventeenth century "divisions." Quick motion is not merely a means to a musical end but almost an end in itself, which always connects with the fingers, the wrists, and the whole of the body. (Sachs and Kunst 1965, 110)

Here, Sachs is talking about something we might call *hand music,* as opposed to music made with the voice, or planned out on paper. I propose that the performer's musical choices are not governed exclusively by harmonic, melodic, or rhythmic concerns but are determined, in part, by the pleasure of the agile movement of the hands and the production of a musical gesture that is idiomatic and rooted in the tactile and kinesthetic aspects of performance. For example, guitarists may have certain finger-picking patterns or "banjo rolls" that they revel in, and the prevalence of unison string bends in the 1960s through the 1980s must be at least in part be due to the fact that they are so satisfying and idiomatic to produce on adjacent strings of the guitar.[8]

[8] An example of a unison bend: The index finder frets the note E on the B string at the fifth fret. The third

In his text *Improvisation*, Derek Bailey (1993, 97) discusses Sachs's notion of the instrumental impulse and describes the importance of not only the instrument but also the body and the coupling of the two. This coupling is really at the heart of Bailey's understanding of Sachs's notion, as the instrumental impulse is the body's response to the instrument; it is the attitude of the player to this tactile element, to the physical experience of playing an instrument. It is this instrumental impulse which establishes much of what a musician will play. One of the basic characteristics of improvising, detectable in everything played, will be how the player harnesses the instrumental impulse or how they react against it. And this response makes the stimulus and the recipient of this impulse, the instrument, the most important of their musical resources.

As any musician knows, you need to play your instrument frequently because part of what you are constantly learning and relearning is how to compensate for minute deviations of fine motor control. Humans have only so much precision. If you play a plucked string instrument, for example, irregularity and imprecision will occur in the timing between your fretting hand and plucking hand. Finger pressure will also be uneven, and the pads of your fingertips will not always land squarely in the middle of the string or just before the fret to stop the note. Getting better means that you not only become more accurate but you also increase your ability to compensate for small errors in

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finger stops the note D on the G string at the seventh fret. The notes are now a whole-step apart. Now bend the D up to meet the concurrently sounding E. On the way up the two notes will grind and then resolve when they meet in unison. If you have an overdriven guitar, the grinding and beating of the two notes is intense. Planting the index finger and bending with the third finger is a natural maneuver.

execution. You train yourself to quickly adjust when things go wrong. You make this adjustment instantaneously, with both your mind and your hand working together even in the course of a busy and rapid musical passage, just as you would try to adjust or react to a fast serve that has some topspin in tennis, or a late-breaking curve or cutter in baseball. This is your brain and your body working synergistically as an integrated organism.

One of the most impressive feats of sensing we do with our fingers is registering minute differences in pressure when handling objects. This is the kind of refined sensing necessary to perform many manual tasks such as drawing or playing music. We sense the pressure required almost instantly, just from the feel of the object in our hand. We know, simply by touching, exactly how much to bend a guitar string to the desired pitch.

Yet there are limits and constraints to skilled human motor performance and these naturally have an impact on music. These restrictions also effect sports performance and this is where the limitations of human biomechanics have been most rigorously studied. The precise limits intrinsic to the central nervous system are unclear. One study employed a computerized throwing task that allowed precise control and measurement of performance, in order to determine the bounds of human timing accuracy (D. Guo, M. E. Huber, and D. Sternad 2014). The results showed that subjects reached a limit in their timing accuracy at about 9.5 milliseconds. These subjects also showed a steady increase of time insensitivity of the hand trajectory. This confirmed that timing accuracy is a limiting factor in skilled performance, and that people shape their movements to compensate for

these innate limitations. For further consideration of the limits of complex hand dexterity in music (and the complexities of measuring movements of the hand) see *Complex hand dexterity: a review of biomechanical methods for measuring musical performance* (Metcalf et al. 2014).

It is specifically this human frailty, precisely this slight human imprecision that helps make some music, for example, a quiet Morton Feldman composition, so meaningful. We are listening to bodies in all their human fragility. Feldman diminishes the volume and speed dramatically so as to amplify these frailties. The quietness serves to make the execution more difficult and therefore less precise (try to play a complex aggregate pianississimo with each note balanced and equally audible). Moreover, this quietness draws the listener in to the performance. The result is that the performer and listener both are in a heightened sense of concentration and the perception of the very human expressivity of bodily gesture is intensified. As Simone Weil (2002, 108) notes, "The vulnerability of precious things is beautiful because vulnerability is a mark of existence." Perhaps it is no accident that in ancient Greek mythology Athena was the god of both wisdom and handicraft.

Mirror Neurology and Social Neuroscience

Recent work in cognition and embodiment has led to groundbreaking new ideas in the emerging field of social neuroscience. These new concepts in social neuroscience are helping us understand how it is we are able to comprehend the various communicative

signals we encounter in our daily lives. Vittorio Gallese and his colleagues are investigating mirror neurology and what Gallese calls *embodied simulation theory*. Embodied simulation theory builds on the implications of mirror neurology. It is essentially a theory of social cognition, of how we understand the actions, intentions, and emotions of others. Researchers have noted, "The fundamental mechanism that allows us a direct experiential grasp of the mind of others is not conceptual reasoning but direct simulation of the observed events through the mirror mechanism" (Gallese, Keysers, and Rizzolatti, n.d., 396). Further, "Social cognition is not only thinking about the contents of someone else's mind … our brains, and those of other primates, appear to have developed a basic functional mechanism, a mirror mechanism, which gives us an experiential insight into other minds. This mechanism could provide the first unifying perspective of the neural basis of social cognition"(n.d., 401).

This theory may provide the critical link in our understanding of how we make sense of the actions and intentions of the people around us. The emerging picture suggests that the mirror neuron system provides a basis for representing infinite combinations of hierarchical structures. It provides a mechanism for mapping the movements and intentions of others on to our own motor system as means of understanding and anticipating the actions of others empathetically (Giacomo Rizzolatti and Craighero 2004). This work, however, is still relatively new and not without its critics and detractors.[9]

[9] Here are just three critical looks among many: ("A Calm Look at the Most Hyped Concept in Neuroscience - Mirror Neurons" n.d.; Hickok 2009; de Bruin and Gallagher, n.d.)

The investigations into mirror neurology started in the late 1980s and early 1990s, when neurophysiologists at the at the University of Parma placed electrodes in the ventral premotor cortex of the macaque monkey to study neurons specialized for the control of hand and mouth actions such as taking hold of an object and manipulating it. During each experiment, the researchers allowed the monkey to reach for food and recorded the activity of single neurons in the monkey's brain. In this way they were able to measure the monkey's neurological response to certain bodily movements. Unexpectedly, they also found that some portion of the same neurological areas also responded when the monkey merely observed a person picking up a piece of food, which suggests the presence of a type of neurological mirror resonance (di Pellegrino et al. 1992; G. Rizzolatti et al. 1996).

The next problem was how to confirm or refute the presence of mirror neurology in humans. It is not possible to study single neurons in the human brain without harm, so most evidence for the presence of mirror neurons in humans comes from brain imaging experiments using functional magnetic resonance imaging (fMRI). These have shown that the human inferior frontal cortex and superior parietal lobe are active when a person performs an action and when one sees another performing the same action. This indicates that these brain regions may contain mirror neurons just as found in the macaque monkey (Iacoboni et al. 1999). Further, it also suggests that for humans too, the same brain regions are used for imagining actions as for performing them. Consequently, there is a physical connection in the mind between performing an act and observing the same act done by another, as well as merely imagining the act, remembering it or possibly

even dreaming it (Nielsen and Kuiken 2013).

This system is highly influenced by personal experience. Because the same neurological network may be activated in response to observation as would be if the action were performed, knowing how to do something well results in a better understanding of the performance of others. The neurological activation is stronger if the action observed is one that the perceiver is familiar with. If I am proficient at performing a certain action then I will have a stronger representation of that action in my own mind. I can use this strong activation to make better sense of other people's movements. For example, watching someone manipulate food with a pair of chopsticks would likely elicit a stronger neurological activation from the person who has extensive experience using chopsticks than from someone who never eats with chopsticks at all.

One study showed isolated movements by capoeira dancers and ballet dancers to novices and experts of both types of performance. The uninitiated were unable to distinguish, in isolation, the capoeira movements from the ballet movements. However, experienced ballet dancers and capoeira practitioners were able to tell, in the absence of other clues, which body motion was excerpted from which type of dance. Further, greater neurological activity resulted when they presented with movements that they themselves had frequently performed. This indicates mirror neurological activity and that the brain response to seeing activities is influenced by the level of acquired skill of the observer (Calvo-Merino, n.d.).

A similar study was performed with subjects shooting basketballs with the added wrinkle that expert basketball players were able to predict with higher degrees of accuracy if the shot would be successful, even if they did not see the trajectory of the ball in flight towards the basket. Experts needed *only* to see the shooting motion in isolation to make predictions. Simply through observation of the shooter's motion up until the moment the ball is released from the hand, expert basketball players were able to tell something more about the accuracy of the shot than novices were. Further, their predictions were both quicker and more accurate than novices and superior even to those people with comparable visual experience but less actual practice shooting the ball, for example basketball coaches or sports journalists (Aglioti et al. 2008).

In the literature concerning the mirror neuron system, there is much discussion about how language and action are supported by the system. It is important to note that the idea of mirror neurology and embodied simulation is consonant with theory of image schemas. For example, in English, we have several linguistic metaphors for conceptualizing the act of intellectual understanding. The two most common metaphors for understanding involve either seeing (sight) or holding (grasp). Metaphors of sight are frequently used in discussions of clarity. We use expressions such as, "I see what you mean," or someone might "shed some light" on a topic. If we did not entirely comprehend a talk we might say that the lecture was "murky." We also use phrases with "grasp" to express how well we understand something. We try to "grasp someone's point" so we can "get it" or "get a handle" on the idea. Conversely, we might say that something was "beyond our reach," if it was a notion we didn't fully comprehend.

Mark Johnson's work on image schemas includes a detailed discussion of how these metaphors work, cognitively speaking. He includes examinations of fMRI neuroimaging studies of subjects grasping objects, of people watching others grasp objects, and then of people merely hearing the word *grasp* both in a literal context and as metaphor (Johnson 1987, 165–70). He notes, "From a neural perspective, the conceptual metaphor hypothesis states that neural mapping is the basis for the conceptual mapping that constitutes a conceptual metaphor. Metaphorical mappings are physically realized in stable neural circuitry linking the sensorimotor system to other brain areas" (1987, 167).

If there are conceptual metaphors, then there must exist neural connections between sensorimotor areas of the brain and other areas that are involved in thinking. It seems we not only activate the same neurological track to grasp something as we do when we observe someone grasp an object, or when we imagine it, but there is even activation when we also use the word *grasp* as a synonym for understanding. Johnson asks, "The big question is whether our brains actually work this way. Do we use our sensorimotor neural circuitry for abstract reasoning, via metaphorical mapping structures? We do not yet know the answer to this question. However, there is at least some evidence from cognitive neuroscience for the plausibility of the embodied meaning hypothesis" (1987, 167).

Human communication, whether it be spoken language, visual symbols, physical gestures, or a musical utterance, has at its root, traditionally, a bodily motion. Language and action have been described as being supported by the human mirror neuron system.

If language and action both involve a deep coupling between the perception and production of hierarchically organized sequential information, might the perception of art also be mediated by the mirror neuron system?

The relationship between art perception and the mirror neuron system has been investigated, most noticeably by Gallese and his collaborators, who have applied his theory to the enjoyment of film (Gallese and Guerra 2012). Appreciation of music may be linked in the same way to mirror neurology and empathetic motor resonance and embodied simulation.

The work in this area is relatively new but it suggests further areas of inquiry concerning embodiment and listening. If the mirror neuron system is sensitive to auditory stimuli related to actions as stated in Molnar-Szakacs and Overy (2006, 236), what are the implications for soundscape composition, if, for example, the sound of cracking peanuts or tearing paper does indeed ignite our brains in much the same way as actually cracking peanuts or tearing paper does (Gazzola, Aziz-Zadeh, and Keysers 2006)? Further, what might be the relationship, neurologically speaking, between very similar activities? Does expertise and experience playing the guitar influence how we hear violin or piano music? What about the arts in general? Sociologist Pierre Bordieu noted, "Everything seems to indicate that knowledge and preferences tend to form into constellations that are strictly linked to the level of education, so that a typical structure of preferences in painting is most likely to be linked to a structure of preferences of the same type in music or literature" (Bourdieu and Johnson 1993, 231). How would competency in literature

translate into the appreciation of film? How about dance and music? Does a greater fluency in one area influence competency in another area, or do these constellations of knowledge and preference arise entirely from one's class, education, and habitus? Can one understand Kandinsky better by listening to Schoenberg?

Listening becomes emotion through a complex and dynamic interaction between auditory stimulus, attention, different cognitive networks, and neural systems. Just as in our basketball example above, the degree and nature of our musical experience modulates our understanding and experience of the music we hear. Even those with moderate levels of experience performing music exhibited enhanced musical responses related to emotion and reward (Chapin et al. 2010).

If the mirror neuron system provides a means by which listeners may experience music empathetically through motor resonance rather than by merely cognitively interpreting an internal representation, then what might this mean for music which is generated by algorithm and synthesized entirely without the intervention of the human body? Additionally, what if that music is made of sounds that were not traditionally included in musical performance, such as the sound of wind or thunder or birds or any unusual sounds that not resemble the sounds of traditional musical instruments? Perhaps these sounds were produced with a synthesizer consisting entirely of filtered noise bands. Do we experience these sounds more intrinsically as suggested in the studies listed in the opening (Vanderveer 1979; Gaver 1988)? Or does the musical context prime us to hear them differently than we otherwise would? If the communication of emotion during

listening to a musical performance is (at least partially) an empathetic process in which a listener feels the emotion communicated by the performer, what might this mean for music that doesn't have a human performer or, even more curious still, doesn't sound like a human performer *could* have produced it? Does the listener still experience motor resonance of some kind?

What I am suggesting are three broad categories of musical production. First, there is music that is clearly within the traditional frame, performed on known musical instruments, and that produces gestures that are evocative of the physical motions that produced them. This is music of the body, or more precisely *synchronous embodied music*. This is music we may experience—at least partially—empathetically and through motor resonance.

There is also *asynchronous disembodied music* that largely resembles traditional music but is now divorced from any visual cues about its source. However, this music is conventional in its unified timbre streams and was initially performed on recognizable musical instruments. However, through recoding technology, it becomes temporally asynchronous. The source of the sound is recognizable but invisible. While literally disembodied, this music presents us with little trouble and we have no problems recognizing what we hear as music. We continue to hear this disembodied and asynchronous music as having once been bodily performed and likely still experience it empathetically. Most of our air-guitar or air-drumming performances likely take place, in private, to recorded music.

However, now we have the music of *non-body*—music that was not produced by bodily movement. How do we experience this music? Is it still mediated by the human mirror neuron system? Is it experienced more intrinsically, as sound itself, than embodied? Is it more difficult to comprehend? Does the enjoyment of this type of music require that we situate it in a stylistic or historic framework or is it still open to the novice? Can we still locate in this music some sense of bodily connection or do we experience this music as something outside us, more like we might experience weather?

It may be many years before we know the answers to many of these questions and we don't know yet if the current line of inquiry into social neuroscience will provide all the answers. Unquestionably, diverse listeners are attending in complex and sophisticated ways to an ever-growing nexus of genres and garnering enjoyment from them. I suspect that these different modes of enjoyment are related to the manner of production, how deeply rooted these performances are in bodily motions, and how well listeners can discern those movements as being responsible for the musical gestures they hear. Recent work in embodiment and social neuroscience suggests that when we listen to traditional music played in a conventional manner, *we are listing to bodies*. Further, what Vanderveer (1979), Gaver (1988), and Ihde (2007) propose is that most sounds are—at least initially—experienced as *sounds of things*. In traditional embodied music, those things are bodies. However, when sounding bodies are no longer apparent, what do we attend to? The above studies also suggest that when we are listening to musical sounds which are not perceptibly tied to human physical gestures, we are more likely to

experience those sounds intrinsically, as individual timbral gestalts, or as *sound objects*. Later, I suggest that conceptual reasoning takes up where motor resonance leaves off, that one of the ways that we fill this gap in comprehension is by employing a form of *scholarly savoring*. Both concepts, Schaeffer's notion of a sounds object and Bordieu's concept of scholarly savoring, will be explored in subsequent chapters.

Perhaps this explains why so many experimental composers use unusual sounds and endeavor to decontextualize and defamiliarize ordinary sounds through technology. They hope to create the conditions that will aid audiences in hearing those sounds anew, to encourage listeners to attend *to the sounds themselves*. This *hearing anew* is a central tenet of the New York school composers, Fluxus, and many of the practitioners of *musique concrète* and other early electronic music composers of mid-century. This sonic defamiliarization had aesthetic and philosophical overlap in the other arts as well.

The Quotidian and the Defamiliarization of Perception

> There is a beautiful statement, in my opinion, by Marcel Duchamp: "To reach the impossibility of transferring from one like object to another the memory imprint." And he expressed that as a goal. That means, from his visual point of view, to look at a Coca-Cola bottle without the feeling that you've ever seen one before, as though you're looking at it for the very first time. That's what I'd like to find with sounds—to play them and hear them as if you've never heard them before.
>
> —John Cage

The boundaries between art and life were increasingly contested throughout the twentieth century. This reflects both an aesthetic evolution and a technological one. This exploration of the very boundaries of art began to intensify considerably by mid-century and the commonly understood definition of art that had been operative at the beginning of the century gave way. By the 1960s, the discourse around art had altered significantly. There were several important changes, but here we are primarily concerned with two important and associated aesthetic turns.

First, the partition between high art and popular art was becoming increasingly indistinct, as artists embraced what critic Brian O'Doherty called the *vernacular glance* (1988, 198–200). Second, the distinction between ordinary objects, sounds, and occurrences, and those that were considered appropriate to art was also progressively muddled. These borders were becoming less well-defined as artists began to assign artistic value to the images, sounds, and movements of daily life. By the 1960s, the most mundane items and events were gradually deemed worthy of aesthetic contemplation. Susan Sontag, a critic who witnessed these changes as there were happening noted,

> All kinds of conventionally accepted boundaries have thereby been challenged: not just the one between the "scientific" and the "literary-artistic" cultures, or the one between "art" and "non-art"; but also many established distinctions within the world of culture itself—that between form and content, the frivolous and the serious, and (a favorite of literary intellectuals) "high" and "low" culture. (Sontag 1966, 297)

This revolution is often traced back to first two decades of the twentieth century, to the Italian and Russian Futurists, to Dada, and most of all to Marcel Duchamp. Dada was, at least in part, a political reaction, a response to the horrors of the first world war. The Dadaists believed that art had become too self-referential, restricted by the underlying philosophical constructs of rational thought. Dada attempted to break the constraints of Cartesian logic and it sought to deride the lofty ethos of high art, and to attack as myth the romantic ideals of genius and the troublesome notion of the artistic masterpiece. Tristan Tzara (Chipp 1968, 386), in his 1922 *Lecture on Dada* wrote, "Art is not the most precious manifestation of life. Art has not the celestial and universal value that people like to attribute to it. Life is far more interesting."

A little earlier than the even the Dadaists, Duchamp had already set out to blur the demarcation between life and art and to thumb his nose at the art establishment. In 1913, he produced the first of his insurrectionary readymades. These readymades were manufactured items elevated to the level of works of art by the mere act of the artist having selected them, affixed his signature, and displayed them in the company of other works of art. The first readymade, the *Roue de bicyclette,* was a bicycle wheel, inverted and attached by its fork to an ordinary wooden kitchen stool. Incidentally, it may also

have been the first kinetic sculpture as the inverted wheel spins freely. The second readymade was a bottle drying rack that Duchamp bought in a Paris market, which was adorned with a typically Duchampian witty phrase or pun.[10]

Over the next thirty years Duchamp made eleven additional readymades, all quite different. We can already see this with the two just described. The bottle rack is merely signed and displayed. However, the *Roue de bicyclette* required some artistic intervention and composition as it was assembled from disparate objects: a stool and the front fork and wheel of a bicycle. Nevertheless, all included everyday objects such as a snow-shovel, a chimney ventilator, a pet grooming comb, a typewriter cover, a urinal, a coatrack, a glass. Susan Sontag, writing in the mid 1960s about contemporary art, could just as easily be addressing Duchamp's work when she says,

> The distinction between "high" and "low" (or "mass" or "popular") culture is based partly on an evaluation of the difference between unique and mass-produced objects. In an era of mass technological reproduction, the work of the serious artist had a special value simply because it was unique, because it bore his personal, individual signature. The works of popular culture … were seen as having little value because they were manufactured objects, bearing no individual stamp … [however] this distinction appears extremely shallow. Many of the serious works of art of recent decades have a decidedly impersonal character. The work of art is reasserting its existence as "object" (even as manufactured or mass-produced object, drawing on the popular arts) rather than as "individual personal expression." (Sontag 1966, 297)

This shift outlined by Sontag is the one Duchamp helped bring about with the subversive

[10] Unfortunately, the rack was tossed when Duchamp moved to New York in 1915. We'll never know what this phrase was as Duchamp could never remember what he had written.

power of his readymades. The somewhat surprisingly small number of readymades Duchamp produced is perhaps due to the difficulty he had in finding suitable objects for inclusion. Duchamp put considerable thought into selecting readymades and when asked about this he answered that his choice, "depended on the object" and he further explained,

> In general, I had to beware of its "look." It's very difficult to choose an object, because, at the end of fifteen days, you begin to like it or hate it. You have to approach something with indifference, as if you had no aesthetic emotion. The choice of readymades is always based on visual indifference and, at the same time, on the total absence of good or bad taste. (Cabanne 1971, 48)

Yet, with this small collection of readymades, Duchamp had ridiculed centuries of high art. He managed to invalidate all the painstaking effort, and the expert craft and specialized knowledge that typically went into the invention of works of high art. A readymade was chosen specifically because there was nothing overtly aesthetic about it, nothing that implied taste, design, or formal beauty—nothing suggestive of art. If lost or destroyed, readymades could be recreated without difficulty and by anyone (as they often were by Duchamp himself). Ironically, this gave the readymades a kind of permanence denied even to the great masterpieces of the canon.[11] Beyond working to diminish the

[11] The readymades bring up a host of perplexing philosophical questions. How could a readymade be a work of art if it was not actually made by the artist? If a work of art is no longer aesthetically beautiful what are we supposed to gain from it? The interested reader might start with the work of Arthur C. Danto, who has made these questions a primary focus. See *The Transfiguration of the Commonplace* (1981), *After the End of Art* (Danto and Goehr 2014), *The Abuse of Beauty* (2003), and *Unnatural Wonders* (2005). There are many tricky post-Duchamp works that are simultaneously art and *mere things* (or simulacra). See Jasper Johns' *Ale Cans*, Robert Watts' *Chromed Toothbrush*, and many of Claes Oldenburg's pieces from the 1960s. Danto's specific fixation is with what he calls *The Brillo Box – Brillo box* problem, the questions surrounding Andy Warhol's work. He calls such works *ontological double agents* (2005, 334).

aura of high art, with the readymades Duchamp had another purpose: by taking an object out of its original context and placing it in another, Duchamp had "created a new thought for that object" (Camfield 1989, 38). Creating new thoughts for old objects and familiar sounds was a century long-project, one easier to see in the visual arts, but no less important in music.

Musical Mystery of the Nineteenth Century

For once music was not lagging behind the other arts as there were cracks forming in the musical frame prior to Pop Art, Fluxus, Dada, and even Duchamp. Even before recording devices were introduced to music, obliterating the traditional boundaries of music, noises ordinary thought to be outside the boundaries of music were already being introduced into performance. As John Cage (1961, 73) noted, if "one uses the word 'experimental' … to mean simply the introduction of novel elements into one's music, we find that America has a rich history." What Cage did not likely know was that this history stretches back further than even Charles Ives and Henry Cowell. A fascinating early example is the Civil War-era composer, pianist, and musical prodigy Thomas Wiggins (a.k.a "Blind Tom").

Born blind and into slavery near Columbus Georgia, Wiggins was keenly attuned to the sounds around him, spoken, musical or just the ambient sounds from his environment (Smirnoff 2008, 52). Sadly, no original recordings of Wiggins exist since his heyday was just prior to the development of household electricity, recording technology, and just before the player piano became popular (Wiggins died in 1908). Most of what little we

know about Wiggins comes down to us as oral history or as transcriptions of his performances by other musicians but he was a sensation in his day. Counted among his fans were John Steinbeck, Willa Cather, and Mark Twain. In 1860, Blind Tom became the first African-American to be invited to perform at the White House, in front of President James Buchanan (Smirnoff 2008, 53).

In addition to being a piano prodigy, Wiggins was reported to have astounding abilities of memory and mimicry. He was able to mimic spoken foreign languages with remarkable accuracy and repeat long conversations verbatim, reproducing all the idiosyncrasies of the speaker's pronunciation and intonation (2008, 53). He could imitate many animals with extraordinary accuracy and apparently, he could reproduce the music performed by nearly anyone after just a single hearing. In concert Wiggins frequently accepted an audience challenge. This involved finding the best musician present. This person was brought onstage to play the most difficult piece of music they could. Wiggins would then repeat back the piece exactly as he had heard it, mistakes and all. In a feat that prefigures the poly-musical experiments of Charles Ives, Wiggins would also play different pieces of music with each hand while singing a third, all in different keys (2008, 52–53). In time, he would incorporate such effects and mimicry into his musical works and improvisations, imitating animals, wind and rain, and including melodies that were heard and remembered from his always attentive and keen listening to the world around him.

In his most famous piece, *The Battle of Manassas*, Wiggins evokes the sounds of the battlefield. In this work he blends *Dixie*, with *The Star-Spangled Banner*, *La Marseillaise*,

and *The Girl I Left Behind Me* with the sounds of drums, fifes, cannons, hoofbeats, occasionally intermingled with train sounds and whistles. Wiggins' biographer remarks that the "sum total of Tom's perfect pitch, hypersensitive clarity, elastic vocal chords, lack of inhibition and total immersion in the world of sound enabled him to re-create a 'harum-scarum' battlefield like no other" (O'Connell 2009, 122). She further notes that we will never know precisely the impact this music had since the transcriptions and notations that others made of his performances were far short of what Wiggins himself produced in concert. Wiggins couldn't bear to hear what he considered meek renditions of his works by other performers (2009, 122).

The earlier part of the twentieth century also saw the Italian Futurists and their *intonarumori*, Leo Ornstein's tone clusters, George Antheil's industrial and mechanical sounds, Edgard Varèse's thundering percussion, wailing sirens and theremins, and Charles Ives and Henry Cowell's wide-ranging sonic explorations. Others followed, most notably John Cage with his prepared piano and percussion works from the late 1930s and early 1940s and his electronic experimentation. But all of this, the Futurists, Varèse, Cage, were after the American Civil War, after emancipation, reconstruction, and after the invention of domestic electricity. Even Ives, who performed sonic experiments similar to Wiggins, and whose life almost exactly coincides with the advent of electric power transmission, is many years after Wiggins' prime. To give some sense of the time frame, Ives graduated from Yale in 1898 and he wrote *Central Park in the Dark* in 1906, Wiggins left the concert circuit in the mid-1890s and retired from performing entirely in December 1904. Wiggins died in 1908, just as Ives began composing his most

accomplished works.

In the quest to include everyday sound in musical performance, Wiggins's trailblazing efforts are remarkable if, sadly, mostly lost to the winds of time. But his primacy is especially noteworthy as he did not have any of the benefits of electricity or recording technology. He had to rely entirely on his memory and extraordinary ability to mimic the world around him and to integrate that mimicry into the fabric of his music.

Field Paintings, Field Compositions

John Cage was a lifelong admirer of Duchamp and in Duchamp's last few years a friend and weekly chess partner. He met Duchamp as far back as 1942. Cage, like Duchamp, was keenly aware of the deterioration of the barriers separating art and life. He noted in 1966, "We are discovering another use of art and of things that we have not considered art. What is happening in this century … is that more and more there is no gap between art and life" (Kostelanetz 2003, 225). Further, he believed that art was ever-present, "theater is continually becoming" (Cage 1961, 14), and it, "… takes place all the time wherever one is and art simply facilitates persuading one this is the case" (1961, 174). Willem de Kooning once famously quarreled with Cage, "If I put a frame around these bread crumbs, that isn't art," Cage countered that it was and that the difference was that de Kooning "connects art with his activity—he connects with himself as an artist whereas I would want art to slip out of us into the world in which we live" (Kostelanetz 2003, 226).

Cage not only was aware of this secularization of art, he actively pursued it. As he saw it, this was not for the benefit of art, but rather for the enrichment of daily life. He held that, "Our business in living is to become fluent with the life we are living, and art can help this" (2003, 44). It was time for art to make life better, to "take care of it, and to change it from being just a mess into being something which facilitates our living, instead of making us all miserable" (White 1978, 15). Cage sensed that many had become unmindful of surroundings and daily life was what was truly important not art. Cage noted that "one was accustomed to thinking of art as something better organized than life that could be used as an escape from life. The changes that have taken place in this century, however, are such that art is not an escape from life, but rather an introduction to it" (Kostelanetz 2003, 226).

Thus, the real purpose of art was not the creation of masterpieces, the consumption of which might be a temporary relief from the drudgery of daily life, but rather a lifelong process of discovery, a process undertaken in order to improve life. Moreover, anyone who wanted, could open their eyes and ears, cultivate their artistic sensibility and thereby improve their everyday existence. All you have to do is listen. When asked, "But, seriously, if this is what music is, I could write it as well as you?" Cage replied, "Have I said anything that would lead you to think I thought you were stupid (Cage 1961, 17)?" For Cage, the barriers to entry needed to be abolished.

The creation of art was what he called "purposeful purposelessness" or "purposeless play." In a lecture on experimental music given in 1957, Cage wrote,

> What is the purpose of writing music? One is, of course, not dealing with purposes but dealing with sounds. Or the answer must take the form of a paradox: a purposeful purposelessness or a purposeless play. This play, however, is an affirmation of life—not an attempt to bring order out of chaos nor to suggest improvements in creation, but simply a way of waking up to the very life we're living, which is so excellent once one gets one's mind and one's desires out of its way and lets it act of its own accord. (Cage 1961, 12)

This purposeless play was an avowal of everyday life, what we might nowadays call "mindfulness," an increased attention and awareness of the sensations and perceptions of the present moment. As Cage put it, "I believe that by eliminating purpose, what I call *awareness* increases. Therefore, my purpose is to remove purpose" (Kostelanetz 2003, 231). To achieve this Cage, ultimately felt he needed to give up compositional control. He claimed that he wanted to get beyond his limitations, his ego, and his particular likes and dislikes,[12] in order to bring music closer to an imitation of nature *in her manner of operations*.[13] Starting in the 1940s, Cage's conception of music was heavily influenced by his idiosyncratic understandings of philosophical concepts from various Asian religious and philosophical traditions,[14] this idea of imitating nature in its manner of operations,

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[12] Writers on Cage often repeat these assertions without examination. I won't entirely dispute these claims here, but I want to at least express some dubiousness about Cage's efforts to be entirely free of taste and ego. I am skeptical that he achieved this goal, as he appeared to maintain preferences throughout his life. As for ego, Cage certainly cultivated a remarkable charisma and from the mid-1960s on his work enjoyed substantial prestige and reward.

[13] This turn of phrase, to *imitate nature in her manner of operations* (or variations of it) appears frequently in Cage's writings and interviews. It appears several times in *Silence* alone (Cage 1961, 53, 100, 173, 194).

[14] Cage's understanding and appropriation of ideas from "Oriental philosophy," specifically the ideas he understood as coming primarily from China, India, and Japan, are problematic in both the general nature of the appropriation itself, and in Cage's outsized power of representation of these concepts. His frequent Orientalizing, and his peculiar understandings of the philosophical concepts he appropriates adds to the trouble. See Edward Crooks' *John Cage's Entanglement with the Ideas of Coomaraswamy* for one extensive critique of Cage specifically (Crooks 2011). See also John Corbett's "Experimental Oriental: New Music and Other Others" in *Western Music and Its Others* (Born and Hesmondhalgh 2000) for a broader examination

purportedly comes from the ideas of Sri Lankan Tamil philosopher Ananda Coomaraswamy.[15] Further, nature's manner, as was being contemporaneously revealed by various branches of science, was seemingly chaotic and indeterminate.[16]

Despite some sharp aesthetic disagreements, and wildly different personal temperaments, Jackson Pollock and Cage agreed on this particular point. Eight weeks before he died, Pollock agreed to an interview with Selden Rodman, at which the abstract expressionist painter, and East Hampton neighbor—Corrado Marca-Relli—was present. Marca-Relli and Pollock both agreed,

> It's a different age we live in. It's an age of indeterminacy, perhaps. Morals are indeterminate compared with other times. You don't call a thing or a person "good" or "bad" the way you could once. We know there's good and bad in everyone. This indeterminacy comes out in our painting. Perhaps it's why we're not interested in making portraits. That would be too precise a statement to lend itself to painting as we practice it. (Rodman 1957, 83)

The Abstract Expressionists' emotional intensity and their dogmatic thrust of the ego in paint were in stark contrast to Cage's philosophy and his ideas of anarchy and compositional decontrol. "Something in me knows where I'm going, and—and well,

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of the experimental tradition and appropriation. For an even wider examination of western European art music and its encounters with the rest of the world see Timothy D. Taylor's excellent *Beyond Exoticism* (2007).

[15] The origin of the phrase was not Coomaraswamy, who was borrowing from Thomas Aquinas, who was in turn referencing Aristotle. Aristotle and Plato are normally credited as of originators of mimetic theory. Therefore, as Crooks (2011, 122–23) notes, this is extremely ironic because "if Cage had wanted to found his aesthetic on ideas opposed to European traditions—whether ancient Greek, medieval or romantic—he would have been hard pressed to have made a worse choice."

[16] For an exploration of these scientific links see N. Katherine Hayles, "Chance Operations: Cagean Paradox and Contemporary Science," in *Composed in America* (Perloff, Junkerman, and University of Chicago. 1994, 226–41).

painting is a state of being," Pollock once said. "Painting is self-discovery. Every good artist paints what he is" (1957, 82). Further, abstract art was clearly entangled with ideas concerning the spiritual. Whereas Cage fought to remove himself from the decision-making process involved in art, Pollock sought to make paintings that were an expression of his manic ego, with its emphasis on spontaneous, automatic, or subconscious creation. Pollock believed, "The modern artist, it seems to me, is working and expressing an inner world—in other words—expressing the energy, the motion, and other inner forces ... the modern artist is working with space and time, and expressing feelings rather than illustrating" (B. H. (Bernard H. Friedman 1972, 176).

This relates Pollock's art with improvisation and Surrealism. Cage disliked both: "Automatic art, in fact, has never interested me, because it is a way of falling back, resting on one's memories and feelings subconsciously, is it not? And I have done my utmost to free people from that" (Kostelanetz 2003, 180). It is also notable that Duchamp took a pretty dim view of Abstract Expressionism. As Irving Sandler noted, "Duchamp believed that the primary concern of the New York School was the manipulation of paint as an end in itself, that is, for purely visual or, as he put it, 'retinal' purposes. Since he considered art that appealed solely to the eye as a thing of the past he had little regard for Abstract Expressionism, which he denigrated as the epitome of this approach" (Sandler 1978, 163). Cage gradually came to share Duchamp's distaste though their objections were somewhat different. If Duchamp disliked the sensual aspects of the Abstract Expressionists' work, Cage's biggest objections were the painter's preoccupation with autobiographical self-expression, the unrelenting seriousness, the impulse to create masterpieces, and the artists

view of themselves as existential heroes.

In this and in other ways, Pollock and Cage were aesthetic extremes of each other. And yet, Pollock and Cage did have at least one more thing in common:[17] an adversarial relationship to hundreds of years of European history, tradition, theory, and dominance in the arts. While Pollock fought to break from figurative painting and the American social realism that dominated his youth, to free his work from the illusion of three-dimensional space, spatial composition and clear center-of-interest, Cage and his fellow travelers battled traditional harmony, teleology and form, and broke in important ways from the great Germanic traditions that had so long dominated western art music.[18] This meant that in Cage's music, there was an analogous *all-over* approach to time akin to the surface and spatial arrangements that characterized Pollack's post-1946 paintings. In these so-called *field paintings* there was no center of interest and the canvases had become so vast that as Allan Kaprow (1958, 26) noted, "They ceased to become paintings and became environments." He further remarked, "Before a painting, one's size as a spectator, in relation to that of the picture, profoundly influences how much we are willing to give up the consciousness of our temporal existence while experiencing it.

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[17] They also shared an interest in Navajo sand painting.

[18] Cage had a lifelong aversion to Beethoven, who he posited as a foil to Satie, "I gave one long lecture, in which I denounced Beethoven, the peak of German music. And that was necessary to do, from Satie's point of view, because Satie himself spoke against Beethoven. So I pointed out to the Germans that Beethoven's music was a mistake fundamentally, and that Satie's music was correct. The reason is that Beethoven's music is based on a marriage of form and content, involving beginnings, ends and middles, and all kinds of ideas and expressions of individual feeling that have nothing whatsoever to do with sounds, whereas Satie's music is essentially based upon an empty space of time, in which one thing or another could happen. There is no other way to explain some of the pieces he wrote around 1912, which simply don't do any of the things that German music told everyone that music should do" (Kostelanetz 2003, 49).

Pollock's choice of great sizes resulted in our being confronted, assaulted, sucked in." As Cage would later note, since there is no longer one center of interest, everyone is already in the best seat (Cage, Kirby, and Schechner 1965, 53).

While Cage found Pollock personally distasteful and was in many ways critical of both his work and De Kooning's, Cage did not dislike abstract expressionism entirely. Cage had a lifelong fascination with the work of Mark Tobey and they became great friends. Tobey's work was a constant presence and influence on Cage (Kostelanetz 2003, 183–84). While there were many aesthetic connections between the two, the artist who will forever be linked with Cage, first and foremost, is likely Robert Rauschenberg,[19] not only because Rauschenberg was also a close personal friend and key collaborator but because of the significant commonality of the artistic goals and the general aesthetic overlap. Moreover, Rauschenberg's own questioning of the distinction between materials suitable for art and everyday objects connects him to the work of Marcel Duchamp, who was so significant for Cage. Rauschenberg once remarked that, "Painting relates to both art and life. Neither can be made. (I try to act in the gap between the two)"[20] (Cage 1961, 105).

Of the canonical Rauschenberg, the white paintings are first. There is some confusion as most will likely immediately think of the more famous all-white panels. However, the very first white paintings, exhibited at Betty Parson's in spring 1951, were the "stylish

[19] There are several artists whose work overlaps, intersects, or carries on from Cage's towering example. However, the striking aesthetic consonance between Cage and Rauschenberg, and the fact that they worked together so frequently, make this connection clear.
[20] Cage later quibbled with this statement see: (Kostelanetz 2003, 188).

doodles in black and white and liberal helpings of silver paint," as Stuart Preston dismissively characterized them in a contemporaneous review in the *New York Times* (Davidson 2013). The all-white paintings were done in the in the fall of 1951. Each of these consists of a different number of modular panels that were painted completely flat white. Rauschenberg wanted to create paintings that looked as if they were untouched by human hands (he used a roller and not a brush), as though these panels had simply arrived in the world fully formed.[21] He must have succeeded as this was precisely the grounds on which these paintings were considered failures by Dore Ashton, who dismissed them because they lacked the trace of the artist's hand ("White Painting [Three Panel] · SFMOMA" n.d.).

The white paintings are no more empty than Cage's *4'33"* is silent. *4'33"* is an occasion, the white paintings are a field, and area of focus for the spaces that they inhabit. They are receptive surfaces that work with, rather than against, the ever-changing world around them. In this way they recall Duchamp's *The Bride Stripped Bare by Her Bachelors*, a painting on glass. The use of glass allowed the images to be both looked at and seen through. The outside world impinges on the work and enters into it continually and no viewer sees exactly the same thing. This was an aspect of the work that greatly appealed to Cage:

[21] Interestingly, the all-white paintings, for many years, existed more as concepts than objects as the original canvases were painted over or destroyed while in storage. Much like the Duchamp readymades, they were recreated as needed. Often the recreations were not even executed by Rauschenberg but by his assistants ("White Painting [Three Panel] · SFMOMA" n.d.)

> Looking at the *Large Glass,* the thing that I like so much is that I can focus my attention wherever I wish. It helps me to blur the distinction between art and life and produces a kind of silence in the work itself. There is nothing in it that requires me to look in one place or another or, in fact, requires me to look at all. I can look through it to the world beyond. Well, this is, of course, the reverse in *Etant Donnés.* I can only see what Duchamp permits me to see. The *Large Glass* changes with the light and he was aware of this. (Kostelanetz 2003, 186)

Cage (1961, 102) famously referred to Rauschenberg's white paintings as "airports for lights, shadows, and particles." The paintings become what the viewer and the environment brought to it. As Rauschenberg once said, "I always thought of the white paintings as being not passive, but very—well, hypersensitive ... so one could look at them and see how many people were in the room by the shadows cast, or what time of day it was" (Tomkins 1976, 203). These white paintings were a significant influence on Cage. As he noted when discussing his composition of *4'33"* in 1973, "what pushed me into it was not guts but the example of Robert Rauschenberg. His white paintings that I referred to earlier: When I saw those, I said, "Oh yes, I must; otherwise I'm lagging, otherwise music is lagging" (Kostelanetz 2003, 71).

After the Parson's show, Rauschenberg's work also went black. Sporadically between 1951 and 1953 (these works were not conceived of as a series), he made several black paintings, some with matte paint and some with glossy paint. Some were, like the all-white paintings, on multiple panels. These were Rauschenberg's so-called *night plants* (Tomkins 1976, 202). The black paintings started with newsprint, often torn and crinkled, which Rauschenberg affixed to the canvas. The newspaper ground is sometimes revealed and sometimes masked, depending on the application of paint and the persistence of the

print below. This was done in order to "to make a lively ground, so that whatever I did would be in addition to something that was already there, so that even the first stroke in the painting would have its position in a gray map of words" (Hunter and Rauschenberg 1999, 68). Some of these were quite dark and others are a bit more grey or brown as Rauschenberg rubbed dirt in his white paint to create different tones and textures.

A series of red paintings followed. This series was created primarily in red paint on grounds of newspaper, comic strips, and patterned fabrics that have been attached to the canvas. These were heavily painted and the pigments are applied in a variety of ways, including brushstrokes, drips, impasto, and squeezed directly from the tube. The later red paintings from the summer of 1954 incorporate found objects and begin to anticipate the three-dimensionality of the *combines,*[22] which incorporated larger and more extraordinary collage elements. These included the famous *Charlene* of 1954, which features a flickering light bulb and a flattened umbrella.

From the mid-1950s on Rauschenberg began to use increasingly larger real-world objects as collage elements and the works become increasingly three-dimensional. As he put it, "I don't want a picture to look like something it isn't. I want it to look like something it is. I think a picture is more like the real world when it is made out of the real world" (Coutts-Smith 1970, 53). *Charlene* is not completely flat, but is still a largely a bulbous two-

[22] *Combine* is a term Rauschenberg coined to describe a work mixing aspects of painting and sculpture in an effort to eliminating the distinctions between these artistic categories. Some combines hang on the wall, some are freestanding.

dimensional painting, comparatively speaking. However, the combines of the mid-1950s to the early 1960s (when Rauschenberg moved away from making combines and began exploring silk-screening), are where Rauschenberg achieved a truly revolutionary hybridization of painting and sculpture. "I liked the idea that a picture could come out into the room," Rauschenberg stated (Tomkins 1976, 218). His work increasingly came *out into the room* with all manner of non-traditional materials and found objects.

This was certainly not an entirely new impulse. Collage has long been a modernist favorite, ever since 1912. That was the year Picasso glued a piece of chair-caning to the surface of a painting *(Nature morte à la chaise cannée)*. It was also the same year that Georges Braque produced his first paper cut out *(Compotier et verre)*. And in April of 1912, Umberto Boccioni, in his "Technical Manifesto of Futurist Sculpture," insisted that artist should, "Destroy all the wholly literary and traditional nobility of marble and of bronze. Deny the exclusiveness of one material for the entire construction of sculptural ensemble. Affirm that even twenty different materials can compete in a single work to effect plastic emotion. Let us enumerate some: glass, wood, cardboard, iron cement, horsehair, leather, cloth, mirrors, electric lights, etc., etc." (Chipp 1968, 304). However, as early as 1905, in an essay about Picasso, Guillaume Apollinaire had maintained, "I have not one prejudice with regard to the painter's materials. Mosaicists paint with marble or colored wood. There is mention of an Italian artist who painted with excrement; during the French revolution blood served somebody as paint. You may paint with whatever material you please, with pipes, postage stamps, postcards or playing cards, candelabra, pieces of oil cloth, collars, painted paper, newspapers" (Caws 2001, 119).

Many of these things did find themselves in art in the coming decades. But there are many pre-modernist precedents as well, including the wonderful tradition of Victorian Photocollage and the scrapbooking that preceded it. It is even possible to go back centuries to the application of gold leaf and gemstones in religious art to see elements of mixed-media collage. Collage enables the artist to incorporate reality into the art without merely mimicking or depicting it. Further, collage, assemblage, and mixed-media works allowed artists to make abrupt and disruptive juxtapositions that reflected the increasingly fractured and chaotic world that surrounds us. Collage made counterpoint easy and readily permitted an instant and integrated presentation of wildly different elements and media. For modernist artists who renounce figuration, who reject illusion and symbolism, collage and assemblage are ideal methods.

However, Rauschenberg took collage a step beyond by combining both flat and nearly flat collage elements and three-dimensional sculptural elements that extruded past the surface. They were even, in some cases, completely freestanding complex assemblages. As the decade wore on he incorporated larger and more challenging collage elements than ever used before: fabrics, scraps of wood, zippers, automobile tires, lights, taxidermized animals, shoes, neckties, clocks, and road signs, hockey sticks, a bed, pillows, mirrors, photographs, buttons, cardboard boxes, colored glass, a silk umbrella and many other sundry static found objects. He also included kinetic objects and electronic devices such as lights that blink, fans that spin, and fully functioning radios. As Rauschenberg noted, "I was bombarded with TV sets and magazines, by the refuse, by the excess of the world … I

thought that if I could paint or make an honest work, it should incorporate all of these elements, which were and are a reality" (Hughes 1991, 345).

The appearance of the quotidian was by no means limited to visual art and music, it was beginning to appear regularly in all the various art forms by mid-century. A comprehensive examination of the everyday in each of the arts would be book length but a few examples will suffice to illustrate my point.

In literature, the many "I do this, I do that" poems of Frank O'Hara are a good example of the trend towards the ordinary and domestic. O'Hara's poems were often immediate and direct. They also frequently displayed a remarkable and charming casual artlessness. These poems documented small pieces of daily experience: telephone conversations, walks, movies, items from the day's newspaper headlines. O'Hara, who wrote poems during his lunch break at the Museum of Modern Art, believed you could put anything you wanted in a poem, just as Rauschenberg believed you could put anything into a picture. In O'Hara's poems, names of friends, movies stars, television programs, local restaurant and bar names abound.

"Steps," one O'Hara's *Lunch Poems,* starts with a reference to *Swing Time*, a 1936 American musical comedy film starring Fred Astaire and Ginger Rogers (O'Hara 1964, 48–56). It also references Lana Turner, Greta Garbo, the Metropolitan Opera, the West Side YMCA, the Pittsburg Pirates, and the Seagram Building. It ends with the following lines:

and the little box is out on the sidewalk
next to the delicatessen
so the old man can sit on it and drink beer
and get knocked off it by his wife later in the day
while the sun is still shining

oh god it's wonderful
to get out of bed
and drink too much coffee
and smoke too many cigarettes
and love you so much

The confessional poets also emerged in 1950s and 1960s. Poets such as Robert Lowell, Sylvia Plath, W. D. Snodgrass, John Berryman, and Anne Sexton spilled some of the most intimate and ordinary details of private lives and all their personal tribulations out on to the page. Anne Sexton, especially, seemed to push the very boundaries of what could be put in a poem, with nothing seemingly considered off-limits. She wrote about everything in her troubled, chaotic life, no matter how taboo: personal shortcomings, family, mortality. She wrote of her own suicidal urges, sex, violence, incest, abortion, masturbation, adultery, drug addiction, neurosis, and insanity. She even addressed the functioning of her own body in poems such as "Menstruation at Forty," and "In Celebration of my Uterus."

In the 1950s and 60s, in the world of dance, movements that were unorthodox in choreography but recognizable from ordinary life began appearing on stages everywhere. In one way or another, Paul Taylor, Merce Cunningham, Anna Halprin, and, most

radically, the Judson Dance Theater all began exploring movements were previously thought to be unworthy of the stage. But before the Judson Dance Theater's radical redefinition of dance, there was Simone Forti and her innovative *Dance Constructions*.

In 1955, Simone Forti and her partner, artist Robert Morris, moved to San Francisco.[23] Soon after moving, Forti enrolled in classes at the Halprin-Lathrop School, co-founded by choreographer Anna Halprin. When Halprin founded the San Francisco Dancer's Workshop in 1955, Forti continued her studies with Halprin, who she worked with until 1959 (Forti 1974, 29). Halprin was almost an exact contemporary of Merce Cunningham and she shared many of Cunningham's aesthetic aims. Halprin abandoned the stylized forms of modern technique to create her own way of reproducing the art of everyday life primarily through the use of improvisation.

In 1959, Forti moved to New York.[24] She enrolled in a composition and improvisation class at the Merce Cunningham Studio, taught by musicologist Robert Ellis Dunn. Dunn attended Cage's New School classes in 1959-60. Dunn's classes introduced Forti to the music and ideas of John Cage. There she met and began working with many of the

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[23] Forti and Morris married that year and Forti began working under the name Simone Morris, the name she used when she published five landmark dance instructions in La Monte Young' s *An Anthology of Chance Operations* (Young 1963).

[24] Ironically, Forti moved away at just the time that Halprin began working with La Monte Young and Terry Jennings, who served as musical co-directors in 1959-60 for the workshops that Anna Halprin conducted on her now famous wooden deck. It was for Halprin's workshop that Young recorded *2 Sounds* (April 1960) with Terry Riley. This noisy composition consists entirely of harsh friction sounds. The two sounds are: tin cans scraped on glass and a drum stick scraped on a gong. La Monte Young would also move to New York in 1960 and both Young and Forti would become involved with Yoko Ono. Young would publish some of Forti's dance events in *An Anthology of Chance Operations* (Young 1963). All three are authors of important proto-Fluxus works and would later participate in Fluxus events.

dancers that became influential 1960s dance, including Trisha Brown, Yvonne Rainer, and Steve Paxton (Forti 1974, 34).

Forti's event structures came out of her experience in Dunn's workshops, they are essentially proto-Fluxus *event scores* but for movement, rather than music, though such distinctions were precisely what Fluxus would go on to problematize. Indeed, Forti thought of these constructions as a type of intermedia, somewhere between dance and a kind of human sculpture (Morse 2016, 90). But the score was a means to an end. That end, aesthetically speaking, was to make dances out of everyday movements and ordinary physical tasks and to reject traditional dance gestures and the typical dramatic dance narrative of traditional ballet and of choreographers like Martha Graham. What Forti achieved was a "natural or non-formalist movement in dance" (Dunning 1991).

Forti's initial development of her *Dance Constructions* series was publicly presented at New York City's Reuben Gallery in December 1960, in an exhibition Claes Oldenburg and Jim Dine called *Happenings at the Reuben Gallery*. In May 1961, Forti presented a full evening of pieces she called *Five Dance Constructions & Some Other Things* at Yoko Ono's loft (Forti 1974, 37). One of the pieces performed was a dance construction later called *Huddle*. A version of the instructions for this dance appear in *An Anthology of Chance Operations* (Young 1963). The piece requires that a group of seven or eight people stand together in a very close huddle. Taking turns, the performers, one at a time, climb over the others, and then back down again, once again joining the mass of performers bodies. Soon another starts climbing up and then returns to the mass again,

and so on. The instructions suggest "movement must be constant but not hurried," and occasionally, if "it happens that there are two climbing at once. That's all right" (Young 1963). The dance construction "should be continued *long enough*, perhaps ten minutes" (Young 1963).

The piece is performed without music. Presumably what one hears in performance is the sound of the dancers in their efforts, the sounds of their bodies and clothing and whatever ambient sound is concurrent. As for the effect on the audience, Sabine Breitwieser noted a kind of defamiliarization of the body: "One could look at the *Dance Constructions* as problematizing everyday or, as you call them, pedestrian movements. If you take something out of an everyday context and isolate it, then it becomes something else. Using a rope to scale a steep ramp in *Slant Board*, for instance, evokes a typical climbing movement, but you've turned it to an isolated action that lacks a purpose, that exists just for itself" (Forti 2014, 35).

Duchamp introduced the idea of creating new thoughts for old objects (Camfield 1989, 38). However, he wasn't the only one thinking along these lines. In one of the art world's many examples of simultaneous invention, Viktor Shklovsky introduced his concept of *ostranenie* in his essay "Art as Device" in 1917 (Shklovskiĭ 2017, 73–96). Ostranenie is frequently translated as *defamiliarization* or *estrangement* and is the technique of presenting common objects or everyday events in unfamiliar ways in order to enhance perception. You can see how close these two ideas are. You could even describe ostranenie by paraphrasing Duchamp, as "creating new thoughts for familiar objects or

events" in order to perceive something anew.

I read "problematizing everyday" or "pedestrian movements" as Breitwieser describing a kind of estrangement of bodily movement, a kind of dance ostranenie. However, as Breitwieser's description indicates, Forti's brand of defamiliarization doesn't insist on the arbitrary isolation of different parts of the body. This independence was a prominent feature of Cunningham's choreography, and was an aspect that Forti disliked and avoided (Forti 1974, 34). We can see this kind of bodily ostranenie elsewhere too, for example a performance such as Bruce Nauman's *Walking in an Exaggerated Manner Around the Perimeter of a Square* (1967). Interestingly, *ostranenie* is one of the major aesthetic aims of Butoh, which was emerging in Japan at roughly the same time. This defamiliarization might take the form of the dancer taking the slowest and most difficult route to picking an object up off the floor, for example. Defamiliarization not only occurs in art and dance but in music too. As I will discuss later it is one of the aesthetic goals of *musique concrète,* and I believe that some form of ostranenie occurs in certain electroacoustic music works, such as the *Egg Fry* series of compositions by Lee Patterson, for example. Estrangement of the body may be the most disconcerting form of ostranenie, since body monitoring is a lifelong endeavor for all us.

Both Steve Paxton and Yvonne Rainer, who were participants in the event, cite Forti's 1961 *Dance Constructions* concert as a key influence on their creative direction and a creative development which encouraged them to establish the Judson Dance Theater. The Judson Dance Theater was a collective of dancers and choreographers who worked out of

an experimental dance workshop that met at the Judson Memorial Church, a Baptist church on Washington Square South, just across from New York's Washington Square Park. The Judson Dance Theater held their first concert in the summer of 1962. They continued on into the 1970s with many members joining and leaving along the way. Such artists as Yvonne Rainer, Deborah Hay, Trisha Brown, Fred Herko, Steve Paxton, James Waring, Carolee Schneemann, David Gordon, Judith Dunn, and Lucinda Childs all crafted works for the Judson Dance Theater.

What these disparate voices had in common was their shared goal of making dance out of ordinary body movements and a focus on those movements not in the service of some dramatic storyline, but as pure aestheticized bodily motion. This conception of dance involved a reveling in the perception from the senses themselves and not a kind of symbolism, psychodrama, or dramatic action. In this sense they were furthering the project started by Cunningham, Halprin, and Forti in their rebellion against narrative dance and the restrictions of traditional dance movements.

These artists tended to accentuate the physical reality of bodily moment and assert that any kind of movement can serve as dance movement. The Judson choreographers celebrated straightforward human physicality and derived dance ideas from ordinary physical activities, work movements, games and sports. The Judson group also worked to lower the barriers to participation. Since we all have bodies, we all can partake in dance regardless of skill level and age. These performances were attempts to remind dancers and audiences alike of their bodies and to valorize them. All bodies are good and without

shame. By abandoning all claims to virtuosity and special skill, the Judson dancers were, in some ways, following in the footsteps of Duchamp and others in the plastic arts. They were also serving as an important precursor to some of the developments which followed (e.g. Fluxus, the Scratch Orchestra, and the free improvisation that emerged in music in the late 1960s).

Art now was not exclusively about making something extraordinary or astonishing in skill or complexity to behold in awe. A goal now was to set the conditions under which the audient might recognize the beauty or pleasure in everything around us, or perhaps to even reject the conventional notion of beauty altogether. Audiences found meaning in other ways. As Sontag noted, we hadn't reached the end of art, but rather a "transformation of the function of art," and that art serves as instrument "for modifying consciousness and organizing new modes of sensibility" (1966, 296). Sontag asserted,

> And the means for practicing art have been radically extended. Indeed, in response to this new function (more felt than clearly articulated), artists have had to become self-conscious aestheticians: continually challenging their means, their materials and methods. Often, the conquest and exploitation of new materials and methods drawn from the world of "non-art"—for example, from industrial technology, from commercial processes and imagery, from purely private and subjective fantasies and dreams—seems to be the principal effort of many artists. Painters no longer feel themselves confined to canvas and paint, but employ hair, photographs, wax, sand, bicycle tires their own toothbrushes and socks. Musicians have reached beyond the sounds of the traditional instruments to use tampered instruments and (usually on tape) synthetic sounds and industrial noises. (Sontag 1966, 296)

Music of Contingency

> I'm out to blur the distinctions between art and life, as I think Duchamp was.
> — John Cage, *Conversing with Cage*

Speaking of increasing dissonance, Schoenberg wrote in his *Theory of Harmony*, that it "all simply depends on the growing ability of the analyzing ear to familiarize itself with the remote overtones, thereby expanding the conception of what is euphonious, suitable for art, so that it embraces the whole natural phenomenon" (Schoenberg 1978, 21). John Cage, with his percussion pieces, moves beyond tone to unpitched sounds and rhythm—not just all available tones but *all sounds* including noises. In his 1937 lecture "The Future of Music – Credo," Cage (1961, 3) writes, "Wherever we are, what we hear is mostly noise. When we ignore it, it disturbs us. When we listen to it, we find it fascinating. The sound of a truck at 50 m.p.h. Static between the stations. Rain. We want to capture and control these sounds, to use them, not as sound effects, but as musical instruments." It's possible to see the ideas in Cage's lecture subsequently brought to fruition in his music. He wrote several short but innovative compositions for small mixed ensembles of conventional instruments with various electronic devices in the late 1930s early 1940s.

Imaginary Landscape No. 1, from 1939, is for four performers. Two players control a pair of variable-speed turntables with fixed-frequency recordings. The performers manipulate the speed of the recording to change the pitches. A third performer plays a large Chinese cymbal. The pianist plays the inside of the piano, sweeping the bass strings with the hand and occasionally muting selected strings by reaching inside the piano. Initially *Imaginary*

Landscape No. 1 was intended to be performed in a radio studio, where it could be either recorded or broadcast but subsequently it has also been performed on stage. Cage took a job as a dance accompanist for Bonnie Bird in Seattle at the Cornish School because he was attracted to the large collection of percussion instruments they owned. When he arrived there, he discovered that the school also had a small radio station. Cage noted, "We were able to make experiments combining percussion instruments and small sounds that required amplification in the studio. We were able to broadcast those to the theater which was just a few steps away, and we were able, of course, to make recordings and, besides making records, to use records as instruments" (Kostelanetz 2003, 163). Cage eventually made a series of five *Imaginary Landscapes*, a title he reserved for compositions that used electronic technology. However, it wasn't the only title he used for such mixed electroacoustic compositions. Another such example is Cage's composition from 1942, *Credo in Us*, with its instrumentation of muted gongs and tom-toms, tin cans, electric buzzer, radio and a phonograph.

This questioning of the resources proper to music by Cage was shared by many at the turn of the century (e.g. Ives, the Futurists, Varèse, Henry Cowell). Despite this questioning, the range of accepted sounds permitted within the conventions of western art music generally remained confined within a relatively small scope, even given the progressive expansion of euphony already brought on by Wagner, Debussy, Ives, Schoenberg, Stravinsky and others.

However, it is Cage who takes this process to its logical conclusion: that literally any

sound can be thought of as music. Music no longer requires an authorial intention, or even an author at all, it merely requires a change of listening mode, an aesthetic engagement. The lesson of *4'33"* is that all that is necessary for music is the willingness to attend to the sounds around us in the same way we would any other music, what Robert Erickson calls listening in "music mode" (Erickson 1975, 1). We might conclude that the dissolution of the distinction between consonance and dissonance was expanded by Cage, Varèse, Schaeffer, and others, to a dissolution of the distinction between sounds deemed worthy of inclusion in music and mere everyday noises. The border between musical sounds and non-musical sounds dissolves as all sound is now aesthetic, if the listener so determines.

In the 1960s, Cage's efforts to elide art and life as much as possible reaches new heights. This elision becomes a central concern and can be seen in many of the works spanning this decade and the next. Cage was notoriously prolific and a full explication of the ways Cage attempted to blur the lines between ordinary occurrences and his art could fill a large tome so I will highlight a few works and discuss the piece that, in my estimation, represents the apex of this undertaking.

The *Variations* series consists of eight works *(Variations I – VIII)* spanning nearly two decades from 1958 to 1976 and several of these pieces significantly blur the distinction between art and life. *Variations III* (1962-63) is an interesting case because it functions more as a type of toolkit or recipe for making a unique event than as fixed score in itself. It is a perfect representation of Cage's move "from giving attention to an object to what

we can call environment or process" (Kostelanetz 2003, 57). The score is made up of two transparencies. One has forty-two circles printed on it. You are meant to cut up this transparency. You put the other transparency, which is blank, down on some flat surface and then let fall the twenty-four circles upon it. From the resulting mass of circles the performer chooses one area where multiple circles overlap. That area becomes the score for that particular iteration of the piece. The performer starts with any circle in the group and makes an action that has as many variables as there are circles that touch in the chosen cluster. The performer then moves to another circle and performs another action.

The score makes no mention at all of sounds that should result from this process, the sounding music is just what results from the process of interpreting the cluster of circles. Interestingly, Cage also allows the performer to acknowledge the unintended sounds as part of the performance and not as an interruption. He encourages performers to notice or respond to any perceived "environmental changes." Cage also specifies that while some of the features of a performance may be planned in advance, the performer should "leave room for unforeseen eventualities"; and that, "any other activities are going on at the same time" as the work is performed (*Variations III* 1965).

In *Variations IV*, likewise a kind of kit for the production of a performance score, the score consists of seven points and two circles on a transparent sheet. The sheet is cut into nine smaller pieces. One of the circles is then placed anywhere on a map of the area where the performance is to take place. The rest of the sheets are dropped anywhere on the same map and straight lines are drawn from the first circle to the seven points. If a line

intersects or is tangential to another circle, the same procedure is applied to that circle. The explanatory note in the score gives instructions on how to interpret the results, but in general the result is a graphic representation of where sounds will occur for that performance. Cage also mentions that musicians need not confine themselves exclusively to a performance of the score during the concert. They are free to engage in any other activities at any time. It is a little unclear what is meant by this, but presumably this means any ordinary activity from life. This work forms part of a group that includes *Atlas Eclipticalis* as the first piece and *0'00*" as the third.[25]

John Cage's own efforts to erase the lines between art and life reaches its zenith with *0'00" (4' 33" No. 2)*, the lesser known sequel to the original silent readymade of 1952. While on tour in Tokyo in 1962 with David Tudor, Cage sat down at a table and wrote out the single sentence that was to become the initial version of the score. Since the table was amplified at the time of the writing of the score, the act of making the score also became, retrospectively, its first performance. The instructions are "in a situation provided with maximum amplification (no feedback), perform a disciplined action" (*0' 00": Solo to Be Performed in Any Way by Anyone* 1962). Here there is a single performer who makes audible some everyday activity that would ordinarily be too quiet to be heard or is perhaps audible but too soft to be salient in the mind of the perceiver.

[25] The grouping of these works was based on Hidekazu Yoshida's interpretations of Japanese Haiku poetry. The first line of a haiku represents *nirvana (Atlas Eclipticalis)*, the second line represents *samsara*, the turmoil of everyday life *(Variations IV)*. The last represents individual action *(0'00")* (Pritchett 1993, 155–56).

Like its predecessor *4'33"*, the emphasis is on unintended and unnoticed sound and the notion that music becomes whatever one happens to be doing. However, unlike *4'33",* there is no form or prescribed length. *4'33"* not only has a precisely specified duration (arrived at by chance) but the piece is in three movements, whether the audience is aware of this structure or not.[26]

The meaning of the title of *0'00"* is not immediately apparent. Cage often talks about the concept of *zero* in several different contexts.[27] However, here Cage is referring to a specific concept, that of *zero time*. This notion comes from Christian Wolff, specifically his *Duo II for Pianists*, where Wolff uses numbers to indicate a range of time during which events in the score should happen. Wolff used zero to indicate that the duration of an event was open (Cage 1961, 38) and could be of any length. Cage thought of the entirety of *0'00"* as taking place in *zero time*, that it can be any length at all depending on the particular undertaking chosen. The original concert performance by Cage in Japan in 1962 is just over eighteen minutes.[28] This performance is captured on *John Cage Shock Vol. 3* (Tudor et al. 2012).

After the Tokyo performance, Cage added four more conditions to the score. First, the

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[26] In the initial performance of *4'33"*, David Tudor opened and closed the piano lid to indicate the division of the piece into three sections. However, the score doesn't indicate that this is necessary.

[27] Cage starts his *2 Pages, 122 Words on Music and Dance* with, "To obtain the value of a sound, a movement, measure from zero"(Cage 1961, 96). He says of Satie that he "appears at unpredictable points springing always from zero" (1961, 79). It isn't always clear that these and other specific and idiosyncratic uses of "zero" overlap in concept or if they are used poetically.

[28] It is interesting to note that at this very first public performance, Cage fails in his quest for a performance entirely free of feedback.

performer should allow any interruptions that occur. Further, the task that is chosen should fulfill some obligation to others. Third, no two performances should be made of the same action and that action should never be the performance of another "musical" composition. Finally, the performer should pay no attention to the performance situation but attend to the task at hand. With this last instruction, Cage makes it explicit that the performance should not be anything extraordinary. There is the suggestion here of a daily, routine task that anyone might otherwise do. The performer should try to ignore the audience and attend to the task. With these extra requirements, the piece seems to strip the performer of their special status even as the amplification makes plain that they are the source of the sounds we hear. This renders the situation something of a fiction. Cage described *0'00"* as:

> … nothing but the continuation of one's daily work, whatever it is, providing it's not selfish, but is the fulfillment of an obligation to other people, done with contact microphones, without any notion of concert or theater or the public, but simply continuing one's daily work, now coming out through loudspeakers. What the piece tries to say is that everything we do is music, or can become music through the use of microphones; so that everything I'm doing, apart from what I'm saying, produces sound. When the sounds are very quiet, they become loud through the use of microphones. And I may not do again in performance what I did once before. (Kostelanetz 2003, 74)

Cage refers to *0'00"* as *4'33" no. 2* and like its predecessor, it is another piece that shares a readymade aspect. Additionally, both compositions show that what we ordinarily think of as silence is filled with unintended sounds. *0'00"* attempts to highlight the world of unintended and unnoticed sounds and to give audience members a chance to appreciate all the sounds that are already always present. Cage goes to great lengths to explicitly shut

off the possibility of self-expressive action. *0'00"* is a celebration of accepting rather than making. It's a discovery of the accidental music that emerges from our everyday world without any special effort required. The acceptance of interruptions in works such as *0'00"* typifies Cage's awareness of the interpenetration of all activities. An interruption is simply an intrusion of an unintended process on an intentional one. Cage increasingly encouraged the acknowledgement of these interruptions in works produced after *0'00"*. *0'00"* proposes a way of being in the world, a way that greatly valorizes listening. Here, Cage uses electronics to demonstrate that there is a great deal of activity occurring even in seemingly idle situations. What was thought to be inactivity is actually full of uncontrolled, unintended sound.

In some important ways *4'33"* and *0'00"* are very different. A typical performance of *4'33"* is often soft while *0'00"* is frequently noisy due to the extreme amplification required. Here the amplification functions as an aural microscope, vastly magnifying the small sounds of every movement. Cage had a lifelong obsession with small sounds and once dreamed of amplifying a children's park which led "to the idea that I've found quite fascinating: a piece of music performed by animals, and butterflies, which sounds fantastic now but is almost within reach, I think, with our technology" (Kostelanetz 2003, 94). Cage also noted that he had "for a long time the desire to hear the mushroom itself, and that would be done with very fine technology, because they are dropping spores and those spores are hitting surfaces. There certainly is sound taking place" (2003, 93). This leads to "the thought about hearing anything in the world since we know that everything is in a state of vibration, so that not only mushrooms, but also chairs and tables, for

instance, could be heard. One could go to an exhibition of sounds in which you would see something and hear it as well. I would like to do that" (2003, 93). Many of Cage's subsequent works, particularly those of the 1970s, point in this direction, such as *Child of Tree* (1975), *Branches* (1976), *Inlets* (1977), and *Pools* (1978). The utopian dream of hearing all objects remained unrealized in Cage's lifetime.

As Pritchett notes (1993, 139), *0'00"* is a somewhat odd piece that doesn't seem to have much in common with the works that immediately preceded it such as *Variations II* and *Atlas Eclipticalis*. It certainly has some kinship with *Cartridge Music* from two years prior, in that there is a concern for making audible that which is ordinarily too soft to hear in a concert setting. Also, in making music out of items not ordinary deemed worthy of the stage, what Duchamp called our "taste for the miserable" (Tomkins 2013, 90). *Cartridge Music* "uses electronics, but it also uses junk things that are part and parcel of everyday life" (Kostelanetz 2003, 125). In *Cartridge Music,* the amplified objects are treated as musical instruments. Just as the amplified organic materials become instruments in the mid 1970s with *Child of Tree*, *Branches*, and *Inlets*. In *0'00",* you simply go about your business doing an everyday task which fulfills the conditions of the score. You might cook a meal for someone, answer someone's letter, or perhaps, fix someone's bicycle.

In *0'00"*, there is also an unusual singular focus on one solitary activity. This is at odds with Cage's usual preference for creating situations where multiple separate activities overlap to make a complex of independent and uniquely timed events, a kind of meta-

polyphony without center. Cage liked to combine more than to strip away. His ideal was nearly always to create a complex unfocused interpenetrating multiplicity. You can see this consistently in his output from the original Black Mountain College happening in 1952 on. This emphasis on interpenetrating multiplicity really takes off in the 1960s. Some examples of complex interpenetrating works are *Sounds of Venice* (1959), *Where are we Going? And What are we Doing?* (1960), *WBAI* (1960), *Variations VI* (1966), *Musicircus* (1968), *Reunion* (1968), *HPSCHD* (1969) and *33 1/3* [29] (1969).

0'00" also bears some relation to *Theater Piece* (1960), written two years prior. However, *Theater Piece* functions rather like a more open and polyphonic variant of *Water Walk.* There are time brackets (the first Cage work to employ them) and parts for up to eight performers. The actions are taken from a gamut of 20 nouns and verbs, chosen by the performer. Ostensibly, solo performances are permitted, but the work was originally used as music for the dance by Merce Cunningham of the same name, so even in that case the audience would experience polyphony. Additionally, in *Theater Piece*, specific sound producing events are called for such as, popping paper bags. In *0'00",* there is no time specified and there are no particular sounds described. Like *Variations VI*, the "notations refer to what is to be done, not to what is heard or to be heard"(*Variations VI,* 1966). In *0'00"*, Cage merely states a number of perquisites for any actions that might fill the spirit of the piece. Typically, *Theater Piece* is much more like a happening. It revels in

[29] Cage's *33 1/3*, already involved a complex mix of twenty-four turntables with independent stereo speakers and typically hundreds of LP records, was later combined with a piece called *Cassette* (instructions for the simultaneous performance of five Cage lectures supplied on cassette tapes). When both of these are played simultaneously they constitute another work which Cage called *Address* (1977).

abundance, simultaneity as relationship, and anarchy. *0'00"* is solitary and single-minded. It is perhaps as close to the standard Fluxus aesthetic as Cage got. The score, marked *Tokyo, Oct 24, 1962* is dedicated to Yoko Ono and Toshi Ichiyanagi, who were both friendly with Cage starting in 1958. They were also, at the time, active in the development of Fluxus, which will be addressed in the next chapter.

Whereas works like *Musicircus*, *Reunion*, and *HPSCHD* explore Cage's interest in interpenetrating processes, his preference for multiple centers, and music that results in a complex polyphony of activity, *0'00"* is more of a concentration on a single deliberate and personal action. There is no exacting and elaborate structure. It's a single task. In this way, *0'00"* more closely resembles Paik Nam June's *One for Violin Solo* or La Monte Young's *Composition 1960 #10* or any number of Fluxus events than, say *Water Walk*, where the performer is required to follow a complex score with a precise timing, as score that suggests much preparation, discipline, and rehearsal. *0'00"* requires some initial thought and electronic set-up but significantly, rehearsal itself is expressly prohibited. Previously, Cage endeavored to make his work more like life, with *0'00",* Cage turns his life into his art. Cage suggests that it is best to do something one would have done anyway, to take that moment of everyday life and present in a concert setting and amplify it so all can hear. By doing so, Cage changes the context, the frame, and the focus. He turns something usual into something unusual so that we might hear with fresh ears.[30]

[30] It's noteworthy that Cage largely abandoned the essay or lecture form and adopted the diary as his chosen literary outlet. This is another example of Cage's tendency to make his own daily life into art.

Variations VII is another work that has a readymade aspect about it as Cage wanted to use the unpredictable sounds that would be accessible at the time of the performance. In a that way it is like a more complex, high-tech version of *Imaginary Landscape No. 4* for twelve radios where what we hear depends largely upon what the stations happen to be broadcasting in that area at the time of the performance. But, *Variations VII* also shares with *0'00"* a concern for amplifying things that aren't ordinarily heard. It makes electronic signals which are in the air or in cables that surround us audible. Cage used ten telephone lines with magnetic pickups on the telephone receivers and fed these signals into the main sounds system. Cage also had the performance platform wired with contact microphones and there were twelve additional contact microphones applied to various household appliances. To this he also had twenty radio bands, two television bands, and a pair of Geiger counters. Oscillators and a pulse generator were the only other sound sources and the only sources the composer had control of. With all these sounds sources there had to be some kind of mixing and triggering system so thirty photocells and lights were mounted at ankle level around the performance area. When the photocells picked up a light source they triggered one of the sound sources as the performers moved around. The performers from the Merce Cunningham Dance company would dance and their bodies would interrupt the light beams changing the mix of sounds one would hear as well as producing sounds on the amplified floor. The audience was encouraged to move around freely which also had an impact on the performance. So, while it has something in common with *0'00"*, it is a piece that returns us once again to Cage's preferred mode of musical abundance.

0'00" is an important, if relatively overlooked work in Cage's output. So key is it to Cage's thinking at the time, that Cage subsequently reused the concept several times. In his *Song Books* (1970) there are eighty-nine vocal solos, to be sung with or without other indeterminate music, e.g. one of the *Variations*, the *Rozart Mix* or the *Concert for Piano and Orchestra*. Any number of solos may be performed in any order and any superimpositions allowed. Each solo belongs to one of the following categories: Song; Song with electronics; Theatre; or Theatre with electronics. Roughly, the way Cage made the collection was, for each solo, to determine whether he was repeating a compositional method used previously (and if so, which one); or if he was using a *variation* of a previous compositional method (and if so, which one); or if he was making up an entirely new compositional method. Solos 8, 23, 24, 28, 62, and 63 are all, in essence, iterations of *0'00"*.

In mid-century western art music compositional models were shifting. Schoenberg replaced Stravinsky and Hindemith, then Webern succeeded Schoenberg. The intense interest in Webern led to expanded applications of serial technique and to a kind of severe technocratic formalism led by Boulez, Stockhausen, Nono and others. Cage's appearance at Darmstadt in 1958, "swept across the European avant-garde like a natural disaster" as Dahlhaus put it (Iddon 2013, 300). After this visit, this formalistic serialism began to give way to a type of aleatoric post-serialism. Cage's work of the subsequent era explores further the notion that sounds no longer require any authorial or intentional organization. What they require is listening. The *sounds themselves* become unpredictable and uncertain. Cage often referred to his works of this period as a "music

of contingency, which means that you're necessary but not in control"(Kostelanetz 2003, 27; See also: Cage and Kuhn 2016, 463). Cage's 60s music, particularly a quietly subversive composition like *0'00",* serves as a powerful critique of the excessive formalism and rationalism found in western art music of the 1950s and 1960s, a type of music which many artists regarded as oppressive and confining.

Happenings

While John Cage was embraced by academia late in life, he even gave the Charles Eliot Norton Lectures at Harvard in 1988–89, he was generally at odds with traditional academia and with the music establishment throughout much of his career. It is no surprise then that his two most celebrated stints with the classroom were with famously unorthodox institutions. Yet, both engagements, short as they were, had long-lasting and significant resonances.

John Cage first visited Black Mountain College, in Asheville, North Carolina, in April 1948, while traveling with choreographer Merce Cunningham. They were only at Black Mountain for a few days but it was a noteworthy stay as the *Sonatas and Interludes* were premiered there on April 6, 1948. Cage returned several times between 1948 and 1953 and both Cage and Rauschenberg both were at Black Mountain College in 1948. However, their visits did not coincide. They weren't introduced until three years later. Cage himself often gets this timeline somewhat confused in his retelling (Kostelanetz 2003, 187, 197). Cage met Rauschenberg at the Betty Parsons Gallery in New York in the

summer of 1951. They must have made fast friends because Rauschenberg was a participant in one of the more noteworthy Cage events of the following year at Black Mountain, the first *Happening*, Cage's *Theatre Piece No.1* (often simply referred to as *Event*). This took place in the summer of 1952 during lunch in the communal dining hall, with Robert Rauschenberg, David Tudor, Nicholas Chernovitch, Merce Cunningham, R. Buckminster Fuller, M.C. Richards, Charles Olson, and John Cage participating.

As Mary Emma Harris notes, memories vary concerning who was present, who did what, and where they were (Harris n.d.). Nevertheless, most seem to concur that the seating for the audience was arranged in four triangular sections with wide aisles between. This arrangement allowed the action to take place both on the stage and in the aisles around the audience. The instructions for the performance assigned time slots, determined by chance operations, to the different participants including Cage, Cunningham, Tudor, Richards, Olson, and Rauschenberg. Cage stood on a ladder at the center and delivered a lecture as artists, musicians, and dancers moved freely through the space and around the audience. Rauschenberg played Edith Piaf recordings on a turntable while David Tudor played the piano. At least one of Rauschenberg's white paintings was on display.

This kind of poly-focal buzz of activity prevented any single narrative and single place of concentration from emerging. The performance, while extraordinary in its complexity and extravagance, mimicked the unstructured and episodic nature of daily life. Further, each person had a different view of the events and a different experience depending on where they sat in the hall. In 1965, Cage recalled a woman who made a point of coming

early, "… in order to get the best seat. And she asked me where the best seat was and I said they were all equally good" (Kostelanetz 2003, 111).

Despite being the first known instance of a Happening, the concept of the Happening was not invented by Cage in isolation. The notion of complex performances consisting of overlapping and unrelated events had some precedence in Futurism, Dada, Artaud, and even Bauhaus theater. Moreover, the unique environment Cage encountered at Black Mountain also must have served as encouragement. Harris remarks, "The Light Sound Movement Workshop taught by Warren 'Pete' Jennerjahn from 1949-51, theater performances directed by Wesley Huss, and Charles Olson's interest in ritual as an alternative to conventional theater had created an environment receptive to Cage's ideas" (Harris n.d.). Harris also notes that a further influence may have been "Antonin Artaud's *The Theatre and Its Double* … which M.C. Richards was translating in New York and reading to the community as she worked. Cage recalled that it was from Artaud that he determined that action and text need not be interdependent" (Harris n.d.).

Still, Cage was remarkably theatrical amongst mid-century American composers, and his influence on the Happenings movement is unquestionable. However, it was left to a younger generation of artists such as Claes Oldenburg, Allan Kaprow, Robert Whitman, Carolee Schneemann, Red Grooms, Jim Dine, and others to develop the form fully. Kaprow, a student of Cage's who took Jackson Pollack as his main inspiration, had thought of Happenings as moving beyond abstract expressionism, which he now considered a dead end. Some artists in the Happenings movement were as dramatic and

expressionistic in sensibility as the abstract expressionist were. Cage objected to this aspect, and while philosophically in accord with the polyphonic nature of this new form, in practice, Cage disliked most Happenings. He not only found this expressionistic quality distasteful, he also strongly objected to what he felt was a lack of discipline. Further, some Happenings went on for far too long and other Happenings had instructions that Cage found coercive (Kostelanetz 2003, 119). Contrastingly, recall the remarkable brevity and precision of a piece like Cage's *Water Walk*.

What Happenings did share with Cage, was the idea that the distinctions between art and everyday life should be erased. Allan Kaprow, a Cage student and a major proponent and practitioner of Happenings wrote a seven-point definition of the Happening. The very first point is "The line between art and life should be kept as fluent, and perhaps indistinct, as possible"(Kaprow 1966, 260). The second point elaborates, "The source of themes, materials, actions, and the relationships between them are to be derived from any place or any period *except* from the arts, their derivatives, and their milieu" (1966, 260).

The Happenings artist that did the most to integrate, or at least confuse art with everyday life was not Kaprow but Claes Oldenburg. In the 1960s, Oldenburg became associated with Happenings and the Pop Art movement simultaneously. In 1961, he began creating sculptures from chicken wire covered with plaster-soaked canvas and enamel paint. He depicted everyday objects, often articles of clothing, hardware, and food. His output contains many replicas of ordinary objects with a messy, floppy, blobby texture, but otherwise as real as possible in appearance. Later some of these replicas were enlarged to

wild proportions (which subsequently became a tired trope in Pop Art). Oldenburg also rendered many ordinarily firm everyday objects as soft fabric sculptures. Oldenburg's then-wife, the artist Patty Mucha, did much of the sewing.

Concurrently, he created many Happenings, and his most famous and conceptually rich events mixed the sculpture with a type of long form meta-performance. The most famous endeavor was and Environment called *The Store*. In December 1961, he rented a storefront on Manhattan's Lower East Side to house a simulated shop. It was a month-long installation he had first presented at the Martha Jackson Gallery in New York. The store was stocked with sculptures roughly in the form of ordinary consumer goods. It looked just like any other retail store complete with cash register, wall-coverings, business cards, and window displays, but all the objects for sale were simulations. He sometimes held performances in *The Store* creating a Happening within an Environment. Oldenburg kept a fascinating diary of this store event. In it he recording occurrences at the store with drawings, photographs, and diary entries. An entry entitled, *I am for an art* is Claes Oldenburg's hymn-like, tongue-in-cheek manifesto on the possibilities of embracing your everyday surroundings as material for art. It's his praise of art that is ephemeral, vernacular, comical, found, crude, unfinished, flawed, or broken. It is an archetypal 1960s art document. It begins,

> I am for an art that is political-erotical-mystical, that does something other than sit on its ass in a museum.
> I am for an art that grows up not knowing it is art at all, an art given the chance of having a starting point of zero.

> I am for an art that embroils itself with the everyday crap and still comes out on top.
> I am for an art that imitates the human, that is comic, if necessary, or violent, or whatever is necessary.
> I am for all art that takes its form from the lines of life itself, that twists and extends and accumulates and spits and drips, and is heavy and coarse and blunt and sweet and stupid as life itself. (Oldenburg and Williams 1967, 39)

Concerts of the Quotidian

> Long long ago, back when the world was young—that is, sometime around the year 1958—a lot of artists and composers and other people who wanted to do beautiful things began to look at the world around them in a new way (for them).
>
> They said: "Hey! —coffee cups can be more beautiful than fancy sculptures. A kiss in the morning can be more dramatic than a drama by Mr. Fancypants. The sloshing of my foot in my wet boot sounds more beautiful than fancy organ music."
>
> And when they saw that, it turned their minds on. And they began to ask questions. One question was: "Why does everything I see that's beautiful like cups and kisses and sloshing feet have to be made into just a part of something fancier and bigger? Why can't I just use it for its own sake?"
>
> When they asked questions like that, they were inventing Fluxus
>
> —Dick Higgins, *A Child's History of Fluxus*

John Cage's other famous academic affiliation of the 1950s was with The New School for Social Research (henceforth: New School). It was founded by a group of university professors and intellectuals in 1919 as a modern, forward-looking school where adult students could pursue a course of study, without declaring a major, from amongst the innovative, wide-ranging curricula, one designed by the students themselves. The New School has a long tradition of academic vanguardism. The New School was not as radical as Black Mountain College but it was a local,[31] progressive university dedicated "To the

[31] Until Cage moved to Stony Point in the mid 1950s.

Living Spirit." John Cage was involved with the School between 1950 and 1960 in several capacities. From 1950 until 1956, he was invited by Henry Cowell, a faculty member at the time, to take part in academic colloquia and to arrange performances of his works, as well as those of other New York School composers. In some ways it was a perfect job for Cage, who would not likely have fit into a more staid, traditional academic arrangement, especially on the heels of the experimental Black Mountain experience.

In 1956, Cage became a member of the faculty. During his tenure, he taught courses on music and also mycology. His first course was a composition course that was offered each semester. While several of Cage's New School students participated in, and authored Happenings (Kaprow made a career of it), the students of the New School classes would largely become known for something else, the formation of an art movement that would later be called Fluxus.

However, in 1959, the word Fluxus didn't yet exist and the friendships and associations that would constitute the wide-ranging international movement were just getting started.[32] Nevertheless, there were a few, mostly associated in one way or another with

[32] Perhaps these works are not properly thought of as Fluxus. Maybe they are proto-Fluxus or merely belong to the general body of experimental music done contemporaneously. Brecht, speaking specifically of *An Anthology* asserted, "It is mistaken to consider *An Anthology* as part of, or representative of Fluxus. … there is no real connection between Fluxus and *An Anthology* except that Maciunas did the layout and also collected pieces at the same time" (Martin 1978, 121 n.27). Nevertheless, these artists later became associated with Fluxus. Further, with the exception of Young, who by 1962 was already moving beyond event scores to his drone work, the nature of their work hadn't significantly changed. The only thing that *did* change was that now there was a name for what they were doing. As Higgins put it, "They were inventing Fluxus; but this they didn't know yet, because Fluxus was like a baby whose mother and father couldn't agree on what to call it—they knew it was there, but it didn't have a name" (Higgins 1984, 88). I will talk about even these early 1959-1962 works as Fluxus even though the word Fluxus wasn't publicly

Cage's New School class, doing work that would set the tone for the Fluxus movement to come.[33] These proto-Fluxus compositions would eventually be called *event scores*. Some artists who later participated in Fluxus made event scores in the very early 1960s such as La Monte Young, Alison Knowles, Nam June Paik, Simone Forti, and Ben Patterson. There was one prominent Fluxus artist who took her first steps in this direction even before Cage had arrived at the New School.

Yoko Ono's *Secret Piece* is the earliest event score I could find and is noteworthy in that it was written way back in 1953, almost a decade before Fluxus's heyday. It was first published in her collection *Grapefruit* in 1964 (Ono 1970). *Secret Piece* also bears some resemblance to Cage's *4'33"* of only a year previous. This aesthetic overlap perhaps helps explain why Cage and Ono become such fast friends. Ono met Cage through Toshi Ichiyanagi, who was in Cage's class at the New School and who was married to Ono from 1956 to 1962. In 1958, Cage invited Ono to hear a lecture by the Zen philosopher Daisetsu Suzuki at Columbia University. Ono had such a high regard for Cage that she attended the lecture even though she had already heard Suzuki speak at Sarah Lawrence College (Yoshimoto 2005, 84). It is easy to see with Ono's *Secret Piece* that she was already investigating similar artistic terrain as Cage. *Secret Piece* reads: "Decide on one note that you want to play. Play it with the following accompaniment: The woods from 5 a.m. to 8

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used until 1962 (Armstrong et al. 1993, 25).

[33] I don't intend to suggest that Cage should get all the credit for spawning these developments, but it is undeniable that he played a significant role. Importantly, there was a high degree of interconnectedness between Cage, and the artists who produced Happenings, and those who took part in Fluxus, particularly in the early 1960s. These artists all shared the common mission to eradicate the borders between art and life. Additionally, the influences went in many directions. While Cage never joined Fluxus, it is clear that he was affected by its development and impact can be observed in Cage's 60s output.

a.m. in summer" (Ono 1970). Below this is a grand staff with the F below middle C held open as in La Monte Young *Composition 1960 # 7*, suggesting an indeterminately long duration. This bottom portion of the page (with the grand staff) is the initial version of the score, presumably as she conceived it and notated it in 1953. The instructions above the grand staff are a later, more abstract, revision of the score.

Secret Piece is notable for its focus, brevity, intimacy (an Ono specialty), and like Cage, her acknowledgement of the performer's relationship to contingencies of the natural surroundings. In *Secret Piece* Ono highlights the significance of everyday sounds. The simplicity of the composition suggests that anyone could realize the work by merely by paying sufficient attention to the ambience and performing a single musical task. The task is so basic as to require no specialized musical education. The revision improves upon this by eliminating the musical staff so that even those who cannot read music can perform the piece. Further, the revision is more open-ended and allows the performer to decide what to play rather than having it prescribed.

Secret Piece creates a link with Cage's ideas but the score also hints at later event scores to come by Brecht, Young, and others. It also suggests later developments in Ono's own work. She only makes four such event scores in the 1950s. Perhaps Ono was busy with her studies at Sarah Lawrence College, which she attended from 1953 to 1956, or struggling with her hypersensitivity which caused her great distress and would have made working on music especially difficult. The four text scores she authored in the 1950s are: *Secret Piece* (1953), *Smell Piece I* (1953), *Lighting Piece* (1955), *Central Park Pond Piece* (1956).

Of these four, *Secret Piece* and *Lighting Piece* are the most interesting. If *Secret Piece* provides a link between Cage and Fluxus, then *Lighting Piece* already prefigures peak Fluxus.

Lighting Piece grows out of Ono's physical predicament. In the 50s, Ono was extremely sensitive to light and sound. She would cover her head hide in the dark to ease her discomfort. Ono discovered that the act of simply lighting a match and watching it burn until it extinguished itself was soothing. She began doing this periodically to calm herself and as a kind of meditation on life (Yoshimoto 2005, 83). *Lighting Piece* is exactly what you might guess: "Light a match and watch it till it goes out." What could be more Fluxus than that? The score is brief and calls for a private, ordinary activity that results in soft, incidental sound. Lighting a match is an event that usually goes unnoticed. Anyone can do it. Smokers in the 1950s likely lit dozens of matches a day without giving the act a single thought. In its simplicity, clarity, and elegance, *Lighting Piece* is quintessential Fluxus but it was written more than five years before Fluxus even began. As Kristine Stiles notes, such aestheticized mundane events provide opportunities for "the rediscovery of the event-value of both actions and objects in the formation of perception and knowledge" and are the very essence of Fluxus (Armstrong et al. 1993, 65).

Ono picks up on her event score practice with enthusiasm in 1960 with scores such as *Let's Piece I*, *Blood Piece*, *Burning Piece*, *Sleeping Piece*, and *Pea Piece* and in the decade that follows, Ono composes some 150 further event scores. Atypically, Ono adheres to a canonical separation of the arts in the organization of *Grapefruit*. The actives are

categorized as music events, painting instructions,[34] poetry, object, film, dance, programs, architecture, or events.

Impossible and extreme events also become Fluxus specialties and Ono seemed to have a special affinity for this type of score. These scores function largely as poetry. Events like *Laugh Piece (laugh for a year)* and *Cough Piece (cough for a year)*, are, if taken literally, impossible. Others scores could be attempted but with uncertain results. For example Ono's *Tape Piece I* (1963) calls for a recording of a stone aging. Of course, you can't actually capture the stone aging in sound, but you would get some other indeterminate result. This suggests that the process, or merely the contemplation of the task, is more important than the result, though in many cases, the result might be interesting too.

Ono isn't the only one who made such scores. Takehisha Kosugi's *Malika 5* (watch a flower till it falls) would be impossible in most situations. Some of these event scores are suggestive of violence. Dick Higgins wrote a whole series entitled *Danger Music*, some of which aren't actually dangerous, but the ninth in the series calls for someone to volunteer to have their spine removed (K. Friedman et al., n.d., 50). A performance of Kosugi's *Music for a Revolution* would have you scoop your eyes out at five-year intervals (K. Friedman et al., n.d., 74).

[34] Another overlooked and under-appreciated segment of Ono's vast output is her inventive *Instruction Paintings*. These are fascinating event scores for the production of visual works (not all are actually paintings). These instructions require the audience to complete the artwork. Interested readers can consult Eva Yi Hsuan Lu's fascinating *Instruction Paintings: Yoko Ono and 1960s Conceptual Art* (Lu 2013).

There is also a whole class of pieces that, while not impossible, are very difficult, wildly impractical, or that require extraordinary time and effort to realize. Jackson Mac Low's *Piano Suite for David Tudor and John Cage* (1961) would require taking apart a piano and re-assembling it before playing something (Armstrong et al. 1993, 164). Certainly not something someone inexperienced in piano repair could undertake easily. Even a relatively popular score, such as Tomas Schmit's *Zyklus für Wassereimer* (1962), which requires the performer to transfer a liquid to several different vessels until all the liquid has disappeared through spillage or evaporation can take a long time depending on the amount of liquid present at the start. A picture of Schmit's performance shows that he started with a full bottle of water, perhaps 800 ml or so (Armstrong et al. 1993, 62–63). Starting with that much liquid would result in performance of many hours.

Physical execution of the events described in Fluxus scores are not always expected. All you can do is imagine these acts. Indeed, many of Ono's scores have the word *imagine* or similar phrases like *in your head* or *in your mind* in them. *Drinking Piece for Orchestra (imagine a gold fish swim across the sky)*, *Pencil Lead Piece (imagine your head filled with pencil leads)* are impossible to actually realize but you are merely asked to *imagine* them. They are internal thoughts, poems, mediations, or exercises. These types of scores are private acts, they are performed in the mind of the reader, without sound, and without an audience. For Ono and others, event scores sometimes shift from realizable directions towards activities that takes place mostly internally, in reading, observing or imagining.

After Ono moves to New York after college, her vanguard creative activities pick up again and from 1960 on she becomes and important figure in the downtown New York art scene. Her loft on Chambers Street was host to an incredible array of art and music events. Ono writes dozens of event scores that eventually become *Grapefruit*, which along with Brecht's *Water Yam*, is probably the best-known collection of event scores. While Ono later took part in Fluxus, it is important to recognize that regarding Fluxus' main philosophical and aesthetic concerns, she was already thinking along these lines before Fluxus existed. As she put it in 1964:

> Art is not a special thing. Anyone can do it. Making art does not have to be so unusual. What I mean is that middle-aged men and housewives, your neighbors, can also do it. Being an artist is not so unusual. If everybody were to become an artist, what we call "Art" would disappear. I think it would be fine if this were to happen and [what I have envisioned] becomes a reality. (Chiaki and Yoshimoto 2005, 99–100)

George Brecht, another student of Cage's who initially took Jackson Pollock as his inspiration, was also early to the notion of *the event*. He was perhaps the first to fully develop the event score into a discrete genre. Brecht attended Cage's class at the New School from June 1958 to August 1959 (Kotz 2001, 63). Cage and Brecht first met in 1957 when Brecht heard that Cage was planning to hunt mushrooms in New Jersey where Brecht lived (Martin 1978, 83). Brecht called Cage and invited him over. Cage returned the invitation and Brecht and Kaprow visited Cage in Stony Point. Cage then invited them to attend his classes at the New School and both did, as did Dick Higgins, Jackson Mac Low, Toshi Ichiyanagi, Al Hansen, Florence Tarlow, Scott Hyde, Richard Maxfield, and several others.

Many artists and musicians who were not actually in the class also came by and sat in. Harvey Gross, George Segal, Larry Poons, Jim Dine, Claes Oldenburg, and Robert Whitman visited, Alison Knowles sometimes came with Higgins, and Yoko Ono occasionally accompanied Ichiyanagi. This list is a virtual *who's who* of the Happenings and Fluxus movements that flowered in the 1960s. To this we need to add La Monte Young, who became enchanted with Cage when he was at Darmstadt in 1959. There he met Stockhausen and David Tudor. He carried on a correspondence with Cage from California and conspired with Cage to come to New York and attend the New School. However, by the time he arrived in New York in September 1960, Cage had left and Richard Maxfield took over composition course, so La Monte Young never became Cage's student but was a student of Maxfield's. George Maciunas, the great Fluxus impresario also took Maxfield's course and Maxfield also participated in later Fluxus events.

In 1953, Brecht was studying statistics and random numbers. Thereafter, he began to make paintings and drawings by chance (Martin 1978, 83, 106, 114). When he began to make events, he made somewhat more complex Happenings with chance procedures. At this point, his practice somewhat resembled Kaprow's or La Monte Young's *Poem for Chairs, Tables, Benches, etc.* (1960), which also had a longer, chance derived score. But Brecht was unsatisfied and, apparently, so was Cage (Bois 2006, 241). He started pairing down his pieces and refining them. They became increasingly less like Happenings but he did not yet have a name for what he was doing. Eventually, he hit upon the condensed,

enigmatic, and conceptually rich style that was to become his trademark. His scores were rather terse to begin with but they were descriptive enough to be clear. His scores became terser still, sometimes consisting of just a solitary cryptic phrase. Eventually, there were even event scores consisting of a single word. The most famous is *Word Event*, which simply states *exit*.

In 1960, he decided these text scores were *events* and by 1962, he had written over a hundred short textual event scores. The first to be explicitly called an event was as somewhat longer score called the *Motor Vehicle Sundown (Event)* from 1960. Brecht's concept of the *event* came to him in the spring of 1960 when "waiting for my wife to come from the house, standing behind my English Ford station wagon, the motor running and the left-turn signal blinking, it occurred to me that a truly *event* piece could be drawn from the situation" (Nyman 1999, 75). He theorized the event as a smaller discrete occurrence within a larger overall situation. If Happenings were like larger overall situations, then Brecht's interest was primarily in the momentary, the singular discreet occurrence.

Brecht's first event score is likely the *Time-Table Music* from 1959. This was later published in his beautifully produced collection *Water Yam*. It consists, as so many events do, of a single sheet of instructions. The event is to take place in a railway station. The performers obtain train schedules. They arrange themselves so that yet can all see each other. They use stopwatches to both time their actions and synchronize the beginning of the event. They each select one of the times on the table by chance and

interpret that number as a duration in minutes and seconds. Brecht gives the following example: If one chooses the train at 7:16 then that is interpreted as a seven minute and sixteen-second performance. The performer is to make a sound, unspecified, at each point on the chosen row or column that falls within the duration of the time chosen. The performance is over when all the performers reach the end of their selected durations.

This is a typical event score in most ways. It is terse, with simple instructions, often involving a singular concentrated action, with the sounds themselves being unspecified or incidental. Found materials, such as the train schedules, are common in Fluxus. Here, the use of train schedules provides a chance-determined structure for the performance, chance being one of Brecht's long-standing interests. *Time-Table Music* is unusual for Brecht in that it is not private but public (*Motor Vehicle Sundown (Event)* is also performed in public). However, the audience, the other people in the train station, aren't even made aware that a performance is underway. Happenings often invited audience participation, however scripted and circumscribed. However, audience participation was not as prominent a feature in Fluxus.[35]

An atypical aspect, being an early piece, is that *Time-Table Music* is still polyphonic, with an unspecified number of performers, presumably a small ensemble. The earliest Brecht

[35] There are several notable exceptions. Alison Knowles has written pieces that specifically require audience participation, including *Shoes of Your Choice* (1963). La Monte Young *Composition 1960 #3* requires an audience, though they are free to do whatever they wish. Ben Vautier is another Fluxus artist who had a penchant for the scripted audience participation piece. Also, Emmett Williams has written event scores that involve the audience.

events from 1959-60 still seem related to John Cage's ideal of complex field, made up of a multiplicity of centers. Indeed, *Time-Table Music* was first performed as a part of Cage's New School class (Martin 1978, 84). *Time-Table Music*, *Candle-Piece for Radios*, *Card-Piece for Voice*, *Spanish Card Piece for Objects*, and *Motor Vehicle Sundown (Event)* are all suggestive of ensemble rather than solo performance. However, most of these could also be performed as solos. *Card-Piece for Radios* specifies 1-54 performers. *Candle Piece for Radios* merely indicates that there are more radios than performers. Strictly, a single performer and two radios fits that condition, but such a reading doesn't seem consonant with the spirit of the work. *Time-Table Music* doesn't specify the number of performers, but the instructions are all in the plural. All these pieces seem conceived as group compositions that rely on chance ordered polyphonic effects and their most effective realizations would be ensemble renderings with an abundance of small, similar overlapping occurrences.

Many event scores, and later Fluxus events are singular monomorphic events that contrast with the more complex and busy Happenings. If Happenings tended towards macro-events, Fluxus tended to investigate the micro-event. George Maciunas, in an interview shortly before his death in 1978, put the distinction this way:

> Now by monomorphism … That's where it differs from Happenings. See, Happenings are polymorphic, which means many things happening at the same time … there would be everything going on: horses jumping and fireworks and waterplay and somebody reciting poems and Louis XIV eating a dinner at the same time. So, that's polymorphism. … Now, reason for that is that, you see, lot of Fluxus is gaglike. That's part of the humor, it's like a gag. In fact, I wouldn't put it in any higher class than a gag, maybe a good gag.

(Ken Friedman 1998, 196)

In a 1964 radio discussion with Kaprow, Brecht stated, "The occurrence that would be of most interest to me would be the little occurrences on the street" (Nyman 1999, 74). While Kaprow, Oldenburg, and others might seek to simulate chaotic experiences in elaborately staged happenings, Brecht's event structures would isolate simple, unified everyday occurrences as something analogous to perceptual readymades. As Michael Nyman (1999, 74) maintains, "Brecht isolated the single, observed occurrence and projects it … into a performance activity, which he calls an *event*." George Brecht occasionally used the phrase *performance haiku* to describe his event scores (Sell 2008, 140). Maciunas preferred to call it *neo-Haiku theatre*, and Ken Friedman explains how this quality, which he called *Zen vaudeville*, appears in Fluxus events:[36]

> There is an important distinction that George Maciunas drew between the sensibility of the happening and the sensibility of the event. He referred to happenings as *neo-Baroque* theatre, a phrase that summoned up the elaborate flourishes of European Baroque architecture and music, as opposed to the concentrated, austere focus on Japanese poetry and its architecture which was reflected in the event form that Maciunas termed *neo-Haiku theatre*. Yoko Ono characterised this work as having an *event bent*, while I created a term that caught both the meditation and the humour in Fluxus pieces with the term *Zen vaudeville*. (Ken Friedman 1998, 149)

[36] Happenings and Fluxus both had significant entanglements with Japan. This involvement extended beyond the interest in Eastern philosophy and religion of scholars and popularizers like Alan Watts and artists such as John Cage in the 1950s. Not only did Fluxus have a sizable Japanese representation in New York, but certain aspects of Happenings and Fluxus were prefigured in the activities of the Gutai group. Further, the members of Group Onganku all later became members of Fluxus. The post-war period represented a resurgence of Japanese vanguardism that first flowered in the 1920s and 1930 in the form of a rich tradition of Japanese Surrealism. During Japanese reconstruction, in response to the reactionary artistic context of the time, newer, more experimental movements re-emerged. When discussing 1960s art movements in the western world, Zen, Calligraphy, and Haiku are frequently discussed, oddly, the Group Onganku, Gutai group, and Butoh are often not. Many important Japanese artists active in New York were aware of these developments in Japan.

The scores themselves, often printed on individual note cards, resemble printed ephemera more than musical scores. One of Brecht's events scores would not be out of place pinned to a bulletin board or stuck to a refrigerator along with various coupons, business cards, receipts, and other sundry items. Many of these event scores look, at a glance, more like an old board game card or a dry-cleaning ticket than a work of art or musical score. Brecht's event scores were especially important because they were so thoroughly embraced by Maciunas and subsequently served as the model for Fluxus performances.

Not everyone was so keen on the new Fluxus aesthetic. Kaprow, a pioneer in establishing the concept of the Happening, and Brecht's New School classmate, didn't have such a high opinion of Fluxus in its heyday. In 1964 he opined,

> The group, with few exceptions, that associates itself with Fluxus is irresponsible. It is my impression that many people just simply goof-off and pretend in a kind of very very nasty way, socially speaking, and certainly socially with respect to other artists, that they have certain superiority in their seemingly indifferent little activities such as a sneeze tomorrow or a finger is as good as a hole in the wall, or any of these little directives which if acted out are somehow to me important rather than unimportant so far as its effect is to say to me and others—"You guys are doing important things, but look, we are even more important doing unimportant things." (Armstrong et al. 1993, 166).

Ironically, Kaprow's own later work tended towards smaller, more intimate activities given to the exploration of ordinary happenings in a way congruent with ordinary life. As for the reciprocal, Brecht initially didn't bother much with the distinctions between

Happenings and Fluxus (Martin 1978, 91–92). Interestingly, some of Brecht's earliest performances were done in the context of Happenings.[37] However, like Cage, he later developed misgivings about Happenings. Brecht felt that some Happenings were aggressive (Martin 1978, 91–92). However, Fluxus too, at times, was also was guilty of aggression and suggestive of violence. Further, Fluxus, while often lauded as remarkably inclusive and proto-feminist, simultaneously exhibited sexism and overt misogyny.[38]

Brecht points to other differences with Happenings. Happenings tended to be presented in art galleries, Fluxus events were regularly performed in lofts. Brecht also suggests that Happenings fit better with the traditional gallery/museum structure because artists who did Happenings tended to be professional artists, while many Fluxus artists held down day jobs (Martin 1978, 116–17). Also, while most of the Happenings artists had formal art education (e.g. Allan Kaprow, Robert Whitman, Claes Oldenburg, Jim Dine, Carolee Schneemann, Red Grooms), Fluxus was more mixed in education and several prominent members had musical backgrounds (e.g. La Monte Young, Yoko Ono, Nam June Paik, Joe Jones, Phil Corner, Mieko Shiomi, Takeshisa Kosugi, Toshi Ichiyanagi, Ben Patterson, Charlotte Moorman).

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[37] According to Nyman these were: *Evening of Sound Theatre—Happenings* at the Reuben Gallery on 11 June 1960 comprised Jim Dine's *Vaudeville Act* (happening), Allan Kaprow's *Intermission Piece* (happening), Robert Whitman's *E.G.* (an opera), Brecht's *Gossoon* (a chamber event) and electronic music by Richard Maxfield. *Environments, Situations, Spaces* at the Martha Jackson Gallery between 25 May to 23, June 1961, which consisted of Brecht's *Iced Dice* (event), Dine's *Spring Cabinet* (environment), Kaprow's *Yard* (environment), Oldenburg's *The Store* (environment), Whitman's *Untitled* (environment), and W. Gaudnek's *Unlimited Dimensions* (event) (Martin 1978, 122 n.45).

[38] For more see: Kathy O'Dell's *Fluxus Feminus* (1997), Kristine Stiles' *Anomaly, Sky, Sex, and Psi in Fluxus* (2003, 60–88) and *Fluxus Feminism* (Terpenkas 2017).

Kaprow recalled, "*Events* was a word that Cage was using—borrowing from science, from physics" (Kotz 2001, 72). However, Brecht's event scores represent, in some ways, a refinement and extension of what Cage had done. Cage made sound his exclusive focus because he was a musician. He was interested in the sounds themselves. He wanted the musician to find "a way to let the sounds be themselves. And in their being themselves to open the minds of the people who made them or listened to them to other possibilities than they had previously considered. To widen their experience" (Kostelanetz 2003, 44). But Brecht thought that this separation, this exclusive valorization of sound, was artificial. He was interested in the entirety of all that happens in the single discreet event, all that might go unobserved in the busy chaos of the Happening or Cagean *Musicircus*. Brecht stated the distinction as a matter of focus:

> "The essential point about a Cage global situation is that it's an unfocused experience … whereas in the event scores the focus isn't on a global situation but on something you've noticed already. It can be pretty marginal. Bird-flight, for instance. … So I notice what's happening during the time the bird's flying. It is a matter of focus. There is no argument between what Cage does in his global situation and what I do in the events, it's just different in the focus." (Martin 1978, 118)

If musical scores defined a musical situation, Brecht's scores would conjure a multi-sensory event. In an interview with Irmeline Lebeer, Brecht recalled that Cage "was the great liberator for me," but that Cage had "at the same time … remained a musician, a composer" (Martin 1978, 83). The problem for Brecht was that he "wanted to make music that wouldn't only be for the ears" (1978, 83). For Brecht, "Music isn't just what you hear or what you listen to, but everything that happens" (1978, 83). Since events are multi-

sensory experiences they "are an extension of music" (1978, 84). Fluxus as a whole seemed like a grand experiment to see what the very borders of the music were. Further, it problematized the boundaries between art forms. It explored what Higgins called *intermedia*, a kind of intersectional art that isn't solidly a single discipline or media. Sound poetry, mail art, Happenings, sound installations, and performance art are all intermedia. Fluxus had a strong media-blurring aspect and pieces which were nominally musical compositions were likely experienced as theater by some who didn't register their musical component.

Brecht helped create what he called *incidental music*. Here, sound is produced as a byproduct of the action described in the score. Sound is no longer the result of purposeful musical action and the resulting sounds may or may not resemble music or even be intentional (accidents happen). Brecht even has an event entitled *Incidental Music*, which is a short suite of five pieces that he instructs can be performed "any number playable successively or simultaneously, in any order and combination, with one another and with other pieces" (Armstrong et al. 1993, 14). The fourth piece is a perfect example of incidental music. Dried peas or beans are dropped, one at a time, onto the piano keyboard. Each one that manages to remain on the keyboard and not fall to the floor is attached in place with a piece of tape. There is no way to predict where the peas will lodge themselves, how many peas will remain on the keyboard, and what sounds will be elicited by trying to tape them in place.

In this composition, just as in several Cage pieces, the score does not describe the sounds

to be made but rather the actions to be taken. The resultant sounds are a byproduct of the actions called for in the score. What the composer composes is *the situation* in which the actions may be perceived and experienced (because they are expected) as musical. A key difference is that Brecht doesn't call for amplification. Therefore, the scores not only create music by way of incidental sounds, but in most cases, the resulting sounds are quiet and intimate.

The Fluxus artists and Cage both shared a fascination with minute sounds. Cage was interested in what might be revealed by greatly amplifying them. I am thinking specifically of works like *Cartridge Music* (1960), *0'00"* (1962), or any of the eco-themed 1970s works such as *Child of Tree* (1975), *Branches* (1976), *Inlets* (1977), or *Pools* (1978). Cage sometimes spoke of these works as producing a *music of contingency*, that is a music that results from an "improvisation using elements in which there is a discontinuity between cause and effect" (Kostelanetz 2003, 64). However, these pieces make small sounds audible through amplification which brings them decidedly into the world of music. Many Fluxus composers, and Brecht specifically, were generally content to leave the sounds unamplified and to leave the listener guessing if they really heard anything or not. Fluxus events are often situated at the very threshold of perception. There are a few spectacular Fluxus events which immediately announce themselves as art, for example Paik Nam June's *Opera Sextronique*, but others melt into the everyday ambiance with events vaguely falling both inside and outside the boundaries of the performance and perception. In 1961, Brecht wrote a fragmentary editorial entitled *Events: Scores and other occurrences*, in which he wrote: "Sounds barely heard. Sights

barely distinguished. *Borderline* Art. (See which way it goes.) (It should be possible to miss it completely)" (Armstrong et al. 1993, 164).

As for Fluxus eschewing amplification, there were some notable exceptions. After all, "Fluxus encompasses opposites," as Brecht noted (1993, 166). A rare acousmatic Fluxus piece is Mieko Shiomi's *Shadow Piece #3* (1966), which requires eating fruit behind a screen (K. Friedman et al., n.d., 94).[39] Somewhat atypically, the eating can be amplified, which gives this event a kinship with some of the Cage pieces just mentioned. Likewise, there is Alison Knowles' famous *Nivea Cream* (1962), where performers are instructed to massage their hands covered in moisturizing cream in front of a microphone. More atypically, there are even some pieces that entirely depend on amplification such as Kosugi's *Micro 1* (1961) which instructs that the performer wrap a live microphone with a very large sheet of paper and let it unfurl for five minutes.

Returning to the barely perceptible, there is Brecht's *Solo for Violin, Viola, Cello or Contrabass* merely instructs *polishing*. Certainly, polishing will make some sounds, but the only one truly in position to clearly hear those sounds is the person polishing or someone sitting in extremely close proximity. *Comb Music* is equally soft and private and even the famous *Drip Music* would not be audible in all concert settings. These pieces constitute a kind of sonic *Arte Povera*, routine events yielding soft and ordinary sounds not usually thought to be suitable for art and unworthy of aesthetic contemplation. With

[39] Another acousmatic Fluxus piece is *In Unison* (1962) by Emmett Williams.

Brecht's work, we are also dealing with the very borderline of sound, sound as uncertain or unknowable. His *Another Weaving* simply states *fingers between fingers*, an action that barely generates any sounds at all. When asked about this in an interview in 1973, Brecht replied, "It's a question of doing something that you could hear if you force your attention and if not. … I've never tried to *give* anything. I don't make you hear, I *allow* you to hear that music is a great deal more than you pick up with your ears" (Martin 1978, 86).

Brecht's penchant for the intimate was also seen in his realization of the work of others. La Monte Young's *Composition 1960 #2* directs that the performer should build a fire in front of the audience. In his gentle reading of it, Brecht placed a saucer on a stool, and an inverted glass on top of the saucer. He then made a small pile of wooden matches and set them alight (Armstrong et al. 1993, 106–7).

This kind of quiet personal music that disappears into the ambiance was a Fluxus specialty. Recall La Monte Young's *Composition 1960 #5*, which instructs that the performer turn "a butterfly (or any number of butterflies) loose in the performance area" (Nyman 1999, 84). Shiomi's *Boundary Music* (1963) directs the performer to make "the faintest possible sound to a boundary condition whether the sound is given birth to as a sound or not. At the performance, instruments, human bodies, electronic apparatus or anything else may be used" (1993, 105). This preoccupation with the barely audible is, incidentally, one aesthetic aspect that links Fluxus with the composers of the

Wandelweiser collective.[40]

Brecht moved fluidly between many types of activities and media. Along with his event scores and Fluxus performances, Brecht continued to make visual art. His art largely consisted of odd kit-like assemblages and installations, such as *Games and Puzzles*, *Eastern Daylight Flux Time*, *Swim Puzzle*, *Exhibit 55.* Perhaps his best-known visual work is *Repository* (1961), a wall cabinet containing a pocket watch, a thermometer, rubber balls, beads, toys, plastic fruit, toothbrushes, and other objects. These were Brecht's variations and reinterpretations of Marcel Duchamp's readymades and other objects. This style of assemblage was adapted and miniaturized by Maciunas in his numerous FluxKits, FluxBoxes and Fluxus editions. All of these works are right at home alongside Duchamp's *3 Stoppages Ètalon* (1913-14), *Why Not Sneeze Rose Sélavy?* (1921), *Boîte-en-valise* (1936) or even *With Hidden Noise (Un Bruit Secret)* (1916).

Brecht's *Water Yam* was also published as the first *Fluxbox*. It was published in June 1963, in Germany, in a box designed by George Maciunas and typeset by Tomas Schmit. It originally was meant to be mass produced and sold for four dollars (Hendricks 1988, 217). It had a sleeve-like cover and contained a large number of small cards. On these cards were printed many of the now classic Brecht event scores. The events themselves,

[40] For example, Eva-Maria Houben's *I Can Fly* (2011) is for solo performer with slow sweep pure wave oscillator. In the score the sine wave event is described as "very, very soft, nearly inaudible." The solo performer is instructed to sit silently for thirty seconds. In the following thirty seconds, the performer is to play "at some time or other during this sound-period ... [a] high and very soft sound—once. The sound is so soft, that you perhaps don't recognize if it's real or within your imagination." The performer is to continually alternate these silent 30 second periods with a single barely perceptible sound for the duration of the piece.

have a readymade aspect to them as well. Brecht once described his art as a way of "ensuring that the details of everyday life, the random constellations of objects that surround us, stop going unnoticed" (Johnson 2008). Liz Kotz characterized Brecht's event score form as "a little device for cutting into the perceptual flow of this *everything that happens*" (2001, 72). George Maciunas, in a letter to Tomas Schmit, went so far as to say that public performances of event scores were unnecessary and he even predicted that they would eventually disappear:

> Fluxus is not an abstraction to do on leisure hours—it is the very non-fine-art work you do (or will eventually do). The best Fluxus "composition" is a most non personal, "ready-made" one like Brecht's "Exit"—it does not require any of us to perform it since it happens daily without any "special" performance of it. Thus our festivals will eliminate themselves (and our need to participate) when they become total readymades (like Brecht's exit). Same applies to publications & other transitional activities. (Chandler and Neumark 2005, 133)

Maciunas also wrote to Brecht to express his delight that his events often went unnoticed as musical compositions. He singled out *Piano Piece* (1962), which instructs "a vase of flowers on(to) a piano" (K. Friedman et al., n.d., 24) as just such an undetected musical delight. Objects went unnoticed in Brecht too. Brecht frequently used chairs in his art. Rauschenberg and Joseph Kosuth also, famously, incorporated chairs in their work but there are important distinctions. For example, the chair in Rauschenberg's *Pilgrim* (1960) is painted in three colors in a way that suggests that the lines in the canvas extends into the chair, thus integrating the chair into the artwork. The chair is outside the picture frame but still clearly understood as inside the boundaries of the work. One wouldn't dare sit in the chair that features in Rauschenberg's *Pilgrim*. Brecht's chairs are simple solid

colors. They could have come from the factory that way. You might actually sit in Brecht's chairs (Martin 1978, 80) not taking notice that they are part of the work. Indeed, people did actually sit in Brecht's chairs. Brecht tells an amusing story about his *Three Chair Events* when asked about his fascination with chairs.

> They interest me since they can pass unnoticed: you can't tell if they're works of art or not. One day, again in 1960 at Martha Jackson's, I showed three chairs (this was a realization of a Water Yam score, THREE CHAIR EVENTS): one black, one white, one yellow. The white one was presented under a spot light, very theatrically, like a work of art. The black chair was in the bathroom and I have the impression that no one noticed that it was a part of the exhibition. But the most beautiful event happened to the yellow chair that was outside on the side-walk in front of the gallery. When I arrived there was a very lovely woman wearing a large hat comfortably sitting in the chair and talking to friends. And do you know who that was? It was Claes Oldenburg's mother. (Martin 1978, 87)

Maciunas, in a letter to Brecht, describes these events as *non-art events* that exist all the time, or in a nod to Duchamp, *readymades events*:

> By non-art I mean anything not created by artist with intend [sic] to provide *art* experience. So, your events are non-art since you did not create the events—they exist all the time. You call attention to them. I did not mind at all that some of your events were *lost* in our festivals. The more lost or unnoticeable the more truly non-artificial they were. Very few ever thought the vase of flowers over piano was meant to be a piece & they all wanted a *piece* to follow. (Kotz 2001, 83)

In an interview with Larry Miller, George Maciunas again referred to them as readymades. Here Maciunas is clearly recalling Brecht's *Three Lamp Events*:

> Right, so that's extreme concrete. There's no illusion about it, it's not abstract. Most

> concrete is the ready-made. Now, Duchamp thought mainly about ready-made objects. John Cage extended it to ready-made sound. George Brecht extended it furthermore … well, together with Ben Vautier … into ready-made actions, everyday actions, so for instance a piece of George Brecht where he turned a light on, and off, okay? That's the piece. Turn the light on and then off. Now you do that every day, right? (Ken Friedman 1998, 191–92)

Besides *Piano Piece* and the *Three Lamp Events*, there were several other pieces that consisted of ordinary readymade events. Brecht came to prefer these to staged events such as *Time-Table Music*. In performances of Brecht pieces, we open and close windows *(Three Window Events),*[41] we answer (or not) telephones and then hang them up (*Three Telephone Events*), we sweep the floor *(Three Broom Events)*, and we variously obey and disobey no smoking signs *(No Smoking Event)*. *Instruction* asks that you turn on a radio and turn it off again upon hearing the first sound. *Three Aqueous Events* reads, Ice; Water; Steam. A common way to perform it is to heat ice until it melts and then continue to apply heat. The performance is over when all the water has evaporated. But one can also just observe that these three things are always already happening somewhere. Like many of the Ono works discussed above, simply reading the work is also a performance of it. According to Brecht, "Events in general are either a viewpoint on life or, in their more objective form, in the form of scores to be realized, notations, they are more personal and they don't even have to be performed outwardly. Some of them can be realized mentally too, also the whole emphasis seems quite different" (Martin 1978, 117).

There are many such pieces and this readymade aspect extended beyond Brecht's work.

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[41] Curiously, it is called *Three Window Events* despite actually only outlining two distinct actions.

For example, Mieko Shiomi's beautiful *Piece for Small Puddle* (1964) asks the performers to stand around and observe the water in a puddle (K. Friedman et al., n.d., 97). Alison Knowles' *Newspaper Event* (1965) uses newspapers or books in different languages as scores (K. Friedman et al., n.d., 72). Her *Shuffling Piece*, (1960) asks us to attend to the pre-existing sounds of one's upstairs neighbor's footfalls (Armstrong et al. 1993, 47). Jackson Mac Low's *Tree* Movie* (1961) asks that you to find a tree and set up and focus a movie camera on it (1993, 165).

Some of Brecht's scores are purposefully ambiguous, with several different readings possible. For example, the *Concert for Orchestra* merely states *exchanging*. It is easy to imagine what could possibly be exchanged. Instruments could be swapped. Audience and performers could change places, or scores on music stands could be exchanged. *Flute Solo* has two directions, *disassembling* and *assembling*. Presumably those directions refer to the instrument itself, which is transported in segments. Therefore, a performance of *Flute Solo* would consist of taking the flute apart and putting it back together again.

Some of Brecht's pieces are yet more perplexing. *Five Events* begins: "eating with; between two breaths" (K. Friedman et al., n.d., 24). Is the performer to eat with something or someone? Is the second event to happen in the space of two breaths, or are we merely meant to observe the moment between two breaths? It would take careful consideration to come up with a realization that would fit. *Three Piano Pieces* has just three verbs in the gerund: Standing; Sitting; Walking. The score has no subjects and no objects. This is one of the most open of Brecht's event scores as those three events can be

interpreted in a multitude of ways. Stranger still is *Two Umbrellas*. It just has the word *umbrella* printed twice on the card, suggesting any two umbrellas or any two events involving an umbrella would satisfy the score. Similarly, *Organ Piece* just indicates *organ*. *Piano Piece* confusingly specifies only *center*, which could indicate the position of the instrument or perhaps that the sound should somehow come from the middle register. Brecht's own realization of this score consisted of him playing two notes at the extremes of the piano and simultaneously moving chromatically towards the center one dyad at a time, till he reached the very center of the keyboard (Martin 1978, 85). *Thursday* just says *Thursday*, which at least suggests *when* something should occur. The strangest and most elusive scores are truly odd and suggest a dream-like logic. *Fox Trot* merely indicates *underground metal or coal* and there is also *Bach,* the entire score of which is the word *Brazil*. Speaking about this score in an interview in 1976, Brecht noted, "Sometimes the result of the score is beyond the score. It can't be deduced by what's on the card" (1978, 111).

An interesting type of event score is one that involves a kind of game where an ordinary task is made purposefully difficult in an act of estrangement. A good example of this is Brecht's *Concert for Clarinet, Fluxversion 1*, which reads:

> Clarinet is suspended by a string tied to its center so that it holds it in a horizontal position about 6 inches above the performer's mouth. Performer attempts to play a note without using his hands. He should do this either by swinging the reed end down or jumping up to it and catching the reed with his mouth. (K. Friedman et al., n.d., 253)

The instruction describes a kind of bodily *ostranenie* or a defamiliarization of an ordinary physical event. The normal act of inserting the mouthpiece in order to play the clarinet is made purposefully difficult. It becomes a challenge to do something ordinarily done routinely and without thought by clarinet players the world over. The performer is faced with a challenge and has to strategize and make a tremendous effort just to make the most rudimentary sound, which is the only sound the score actually calls for. The sound of the effort itself is likely to be greater than the sounds that result from the clarinetist finally succeeding in catching the mouthpiece.

Such a score brings to mind Butoh, which was almost exactly contemporary with the development of Fluxus and shares many significant areas of aesthetic overlap. Fluxus and Butoh both put an emphasis on the fragmentary and the messy. Additionally, like Butoh, Fluxus focuses on the physical materiality of the body and the concreteness of everyday objects and ordinary occurrences. But in Brecht's *Concert for Clarinet*, we see another important confluence with Butoh, the notion that obstacles can lead us to interesting places and reveal things to us about ordinary events and tasks by suddenly making them intentionally awkward or difficult. Butoh reveals motions such as picking up a pencil or a coffee cup as habitual, unexamined, and in a sense, invisible. Some Fluxus also defamiliarizes the movements and objects of daily life. This aspect was not unique to Brecht. For example, Kosugi's *Distance for Piano (to David Tudor)* (1965) reads:

> Performer positions himself at some distance from the piano from which he should not move. Performer does not touch piano directly by any part of his body, but may

> manipulate other objects to produce sound on piano through them. Performer produces sounds at points of piano previously determined by him. Assistants may move piano to change distance and direction to directions of the performer. (K. Friedman et al., n.d., 73)

Kosugi requires the performer to make a piano performance without actually getting near the instrument. Fluxus artists reveled at setting up obstacles to performance and tying everything up in knots, sometimes literally.[42]

It's easy to see why Fluxus was sometimes referred to as Neo-Dada. The movements share much in common. Like Dada, Fluxus was not keen on the epic, the heroic, the logical, or the neat and tidy. High seriousness was out of place in the Fluxus, absurdity and humor were in. The big budget grandiosity of productions like *9 Evenings: Theatre and Engineering* (1966) and *Experiments in Art and Technology* (1967), both of which involved Cage, Raushenberg, Robert Whitman and several of the Judson Dance Theater performers, would have been unthinkable to Fluxus artist in the early 1960s and entirely contrary to their ethos. Fluxus was decidedly low-technology, direct, and in tune with the burgeoning counterculture of the 1960s.

Fluxus was steadfast in its rejection of artificial sanctuaries of aesthetic beauty. Brecht, in discussing Duchamp noted, "If we don't make objects to please the eye . . . then music too should stop simply pleasing the ear" (Martin 1978, 82). Fluxus was an attitude, a

[42] Fluxus appeared to have fixations on certain everyday objects. Matches, hats, combs, chairs and beans appear repeatedly in Fluxus events, but string has to be the most common element. *String Piece* by Knowles, A-yo's *Exit #2*, Higgin's *Judgement for String and Brass*, Vautier's *Audience Variation No. 1*, and Kosugi's *Anima 1* all involve string.

celebration of the everyday, and an approach to ordinary life. The very power of Fluxus is in its relationship to daily life, to the common, trivial, mundane contingencies of one's existence in it all its randomness, confusion, contradiction, whimsy and boredom. Duchamp made ordinary objects strange by putting them in odd juxtapositions and in unusual contexts. Fluxus artists also understood the possibilities of taking ordinary objects and everyday occurrences and putting them in odd situations, that the usual could become unusual by having our attention drawn to it in a way that was different from the automatic and habitual. Fluxus events are about the evanescent every day, they are celebrations of the quotidian and serve as opportunities for the rediscovery of the significance of the seemingly insignificant.

The border between art and life narrowed as the content of the performance and the skills needed to execute it moved towards the commonplace. The event score became a simple medium for the playful, dryly humorous presentation of the concrete. Event scores invariably called for the use of everyday materials as props and for sound generation. Early Fluxus strengths were reduction, isolation, focus, and whimsy. Under Fluxus, art and life are meant to merge entirely and every moment of one's very existence becomes an occasion for aesthetic enjoyment. According to Maciunas,

> Rainfall is anti-art, a babble of a crowd is anti-art, a sneeze is anti-art, a flight of a butterfly, or movements of microbes are anti-art. They are beautiful and as worthy to be aware of as art itself. If man could experience the world, the concrete world surrounding him (from mathematical ideas to physical matter) in the same way he experiences art, there would be no need for art, artists and similar *nonproductive* elements. (Armstrong et al. 1993, 157)

Above all, Fluxus aimed for a total integration of art and life. In many ways it represents the culmination of this nearly century long effort to merge the two. Further, for Fluxus this wasn't merely one concern amongst many, it was the one overriding concern and the most widely shared ideal amongst the widely disparate personalities involved. As George Brecht characterized it, "Each of us had his own ideas about what Fluxus was and so much the better. That way it will take longer to bury us. For me, Fluxus was a group of people who got along with each other and who were interested in each other's work and personality"(Martin 1978, 86). In 1972 he put it similarly,

> FLUXUS is a Latin word Maciunas dug up. I never studied Latin. If it hadn't been for Maciunas nobody might ever have called it anything. We would all have gone our own ways, like the man crossing the street with his umbrella, and a woman walking a dog in another direction. We would have gone our own ways and done our own things: the only reference-point for any of this bunch of people who liked each other's works, and each other, more or less, was Maciunas. (Martin 1978, 103)

The individual artist associated with Fluxus all had their own special concerns and transgressed various boundaries in their own unique way, but the net effect of the activities of the collective was to suggest that the category of high art, art separate from ordinary people and ordinary life, should be abolished. It was a rejection of the very idea of the professional artist, of art categories, and an attempt to disrupt the traditional forms of bourgeois art. As Maciunas would later write, Fluxus should "promote living art, anti-art, promote NON-ART REALITY to be grasped by all peoples, not only critics, dilettantes and professionals" and that artists should "FUSE the cadres of cultural, social

& political revolutionaries into united front & action" (Armstrong et al. 1993, 24).

Fluxus artists circumvented conventional institutions of art in an effort to combat elitism. They worked outside the usual art establishment, bypassing the museum and the art market. They created instead their own venues for performances, exhibitions, and the sale of their work. The emphasis in Fluxus was squarely on performance as performance was understood as a means to de-commodify art. Fluxus, of course, did make art objects but the aim was to mass-produce all Fluxus objects, publications, and multiples in order to circumvent market forces and disrupt the traditional correspondence of price with autographic value, rarity, and uniqueness (1993, 34).

Fluxus's success in these goals was limited. Ultimately, Fluxus remained art and the art world survived Fluxus's efforts to snuff it out. Art emerged healthier and wealthier than ever in the corporate 1980s. But Fluxus changed the art world in important ways. It was hugely influential in its efforts to project everyday life into art, of aestheticizing the ordinary. If Fluxus artists failed in their objective to get the whole world to use their artistic sensibilities to further the enjoyment of the everyday, they at least helped subvert the heroic ideal of the grand artistic expression rooted on the mystical vision of a genius. Like their kindred spirit, Erik Satie, they also managed to do it with drollness and wit. As Willem de Ritter put it, "Fluxus' goal was the journey, but alas it became art" (1993, 14).

The Emancipation of Noise

> Sounds by themselves may be aesthetic
> —Igor Stravinsky, *Dialogues*

Futurism, as the name itself conveys, is a belief in a utopian art of the future. This new art breaks with the constraints of tradition and puts a new emphasis on formal and technological innovation. These emphases would be inherited by many subsequent modernist movements and this influence partly explains Futurism's outsized representation in histories of art and music.

However, it is important to note that these aesthetic aims were in the service of an overriding political agenda and that those politics are markedly regressive, authoritarian, and ultra-nationalistic. Futurist art was intended to be inflammatory and to incite. The Futurists aimed to promote what they saw as the modern values of speed, violence, and destruction. These principles were needed, so the Futurists believed, to overthrow the cultural institutions of Italy's anachronistic, moribund past and to wake Italy from its provincial slumber and turn it into a modern European power.

Futurism emerged as a movement with cultural and political ideals directly and inextricably linked with the rise of Italian Fascism, which was proposed as a solution to what some saw as the larger contemporary political crisis in Italy. Italy was seen to be far behind the rapidly industrializing United States and the older more established capitalist

powers, such as Britain, France, and Germany. Many in Italy, recalling the splendors of imperial Rome, thought that Italy was so far behind that the only way to catch up was through war and imperial projects that would expand Italy's national space and international power. Therefore, war should be glorified in art so that Italy could emerge as a modern, capitalist, imperial power on par with the powerful nation states of Europe.

Futurism not only echoed themes central to Fascist ideology, but helped develop the propaganda that formed the Fascists' methods for provocation and control. It promoted nationalism, militarism, and force. It had as one of its main goals, the aestheticization of power, violence, and death. Italian Futurism emerged in 1909 with the publication of "The Founding and Manifesto of Futurism" by Marinetti in the Paris daily *Le Figaro*, wherein, Marinetti heartily endorsed the glory of war, "the world's only hygiene—militarism, patriotism, the destructive gesture of freedom-bringers, beautiful ideas worth dying for, and scorn for woman" (Caws 2001, 187).

Futurism was to lead the way to a new art that would no longer serve as pleasant diversion from ordinary life but directly engage and transform it. Marinetti aimed to destroy the past and usher in a new age where art and life would no longer be separate. Traditional notions and ideals of artistic beauty were rejected, as those values were precisely the ones holding Italy back. It called for the destruction of "museums and libraries … morality, feminism … and all opportunistic and utilitarian cowardice" (2001, 187)

The Futurist project for the assimilation of art and life as the basis of a new social order appears in specifically technological terms. It celebrated all things both great and mechanical: large ships, locomotives, huge trams, roaring automobiles, shipyards, factories, and airplanes. Anything that symbolized the technological triumph of man over nature. In Futurism, the machine becomes god-like. This was to help prepare the populace for a totalitarian state where the individual is completely at the service of the state and the military. What begins as an attempt to rethink the relation between man and technology ends up fetishizing technology and power and aestheticizing violence and death. Whatever vague liberal socialist or anarchist affiliations some of the Futurists initially may have had were eventually overtaken by a complete dedication to Fascism and, ultimately, to Mussolini. Marinetti himself was a pioneering and prominent Fascist. While he eventually became critical of Mussolini, he persisted in his beliefs in Fascism and never repented.

Among the early members of the Futurist movement was a young artist named Luigi Russolo.[43] In 1913, Russolo wrote a long letter to his friend, the composer Francesco Balilla Pratella, explaining his thoughts on the subject. Later he published these in book form as *The Art of Noises*. This began with a survey of musical history that rested on the distinction between noise and sound. Russolo noted that since the Industrial Revolution, dramatic changes had taken place and the world was no longer quiet. The cities, were filled with the sounds of cars, trains, factories, and the clamoring masses. In the

[43] Russolo had political differences with Marinetti and was one of the Futurists opposed to Fascism.

countryside, the quiet disappeared as work animals gave way to tractors and threshing machines.

Russolo wrote about "the idea of sound as something in itself, as different from and independent of life ... [creating] a fantastic world superimposed on the real one, an inviolable and sacred world" (Russolo 1986, 23). It was this distinction between the fantastic and artificial world of music, and the chaotic sounds of everyday life that he hoped to eliminate. He noted "musical art sought out and obtained purity and sweetness of sound" (1986, 24), but now, he argued, it was time to "break out of this limited circle of sounds and conquer the infinite variety of noise-sounds" (1986, 25). Modern industrial life itself is noisy and every moment of our lives is accompanied by noise. Therefore, "Noise is thus familiar to our ear and has the power of immediately recalling life itself. Sound, estranged from life, always musical, something in itself, an occasion not a necessary element, has become for our ear what for the eye is a too familiar sight. Noise instead, arriving confused and irregular from the irregular confusion of life, is never revealed to us entirely and always holds innumerable surprises" (1986, 27).

Russolo invited musicians to make use of a mechanical orchestra of his design. These made noises inspired by the disorderly sounds of daily life. He aimed to provide a vast array of musical experiences, capable of enriching music with a new and unexpected "acoustical pleasures" (1986, 85–87). Shortly after writing *The Art of Noises*, Russolo began designing and building a large number of noise makers called *intonarumori*. Most of these odd instruments looked like boxes with horns for amplification, only a few

required electricity (1986, 76). The boxes each contained a complex assembly of plates, gears and strings. They produced a wide range of strange noises. His instruments included various *Howlers*, *Roarers*, *Cracklers*, *Rubbers*, *Bursters*, *Gurglers*, *Hummers*, and *Whistlers* (1986, 75–80). To this he added the already sufficiently noisy tympani, sistrum, and xylophone (1986, 82).

The emancipation of noise was the logical extension of the emancipation of dissonance and by the late 1940s, when Pierre Schaeffer began his "research into noises" at the *Club d'Essai*, the musical frame itself began to come completely apart (Palombini 1993, 14).

Schaeffer was a composer, theorist, writer, broadcaster, engineer, musicologist and acoustician. He was also a systematizer, classifier, and creator of typologies who coined many new useful analytic terms. He was also fond of complex multidimensional tables, charts and graphs. The groundbreaking nature of his work and the sheer volume of it is awe-inspiring. To these roles we should add his formidable influence as a teacher and, of course, the impact of his own work as composer and broadcaster.[44]

In Paris on October 5, 1948, (also broadcast on French Radio) Schaeffer gave the *Concert de Bruits* that including five works for phonograph (known collectively as *Cinq études de*

[44] Schaeffer's epic 700-page *Traité des Objets Musicaux* is only very recently translated (Schaeffer 2017) into English, and many of his other writings remain unavailable to those unable to read the original French. Thankfully there is Michel Chion's helpful 200-page overview and quasi-dictionary, the *Guide des objets sonores: Pierre Schaeffer et la recherche musicale* (Chion 1983), also available in a translation by John Dack and Christine North (Chion 2009).

bruits) including the now famous *Etude aux chemins de fer* (*Study of the Railroads*) (Palombini 1993, 16). While the other *Cinq études de bruits* had percussion instruments, singing, piano sounds, the *Etude aux chemins de fer* was made entirely of train sounds. One can hear the sounds of the engines, whistles, and train cars rolling on the tracks and percussively clanging over the ties. Here we have the first piece of unadulterated *musique concrète*, a composition made entirely in the studio, with recording technology, requiring no musical performers and derived exclusively from prerecorded sounds that were not typically thought of as musical material.

While magnetic tape had already been invented, it was not widely available until after the war. Magnetic tape recording was developed in Germany during the 1930s at BASF, but the first commercially available tape recorder was not released until 1946. Early *musique concrète* was done largely with shellac recorders and players (Teruggi 2007, 216), which is why the piece is quite simple but its implications are so far reaching. As French-speakers have long known, Schaeffer himself spent a long time thinking about the aesthetic and philosophical implications of what he was doing in the studio.[45]

Recording technology is not necessary for the appearance of quotidian sounds in music.

[45] It is astonishing that only very recently have some of Pierre Schaeffer's most important texts become available in English translation. English speakers had to wait until almost 2013 for the first of these (Schaeffer, North, and Dack 2012). Schaeffer is major thinker on music at midcentury and his ideas have a much wider significance beyond the history and development of electroacoustic music and music technology. His ideas also have significant applicability to music theory and the philosophy of music generally and a meaningful relevance to the study of phenomenology of sound and musical semiotics. Finally, in 2017 Pierre Schaeffer's most important theoretical work, the epic and groundbreaking *Treatise on Musical Objects* (Schaeffer 2017) has appeared in English. See (Dack and North 2006) for the special challenges in translating Schaeffer.

The sounds of everyday life can simply be performed live as John Cage did in 1959 when he created a music-theater piece called *Water Walk*, which was premiered on "Lascia o Raddoppia," a TV program televised in Milan, February 5, 1959. He made the performance from whatever ordinary materials were at hand, many of which related to water e.g. a bath tub (filled), a siphon, toy fish, a pressure cooker (which produced steam), some ice cubes (which were crushed in an electric mixer), a rubber duck, and an old-fashioned garden sprinkler. To this, Cage added a bottle of Campari bitters, five radios, a piano, a tape-machine, bells, whistles, party-poppers, a large vase of roses (which get put in the tub and watered). The score consists of a floor-plan showing the placements of objects and three pages with a timeline (each page shows one minute) with descriptions and pictographic notations of events.

As *Water Walk* was three minutes long, and every prop was used, it required precise timing and some rehearsal to perform as written. The fish, for example, starts off inside the piano, flopping its tail against the strings, and ends up swimming in the bathtub. A video survives of Cage's performance almost exactly a year later on the American game show, "I've Got a Secret," and in a testament to Cage's discipline, the performance lasts three minutes and two seconds.

So, while the quotidian does not rely on technology, as we saw with Wiggins, Cage, and even Fluxus, recording technology makes it much easier to include moments captured from everyday life in music. It is specifically the development of the tape recorder that finally creates a technological revolution equal to the aesthetic wishes of musicians such

as Russolo, Varèse, and Cage. The introduction of recording technology, first analog, then digital, is a game-changing development. Music would never be the same. The production, consumption, musical language and perception was forever altered by recording technology. As Trevor Wishart states,

> From the final quarter of the twentieth century, it now seems clear that the central watershed in changing our view of what constitutes music has more to do with the inventions of sound recording and then sound processing and synthesis than with any specific development within the language of music itself. … Computer technology offering us the most detailed control of the internal parameters of sounds, not only fulfills the original dream of early electronic music—to be able to sculpt all aspects of sound—but also makes the original categoric distinctions separating music from text-sound and landscape-based art forms invalid. We can no longer draw these lines of division. (Wishart and Emmerson 1996, 5)

As we can see from all our examples above, from Wiggins to Cage, from Duchamp to Pop Art, the quotidian was making a full-scale invasion into art. Collage enabled the artist to incorporate reality into the art work without having to create an illusion. Art now accommodated real objects rather than imitations or illusions of the real. As for music, the game would change entirely as the nearly the whole universe of sound was now available to musicians and composers. Noise and other traditionally non-musical sounds began to appear in musical compositions. Further, recording technology made it certain that whatever music had been in the thousands of years previous, it was going to be something very different from this point on. More than ever artists made perception itself a primary subject in their work and listening became the central issue to explore in music.

Reduced Listening

> After abstract serial music, I already said that I wanted to draw on the dialectic of the everyday. Like Rauschenberg, I wanted to bend down and pick up a 'tin-can' with my microphone
>
> —Luc Ferrari

Pierre Schaeffer was not only the pioneer of *musique concrète*, he was its first major theorist and an its most important teacher. It is difficult to overstate the importance of his contributions and his general importance to French music and music theory at mid-century. Central to his theoretical and compositional approach was his notion of the *acousmatic* and the related practice of *reduced listening*, and his concept of the *sound object*. Schaeffer's ideas were explored in some two dozen compositions and in the thousands of pages he wrote in numerous books, articles and essays including the epic *Traité des Objets Musicaux* (*Treatise on Musical Objects*) where these concepts, and many others, are explored in detail (Schaeffer 1998). Any brief distillation will be simplified and incomplete, but I will give an overview of a few essential concepts necessary for the present discussion.

First is the term *musique concrète* itself. Schaeffer, taking his cue from phenomenology, often employed terminology in opposing pairs. In Western classical music, typically the composition exists as an abstract conception, an imperfectly notated score, to be realized in performance. With the term *concrète*, Schaeffer wanted to emphasize that the new music was now made of actual sounds from which abstractions were subsequently made. Serialism, an abstract music if there ever was one, and the accompanying penchant for

pre-compositional planning were in ascent at this moment. Perhaps Schaeffer had this in mind too. Nevertheless, the general idea was that in western classical music compositions were thought to be abstractions rendered *concrete*. Schaeffer was accentuating that the new technology meant that music could now operate in the opposite direction, starting from actual sounds then moving on to compositional abstraction.

The term *acousmatic* refers to the separation of the sound from any visual information, any physical event or gesture that might have elicited or initially accompanied that sound. In short, *acousmatic* refers to listening without seeing. This is opposed to what Schaffer calls *direct listening (écoute directe)*, which is the routine situation for music pre-twentieth century, where the sound source is ordinarily present and typically visible to the perceiver.

Direct listening is what Michel Chion calls *visualized sound* in his own important treatise on sound *Audio-Vision* (Chion and Gorbman 1994, 72).[46] Logically, the *acousmatic* situation is what obtains when sound is broadcast over the radio or sound is recorded and subsequently replayed. Strictly speaking, telephone conversations are also *acousmatic*. Modern broadcasting allows a person to hear a physically remote sonic event. Further, recorded sound is split in both time and space from the event which caused it. At the time

[46] Michel Chion was one of the musicians to elaborate on Schaeffarian theories and methods. Chion also worked for the ORTF (French Radio and Television Organization) in the *Service de la Recherche* and was an assistant to Pierre Schaeffer in 1970. Besides being a composer, Chion's special area of interest is in film sound and audio-visual relationships. He has written a number of books and essays expounding his theories of the interaction between sound and image within the medium of film. His own listening theory included casual listening, semantic listening, and reduced listening (Chion and Gorbman 1994, 25–34).

of playback, the physical event that produced the sound is no longer visible to us and no longer occurring. The sound is asynchronous. Mentally we still might make associations with the resultant sound or we might imagine the physical events that caused the sound, but all visual cues have been stripped away.

Accustomed as we are to the current state of media development, we don't ordinarily contemplate this situation. However, at the earlier part of the twentieth century this temporally asynchronous way of experiencing sound was novel. It is telling that Schaeffer was not only a musician and theorist but also an audio engineer and broadcaster. The profound effect recording and broadcast technology had on the relationship we have to sound, music, and to listening, was a key era of scrutiny for him.

Schaeffer believed that *acousmatic* sound enabled perceivers to more easily and fully suspend habitual listing practices. He thought it would aid listeners to achieve an enhanced focus on the sound's inherent characteristics and morphology through a practice called *écoute réduite* or *reduced listening*. Even in the case of *acousmatic* sound, a listener might imagine the source of the sound or ponder its origin or meaning. Another step was required beyond making the source of the sound invisible. *Reduced listening* is attending to the sound for its own sake and dissociating the sound, mentally, from its possible origins and associations. This is what phenomenologists (and Schaeffer) called *epoché*. Epoché (literally "suspension") is an ancient Greek term used in philosophy and is typically translated as *suspension of judgment*. The German philosopher Edmund Husserl made the concept of epoché a key part of his newly established philosophy of

phenomenology, which is, in short, the study of the structures of the experience of self. Husserl expounded on the concept in many of his writings but a good overview is provided in his *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy* (Husserl 1982, 60–62).

In phenomenology, epoché (or bracketing) is a process which involves blocking predispositions and assumptions in order to understand a phenomenon according to its own inherent system of meaning. Through phenomenological reduction, the perceiver is able to suspend judgment regarding the general or naive philosophical belief in the existence of the external world, and thus examine phenomena as they are originally given to consciousness. Husserl argued that this was a general predisposition one must adopt before commencing phenomenological study, that one must take systematic steps to set aside various assumptions and beliefs about a phenomenon in order to examine how the phenomenon presents itself in the consciousness of the perceiver.

It is easy to see how these ideas from phenomenology could further the perceptual goals of Schaeffer and the musique concrète composers with their fixation on acousmatic sound. This phenomenological reduction or a bracketing out of information and a suspension of judgment about a sonic event and its cause might afford listeners a better focus on perceived properties of the sound itself. Reduced listening is, in essence, Husserl's concept applied specifically to music. This was the step beyond the acousmatic that Schaeffer required to make his theories on listening complete. Schaeffer believed that a listening practice based on reduced listening would allow the listener to hear the sound

with fresh ears. The audient would be better equipped to focus in on the physical character of the sound so as to better appreciate the timbral qualities of the sound itself.

With this further phenomenological reduction, Schaeffer's aim was to disconnect the sound not only from all visual cues but all cultural or psychological referents as well. This means attending to the sound entirely as an aesthetic object of contemplation, what Schaeffer termed the *sound object*. *Sounds object* is a bit tricky to define but it is close to what cognitive psychologists call a *gestalt*. The *sound object*, is therefore the obverse of *reduced listening*, it is the outcome, the coherent sonic entity that is reached through the practice of *reduced listening*.

Reduced listening was opposed to *écoute naturelle* or *natural listing* in which the listener is cognizant of the event that elicits sound. Schaeffer had an elaborate theory about listening with four different listening modes which were divided into a four-square matrix. I refer to the reader to Brian Kane's work for a detailed exploration of these fascinating ideas (2007). But in brief, Schaeffer, following the phenomenologists, was asking some of the most fundamental questions that audio technology presents us: How do we listen? What exactly is it we attend to? What is the nature of perception itself?

This is only a sample of Schaeffer's extensive ideas on listening but as you can already see these concepts intersect with contemporary theories in cognitive psychology, phenomenology, semiotics, and several other disciplines. But even from the number of concepts introduced here you can see that, in essence, it is a theory of listening in the

service of a defamiliarization of perception. The Duchampian notion of creating a *new thought for a familiar object* is not entirely dissimilar to Pierre Schaeffer's concept of reduced listening. The composer uses recording technology to change the context of a quotidian sound and assists the perceiver in hearing the sound anew.

Facture

For Schaeffer, information about the sound source was irrelevant as he was only interested in the actual qualities of the resulting sound. Still, he recognized that some electroacoustic sounds closely mimic real-world acoustic instrumental sounds, while other sounds were truly new as these sounds are producible only through electronic means and were unlike sounds experienced routinely in the non-electronic world. To help distinguish sounds that are more spectromorphologically[47] akin to typical musical sounds from the new and unusual electronically produced sounds he coined the term *facture*. This Schaefferian concept is relevant to our discussion of embodiment and may help us to distinguish new types of sounds introduced to us post-electricity.

Schaeffer calls the ability to perceive or imagine some aspects of the original sound producing agent or process in the resulting sound object facture.[48] The notion of *facture*

[47] I will discuss some of Smalley's ideas in detail in a subsequent section but briefly, the term spectromorphology, coined by Denis Smalley, is a combination of the terms *spectra* and *morphology* and refers to the way that a sound event unfolds in time.
[48] The concept of facture has much overlap with Wishart's notion of *landscape*. Wishart defines *landscape* as "the source from which we *imagine* sounds to come" (Wishart and Emmerson 1996, 136)

can be a little difficult to fully grasp because it does not entirely or exclusively depend on source recognition. *Facture* might be more accurately thought of as our perception of how we *think* a sound object *could* have been created, regardless of whether it was actually made that way or not. Simple plucked guitar sounds have *facture* and sampled plucked guitar sounds have *facture*, and so too does a reasonably life-like plucked string virtual model sound, such as produced by Karplus-Strong algorithm even though these sounds are synthetic and no actual string was struck. A good test for discerning whether or not a sound has *facture* is the *-like* construct. If you can describe a sound as being *flute-like*, or *drum-like*, or *guitar-like*, for example, then that sound likely exhibits *facture*.

Conversely, a recorded instrumental sound might be so heavily processed or unconventionally produced that you are not be able to discern anything about the source even thought there was a physical source at the root of that sound. For example, you might experience a sound in a tabletop guitar performance by Keith Rowe that is completely unfamiliar to you. Since you can't specifically identify the source of the sound, you are more likely to experience that sound intrinsically. This is especially true if, in addition to the sound being alien to you, the motion which produced the sound is hidden from view or too small to be seen (for example scrapping a guitar transducer with a small file). Therefore, sounds that do not exhibit *facture* typically occur in situations where the sound source is unclear, or where the resulting sound object is or seems physically source-less or unfamiliar, such as a sound made from a virtual instrument design in a software synthesis programming language. However, if the virtual instrument produces sounds that have a characteristic attack and decay pattern and sounds as if it could have

been made with a real-world physical source, even if no physical analog exists,[49] it will have *facture*. Usually, if a sound has no *facture*, it will often be a sound of great harmonic or spectral complexity, unpredictability, or length. These are sounds which are less likely to be experienced in the natural world.

A somewhat contradictory example would be a test-tone sine oscillator. Sine tones also can seem unnatural. While many quasi-sine tone-like sounds exist in nature, a pure elongated sine tone without modulation, noise, and with constant amplitude exists only as an electroacoustic sound. Long sine tones are like the sonic equivalent of a laser beam, pure and perfectly straight (without modulation). In Schaefferian terms, sine tones do not have *grain* or *allure,* in addition to having the lowest possible *mass* of any sound. *Mass* is Schaeffer's generalization of pitch space, or how that space is filled with spectral energy. A look at the two extremes, spectrally speaking, will be enough to make this notion clear. A sound object with the least *mass* is a sine tone since it has the thinnest occupation of the pitch space, with just a single spectral component. At the opposite extreme is broadband white noise.[50] This is the sound with the most *mass*, having equal intensity at different frequencies yielding constant power spectral density. Therefore, *mass* might be thought of as defining how packed with energy the audible spectral region is, or, more simply, *spectral density*. *Allure* is what Schaeffer calls the "signature of the facture" (Schaeffer

[49] For example, a physical model of an oboe with a trumpet mouthpiece, and a trombone slide instead of keys.

[50] The bandwidth of white noise is limited by the mechanism of noise generation and by the finite human observation capabilities. By broadband noise, I mean white noise with a bandwidth within the range of hearing (audible sound frequencies between 20 and 20,000 Hz). Infinite bandwidth white noise signal is obviously a theoretical construction (and would have infinite spectral mass).

1998, 550–51), which refers to the small oscillations and variations of vibrato or other modulations that are a part of a sound. *Grain* refers to the small-scale irregularities in the surface of the sounds such as heard on a bow drawn on a string (especially if done loud and slow). Grain and Allure are often talked about together and feature prominently in the discussion of sustained sounds.

Sounds that have a limited time span can more easily show *facture* but extremely short individual mircosounds, as produced by granular synthesis, often do not. Sustained synthesizer timbres that continue on for several minutes do not have *facture*. Sounds made by real instruments, real physical systems will tend to have a specific natural range of duration. You put energy into a physical system to make it vibrate and then the sound will die away as the energy dissipates. Wind players will run out of breath and string instruments run out of bow. Struck or plucked instruments die away due to damping, the ordinary loss of energy from internal heat transfer, plasticity, and external absorption of energy. There is a certain natural durational limit to all these sounds but a solenoid or oscillator will continue to run until it is unplugged or fails.

If a very long sustained sound continues much past the duration of a human breath (or bow, or pluck, etc.) and it is not re-articulated, that sound may begin to seem alien to us as it is divorced from our bodily experience of producing sound. Hence the disconcerted feeling some experience while listening to a performance that involves circular breathing. Very long sounds, such as slowly evolving drones, are idiomatic to electro-acoustic music, which is almost uniquely able to produce them. They contribute to a listening experience

less frequently encountered in music previously (the organ is a notable exception). Interestingly, as the attack of onset recedes in memory, our focus shifts to the harmonic content of the sustained portion of a tone. We have time to contemplate, in a way which we would not with a shorter sound with a fast decay such as plucked string or piano-like sounds. One can try to focus on the evolution of a slowly decaying piano sound and learn to hear the unfolding beauty and complexity that occurs, but in ordinary moments in, say, a sonata or rag, we don't usually have time to shift our attention to the sustain before the next note attack occurs. The attack portions are likely to be the most salient in our minds and get cognitively grouped together as aggregates and phrases. Such shorter sounds in the context of busier textures go by so quickly that we are more likely to experience them much more as single holistic events (as "notes"). However, it is hard to experience a single sound holistically if it continues for several minutes, as it does in much of Éliane Radigue's synthesizer music for example. Therefore, this type of slowly evolving uninterrupted music does not exhibit much *facture*.

Sounds that do not have *facture* are often featured in science fiction films, for the obvious reason that they can seem unearthly, alien, and inhuman. Electroacoustic sounds are featured widely in mystery and science fiction films, such as the classic all electronic score for *Forbidden Planet* (1956) by Bebe and Louis Barron. The otherworldly Theremin is featured in Alfred Hitchcock's *Spellbound* (1945), and also famously used in the 1951 film *The Day the Earth Stood Still* to evoke alien soundscapes.

Characteristics of sound such as *facture*, *allure,* and *grain* are fascinating because they are

the subtle cues that are, perhaps along with various predilections, the very things that might be used to describe a musician's personhood or their signature sound. I will address issues of musical personality more fully in a subsequent section, but these characteristics help associate the resultant sound to the body that made it, for example the characteristic vocal fry of a country singer is a good example of what Schaeffer calls *grain*. Vocal fry is a low gritty vocal attack produced through a loose glottal closure that permits air to sneak through slowly with a gritty, abrasive sound of low frequency. During this phonation, the arytenoid cartilages in the larynx are drawn together, which causes the vocal folds to compress. This process forms a large and irregularly vibrating mass within the vocal folds that produces the characteristic low gritty sound when air passes through the glottal closure. Every singer has a characteristic way of producing vocal fry, and some, most opera singers, for example, eschew it entirely. Therefore, the presence and characteristic of the vocal fry is part of the signature sound of the singer.

I grew up playing the guitar. A common musical gesture on the guitar is the upward bend. I was always fascinated by how different everyone's upward bend was. Some had a stopping point just past the point where the note was *in tune*, or perhaps just below that point. Some players had a late-breaking bend and some began their bend immediately after the attack. This upward bend is often followed by a vibrato, so enjoyable to make against the increased tension of the string. Some players employ a subtle late-breaking gentle wiggle, others have a wider vibrato. Just as everyone's voice is unique and signature is different, every player had a signature style of vibrato or attack or a preference for a type of bend and that becomes part of that person's sound. This is part of what Schaeffer

calls *allure*.

Sounds without *facture*, without *grain*, without *allure* are non-body sounds and often do not exhibit this personal signature. What would an fMRI imagine study reveal? Do we attend to these sounds with facture differently than we do to fully embodied sounds? Does our mirror neuron system engage more if the sounds are fully acoustic embodied sounds than electronic virtual models? Do sounds with facture engage us differently? Does a virtual string model elicit a different reaction than a bank of filtered noise bands? Do we attend to embodied sounds and non-body sounds differently?

The Return of the Repressed

> We should keep gramophone records as we keep photographs.
> —Graham Greene

But by the late 1960s a conflict had emerged. An alternative to Pierre Schaeffer's ideas was suggested by Luc Ferrari's composition *Presque Rien ou le Lever du jour au bord de la mer* ("Almost nothing, or daybreak at the seashore") (1967–70).[51] *Presque Rien* was made from a day-long recording of a beach of the Adriatic Sea in the town of Vela Luka on the island of Korčula (then part of Socialist Federal Republic of Yugoslavia, today the island is

[51] There are any number of ways this piece is referred to and capitalized. Sometimes with the number and a subtitle clause and sometimes as a single string, occasionally also just *Presque Rien No.1*. Ferrari himself can't seem to decide on precisely what this piece should be called. As the full title is so long, I will just refer to the work as *Presque Rien*, though there were other works in what became a series of that name, here I am only referring to the first piece entitled *Presque Rien*.

at the very southern tip of Croatia) in the summer of 1968. Ferrari positioned his microphones outside a window of his home and captured the sounds of everyday life in the fishing village around him. Ferrari noted that, "I consider the moment of recording as a creative act in its own right, since I choose what is significant through a process of auditory attentiveness" (Caux et al. 2012, 81).

These tapes were then edited down to just over twenty minutes to create an "electroacoustic nature photograph" (Adlington 2009, 153) of a typical morning in Vela Luka. The edits are well concealed and no other audio processing is readily apparent to the listener. Ferrari knew this way of working was antithetical to the common studio practice at the time, noting that *Presque Rien,* "Indeed marks the break from classical electro-acoustic practices. Even more so than what, following *Hètèrozygote*, would be called *anecdotal music*, this piece clearly establishes the long take and the fixed sound image—a sort of snapshot that makes a portion of reality audible—as working methods and means of freeing oneself from the routine ways of doing" (Caux et al. 2012, 154).

By making his title so plain and by leaving his sound sources so bare and untreated, he was transgressing the norms and practices of the emerging musique concrète canon, a body of work he had no small hand in helping to establish. In 1958, Ferrari co-founded the *Groupe de Recherches Musicales* with Pierre Schaeffer and François-Bernard Mâche. Ferrari worked alongside Schaeffer from 1958 to 1966 and was also an assistant to that other trailblazing figure of musique concrète, Pierre Henry (2012, 27). Ferrari is, himself, generally identified as a central figure in the history of French musique concrète. The

aesthetic suggested by *Presque Rien*, however is completely opposed to the one outlined by Schaeffer. Ferrari notes that,

> With the early experiments in musique concrète, we would take sounds from the studios—piano, bits of metal, etc.—and treat them as if they were notes. As soon as I walked out of the studio with the microphone and the tape recorder, the sounds I would capture came from another reality. I listened to all these elements that I had collected outdoors and I thought these sounds developed a discourse that had something to do with narration. There was no name for this kind of music so I said: "that's *anecdotal* music." (2012, 129)

As Eric Drott points out in his article *The Politics of Presque Rien,* "By presenting clearly recognizable sounds, which have undergone little if any overt alteration, the piece marks what Michel Chion and Guy Reibel describe as a *return of the repressed*. Audible traces of reality, hitherto barred from *musique concrète*, are encountered at every turn in *Presque rien*" (Adlington 2009, 146). Ferrari stated that he wanted to "bring something from the everyday into the music world, to use specific, evocative moments, to shatter the confines of abstraction—that was extravagant" (Caux et al. 2012, 130). As noted, one of the initial goals of musique concrète was to construct abstractions from the sounds around us so the idea of shattering abstraction was diametrically opposed had been going on at the *Groupe de Recherches Musicales*.

Drott cites, and helpfully translates, a record review of Jean-Michel Damian which quotes Ferrari's reasoning for the renouncement of sophisticated studio manipulation, "My intention was to pave the way for amateur *concrète* music much as people take snapshots during vacations" and that the kind of listening the piece calls for is what Ferrari called

pop listening (Adlington 2009, 154). Damian notes that the word *pop* reflects Ferrari's hope that, "there isn't a need for any intellectual baggage to appreciate this music" (2009, 154). *Pop* listening is, in this sense, posited as an "*anti-cultural* form of listening" (2009, 154). According to Damian this means that in order "to enjoy it one need not situate oneself with reference to learned concepts or knowledge. The only culture required is that which each person possesses: the capacity to recall his own memories" (Adlington 2009, 154).[52] Drott also argues that Ferrari's stance was both aesthetic *and* political. Ferrari, in an interview with Jacqueline Caux has said as much:

> Creators and artists don't live outside of society. Their history unfolds in the thick of the most brutal, terrible but also the most joyful events. The great adventure of the spontaneous revolutionary movements of the 1960s was to take part in a social experiment, in a situation where we knew that women didn't have a voice, that homosexuals demanded to lead a normal life. We knew about Vietnam, etc. My own role was to join in this experiment by contributing my thoughts, my perception. We acted as a barometer for the spirit of the time. The act of capturing ordinary, everyday events on a tape recorder, before editing them as something brought out of anonymity, seemed incredibly important. (Caux et al. 2012, 48)

Since mid-century, there has been an ongoing discussion about the very nature of listening. This debate was brought on, largely, by dramatic changes in music technology. Was Pierre Schaeffer correct? Should we try to attend to sound entirely as object? Should

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[52] Here, I am reporting, but the idea that there is an entirely *anti-cultural form of listening* that needn't reference any *learned concepts or knowledge* is problematic. Further, it is contradicted by the idea that the only requirement for comprehension of the work is one's *capacity to recall his own memories* as learned conceptions and knowledge are not separate from memory. The problem stems from stating it as an absolute. Likely, Ferrari's goal was to create a mode of musical production that relies significantly less on the deciphering of cultural codes and doesn't require a reference to aesthetic, historic, or stylistic contexts, what Bourdieu called *lowering the level of emission* (Bourdieu and Johnson 1993, 225). This still allows for the listener who does possess knowledge of such contexts to apply that to their understanding of the work.

we all be practicing *reduced listening*?

Because nothing is written in a vacuum, there are always connections to other semiotic systems external to the text at hand. One text's meaning is shaped by other texts with which we are in a continual dialogue. The term *intertextuality* refers to the interconnections that are latent in any text. This term, introduced by Julia Kristeva (1980) in her essays, "Word, Dialogue and Novel" and "The Bounded Text," was meant to address what she saw as a shortcoming of structural analysis: a tendency to treat individual texts as isolated and closed entities. Kristeva posited two axes, the horizontal, which connects the author to the reader, and the vertical, which connects the texts to other texts.

Intertextuality goes far beyond traditional notions of sources and influences for a particular work. It asserts that all signifying systems are constituted by the manner in which they transform earlier signifying systems, problematizing the Romantic notions of creativity, originality, and individualism (Kristeva 1980). The notion of intertextuality supports the idea that a meaning of a text does not reside in it, but is produced by the reader in relation not only to the text in question, but also in relation to a complex network of texts invoked in the reading process (Barthes 1977, 142–48).

Since a text is any system of signs, it makes sense that music can be understood as intertextual as well. Georgina Born (1995, 16-23) in *Rationalizing Culture*, makes the case for a social semiotics of music. She draws upon several other works of scholarship and she

makes the most succinct case. Born provides an excellent summery of the issues involved. She points to Weber (1958), Shepard et al. (1977), Shepard (1982), and in particular Tagg (1982; 2000) and Bradby and Torode (1984) as studies that suggest that the "operation of meaning cannot be ascribed simply to the musical sounds or system alone," and that the aforementioned studies "suggest the need for a more complex analysis of musical meaning as conveyed through the ensemble of mediations surrounding the sound" (Born 1995, 16).

Born credits the pioneering work of Dave Laing (1985) in particular with its "close reading of the intricate mediations and associations of punk" as expanding the semiotic frame to "the practices, social and institutional forms, the political economy of punk; by relating its internal signification to wider historical forces; and by analyzing the place of intertextual bricolage in the process of signification" (Born 1995, 16). The key to Born's social semiotics of music is the inclusion of two important semiotic concepts: multitextuality, "the analysis of meaning as operating through mainly simultaneous, juxtaposed, and interrelated forms of mediations," (1995, 16–17) and intertextuality, "the idea that meaning is created by signs referencing other cultural realms through connotation" (1995, 17).

Born argues that musical sound is culture, and therefore, multitextual and is therefore mediated by the "aural, visual-textual, technological, social" (1995, 17). However, she also notes that music is a relatively empty sign. Musical sound is "alogogenic, unrelated to language, non-artifact, having no physical existence, and nonrepresentational. It is self-

referential, aural abstraction" (1995, 17). In semotic terms, the signifier and signified are disconnected (sometimes called *floating*) and the signifier is vague and highly variable. This is why so many musical sounds elicit such widely varied responses to the question of meaning. Such empty signs mean different things to different people: they may stand for many possible signifieds and they might mean whatever their commentators might imagine or desire. It is this bare core which "must be the start of any sociocultural understanding of music, since only then can one build up an analysis of its social and cultural mediation" (1995, 19). Music "denotes nothing other than its musical expressivity as part of a specific genre. It calls to mind only its difference from other possible expressions within that aesthetic," however it is "at the level of connotation that music is particularly subject to extramusical meanings"(1995, 19).

The "signifieds that music connotes are many kinds: visual, sensual, emotional, and intellectual" and all "can combine into fields of discourse" around music (1995, 19). "The relation of these extramusical connotations to music as signifier is cultural and historical" Born notes, but these connotations are projected into the sound object creating what Born calls a "naturalizing" effect and the "connotations appear natural and universal, when they are conventional" (1995, 19).

It is precisely this register of connotative meaning that Schaeffer wants you to endeavor to suppress and that Luc Ferrari hopes to exploit. If you believe music is ultimately intertextual and is mediated by many levels of meaning and experience, you are not going to get on board with Schaeffer's reduced listening regimen. Born herself doesn't step into

the debate on listening but provides clues about where she sides: "The point is that, since meaning inheres in the social, theoretical, technological, and visual mediations of music as well as in the musical sound, and since these all play a part in the construction of musical sound, we should consider the musical object as subsuming these mediations. From this perspective, the social, theoretical, and so on are all constitutive of the object, and the *music itself* no longer stands as the only arbiter of meaning" (1995, 23).

Gesture and Surrogacy

One of the problems of Wishart's brilliant, if cranky and idiosyncratic text *On Sonic Art*, which I have quoted from several times, is that it relies greatly on an intuitive and vaguely defined notion of gesture.[53] Moreover, musical gesture is probably the key notion for the whole first half of his text (the second part of the text largely explores his concept of *landscape*). Since Wishart's text was written, gesture in music has become much more widely explored topic, with recent insights from enactive and embodied music cognition studies developing our understanding substantially. Since I continue to use the term *gesture*, I should discuss what the term signifies, if even in a somewhat simplified way. This is a very large topic. I refer the reader to *Musical gestures: Sound, Movement, and*

[53] His limited and idiosyncratic definition is "gesture is essentially an articulation of the continuum" (Wishart and Emmerson 1996, 17). By continuum, he means that the gesture is not constrained by what he calls the lattice, the rigid, finite, quantized, and discrete steps of equal temperament combined with the rhythmic constraints of additive rhythm in a strict metric structure. Gesture here is a complex and inflected morphology as opposed to the kind of music that is easily notated and tethered to lattice points, say, in a MIDI sequencer. A Bach two-part invention would be relatively easy to notate and sequence, while a traditional Korean daegeum (a large bamboo transverse flute) performance is nearly impossible, being too heavily inflected and rhythmically free to capture in notation or in a sequencer.

Meaning by Godøy and Leman (2010) for a thorough introductory discussion of gesture in music. The second chapter is an extensive and detailed overview of more recent developments in this area.

When discussing gesture, we are confronted with some difficulties at the outset, as the concept of gesture applies both to the sonic event (a sounding gestalt in the music) and the bodily movement (hand and arm motion, for example) that produced it. This is because for most of human history sonic gestures in music typically reflected the physical gestures that produced them. This is just the body-sound link that computer music so often disrupts. This semantic difficulty is addressed in Godøy and Leman (2010, 12): "Given the different contexts in which gestures appear, and their close relationship to movement and meaning, one may be tempted to say that the notion of gesture is too broad, ill-defined, and perhaps too vague. Yet the use of this notion is very convenient in modern music research because it builds a bridge between movement and meaning."

We generally can think of musical gestures as being body movement that is temporally synchronous with a sounding musical event. However, we say gesture rather than movement because:

> The notion of gesture somehow blurs the distinction between movement and meaning. Movement denotes physical displacement of an object in space, whereas meaning denotes the mental activation of an experience. The notion of gesture somehow covers both aspects and therefore bypasses the Cartesian divide between matter and mind. In that sense, the notion of gesture provides a tool that allows a more straightforward crossing of the traditional boundary between the physical and the mental world. (2010, 13)

The crossing of this boundary is at the core of embodiment and is key to the concept of the enactive approach to cognition. The literature on gesture suggests a complex taxonomy of gestural components and categories of gestures and various definitions. Briefly, gesture is some movement coupled with meaning or expression. That gesture can be either a sounding gesture or a physical gesture and can be a gesture that produces sounds or can even encompass gestures of the perceivers of the sounds (listeners, dancers, and conductors). Those types of gestures can be divided further into categories, for example musicians make sonic gestures but they also make communicative gestures (cues and nods, for example).

Gesture is more than a morphology containing spatial and temporal change, it is more than a mere change of space or action. Gesture indicates a movement that is expressive or meaningful. Traditionally, actions of musical performers were clear gestures, but electroacoustic music production problematizes this because turning a knob or pushing a button is not much of a gesture. It carries no specific meaning or expression. The motions are so small as to be ordinarily invisible to anyone but the person actually turning the potentiometer or pushing the actuator. Yet these small movements can produce extraordinarily large sonic results in sheer volume, spectral density, duration, and so on. One press of a button might trigger an algorithm that lasts for the lifetime of the machine. Laptop music is typically gesturally impoverished, and while live laptop performance has many virtues, the thrill of watching someone hit a few keys on the qwerty keyboard is not one of them.

Denis Smalley's notion of *spectromorphology* builds upon Schaeffer's ideas for describing and classifying sounds but using his own categories and new terminology, including some useful concepts for categorizing gesture. Spectromorphology is the study of sounds as they unfold temporally and how their motion and energy have both a sonic reality and a related evocative reality (Smalley 1997, 110). It is, in essence, the *sound shape*, the topology and morphology of the sound spectra. This single notion has been expanded by Smalley to become a "collection of tools for describing sound shapes, structures, and relationships, and for thinking about certain semiotic aspects—potentially analysis of a kind" (Harley 2011, 95). Here, presumably, *analysis* doesn't just mean formal analysis but includes phenomenological description and deep consideration of listening practices and experiences. Like Schaeffer, Smalley recognized that a musical moment is not a closed and autonomous artifact (though Schaeffer thought it could be with reduced listening). Smalley acknowledges that understanding relies on relationships with a wide range of experiences external to the work. Smalley grants that music is intertextual and mediated and he asserts that an extrinsic foundation in culture is necessary so that the music can have meaning (Smalley 1997, 110).

A helpful expansion of the concept of *facture*, is Denis Smalley's notion of *gestural surrogacy*. Smalley describes gesture as a sound that is elicited by a human agent through physical force (applying energy to a sounding body) to produce various musical or spectromorphological qualities (1997, 111). He calls this linkage between physical motion and sounding result, the *energy-motion trajectory* (1997, 111). Since the sounding

gesture, the gestalt, is usually related to the physical gesture that produced it, listeners try to decode the source based on the spectromorphological qualities of the sound produced. Occasionally, there isn't an identifiable source because of the processing of the sound by the composer. This sounds, thus far, much like Schaeffer's *facture* but Smaller adds several new twists. He identifies various possible levels of disconnect between physical exertion and the resulting musical gesture. He calls this concept *gestural surrogacy* and outlines four orders, or degrees, of surrogacy within electroacoustic music (1997, 112).

Smalley calls the tendency to relate a perceived sound to an imagined physical source or cause, and how this is influenced by extrinsic socio-cultural associations, *source bonding*. *Source bonding* can also refer to the tendency for listeners to relate these sounds to each other as if they had shared and associated origins (1997, 110). What makes this *source bonding* so problematic in electroacoustic music is the question of "discourse stability and variability" (Smalley 1994, 43). According to Smalley, the "timbral level in traditional note-based music is quite simple. The note is the lowest level and is articulated by an instrumental source. Form develops from note articulations. In electroacoustic music continuing contexts resist and deny low-level segmentation. Thus, once timbral level ceases to be clear-cut we cannot separate timbre and discourse: timbral attributes become woven into the spectromorphological fabric" (1994, 43). The difficulty in separation is due to the fusing of the various timbral levels. Smalley's theory of sound surrogacy is, in essence, about the identification of sound sources and how clear they are to the perceiver.

First-order surrogacy can include recordings of everyday activities that are not usually

intended for musical use, as they "can never achieve full cultural, instrumental status" (Smalley 1997, 112). Additionally, in order for a sound to be considered first-order, listeners must able to apprehend the source of the sound (the type of material). This is not a completely clear or adequate definition, and while it becomes somewhat clearer in relation to the other orders, several questions remain: Does this category essentially cover field recordings? What is the role of the human agent in this category? It seems key here that Smalley is talking about sound that has not been subject to "*instrumentalisation* or incorporation into a musical activity or structure" (1997, 112). I understand this order as applying to any capture of unprocessed sound such as the capture of the rain on a tin roof or the waves crashing on the beach.

Second-order surrogacy concerns traditional instrumental gesture, where "recognizable performance skill has been used to develop an extensive registral articulatory play" (1997, 112). Simulations of such sounds are also included in this category because Smalley's emphasis is on listener perception. Guitar riffs fit in this category, as do guitar riffs programmed on a physical model and guitar riffs played on a MIDI keyboard. Much like the definition of *facture,* what counts is how the listener perceives the sound *could* have been made, not if it was actually produced that way.

Third-order surrogacy refers to uncertainty in *source bonding*. Here we may be "unsure about the reality of either the source or the cause, or both. We may not be sure about how the sound was made to behave as it does, what the sounding material might be, or perhaps about the energy–motion trajectory involved" (1997, 112). In third-order

surrogacy, gestures that have a source case that is either "inferred or imaged" (1997, 112) but cannot be pinpointed because the source behaves in unfamiliar and unexpected ways.

The fourth order is *remote surrogacy*. Remote surrogacy "is concerned with gestural vestiges. Source and cause become unknown and unknowable as any human action behind the sound disappears" (1997, 112). Smalley uses the word *vestiges* because while some sense of the physical gesture might still be perceptible, he notes, "In order for such a gesture to be felt, there has to be sufficient directed, propagating or re-injected energy in the spectromorphology" (1997, 112).

It is noteworthy that Smalley's research is roughly contemporaneous with Trevor Wishart's work. Wishart was exploring similar areas of inquiry. Wishart was also talking about *energy-motion trajectory*, *source bonding* and *gestural surrogacy* in his *On Sonic Art*, without using those terms. He also did not define, analyze or systematize his own vocabulary as thoroughly and precisely as Smalley. Yet, if you become familiar with Smalley's definitions you can spot them appearing in different guises in *On Sonic Art*. For example, Wishart is clearly talking about *energy-motion trajectory* when discussing musical gesture. He notes,

> Musical gesture is evidenced in the internal morphology of sound-objects and also in the overall shaping of groups, phrases, etc. In fact, the morphology of intellectual-physiological gestures (an aspect of human behaviour) may be translated directly into the morphology of sound-objects by the action of the larynx, or the musculature and an instrumental transducer. The translation of performance-gesture into the gestural-structure of the sound-object is most complete and convincing where the technology of

> instrument construction does not present a barrier. (Wishart and Emmerson 1996, 17)

He also introduces some of his own useful terminology, some of which is compatible with Smalley's. I particularly like Wishart's notion of musical instruments as *gesturally sensitive transducers* and his discussion of the various levels of sensitivity from the human voice, to wind instruments, string instruments and then percussion, and so on. Wishart states,

> Vocal music where there is no socially-constructed mechanical intermediary—and particularly where performance practice has not become dominated by a notation-based system of theory—is the most sensitive carrier of gestural information. This reaches down to the level of timbre modulation, as well as amplitude and frequency modulation (vibrato and tremolo and articulation of all these) and up to all higher levels of sound ordering. All wind instruments having a direct and continuous connection with the physiological breathing of the player are similarly gesturally-sensitive transducers although technology and performance practice can get in the way —compare, for example, typical contemporary performance practice on the flute and the saxophone. Bowed instruments, similarly, where sound is produced by a continuing physiological action, are also gesturally sensitive. Percussive instruments (from drums to pianos) are not gesturally sensitive at the level of the individual sound-event, except in the elementary sense that more energy in the gestural input leads to a louder sound, but gestural information may be carried by groupings of individual sound-objects. (Wishart and Emmerson 1996, 17–18)

Smalley's theory goes much beyond merely stating whether a musical event exhibits *facture* or not. With Smalley, we need no longer be so binary about the degree of *source bonding*. We can refer to many different levels of *source bonding* between bodily gesture, or anything perceived as such, and the resultant sound. We can also discuss the degree to which musical elements become non-body with more nuance.

Scholarly Savoring

A Structuralist like Claude Lévi-Strauss contended that there were fixed universal rules to all societies and these rules provided the foundation for all social life. Postmodernists steadfastly emphasized individual subjective views that are hard to resolve. The French sociologist and philosopher Pierre Bourdieu was bothered by what he called this "quite absurd opposition between individual and society"(1990a, 31) and formulated a theory to address precisely this either/or situation. This was because Bourdieu was interested in how culture and society were organized *and* how that general organization could shape our individual view of the world and our social engagements. He wanted to understand how we didn't just pick our culture but, how in some ways, culture picked us, or at least caused us to act in ways delimited by our social and economic conditions. He wanted to know how are we socialized and how this socialization shapes our individual experiences, expectations, and life opportunities.

Our tastes, our accents and manner of speaking, our attire, our values, are the product of our social environment. Our predilections for art, literature, and music are at least partially determined by our social position, family experience, exposure to culture, the schools we attended, and our economic situation. If you grew up in a particular community, you are more likely to enjoy a certain type of music, dress a certain way, etc. If you were from elsewhere, went to a different school, or were born into a different social stratum, you are likely to be fluent in a different culture. Why are tastes so often so predictable, so uniform, and so well-correlated to economic class?

Bourdieu saw that if a person was brought up in an aristocratic family, where all their friends and teachers read Shakespeare or listened to Mozart, they would be much more likely to attribute value to those artistic activities and to the ability to be conversant about them. If you are told as a child that these things are laudable, and you are rewarded or praised for understanding them, that serves as a powerful incentive to learn and help perpetuate their perceived value in turn. This knowledge is what Bourdieu called *cultural capital*. Cultural capital consists of forms of cultural knowledge, competencies, or dispositions that fulfill the social function of legitimating social differences. Further, cultural capital can be eventually exchanged or converted into economic capital (Richardson 1986, 243). When an aristocratic child goes to school they are participating in a long-term project to exchange their knowledge for good grades, good relations with teachers, and ultimately, a more secure and higher paying job. This intermediate step is what he called *institutional capital* (Richardson 1986, 248).

Why would it be that Shakespeare, Mozart, or Cézanne is more highly valued as cultural capital and more easily exchanged for institutional capital, such as higher grades, better references, and better job prospects? Bourdieu argued that the distinction between these highbrow cultural artifacts and vernacular ones is essentially arbitrary. The tastes of certain social groups are valued more not because they are intrinsically better, but because highly cultured artifacts and the specialized knowledge required to understand them help to restrict group membership by conferring status to those who understand the codes and excluding those who do not. These distinctions serve to legitimate social differences as

"taste classifies, and it classifies the classifier" (Bourdieu 1984, 6–7).

These circumscribed ways of talking and thinking are what Bourdieu called *habitus*. Habitus is frequently described as one's knowledge of *the rules of the game*, and it determines if one fits in one particular social circle or another. Bourdieu considered the concept of the habitus key, "I can say that all of my thinking started from this point: how can behavior be regulated without being the product of obedience to rules?" (1990a, 65). The habitus in essence, organizes us. It's a predisposition, tendency, propensity, or inclination. We know that society is ordered in a certain way and that our own position in that society presupposes a range of options, some of which we might be likely to achieve and others not. If you know the rules and can apply them, you might become part of the group. Learning the rules takes time, connections, and money. In other words, it takes both cultural capital and economic wealth. This is why so many are excluded from the start. This structuring of society is achieved by an invisible hand. Social life is collectively arranged without being the product of the action of a specific organizing body or individual. The arrangement is the result of the hierarchy of varying educations, affiliations, qualifications, career paths, etiquettes, regions, subcultures, musics, and so on.

The habitus is the underlying structure of social life that has become ingrained. How we behave is conditioned by these objective possibilities. Bourdieu calls this the *subjective expectations of objective probabilities*. *Objective* meaning, for example, the chance of getting hired at a certain type of job or being able to buy a certain product. *Subjective,*

referring to the behavior we adopt in pursuit of those aims. We respond, largely unconsciously, to the probabilities of the social world. For example, you know that if you're not good at math, the probability of becoming an astrophysicist is slim, so this conditions your subjective decision. Alternatively, you might think you're an incredible basketball player but live in a remote village in a country that doesn't have a professional basketball league and so you don't pursue that particular ambition. This range of objective possibilities is what Bourdieu calls the *field*. Our differing habitus determine what are considered reasonable courses of action within our particular fields. They serve to guide or restrain personal thought and action.

Language, interests, fashion, ways of speaking, our routines, much of this is transmitted from parent to child at an early age. This means then that behavior isn't just rational, its conditioned by the possibilities that are presented to us. It's determined, but not entirely, since we adjust the habitus depending on the uniqueness of our position in the world. We can move location, change how we dress, and learn new skills, or attend better schools.

In his *Outline of a Sociological Theory of Art Perception*, Pierre Bourdieu distinguishes two different forms of aesthetic pleasure. He sees education and culture as crucial to these two types of art perception. Culture is an unconscious class characteristic which is largely inherited. Educational achievement is also structured by class, but with the important difference that Bourdieu leaves room for the further acquisition of artistic competence and cultural capital (Bourdieu and Johnson 1993, 220).

The first type of artistic perception is the enjoyment that accompanies aesthetic perception, which can be reduced to what he calls simple *aisthesis*. "This designates a type of perception that responds to the pure sensory stimulus provided by the artwork, without ascribing to it any particular stylistic or symbolic significance" (1993, 220). The object of perception merely pleases (or not) based on *physiognomical* qualities of the work. The second type of aesthetic pleasure is due to what Bourdieu calls *scholarly savoring*, which requires sufficient deciphering of cultural codes. Scholarly savoring designates a type of engagement in which the audient situates the work within a stylistic and historical framework and interprets and evaluates the work on that basis (1993, 220). There is no perception which does not involve an unconscious code. Bourdieu notes that those who are devoid of specific categories of perception will try, of necessity, to draw upon their everyday experience to interpret the work at hand (1993, 216–17). This leads to an *illusory comprehension* based on the application of a mistaken code. This may be one reason why more inexperienced beholders are so strongly inclined to demand realistic representations in art. Educated people are class-centric and do not recognize that familiarity and immediate comprehension is "an unrecognized special case" and they regard their manner of perception as "natural" or worse, as a matter of "good breeding" (1993, 217).

Art competence depends on a sophisticated knowledge of the codes of representation. This allows the viewer to savor the form of the work and situate the work among various other works and within artistic schools and to determine how it might conform, or not, to genre expectations. This type of pleasure is highly mediated. For the uncultured classes

art perception involves naïve sensory experience and simple emotional gratification based on denotative and connotative interpretation. It is a comparatively unmediated pleasure that is mistaken for the proper reading of the work. Bourdieu suggests that when confronted with a representational painting, for example, the cultured viewer will attend more to *how* the object is represented in order to locate the work stylistically or to better appreciate its formal or sensual properties. The viewer with lower artistic competence, having recourse only to the codes that organize ordinary perception, will attend primarily to *what* is represented and insist that the significance of the work is rooted in what is depicted. These viewers require "that every image shall fulfill a function, if only that of a sign" (1993, 222). This experience is not as highly mediated. Bourdieu points out that these various modes of art perception are not valued equally in cultured society and they help replicate social differences and legitimate symbolic power. Like Barthes (1972), Bourdieu views power as diffuse and concealed in uncontested and unexamined ways of seeing and describing the world.[54] The role of culture in the reproduction of social structures and unequal power relations are at the crux of Bourdieu's work on art perception.

Cultural capital can take two different forms: it can be embodied in our understanding and knowledge of the world (again, our habitus) and it can be objectified in cultural artifacts like books, schools, galleries, and concert halls. However, access to cultural capital is restricted. Bourdieu gives the example of the nominally free museum. Entrance

[54] Bourdieu recalls Barthes also in the remarkable diversity of cultural practices examined.

may be free of charge but the time required to access the objectified cultural capital isn't. If you go to the museum and you are standing in front of a work of art, let's say an Italian Futurist painting, you may not understand what you are looking at. All you see is a small plaque on the wall. You stare at the painting and you are confounded. In order for it to keep your attention you need to understand what it is you are seeing. Conversely, the more you know about the Futurists, Italy at the turn of the century, how the work relates to Cubism, and Duchamp, how it differs from Russian Futurism, what developments in art it foreshadows, and so on, the more you can derive meaning from the cultural artifact before you. Again, this is scholarly savoring—situating the work historically, intertextually, and within your own personal knowledge and experience. You gain additional meaning and pleasure by locating the work historically and stylistically, by understanding the greater contexts, connections, and resonances of the work.

In *The Love of Art*, Bourdieu and his colleagues interviewed visitors to art museums and galleries. Bourdieu noted, "In addition to visiting and its patterns, all visitors behavior, and all their attitudes to works on display, are directly and almost exclusively related to education, whether measured by qualifications obtained or by length of schooling" (1990b, 37). Cultural artifacts contain codes, which need to be received and decoded by the perceiver of the work. The perceiver may understand the message of a work in a complex way and instantly be able to see what the artist intended and how the artwork might relate or react to other works. You might see beyond the surface of the work and see some metaphorical or symbolic aspect, or you might know about the artist's life and that will inform your understanding of the work.

Confronted with a painting you might first consider the colors and the shading and the overall texture. You might make out something you think is symbolic. Perhaps you know something about the artists and the time they lived or the genre or school the artist belongs to. This particular painting might be important or minor, influential or not. You apprehend all of this in the message. You recognized the code of the message. Bourdieu gives the following example:

> For anyone familiar only with the principle division into Romnesque art and Gothic art, all Gothic cathedrals fall into the same class and, for that reason, remain *indistinct*, whereas greater competence makes it possible to perceive differences between the styles of the 'early', 'middle' and 'late' periods, or even to recognize, within each of these styles, the works of a school or even of an architect. (Bourdieu and Johnson 1993, 222)

I'll give a different example: the work of the Norwegian Painter Edvard Munch, whose whole life, artistic and otherwise, was shaped by tuberculosis and mental illness. He once said, "My art must be seen against the background of the heavy freight of my inheritance—tuberculosis on Mother's side, mental illness on Father's side (Grandfather's phthisis)—my art is a self-confession. In it I seek to understand what terms the world and I are on" (Munch 2005, 20). Munch's mother died in 1868 of tuberculosis. His older sister, who he was close with, also succumbed to TB in 1877. Munch also had three younger siblings. Peter Andreas was a physician, who died at age thirty of pneumonia. Edvard's younger sister Laura developed a schizoaffective illness during her adolescence and required intermittent lifelong hospitalizations. The youngest sister, Inger, was a rare success story. She fared well and outlived everyone. However, Edvard's father was

morbidly pious. According to Munch, "My father was temperamentally nervous and obsessively religious—to the point of psychoneurosis. From him I inherited the seeds of madness. The angels of fear, sorrow, and death stood by my side since the day I was born" (Prideaux and Munch 2005, 2).

Edvard himself was hospitalized a number of times for respiratory problems, and later depression, anxiety, and alcoholism. Munch himself nearly died from TB as a child. Munch's survival was unusual. In the era before antimicrobial drugs, the fatality rate for TB was seventy percent. An estimated 285 persons per 100,000 died of phthisis annually in Norway (Chorba and Jereb 2017). Although Munch also nearly died of influenza in the pandemic of 1918–19, he survived, recovered, and died in 1944, at age eighty. But Munch's life and art reveals his lifelong struggle with grief, depression, anxiety, alcoholism, and perhaps even some survivor's guilt. "I live with the dead—my mother, my sister, my grandfather, my father … Kill yourself and then it's over. Why live?" Munch once wrote (Prideaux and Munch 2005, 115).

Would knowing about the scourge and terror of tuberculosis in northern Europe at the turn of the century, and the fact that Munch was constantly surrounded by death and mental illness change how you see his work? And what of the art itself? How does Munch relate to Paul Gauguin, Vincent van Gogh, and Henri de Toulouse-Lautrec? Or Paul Klee? How does his work show the influence of German Expressionism? How does he combine this expressionism with uniquely impressionistic techniques? Here is art critic Michelle Facos describing Munch's famous painting *The Sick Child* (1886):

> Like Josephson's *Water Sprite*, Munch intended *The Sick Child* as an accurate psychological record of his helplessness and guilt … Although conforming to Naturalism by painting an event he saw and experienced as truthfully as possible, Munch's dissatisfaction with the result led to a work more Symbolist in character. Munch worked obsessively on the painting for more than a year, repeatedly scratching out, repainting, and scratching out again. The result is a scene experienced at close range but hazily, as if viewed through tears or the veil of memory. The artist's intense emotion emerges in the grid of scratchings, which contrasts with the pallor and vacant stare of the dying child. She seems as resigned to her fate as her sorrowful aunt, whose head is bowed, perhaps in prayer. Their hands melt together in an abstract patch suggesting the emotional and biological connectedness of family. Munch intensified the mood of sickness and decay by using the complementary colors green and red. Red is particularly appropriate, since one of the symptoms of tuberculosis is coughing up blood. (Facos 2011, 361)

That is scholarly savoring. She is bringing all of her vast knowledge of art to create meaning. She knows of Munch's situation, of the situation in northern Europe at the turn of the century, the scourge and terror of tuberculosis. She talks about Naturalism, Symbolism, and the texture and effects of the paint. All this adds to her reading of the picture. This is precisely what Susan Sontag addresses in this comparison to the development of modern science:

> Art does not progress, in the sense that science and technology do. But the arts do develop and change. For instance, in our own time, art is becoming increasingly the terrain of specialists. The most interesting and creative art of our time is not open to the generally educated; it demands special effort; it speaks a specialized language. The music of Milton Babbitt and Morton Feldman, the painting of Mark Rothko and Frank Stella, the dance of Merce Cunningham and James Waring demand an education of sensibility whose difficulties and length of apprenticeship are at least comparable to the difficulties of mastering physics or engineering. (Only the novel, among the arts, at least in America, fails to provide similar examples.) The parallel between the abstruseness of contemporary art and that of modern science is too obvious to be missed. Another likeness to the scientific culture is the history-mindedness of contemporary art. The most interesting

> works of contemporary art are full of references to the history of the medium; so far as they comment on past art, they demand a knowledge of at least the recent past. As Harold Rosenberg has pointed out, contemporary paintings are themselves acts of criticism as much as of creation. The point could be made as well of much recent work in the films, music, the dance, poetry, and (in Europe) literature. Again, a similarity with the style of science—this time, with the accumulative aspect of science—can be discerned. (Sontag 1966, 295–96)

Bourdieu argues that you can only appreciate the cultural artifact as long as your attention is drawn to it. The more you know about it and its milieu the more you have to ponder. With more to consider, you are able to remain with the artifact longer and get more reward from observing it. This ability requires cultural capital. As noted, some cultural capital is valued more highly than other cultural capital and within any type, some subsets of knowledge are valued more highly than other subsets. Some of this higher valuation may seem justified. Learning advanced engineering or nuclear physics puts one into a particular culture, a culture that is highly esteemed. Further, it becomes increasingly difficult to understand and be conversant with each higher level of knowledge. Knowing Shakespeare may seem to some justifiably valued too, since many deem it culturally and socially useful. Shakespeare can impart lessons in ethics, moral philosophy, and rhetoric. Familiarity with Shakespeare might be deemed useful for society but its usefulness is subjective. This scholarly savoring is responsible for what Arthur Danto calls the *nonvisual differences* in his discussion of Andy Warhol's *Brillo Box (Soap Pads)* (1964):

> I thought that in order to see Brillo Box as art, one would need to see how the history of art had evolved to a point where it was now possible for such a work to exist. And one would have to know something of the state of discourse of the art world, within which

> that possibility existed. You would have to know about Duchamp, for example. You would have to know something about Clement Greenberg. And so on. None of this applied to Brillo cartons. They were situated in history in a very different way from *Brillo Box*, however much alike they looked. (Danto 2005, 12–13)

Problems arise when access to this type of knowledge is restricted from certain groups and classes. Culture can be made exclusive and inaccessible and this often is directly reducible to economics. Bourdieu asks, is it surprising that the "good" taste of more cultivated individuals derives from the homogeneous and homogenizing action of academic institutions which are highly orthodox? The thought of what we call the educated classes is controlled essentially by those ideals which have been transmitted to us by past generations. In other words, institutions and elites carefully guard cultural knowledge.

Consider music in its most aesthetic form, stripped of any moral message, say, an instrumental hip-hop track or an orchestra playing a simple waltz. What reason is there to privilege one over the other? What makes Beethoven more respectable than DJ Screw? This evaluation is often purely arbitrary, having the effect of restricting. In academia, for example, a certain style of writing, the use of certain kind of formal language, is taken as a sign that you know the rules of the game. It's not so much *what* you know, but the style of transmission. In interviews, a certain accent is judged often subconsciously, very quickly. If you're at a party, and a circle is talking about Baroque opera, the ability to partake in the conversation is more likely to get you accepted by that group.

These dominant values can also be subverted. Underprivileged groups don't always have to learn the rules of the dominant game but can occasionally create new rules, a new game, and a new type of cultural capital. This is what Sarah Thornton, in an extension of Bourdieu's theory of cultural capital calls *subcultural capital* (1996). The common struggle and the shared strength of subordinated groups, the infusion of different cultural heritages, the uniqueness of their environments, all mean that each member of the group can recognize a shared and distinct culture. Social groups then discuss them, find meaning in them, review the merits of each contribution to the subculture. Thornton focuses on the youth cultures that revolves around dance clubs and raves in Europe and North America, but her notion of *subcultural capital* could apply to any subculture at all. The concept of *subcultural capital* is used to make sense of distinctions made by participants, noting particularly their disparagement of the mainstream against which they measure their alternative cultural value. Critically, Thornton does not see media as a reflection of social groups, but as a part of their formation (1996, 117).

Bourdieu's work in this area suggests that it's not enough that museums and galleries are free, or that education is widely funded, and concert tickets are affordable. If you go to the Museum of Modern Art and the plaques merely give the artist's name, nationality, and dates, you won't learn anything you need to know in order to understand what that cultural artifact might mean. You won't be able to understand its wider context, or be able to access the information required to decode the message easily. One implication of Bourdieu's work is that the culture of economically disadvantaged groups is also important and should be more widely discussed, studied, and disseminated by society.

Cultural capital, embodied as it is over lifetimes and generations is, in some ways, more powerful and enduring than economic capital.

In a further development of these ideas, in *Distinction: A Social Critique of the Judgement of Taste*, Bourdieu developed the concept of the *pure gaze*, which represents the consumption of cultural goods of the elite. The *pure gaze* requires cultural capital and a high degree of cultural autonomy. The *pure gaze* is focused on form and does not require the object of the gaze to have any function at all since the beholders are free from economic need and are able to indulge in the pure gaze separate from daily life. Meanwhile "working-class people expect every image to explicitly perform a function" (Bourdieu 1984, 5). The *barbarous gaze* is the gaze of the non-elites, those without cultural or economic capital. The "naïve exhibitionism of 'conspicuous consumption,' which seeks distinction in the crude display of ill-mastered luxury, is nothing compared to the unique capacity of the pure gaze" (1984, 31).

As Bourdieu states, "The perception of the work of art in a truly aesthetic manner, that is, as a signifier which signifies nothing other than itself, does not consist of considering it 'without connecting it with anything other than itself, either emotionally or intellectually' … but rather of noting its *distinctive stylistic features* by relating it to the ensemble of the works forming the class to which it belongs, and to these works only"[55] (Bourdieu and Johnson 1993, 222). This means that artistic competence is the result of a long process of

[55] The quotation marks in this statement are mysterious as there are no citations and Bourdieu doesn't say who he is quoting.

inculcation which begins at home and is reinforced by the educational system. This usually comes with the commensurate level of educational attainment and economic and cultural capital and involves continuous exposure to art, literature, and music. Thus, the understanding of a work of art depends completely on the possession of the proper codes which, while appearing natural and free, are actually neither. As Johnson's notes in his introduction to the Bourdieu collection *The Field of Cultural Production*, "Competence in this process of appropriation, which Bourdieu sometimes refers to as an *aesthetic disposition*, is a form of cultural capital, which, like other forms of capital, tends to follow unequal patterns of accumulation" (Bourdieu and Johnson 1993, 23).

According to Bourdieu an artwork has significance and interest only for someone who has the required cultural competence, that is, the code into which a work is encoded. The possession of this code is accrued through a long process of acquisition or inculcation from one's home, social institutions and associations. What we think of as *high art*, including classical and modern concert music, is part of what Bourdieu calls *the field of restricted production*. As Johnson notes, "The degree of autonomy of a specific realm of activity is defined by its ability to reject external determinants and obey only the specific logic of the field, governed by specific forms of symbolic capital" (1993, 15). Bourdieu sums it up as follows:

> In the most perfectly autonomous sector of the field of cultural production, where the only audience aimed at is other producers (as with Symbolist poetry), the economy of practices is based, as in a generalized game of "loser wins," on a systematic inversion of the fundamental principles of all ordinary economies, that of business (it excludes the

> pursuit of profit and does guarantee any sort of correspondence between investments and monetary gains), that of power, (it condemns honors and temporal greatness), and even that of institutionalized cultural authority (the absence of any academic training or consecration may be considered a virtue)." (1993, 39)

Bourdieu's theories of art perception are complex. A full explication of them, while fascinating, is more than we need. However, even this much tells us what could be wrong with, for example, Cage's assertion that, "I don't feel I need much scholarship to enjoy Duchamp as *I* enjoy him" (Kostelanetz 2003, 184). The italicized *I* in that sentence is doing far too much work. It is obscuring Cage's social standing, education, and elite intellectual status. In Bourdieu's language, Cage is being "class-centric" and he fails here to recognize that his familiarity and comprehension is "an unrecognized special case." Cage is one of mid-century's top authorities on Duchamp. It sounds odd to state it that way, but Cage is certainly part of the small group of elite artists who contemplated longest and hardest about the implications of Duchamp's work. Cage's own work is unthinkable without Duchamp's example.

But we can also now possibly understand better why listeners and fans of, say, Cage's music, are able to derive enjoyment from something others can't comprehend. Anyone who has become a fan of experimental music has likely had the challenging task of having to explain to the unversed what precisely it is they are listening to and why. Most people expect that music is discernibly in some mode or key, that it exhibits some patterned metric regularity, and that it is performed on recognizable musical instruments in a conventional manner. How then, do listeners and practitioners of such music explain

how they derive satisfaction, significance, and even pleasure from *Atlas Eclipticalis*, *Etudes Australes*, *Lecture on the Weather*, or indeed *0'00"*?

This is a difficult question because the reasons for experimental music are often clear, if unarticulated, for anyone who participates in it. Trying to articulate what is heard in a way that everyone can understand often leads to difficulty and frustration. A participant or fan is often much more interested in the specific details of a particular performance and perhaps has never even pondered the bigger questions about the nature of listening and pleasure.

If you listen to something and find enjoyment or become intrigued you might listen again—perhaps repeatedly, if the work is especially rich. A rich work can give rewards over frequent listenings. At a certain point the piece seems drained. You might revisit it in the months and years ahead but it no longer repays repeated listening. Then comes the next thing that captivates you. Listeners arrive to any area of music through a series of incremental and intermediary steps. Their initiation into a musical world that might seem like nonsense to the newly exposed is long-term and piecemeal. AMM might seem like gibberish to someone who only listens to traditional old-time fiddle tunes, but it might make more sense to someone who at least has some listening experience with bebop, free jazz, and ambient music.

Many musicians themselves model this in their own evolution in production. The Swiss electronic free improvisation group Voice Crack was formed in late 1972 by Andy Guhl

and Norbert Möslang. When they started they were essentially a free jazz duo. They began to include tape recordings and electronics in their performances along with their instruments. By 1983, they had eliminated any conventional instrumentation in favor of what they called *cracked everyday electronics*, a creative misuse of conventional consumer electronics and DIY hacking. Their early performances likely resembled some of the post-bop experimental free jazz of the 60s. They played conventional instruments and their music likely was made of recognizable musical gestures and their resultant sounds had conventional levels of gestural surrogacy even if the music itself was ametrical and atonal. By the late 1980s they were doing many things that some might have a hard time even calling music and which was almost entirely dissimilar to their 1970s output.

We can see that each subsequent scholar introduced here has presented a stance that is in opposition to or at least questioning of Schaeffer's notion of reduced listening. Schaeffer has his defenders too. See for example Francisco López's essay, "Environmental Sound Matter" where he boldly states, "I'm thus straightforwardly attaching to the original sound object concept of P. Schaeffer and his idea of reduced listening" (López n.d.). I have also hinted at my own problems with reduced listening. I consider it a folly to try to control the listener. As a full-time prescriptive listening practice, reduced listening strikes me as wildly impractical, undesirable, and ultimately, coercive. Yet, I want to leave some room for the idea that a fleeting, voluntary, reduced listening occasionally takes place as part of a larger overall listening experience. While I believe that a large part of our enjoyment of a music performance is an appreciation for the human source of the sound, particularly when those sources are present or have left traces (in recordings), I question

if some form of momentary reduced listening is indeed experienced by some sonic aesthetes. This may be part of the divide between experienced listeners and the uninitiated. Clearly these two groups are listening differently and part of that may be that the experienced are attending, selectively, to particularly interesting timbres and focusing on their inherent spectral qualities, much as seasoned art consumer can look at an abstract work and enjoy its composition, texture, and color scheme.

It is possible that at a moment when we are appreciating a particularly rich or curious musical gestalt, either an unusual non-body sound, or some familiar sound made strange through a change in context, that we are savoring this sound primarily for its intrinsic acoustical properties. If we find ourselves momentarily captivated by some especially absorbing spectromorphological gesture, is this not also a form of scholarly savoring? If a music lover surrounds themselves with interesting and rich experimental music continuously, or is a musician themselves, does that person then not become more experienced, more expert at grasping and contextualizing these distant gestural surrogates and unusually structured timbres? I propose that in this instance it is possible that some may experience a type of momentary reduced listening. Engagement shifts and conceptual reasoning comes to the fore, and this reasoning may involve a cultivated appreciation for the particularities of sonic gesture at hand—a form of scholarly savoring. In these instances, some may appreciate a musical gesture as sonic object, however fleetingly.

I say “momentary” or “fleeting” because having observed or savored the moment and

attended to the sonic properties of the sound itself, it seems inevitable that in the next moment attention will shift. Music is a complex and dynamic expression and the act of listening involves a multitude of complex affective, cognitive, and behavioral processes. The dynamics of listener response are extraordinarily complicated, with differing responses depending on the nature of the music, the context, and the listener's personal experience, culture, and physiology. I propose that reduced listening is instantaneous, that it occurs only under certain circumstances, and it isn't sustainable. There might be moments when we forget about the source and just marvel at the unique qualities of a sound itself. In these moments, the spectromorphological characteristics of the sound may become foremost in our minds. But then that moment passes and we attend to something else in the music, or to something in our environment, or in our minds. The nature of listening is extraordinarily complicated and the task of meaningfully and accurately quantifying listener reaction to music in real-time seems unmanageable. Given the complex nature of both music and the act of listening it seems illogical and unrealistic to advocate a singular and sustained listening mode to beholder.

As noted in the opening chapter, people tend to describe the sound they heard in terms of the objects and events that caused the sounds they hear. The choices here between experiencing sound as *sound of thing* and sound as *object* are not entirely binary and depend on context and perceiver experience. What if the sound is made strange or is so remote as to no longer resemble a real life ecological acoustic experience? Gaver noted (1993, 19) that when listeners were confronted with sounds of unrecognized sources participants resorted to describing the intrinsic sensory qualities of the sound. It is ironic

that the very sounds Pierre Schaeffer wanted you to attend to as sound objects, the real-world sounds captured by *musique concrète*, are precisely the sounds we are *least likely* to experience intrinsically. Perhaps that is also why he advocated so strongly to for the acousmatic situation and for reduced listening—to try to hear even the most familiar sounds anew.

What are we actually listening to, when we listen to a generative performance, a tabletop guitar improvisation, a sonification, or some other sound which is gesturally remote? We may be hearing or imagining sounds of things and events and making connections but we may also be experiencing aestheticized sound at moments when the sound becomes most strange. At these times some may be attending to a musical event as something close to a *sound object*, a sonic event for aesthetic contemplation rooted in the physical properties of the sound. These moments may be transitory, yet it seems a misstep to dismiss reduced listening entirely.

Contradictory as it may seem, I am in suggesting that we may arrive at partial and fleeting phenomenological reductions through a kind of scholarly timbral savoring. Scholarly savoring is, in part, relating works to each other and to the larger ecosystem in which they exist. Obscure and commercially unviable electroacoustic music listening, even of the academically unaffiliated type, is a form of scholarly savoring. Reduced listening is a part of that practice and itself is a form of scholarly savoring just as the appreciation of 1950s gestural abstraction or color field painting is. It is timbral savoring and connoisseurship. It is something you partake in if you have some knowledge of acoustics, synthesis,

cognition, tuning, and the various properties of musical sound. Ironically, whatever little of this music is experienced as sonic object, it likely achieves this status precisely because music is mediated and intertextual as Bourdieu so thoroughly shows.

Musical Personhood and Idiosyncrasy

> Someone once suggested that since Mondrian used areas of all one color, why not use a spray instead of painting these areas? Mondrian was very interested, and immediately tried it. Not only did the picture not have the feel of a Mondrian, it didn't even have the look of a Mondrian. No one who has not experienced something of this will understand it.
>
> —Morton Feldman, The Anxiety of Art

> The sound of the improvisation seems to tell us what kind of person is improvising. We feel that we can hear character or personality in the way the musician improvises.
>
> —Yusef Lateef, The Pleasures of Voice in Improvised Music

Just as a painter's personality is revealed in the brushstroke, a performer's musical language, performance style, and musical predilections and idiosyncrasies serve as markers of their identity. One of the virtues of improvisation is that it emphasizes the individual performer's personality; one of the pleasures in following an improviser's output over the course of their career, or as they work in collaboration with another musician over several years, is that you cultivate an ear for the personal marks of the performer and can develop an understanding of that player's musical behavior. Of course, it is interesting when the performer thwarts expectations and surprises the listener with something new to invigorate interest, but that something new is still enjoyed against a backdrop, a memory, of what came before. Nevertheless, in time, the listener generally begins to detect the typical timbres, the signature articulations, inflections, and propensities of a musician.

Sometimes this presence of a personal signature has been explained as a pitfall of

improvisation. Bailey notes that "the longer you play in the same situation group—and this certainly applies to playing solo—the less appropriate it becomes to describe the music as 'free' anything. It becomes, usually, very personalized, very closely identified with the player or one group of players. And then you suddenly find yourself in the business of peddling *my music*" (Bailey 1993, 115). Gavin Bryars expresses a similar objection in a conversation with Bailey:

> One of the main reasons I am against improvisation now is that in any improvising position the person creating the music is identified with the music. The two things are seen to be synonymous. The creator is there making music and is identified with the music and the music with the person. It's like standing a painter next to his picture so that every time you see the painting you see the painter as well and you can't see it without him. And because of that the music, in improvisation, doesn't stand alone. (Bailey 1993, 115)

These objections are common and carefully examined by George Lewis in his landmark essay *Improvised Music after 1950: Afrological and Eurological Perspectives* (1996). As Lewis notes, an important aspect of Afrological[56] improvisation is the significance of the personal narrative, of memory, of history, of "telling your own story." Moreover, Lewis problematizes the idea that one must perform spontaneously without memory or

[56] George Lewis outlines a distinction between what he calls "Afrological" and "Eurological" conceptions of improvisation. These coinages are not intended to be ethnically or racially essential but are meant to describe two historically emergent approaches to improvisation. Lewis argues that the postwar development of bebop forced musicians in Eurological traditions to face the implications of improvisation and that white composers have been influenced by Afrological improvisation but they take steps to distance themselves from this tradition. Lewis's study focuses on two central figures in American music. Charlie Parker's name functions as a metonym for bebop and bebop's political nature and its creation in opposition to racism. Bebop also marks the first time that Black music demanded to be contended with as experimental art music. The contrasting figure is John Cage and his discourse around indeterminacy. Lewis first deconstructs Dahlhaus's criteria for composition, which states that a work must be complete in itself, fully worked out, notated, and that its most salient characteristics must be written rather than left to chance. Lewis notes that this definition effectively defines composition as an exclusively European art form.

taste. He identifies this idea of purity in musical production as a strictly Eurological musical value associated with Cage's project to eliminate taste. It also stems from the general modernist project of breaking with tradition, memory and history, and creating something theorized as completely new, original and unique. Lewis explains that this break with history, this erasure, is unacceptable to Black artists as a historically oppressed people (1996, 233).

Lewis outlines the structural process many improvisers undergo in cultivating what many call *a sound* but which European conservatory-trained composers might think of as also overlapping with notions of musical style. Lewis asserts that "for an improviser working in Afrological forms, 'sound,' sensibility, personality, and intelligence cannot be separated from an improviser's phenomenal (as distinct from formal) definition of music. Notions of personhood are transmitted via sounds, and sounds become signs for deeper levels of meaning beyond pitches and intervals" (Lewis 1996, 241).

Various elements contribute to a performing artist's *sound* and vocabulary. If they play a traditional instrument, their timbre will be chief among these defining characteristics and we quickly place a musician's sound and style in relation to other players we know. One trumpeter may play with a typically breathy tone while another's tone is typically tight and rich. Vibrato, pitch bends, and other pitch inflections and microtonal shadings, as well as penchants for certain types of musical phrasing are also distinctive and express the personality of the performer.

A performer's personal sound is also centered on the development of an individual, characteristic touch; this relates the personality and character of the sound to the performer's body. This is true even in instruments that are not gesturally rich, such as the piano.[57] The personal idiosyncrasies of the execution and the amount of force used in simply playing a short series of chords can be enough to identify a player or place that performer's musical gesture in relation to other players one knows.

In addition to developing skills and techniques that enhance the musician's palette, musicians may develop numerous other stylistic traits that reflect their musical personalities and their ideas about music. Even in extended, electroacoustic or non-idiomatic[58] improvisation, in which traditional musical vocabulary might be combined with an individual repertoire of extended techniques or electronic processing, performers

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[57] A guitar or a zither, for example, would be gesturally rich, since a player's fingers not only stop the string directly but also articulate the sound; the guitarist can control the sound upon articulation as well as after, with the fingers directly affecting dampening, vibrato and other pitch inflections. A piano is less so because the piano string and soundboard are activated by a hammer through a complex mechanism at many removes from the finger's initial strike on the keyboard. Also, once the note is struck there are limited techniques the pianist can employ alter the sound. Still, touch matters on the piano and the forces exerted by the hand influence the sound in such a way as to give even pianists a signature touch at the keyboard.

[58] Derek Bailey splits improvisation into two basic types (1993). *Idiomatic* improvisation is where the specifics of the improvisation are free but the music is constrained by a specific musical idiom. The musician absorbs the conventions and traditions appropriate to a certain style and they learn to play within the rules and boundaries of that style. They might push against those boundaries and transgress rules and genre expectations, but generally they are still working within a certain musical idiom. In *non-idiomatic* improvisation there is, presumably, no set musical style and no rules or boundaries are observed. The musicians mutually agree not to make any musical choices that would appear to fix the performance to a specific musical idiom. Both forms employ a personal repertoire of techniques and experiences that are acquired through time and practice. I find this split between idiomatic and non-idiomatic problematic in several ways. By non-idiomatic most musicians seem to mean ametrical, atonal, modernist or timbre-centric music in opposition to a well-defined, well-known vernacular style, such as any era or style of Jazz. Further, the notion of non-idiomatic improvisation is squarely aligned with Eurological discourses on music and this opposition seems to be yet another distancing measure intended to clarify that the musician is not a part of the Afrological traditions outlined by Lewis. Anthony Braxton suggests the term "trans-idiomatic improvisation" which has the virtue that it allows many idioms, including vernacular ones (Lock 2008).

develop predilections, attitudes and personal tastes that mark them as performers. I think of the highly distinctive and personal sound world of performers such as Bill Dixon, Tetuzi Akiyama, Kang Tae Hwan, or Ami Yoshida, to name just a few highly individual and recognizable players.

Organic Abstraction and the Beauty of Line

> What I began to look for, and what I soon found, was a process only vaguely outlined, an action only vaguely defined: one draws more freely on unruled paper.
>
> —Morton Feldman, A Life without Bach and Beethoven

The aesthetic principle underlying my current musical practice is to try to make a lively auditory shape—to conceive of, and execute, a beautiful figure in the moment. Since it is handmade, the movement cannot be formally precise or free of jitter or imperfections. I might try to conform to a perfect, even, and universal pattern to suppress eccentricities, but the result is surely always a little uneven. This is the beauty of plastic movement. Slight deviations are favored because when things are precisely measured and rendered, the result is a kind of uniformity and hyper-precision that suppresses the subjective differences of individuals. The appeal of an organically vital motion is that it is not a strictly ruled shape, such as a line segment or an envelope generated by a computer, but instead contains the unevenness and unsteadiness of human movement. There is an echo of life in the gesture, in the muscular stroke, with all its limitations, frailties, and eccentricities. It is by nature idiosyncratic and the irregularities mean that the results are unique and evocative of the human body, imbued with subtlety, modesty, and the distinct

personality of the maker.

I don't mean to be doctrinaire. Sometimes a perfectly smooth or artificially even sound might be meaningful, such as the long almost superhumanly long crossfades or envelopes found in an electronic work. Part of the appeal of Éliane Radigue's extraordinary electronic music is precisely the impression of this type of glacial movement, in which the music evolves and changes like clouds moving across the sky or a boat moving on the water in the distance. There is also the allure of the purity and conceptually and sonically clean work like that of Alvin Lucier, in which the whole point is to put the process itself under the microscope.

But just as an artist might want to print by hand or to draw freely on unruled paper, so a musician might desire to work freely and unmeasured. Musical gesture is very personal. No two people will make the same gesture in the same way, and each will have their own limitations and predilections, much like handwriting. And as in handwriting, the musical motion is rooted in the body; not a mechanically ruled auditory shape, but a kind of organic abstraction, a dynamic unevenness or disequilibrium. Our challenge, is to find new ways to allow the performer's "signature" to emerge. This is not easy as the tools we now use are so new, so thoroughly generalized and standardized, and so gesturally impoverished. That is the art of it—when least expected the hand emerges and defines what the endeavor is and offers the possibility of a recognizable style and allows a particular vocabulary to emerge, one that bears the maker's personality and allows the musician to leave their personal mark on sounding music.

Let Playing be Composition and Composition Playing

> One reason why the standard Western instrumental training produces non-improvisers is that not only does it teach how to play an instrument, it teaches *the creation of music is a separate activity from playing that instrument*. Learning how to create music is a separate study totally divorced from playing an instrument.
>
> —Derek Bailey

> The other possibility, instead of using the machines, is to make a music where playing it is as much in the activity of making it as is the composing. The score is rather unimportant to the player, or the score is a kind of beginning, indicating directions and conditions under which music can be made. Music itself simply happens when people get together and make sounds. This is the situation that interests me now. Furthermore, I am interested in having everyone participate when that happens. You can call it composing, for they become the composers. It goes back to the situation where composer and performer where not different, but one and the same.
>
> —Christian Wolff

The following is a statement of personal aesthetic principles, opinions, and preferences. I am concerned that making these explicit will make my evaluations and assertions appear more absolute and entrenched than they truly are, but all art implicitly has a point of view and here I will discuss some of my own experiences and make some of my current ideas about my musical practice plain. They change and evolve continually.

Thus far I have been involved in music making in three separate, if overlapping, methods of composition, which I have practiced concurrently. First, as a student, I was primarily writing scores in the traditional manner, texts that were interpreted by performers other than myself. Scores are exciting to make but you are limited by who is available to play them. Printed scores and parts take a long time to prepare, often yielding only a small

amount of music that you then have to wait to hear, if at all. Then once you've heard it you might want to make revisions and the scores are not so easily changed. Most disappointingly, scores are often performed only once and with limited rehearsal time.

Simultaneously, I also occasionally worked with live electronics, cello, guitar, and signal processors along with microphones and analog and digital tape loops in a live real-time musical practice that was frequently collaborative. As time went on, these practices gave way almost entirely to the production of fixed-media computer generated works as I went deeper into my academic career. My own electroacoustic music principally consisted of fixed-media production which was synthesized or sampled and then rendered or resynthesized on a computer via a number of domain-specific languages derived from the MUSIC-N family of languages originally introduced by Max Mathews at the Bell Labs. I used programs such as Max/MSP, CMIX, SuperCollider, or CSOUND. Little of this music was generated in real-time, so I largely retained the tradition of splitting music into separate virtual instrument design or sound synthesis through some unit generators in one of the above-mentioned languages and event-list generation and preprocessing. Score events were generated (often separately) by computer programs in a general-purpose language (such as C, or Python) or in a Unix shell script.

This type of fixed media production is interesting and certainly has its allure and advantages. In one important way, computer music was more fulfilling than making scores because you could hear what you were working on while you made it. Further, you could largely do it all on your own. However, this way of working has important

shortcomings as well. In my case, computer music programming, was becoming increasingly less satisfying both as a process and in terms of the results. It took much too long and produced small amounts of music. I began to seek a healthier, more satisfying, and more active musical experience. I desired a musical practice that was more connected with my daily life. I wished to make a greater quantity of music and I wanted that work to be pleasurable. Spending so much of my time chasing down software bugs was tiresome and I wanted to get out of my chair.

Both the production of traditional music scores and the composition of fixed media computer generated music are planned arts. However, neither gives the satisfaction of working in a social, collaborative setting playing music in real time with other people. While fixed-media music production by computer is collaborative in some ways (we're all essentially in dialog with the software engineers, for example), the collaborative aspect of this way of working is temporally asynchronous and isn't directly social in the same way as playing an instrument in a group is.

I also wanted to work towards developing a musical language that was more personal and more directly a result of my own agency and physical being. I wanted to make music which I could exert some control over, that I could shape with my hands in real-time. While working on non-real-time fixed-media pieces it can be difficult to make the pieces seem human and relatable. Sometimes you work hard on the realization of an algorithm and it just sounds like a note list, even though you couldn't say what the pattern is, you sense the presence of a pattern and the results are predictable and dull. Further, I wanted

my performance to involve more than the contemplation of an empty stage.

My own music occasionally sounded clinical and lifeless. I wanted to make a more direct, distinct, and personal musical voice. I was desirous of a more handmade experience. I wanted to make music that, despite being electronic, would allow me to leave a physical trace. Computer generated music requires that you have a strict quantitative measure of parameter and adding deviations and "jitter" is something you have to try to painstakingly program in. Random variation is possible but it still isn't the type of deviation you would get if the music was controlled by the human hand and judged by eye and ear, with adjustments done in the moment, on the fly, and by intuition. I wanted music to be less dependent upon strict ordering processes and more contingent on making choices in the moment.

Concurrently, I noticed that some of the older electroacoustic music had a charm that many newer, cleaner, more finely-manicured and high-fidelity music does not have. What leads to such perceived clinical coldness with many of my own completely algorithmically generated pieces and those of others? Why did I like so much older electronic music from the 50s, 60s, and 70s and like so comparatively few computer music compositions from the subsequent era? Why had the promise of computer music remained unfulfilled, and the music so pallid despite enormous efforts by so many engineers and musicians?

With each passing year we saw more breathtaking and bedazzling new technology and

certainly there were fine examples of machine generated art of great interest and complexity. However, in listening back to Gordon Mumma, Hugh Davies, David Behrman, Robert Ashley, and the Cage pieces of mid-century, or even the tape music of Pierre Henry, Pauline Oliveros, Annea Lockwood, Terry Riley, and many others, I noticed that the music was not impersonal and bloodless but full of life, of personality, of quirks, of mistakes, even. The music likely reflected the compromises and limits imposed by the technology of the day. Unlike much of the multi-channel, high-definition generative music I heard at conferences, the older music was messy. It had rough edits, crude envelopes, and noise. Moreover, I discovered a whole world of non-affiliated electroacoustic music (largely live and improvised) that similarly had this same appeal.[59] It occurred to me that these performances, which were handmade, are beautiful precisely because they were handmade.

Therefore, in order to produce an increased level of liveliness in my music I made two important changes. First, even if the ultimate goal was to produce a fixed media composition or recording, I created significantly more of my musical gestures in real-time rather that making scripted or algorithmically generated events. Second, the generation of those musical events were more regularly done with bodily gestures

[59] Genre discussions can get messy. In order to clarify and not get unduly sidetracked, I will simply list some musicians to give a sense of the area of music under discussion—a constellation of overlapping genres known as Onkyo, EAI, Noise, or lowercase improvisation. Here I am speaking of musicians such as Otomo Yoshihide, Toshimaru Nakamura, Sachiko M, Keith Rowe, Andy Guhl, Norbert Möslang, Olivia Block, Bhob Rainey, Günter Müller, Andrea Neumann, Kevin Drumm, Annette Krebs, Jeph Jerman, Burkhard Stangl, Ryu Hankil, Hong Chulki, Choi Joonyong, Klaus Filip, Bryan Eubanks, Lê Quan Ninh, Greg Kelley, Jason Lescalleet, Taku Sugimoto, John Tilbury, Takahiro Kawaguchi, Ami Yoshida, Christof Kurzmann, and many of their fellow travelers.

performed on instruments and physical objects, making choices in the instant. The aim was to impart my own signature to the sound by employing gesturally rich transducers, the guitar, and by producing a music that has a more handmade quality to it. In order to do this, it was necessary to collapse the act of composition and realization into a single moment, or as Christian Wolff has it:

> Let playing be composition and composition playing. If composition is putting together (or giving instructions for it), playing is an activity which can, while allowing that it may fall apart, be the life of what was composed. If composition is the condition of all sounds, all those around us, dormant in things or awake in the air, playing can be their investigation: listen, converse with, accompany, pursue, abandon, alter, liberate. (Wolff 1998, 80)

The approach in academic contexts has generally been to electronically process conventional instruments performed by a second musician while the composer sits at a computer and records and processes the sound in various ways. This can be effective, and helps the composer move past their performance limitations but this division of labor requires making instructions and requires the performer to be present. If the desire is to make more music, more frequently, then working this way is an impediment. One way to change this dynamic is for the performer and composer to become one and for the activities of playing and composing collapse into a single effort.

In short, to the improvisor, the bodily exploration of the musical instrument, in its total configuration, is the cornerstone of an ongoing musical practice and each performance is a moment in a life-long search for all, musically, that the instrument can elicit.

Improvisation itself can be both the learning of the instrument and the sounding result of a musical practice, simultaneously. This, in contrast with the traditional classical player who, while in the pursuit of excellence in the performance of the standard repertoire of that instrument, is not perhaps responding to her own impulse, exclusively. Here, the creation of a body of musical literature is separate from the specialty of instrumental performance and interpretation. The composer "makes" the fabric of the music, notates it, and the performer is to render the music as precisely as they can with the few necessary bits of taste and interpretation added to bring it to life. Composers compose, performers realize, and everyone is to stay in their lane.

When the performer and composer are one and the same and the performance and the composition are happening simultaneously. A substantial benefit is that you can forgo a score and one is no longer subject to the stranglehold that notation often has on the music. Freeing yourself from notation allows the musician to get beyond the inhibitions that notation creates and permits you to do something completely your own. It allows you to create something that instantly relevant, and to craft a performance which can be hand-tuned in the moment in response to the performance atmosphere, to the audience, to psychological or acoustical conditions of the situation at the very moment the music is being played. Further, the performance can bear the maker's mark and be a more direct expression of one's musical personality. Or as Leo Smith put it, "Technique for the improviser is not an arbitrary consumption of an abstract standardized method but rather a direct attainment with the mental, spiritual and mechanical energy necessary to express a full creative impulse" (Bailey 1993, 99).

Trevor Wishart noted the effect human performance of musical gesture had on vitalizing an electronic sound:

> Composers who have weighted their activities towards live electronics rather than studio-based synthesis seem to me to have been strongly affected by the fact that a morphology imposed upon electronic sound-objects through the monitoring of performance gesture can be much more refined and subtle than that resulting from intellectual decisions made in the studio. The directness of the physiological-intellectual gestural behavior carries with it 'unspoken' knowledge of morphological subtlety which a more distanced intellectual approach may not be aware of. This is not to say that theorising cannot lead to interesting results, but that it can lead to a loss of contact with the realities of the acoustic landscape. (Wishart and Emmerson 1996, 179)

This, in essence has been my solution to some of the questions about how electroacoustic music might make some stronger connections to its audience and perhaps beyond—to involve the body in production and performance, to promote a human presence in the music, complete with idiosyncrasy, quirks, and even error. The presence of the body, both literally (in performance) and as a body trace left in the music (records of bodily motion) can enliven dead electroacoustic production. Christian Wolff, noticed this effect as well, "… have you noticed what seems to take the liveliness from electronically produced sounds? There is no immediate mystery about their source. They just come from one or more loudspeakers. A sound, I think, appears more engaging when specific actions which produce it are either visible or felt as present, though not necessarily understood at all" (1998, 54). One way to enliven music is to *let playing be composition and composition playing*.

Conclusion

John Cage had a long career that resulted in an impressively large, beautiful, and varied output. One of the few things that remains consistent for Cage, from his "square-root method" works beginning in the late 1930s to his last works based on time-brackets, the so-called "Number Pieces,"[60] is that music is conceived of as an empty temporal vessel for all the sounds that Cage, the performers, and the gods of chance, might include. Cage recalls remarks by Henry Cowell "at the New School before a concert of works by Christian Wolff, Earle Brown, Morton Feldman, and myself, that here were four composers who were getting rid of glue. That is: Where people had felt the necessity to stick sounds together to make a continuity, we four felt the opposite necessity to get rid of the glue so that sounds would be themselves" (Cage 1961, 71).

But Cage attempts to go beyond just getting rid of the glue. Cage's project was, in some ways, an arch-modernist one. Ultimately, it was not at all that different from Schaeffer's. Cage proposed, "One may give up the desire to control sound, clear his mind of music, and set about discovering means to let sounds be themselves rather than vehicles for man-made theories or expressions of human sentiments" (1961, 10). The associative

[60] The *Number Pieces* were composed during the last six years of Cage's life. They are called such because each work is named after the number of performers required. These range from solos, *One*, to large orchestral works such as *103* and *108*. If there is more than one work with the same number of forces, the title gets a superscript number as well. The vast majority of these works (though not all) were composed using Cage's time-bracket technique. Each score consists of a series of short fragments, usually but not always in traditional notation. Beneath this musical event is a pair of brackets with time expressed in minutes and seconds. The left bracket indicates a range of start times. The right bracket indicates by what time the musical event should be finished. Here, time is conceived of as a container, an empty time structure, that Cage fills with chance-derived or performer determined sounds.

aspects of sounds were to be suppressed in order that we might *let sounds be themselves*, free from any compositional rhetoric or connections, free from any person expression. Cage noted, "I try to approach each sound as itself. Now I find I can do that better with sounds that aren't music than sounds that are music; but I try to make my own music" (Kostelanetz 2003, 243). An insistence on the primacy of relationships was also a main criticism of contemporary composers by Cage, "Just this last November, I was in Metz and went to a lecture that Karlheinz [Stockhausen] gave, and I was astonished to see that his whole insistence on musicality as relationships and oppositions was very, very conventional, and not in any sense a discovery. He gave a detailed lecture in which he said that listening was actually listening to relationships. In my opinion, listening is listening to each sound. If you listen to the relationship, you lose those sounds" (Kostelanetz 2003, 212–13).

Cage is not only subverting teleology and harmonic and motivic relationships but he's advocating something just short of reduced listening, and he's denying the mediated nature of musical enjoyment. With the advent of electronic media, the number of sounds and their associations has actually accumulated, proliferated, and became accelerated. What Wiggins, Ives, Varèse, Cage, Schaeffer, Ono, Brecht and so many others did was to bring extra-musical sounds and noises into the fold of music, to make music represent more. But for Cage, and especially for Schaeffer, music had to suppress relations and associations so that it could better represent the intention of the composer as a cultural product, not as nature. In Cage's case this is especially ironic as he set out to mimic nature and he did so by purporting to subvert his own intentions and preferences. Yet for all that

he was a still a composer. He still required his music to sound a certain way. Too close an association with the source and the sound might return to its original domain outside the boundaries of music. But it is precisely this that Luc Ferrari's post-modern notions of listening question: The separation of the aesthetic from the socio-political world of listening and perceiving subjects.

Sounds have always carried a multiplicity of extant and potential, real and imaginary associations and codifications. These associations change continually with different contexts and through different modes of transmission. Meaning inheres not only in the sound but in the all the mediations—visual, social, theoretical and otherwise. These all have a role in the construction of musical sound and we should consider the musical object as subsuming all these mediations. The musical sound and all its mediations are all a part of the object, and the sound itself no longer stands as the only arbiter of meaning. Cage wanted to free the sounds, to *let sounds be themselves*, but they can't be. Just as there can't be disembodied cognition and there can't be anything called perception independent of the behavior of the entire perceiving body, nor of its unique personal history of interactions with the world.

Since mid-century, there has been an ongoing and deep discussion about the very nature of listening brought on—largely—by dramatic changes in music technology, which—in turn—drove changes in musical language. I have simplified this dispute by presenting it largely as a Schaeffer *reduced listening* versus a Luc Ferrari's *pop listening* debate. To this, I have included some ideas concerning the role of the body in production and perception

in music. I also made the case for a freer, momentary reduced listening, a reduced listening as a type of timbral scholarly savoring, which I advance as a small part of an overall listening practice. While I greatly admire Schaeffer's many achievements, and the richness of his thought, I do find some of Schaeffer's prescriptions coercive and impractical. Yet, there are people who spend an enormous amount of time with music who must, at least in fleeting moments, experience sound innately, as timbre. Nevertheless, attempting to exert control over how others perceive a piece of music is a fool's errand.

The nature of listening is exceedingly complicated and it would seem impossible to precisely quantify listener reaction to music in a natural setting in real-time. Music is a complex and dynamic expression that unfolds at multiple nested timescales at once, from tiny fractions of a second to minutes at a time. The dynamics of listener response, from what we know from neuron-imaging studies, is complex, with differing neurological responses depending on both the nature of the stimulus as well as the perceiver's experience, context, culture, and physiology.

To insist that sounds be stripped of their associations as, for example, Cage and Schaeffer did, is to repress memory and history, dismiss the vernacular, and deny individual experience in the service of the endless quest for something always completely original and new. Further, by breaking with memory and history, we might create an erasure of history and tradition. We might prevent people from proverbially "telling their stories" through music and making connections to broader traditions and ultimately in crafting

and projecting their musical personhood. Music is intertextual and sound carries with it a host of latent and extant associations and connections in the minds of listeners. These connections and associations are historical, personal, and constantly in flux.

One can be aware of the roots of sounds, their compositional context, and the way those sounds likely to be perceived. A musician might even strive to create the conditions, the context, the opportunity for listeners to attend to sounds in a particular way. However, music isn't just made of sounds. Music consists of performers, performances, listeners, technologies, objects, bodies, texts, institutions, and so on. Music is a social practice by which individuals imbue reality with meaning. There are no sounds that are heard wholly outside culture and society. By allowing sounds to be sounds of things, to accept that sounds ordinarily associate with visuals and that sounds have context, history, and associations allows listeners to contextualize and helps everyone understand the music in the best way, *their own way*. There has been a near century-long effort to let sounds be themselves. But it isn't the sounds that need to be free—it's us. In the words of Christian Wolff (1998, 86) we should "let the listeners be just as free as the players."

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