

Sound Object Analysis

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Abstract: Pierre Schaeffer coined the term "sound object" (*objet sonore*) to describe a sound from which a listener brackets out all referential meaning, taking instead an aesthetic attitude toward the sound's intrinsic parameters. Years later, microsound composer Curtis Roads redefined the sound object as a "basic unit of musical structure, generalizing the traditional concept of note to include complex and mutating sound events on a time scale ranging from a fraction of a second to several seconds." Contrastingly, Chris Cutler identifies the sound object with the "found (or stolen)" sampled sound. My paper evaluates the term "sound object," with these three definitions, as a tool for analysis of avant-garde music and sound art. Sound object analysis is hence the analysis of music and sound art in terms of sound objects. I attempt to apply sound object analysis to sonic experiences that defy description in traditional musical terms: Alvin Lucier's *I Am Sitting in a Room* and improvised electroacoustic music by the American duo Mem1. The term "sound object" suggests that a sound is a discrete entity, set apart from context to various extents. To conceptualize sound as reified and objectified is to adopt an attitude towards it of the kind described above. Thus one might say that "sound object" is a metaphor for that peculiar listening stance. This, I believe, is the greatest strength of sound object analysis: the importance it places on the listening subjectivity. However, the sound object is also problematic. In its determination to separate sound from context, the concept "sound object" may obscure the human factors that give rise to aesthetic sounds. Lucier and Mem1 strain the sound object metaphor even as they showcase its analytical advantages.

The term *sound object* began as Pierre Schaeffer's conceptualization of music's "raw element," which he believed listeners could learn to hear.¹ Typically we listen for what sounds signify, and assess how they contribute to meaningful structures. But perceiving sound objects requires idiosyncratic listening techniques additional and in contrast to our usual modes. Given that listening goes hand in hand with analysis, how may sound objects, and the singular listening techniques they entail, affect analysis? I propose that as the sound object slowly permeates analytical discourse, it not only broadens its definition to involve more different kinds of listening, but also questions the unspoken, foundational assumptions of that discourse. Because a sound object's characteristics depend on how each listener hears it, analysis via sound objects challenges the presumed stability of every signifying category, and the basic presupposition that it is possible to draw conclusions about what a sound *is*. In fact the assumption of fixed analytical categories may be a form of what Judith Butler calls "ethical violence," which sound object analysis avoids by recognizing the critical role of listening subjects.²

In his 1966 treatise, Schaeffer observed that since the typical aim of listening is to locate meaning in sound, *meaning* diverts our attention from the intrinsic features of a sound as soon as we detect its potential for meaning. In contrast, a sound object results from what Schaeffer named *reduced listening*: a skillful hearing that deliberately ignores sound's possibilities for referring beyond itself. Reduced listening bars from perception any indications of sources, semantic functions, or significations that the sound in question may imply. Thus reduced listening cannot lead to such surmises as, "This sound is an acoustic sign for the word 'dog,'" or "This is the sound of a violin." Instead reduced listening aims at sounds' intrinsic characteristics, identifying in sounds themselves the features that make them musical.³ Thus for Schaeffer, composition involved "gather[ing] concrete sound material, wherever it came from, and extract[ing] from it the sonorous musical values which it potentially contained."⁴

Since sound objects could be sounds of any kind, including those commonly called noises, Schaeffer hoped that sound object analysis would encourage listeners and composers to liberalize their understanding of what constitutes so-called musical sound. Sound object analysis is my term for what Schaeffer called "typology and morphology" of sound objects, meaning their identification and description.⁵ He believed that analysis of sound objects could lead to new ideas for composition and sound synthesis, maybe even to new instruments, inspired by the striking characteristics of sound itself.⁶

Besides proposing new avenues for music experience and creation, sound object identification and description have several analytical advantages. Rolf Inge Godøy attributes a certain "universality" to sound object analysis: since a sound object may be any kind of sound, analysis based on sound objects may apply to any kind of music besides and including that of the western classical tradition.⁷ We shall see that sound object analysis provides a platform for the discussion of sound art, enabling discourse on details that traditional analysis consigns to the margins. Furthermore, sound object analysis takes *sound* as its starting point, instead of abstract systems fixed in place before composition begins: a priori conditions that many listeners cannot even detect, such as twelve-tone rows and large-scale tonal forms. For Schaeffer, sound objects are unitary fragments of "medium duration," neither too long nor too short for the listener to memorize.⁸ In his thinking, sound object analysis therefore proceeds in the same way as perception itself, in discontinuous "chunks" that we synthesize into coherent wholes.⁹ In these manageable chunks, listeners may detect and enjoy characteristics imperceptible in shorter fragments and swallowed up by larger structures.¹⁰ Based in sound and deliberate listening, sound object analysis invites the apprehension of details that neither acoustic measurements nor musical notation can capture.¹¹ In fact the listening subject plays the defining role in sound object analysis. This will prove to be the source of its power.

Schaeffer recognized reduced listening as only one of many listening techniques, that we can and do slip between different listening modes within the course of a single experience.¹² He sought to encourage, in his words to "facilitate" a "swirl" of multifarious listening modes.¹³ Discovering new modes was among the aims of his research.¹⁴ Now, distinguishing sound objects via perceptual differentiation of their features is truly interdisciplinary work, hailing phenomenology and epistemology as well as physiology and psychoacoustics. Sound object analysis thus implies that sound and music, their perception and analysis, are at least dialectical in nature. Schaeffer describes the sound object as at once objective and subjective: a sound come from without, potentially manipulated so as to trigger perceptions, yet wholly contingent on a certain type of perception. Objectively, a sound object is at once an element of a structure and a structure composed of elements. It is thus abstract and concrete, internally static and unstable. Subjectively, it is an instinctive and personal as well as culturally-conditioned perception.¹⁵ The point is: sound object analysis underscores the impossibility of describing sound, or music, as any one thing. Nor can we attribute to analysis any "proper" listening technique. Our often subconscious alternation between listening modes precludes the coherent narration of musical experience. Let us keep this point in mind as we proceed.

In ensuing decades, Schaeffer's sound object received several reapplications by analysts and composers of electroacoustic music. The term appears in Chris Cutler's work on the illegal use of samples, rethinking the sound object as a "found (or stolen) object," a sound copied from one context and pasted verbatim into another.¹⁶ I call this phenomenon a *transcontextual sound object*, following Denis Smalley. In Smalley's writings, a sound's transcontextuality is its suggestion of multiple interpretations based on the sound's new and initial contexts.¹⁷ Transcontextuality is contingent on listeners' recognition of the sound in question *from its original context*. Only with such a priori knowledge can she appreciate the sound's transplantation between contextual arenas. In fact, says Cutler, "as a pirated cultural artefact...a plundered sound...holds out an invitation to be used *because* of its cause and because of all the associations and cultural apparatus that surround it."¹⁸ The transcontextual

sound object thus depends on a mode of listening opposed to the disavowal of meaning that characterizes reduced listening. Where reduced listening invites singular focus on a sound's characteristics independent of every circumstance – drawing attention to what I call *reduced sound objects* – transcontextuality presents an opportunity to knit new experiences out of previous encounters, past and present circumstances.

Although the listening mode that originates reduced sound objects cannot contribute to transcontextual objects, Schaeffer's idea persists that sound objects constitute fragments relative to a larger structure. Both reduced and transcontextual objects therefore qualify as *structural sound objects*. The last is a significant concept to theorists and composers of digital microsound such as Curtis Roads, who uses the term *sound object* to distinguish sounds of a few seconds' duration from micro-sounds too short for any but a computer to process, and macro-structures too long for listeners to conceive as single sounds.¹⁹

The last "second-generation sound object" to which I will call attention is the *gestural-sonorous object* coined by Godøy. His research on "motor-mimetic music cognition" hypothesizes that when listening to music we "trace" the shapes of sonic envelopes in bodily movement.²⁰ Our imaginations, limbs, or both respond to what we hear with "sound-producing gestures" like "air-guitar-playing," "sound-accompanying gestures" such as dance, or "emotive gestures" such as impatient finger-tapping.²¹ According to Godøy "we actually recode musical sound into multi-modal gestural-sonorous images based on biomechanical constraints (what we imagine our bodies can do), hence into images that also have visual...and motor...components."²² Drawing on Schaeffer's sound object, Godøy names a *gestural-sonorous object* any sound possessed of internal characteristics that may invite listeners to "trace" them in bodily motion.²³ Like the transcontextual sound object, gestural sound objects are defined by their extra-sonic and perhaps quite personal connotations.

With the transcontextual, structural, gestural, and reduced categories to call upon, sound object analysis may approach a wide range of applications beyond the western classical tradition, as Schaeffer hoped. An aspect of my research involves inquiring after the sound object's value as a primary category in descriptions of sound art, experimental and improvised music, perhaps even poetry and sculpture. But sound objects are not without their problems, as we'll see. Let's look at an example.

Composed in the USA, 1969, for a performer and sound recording equipment, Alvin Lucier's "I am Sitting in a Room" requires the performer to recite and record a short text. The performer plays back and records his recording, and repeats this process indefinitely, with the result that the same sounds pile on top of themselves several times over. Multiple instances of the same frequencies activate simultaneously, reinforcing one another's stimulation of the air in the performance space. By the end of the piece, all we can hear is the space itself ringing at the frequencies of the performer's voice. Thus linguistic articulations metamorphose into nigh indescribable unbroken sound. Here are the final 10 seconds or so of Lucier's 1969 performance.

Trevor Wishart interprets Lucier's work as the evolution of a mysterious sound object:

At the beginning of the piece we would unreservedly state that the sound-object is the voice. At the end of the piece the sound-object is clearly a more "abstract" entity whose characteristics derive from the room acoustic. Somewhere in between these extremes our perception passes over from one interpretation to the other.²⁴

Wishart seems to read the vocal utterance as a structural sound object. Does it qualify as such even while it is being spoken? Possibly, depending on the difference between actions, events, and objects. In any case, recording the utterance changes it from an immediate human encounter to a mechanical experience. Hence the recorded-replayed utterance has both transcontextuality and the self-containment of a sound object which forms a repetitive

component of a larger structure. As it stacks upon itself, the monophonic utterance becomes polyphonic and eventually loses its vocal quality, taking on the anonymity of a reduced sound object. The layered recordings eliminate the possibility of hearing words in the sound, and invite us to forget the sound's origin in a human voice. Soon we can no longer tell when new iterations of the utterance begin, so that we cannot follow the structure of the piece. In the end we can infer nothing from what we hear except the sound itself and its intrinsic features. To reiterate: a structural sound object is a sonic fragment; a transcontextual sound object is a sound transplanted between contexts; and a reduced sound object is a sound without external connotations. Overall in "I am Sitting in a Room," a structural, transcontextual sound object changes into a reduced sound object when successive layering renders it unrecognizable, its source indistinguishable from the surrounding space.

What are some advantages and disadvantages to sound object analysis, applied to "I am Sitting in a Room"? Lucier problematizes the relationship between entities – particularly sounds – and the spaces in which they occur. Thus where traditional musical analysis could not begin to approach him, thinking in terms of sound objects enables us to take him on his own terms. Also, by identifying particular types of sound object amid his sonic textures, sound object analysis accounts for his objective attempts to engage certain receptive modes – his use of layered recordings to *propose* "reduced" hearing of speech, for example. When listening for different kinds of sound object, we shift between listening modes: we experiment with diverse standpoints from which we may encounter and describe sonic experiences. Listening for sound objects enables analysis to conceptualize what musical notes cannot, for instance certain sounds' provocation of memory or gesture. What is more, the word *object* imparts a thing-like presence to sound, an intransigence that invites us to contemplate sounds at length, as we may plastic artworks or provocative ideas. In that sense each sound is like a sculpture that I circumnavigate at my own pace, so as to experience its facets from various perspectives. However, by suggesting thing-like fixity and self-sufficiency, the term *object* may mask the true ephemerality of sounds and their origin in movement or effort. Moreover the word *object* lends a givenness, an objectivity to sounds that may obfuscate the listener's partial responsibility for her experience, and obscure the foundation of every sound object in *subjectivity*.

This is why Wishart emphasizes "perception," not only sound, as the changing element in the Lucier. No term, analyst, or artist can determine how we listen: we respond to their suggestions if and as we choose. Which means, since the characteristics of sound objects are contingent on how we hear them, that no sound object needs necessarily possess any particular feature. This recalls my earlier point: sound object analysis demonstrates that we can never definitively categorize sound, music, or sound art, as any particular thing. Nor can we definitively say what listening or analysis ought to be. I do not mean that any sonic experience is ineffable in a transcendent sense. Rather, sound object analysis suggests the opposite. Sonic experience eludes determinateness because it relies on subjective factors: interpretations, memories, cultural and epistemological predispositions of individual listeners. Analysis is correspondingly elusive because the variety of possible listening modes may be close to infinite.

What does this mean for analysis? What kind of activity is it? As the identification and description of objective elements within a sonic structure, traditional score- or program-based analysis proposes a narrative of a musical work: a tracing of its semantic structure relative to a pre-established musical system plus, in many cases, a translation of the "musical semantics" into linguistic communiqués relative to socio-historical circumstances. The narrative forms a coherent, autonomous whole, an organized presentation free of mixed metaphors – as such an objective presence that brooks no interruption, because interruptions in the form of contradictions may compromise the narrative's objectivity by undermining its claim to truth. This claim is strengthened by the narrative's basis in an established system that fixes the terms in which all narratives proceed. In western systems, for example, G# is always G#,

even when its setting varies. Western analysis depends on categorizing pitches, volumes, attacks, rates and sequences of change, using inflexible terms determined prior to any hearing. Although no western musicologist would claim that his or hers is the only possible way in which to hear a piece, the predetermination of such categories as pitch classes, dynamic and tempo markings, prior to *any* analysis, limits the extent to which analyses can vary.

But in sound object analysis, the listening act proposes and explores all possible descriptive categories, allowing for contradictory categorizations. For instance, although reduced and transcontextual listening require opposing standpoints, description of the Lucier excerpt as a transcontextual *and/or* reduced sound object is completely valid. Sound object analysis is entirely contingent on the subjective, creative, listening agent, requiring her to interrupt and contradict every attempt at coherent narration, even her own, by moving at will or unconsciously between contrasting listening modes. Where traditional analysis closes itself off from variations of its categories, sound object analysis calls on an Other – any other listening subject – to interrupt every application of every category. Thus sound object analysis functions less like a declaration and more like an interaction.²⁵ It illuminates the egocentrism of traditional methods, which undermine the very existence of listening subjects by categorizing sounds before anyone hears them.

In Judith Butler's *Giving an Account of Oneself*, listening and analysis are kinds of *doing*.²⁶ As such, the traditional assumption that everyone hears in the same way to some extent, an assumption meant to justify determinate categorizations of sound, could constitute what Butler calls "ethical violence": the demand "that we manifest and maintain self-identity at all times and require that others do the same," dismissing the singularity of others.²⁷ When established norms enforce this demand – as the norms of traditional musical analysis forbid inconsistent application of their categories, thus refusing to account for other listeners – those norms need to change: "the very unrecognizability of the other brings about a crisis in the norms that govern recognition."²⁸ For example, what experiential correlate has the category "G#" for listeners without perfect pitch? Traditional analysis fails to recognize or interact with such listening subjects, as it neglects sounds of indeterminate pitch. Instead of interacting with descriptive categories proposed by individual listening subjects, traditional analysis passes judgment on whether or not each sound measures up to predetermined categories, which everyone is assumed to hear. Sound object analysis evades this kind of "violence" by making individual experience indispensable to its approach, thereby putting traditional norms into crisis.

In conclusion: sound object analysis empowers the listening subject as a critical and creative agent, by allowing her full control over what constitutes each and every sound object. By posing as an alternative to traditional analysis, sound object analysis reveals the foundation of traditional methods in assumptions of listeners' homogeneity, hence their passive relationship to a priori categories. However, the claim of sound object analysis to dependence on subjectivity raises questions about sound's relation to meaning and truth. Sound object analysis discourages us from saying "sound *is*," "music *is*," or making a decision as to what it means to speak about music and sound. Does this mean there is no truth about sound or the arts of sound? Can we never have an ontology of music or sound? Does sound object analysis imply that there is no truth at all, only interpretation, language, and relation? Sound object analysis reveals at the foundation of traditional analysis the assumption that there is such a thing as truth – an assumption that not even sound object analysis can altogether escape, as it maintains the objectivity of sound at a certain level. Ultimately a theory of sound objects must confront the question of truth's very being.

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Notes

¹ Pierre Schaeffer, *Solfège De L'objet Sonore*, trans. Livia Bellagamba (Paris: Institut National de l'Audiovisuel, 1998), 65.

² Judith Butler, *Giving an Account of Oneself* (New York: Fordham University Press, 2005), 42.

³ Pierre Schaeffer, *Traité Des Objets Musicaux* (Paris: Éditions du Seuil, 1966), 265.

⁴ *Ibid.*, 23. Translation by John Dack, quoted in Michel Chion, *Guide to Sound Objects*, trans. John Dack (2009), 38.

⁵ Schaeffer, *Traité Des Objets Musicaux*, 365.

⁶ After "classifying objects from various sources without any reference to their instrumental sources," Schaeffer asks, "Is it possible to do the contrary, that is deliberately manufacture objects which correspond to our typological patterns, thereby proving that we are not committed to the construction of conventional instruments?" ———, *Solfège De L'objet Sonore*, 69-71.

⁷ Rolf Inge Godøy, "Music Theory by Sonic Objects," in *Polychrome Portraits: Pierre Schaeffer*, ed. Évelyne Gayou and translated by François Couture (Paris: Institut National de l'Audiovisuel, 2009), 73.

⁸ Michel Chion, *Guide Des Objets Sonores* (Paris: Buchet/Chastel, 1983), 35.

⁹ In his theory of perception, Schaeffer draws on his own psychoacoustic experiments and the philosophy of Edmund Husserl. See Schaeffer's *Traité* as well as Godøy, "Music Theory by Sonic Objects," 71, 73.

¹⁰ *Ibid.*, 70.

¹¹ See Schaeffer, *Solfège De L'objet Sonore*, 27, 65.

¹² "Rien ne peut empêcher un auditeur de la faire vaciller, passant inconsciemment d'un système à un autre, ou encore d'un écoute réduite à une écoute qu ne l'est pas. On peut même s'en féliciter." ("Nothing can impede a listener from vacillating, passing unconsciously from one system [of listening] to another, or from reduced listening to a [mode of] listening that is not [reduced]. We may rather facilitate this [vacillation].") ———, *Traité Des Objets Musicaux*, 343. Emphasis original.

¹³ *Ibid.*

¹⁴ Chion, *Guide Des Objets Sonores*, 30.

¹⁵ See *Ibid.* for clarification of these dialectical pairs.

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- ¹⁶ Chris Cutler, "Plunderphonics," in *Music, Electronic Media and Culture*, ed. Simon Emmerson (Aldershot, England: Ashgate, 2000), 97.
- ¹⁷ See Denis Smalley, "Spectromorphology: Explaining Sound-Shapes," *Organised Sound* 2, no. 2 (1997), and for a valuable clarification of Smalley, see Vesa Kankaanpää, "Displaced Time: Transcontextual References to Time in Kaija Saariaho's *Stilleben*," *Organised Sound* 1, no. 02 (1996): 88.
- ¹⁸ Cutler, "Plunderphonics," 97. Emphasis original.
- ¹⁹ Curtis Roads, *Microsound* (Cambridge: MIT Press, 2004), 3, 17.
- ²⁰ Rolf Inge Godøy, "Motor-Mimetic Music Cognition," *Leonardo* 36, no. 4 (2003): 154.
- ²¹ ———, "Gestural-Sonorous Objects: Embodied Extensions of Schaeffer's Conceptual Apparatus," *Organised Sound* 11, no. 2 (2006): 154.
- ²² *Ibid.*: 149.
- ²³ *Ibid.*
- ²⁴ Trevor Wishart, *On Sonic Art* (New York: Routledge, 1996), 158.
- ²⁵ For Adriana Cavarero, speech is an interaction, reason a gaze. See Adriana Cavarero, *For More Than One Voice* (Stanford: Stanford University Press, 2005), x, xix.
- ²⁶ Butler, *Giving an Account of Oneself*, 125.
- ²⁷ *Ibid.*, 42.
- ²⁸ *Ibid.*, 24.