

CASEY O'CALLAGHAN'S "SOUNDS":
A PRIMER

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Abstract

Casey O'Callaghan's *Sounds* is a phenomenological primer that argues for, as the author calls it, a form of "sonic reality" predicated upon a definition of sounds as "extra-mental" and "event-like" particulars that persist through changes. O'Callaghan's work is not concerned solely with defining sounds as such, but with countering the "visuocentrism" that misinterprets the rules governing sight as being applicable also to aural experience, and which therefore sees sounds as a kind of "secondary" sensory phenomena. Beginning with the critique of how cognitive science and philosophy have based their attitudes towards perception on visual criteria, O'Callaghan's theory of sounds hinges largely upon their existence as *events* rather than as *waves*, with his 'event view' also ruling out the possibility of perceiving sounds either as objects or object-like. As the term "sonic reality" suggests, O'Callaghan's project is also one of de-mystification, with much attention being paid to, among other things, faulty perception of cross-modal correspondences, and the true nature of echoes (which are posited as primary sounds being re-encountered rather than secondary sounds.)

Introduction: Why Sounds?

The shifting landscape of media studies, in recent years, seems to be allotting more time and more column inches to the subject of acoustic phenomena. This is perhaps a logical development following upon the fatigue arising from the emphasis upon "screens" (both television and digital virtual interfaces), or at the very least a belated complementary development. Sound is becoming increasingly relevant to this quadrant of academia, particularly for the role that it has played in the social or cultural histories of communications technologies (Jonathan Sterne's *The Audible Past*, from 2002, remains one of the most reliable templates for this kind of discourse, and will be returned to briefly.) The "extreme" perceptual limits of sound, i.e. "noise" and "silence" are particularly dominant within this field, with much of the theorizing on these sonic phenomena stemming from Friedrich Kittler's work (namely, his proposal that what we now refer to as "noise" began in the 19th century with "the conceptualization of sound as frequency, and the subsequent invention of sound recording by means of Edison's phonograph."¹)

Noises, to be read here as sounds of an incomprehensible or signal-obscuring character - what Denis Smalley would refer to as "third-order sound surrogacy" - are

increasingly intertwined with contemporary media studies courses, owing to their interpretive malleability. For example, they can be instruments of 'transgression' in the sense proposed by Antonin Artaud or Georges Bataille, or they can be harbingers of endless multiplicity as suggested by Michel Serres, or (following from Gregory Bateson's thoughts upon noise as a creator of "new forms"), can be seen as a sort of originary Ur-phenomenon of which more clearly defined arrangements of sensory data are epiphenomena. This latter view can be seen in Paul Hegarty's observation that "noise offers something [...] like dark matter, which may be what allows a structure for everything else to exist."² Lastly, the intrusive character of audial noise - e.g. the radio static that interferes with a 'clean' radio signal - has also been explored for what their nature may communicate about various 'excluded Others' within post-industrial society.

Many books and essays in this vein also, for better or worse, take their cues from *Noise: The Political Economy of Music*, the critique penned by Marxist technocrat Jacques Attali (Attali is introduced by Fredric Jameson in the book's foreword as "a practicing economist and a close adviser to President Mitterand," and "a central figure in France's current socialist experiment."³) Attali's affiliations are a topic for another day, though his theorizing has led to some even more woeful sequels to his own work, such as Steve Goodman's *Sonic Warfare* (in which the would-be progressive 'dubstep' producer-cum-author seemingly tries to resurrect a racial binarism that insists 'whites' and 'blacks' are genetically predisposed to make certain kinds of music.) Goodman's attempts aside, the recent academic focus is apparently concerned with building upon Kittler's realizations that "when sound became frequency, all sounds became equal" and that "the conception of frequency undermines the privileged and distinctive status of written music and changes the concept of sound and music altogether."⁴

But herein lies the problem: sound is being increasingly dealt with as a mental *concept*, not as a physiological acoustic phenomenon. The discrepancy between discussion on the radicalizing potential of sound, and discussion on the actual behavior of sound as it propagates in a given medium, is growing - in no small part because so much about the phenomenology of sound is taken to be common knowledge. This is also due to the fact that, according to Jonathan Sterne, focus upon "transhistorical explanations of sound's nature" is misleading insofar as transcendent sonic characteristics are themselves the legacy of a single incomplete worldview - namely, the "two-thousand year old Christian

theology of listening."⁵ Sterne's assumption says more about his ideological foes than it does about the phenomenology of sounds, unfortunately, and the dismissal of transhistorical perception that he shares with other cultural studies scholars will be dealt with shortly.

Seen against this background, it is clear that there needs to be more discussion on how all sounds are perceived and understood to behave (and this refers not just those potentially disruptive varieties that are seen as metaphors for political activism and upheaval, or seen as being uncannily resistant to commodification.) Many of the current media studies polemics are jumping the gun by trying to sketch the ontology of noises and sonic ruptures, which are only a sub-species of sounds proper, without fully considering the phenomenology of sounds. As a corrective to this 21st century trend, we can at least look to Casey O'Callaghan's 2007 work *Sounds*.

Though the writers of works based in critical theory would be correct in saying that sounds, especially recorded or synthetic ones, cannot be easily analyzed as some sort of primordial materials whose socio-cultural impact is not accounted for, it is clear that too much about acoustic phenomena itself has been taken as a given. Even by referring to sounds as "properties" of an environment, such writers will already be running afoul of an idea forwarded by O'Callaghan: that sounds are not themselves "properties" or "qualities," but rather "particular individuals that *possess* [italics mine] audible qualities of pitch, timbre, loudness and possibly other inaudible properties."⁶

So O'Callaghan's 2007 volume is interesting in that, unlike many other 21st-century writings on the topic, it sticks to its development of a philosophical theory without inferring exactly what this will mean for human culture, other than perhaps its general enrichment. The book offers seemingly no social prescriptions for the correct use of sound once its nature has been more clearly identified, yet O'Callaghan still offers a host of reasons as to why this knowledge might be useful, stating that "audition surpasses vision in the ability to detect change, and in the ability to monitor multiple sources of information."⁷ In order to achieve all this, however, certain enemies still have to be identified and given a proper polemical counter-attack - in O'Callaghan's case, this enemy is "visuocentrism" or the habit of interpreting all sensory information by the same physical and mechanical criteria that govern sight.

Sound is defined in at least one popular textbook on acoustics as a "mechanical disturbance of the medium, which may be air, a solid, liquid, or other gas."⁸ By using such language, much of O'Callaghan's argument has already been made for him, given that he himself repeatedly determines sounds to be events and occurrences rather than the objects they have been made out to be in a visuocentric culture. As we will see, though, O'Callaghan's line of attack is formed from more than simple re-statements of the fundamentals of acoustic science.

Tyranny of the visual

O'Callaghan's book is prefaced with a quote by the composer John Cage, a choice that seems more apt the further one reads into the former's book. In his well-known treatise *Silence*, Cage famously argued for an appreciation of sounds that would allow them to "be themselves",⁹ and, when asked what the purpose is of his "experimental" music, replies "no purposes. Sounds."¹⁰ Distinctly flavoured with the Zen view of life that Cage would come to absorb through the teachings of D.T. Suzuki, Cage's thoughts on this subject echo those already made by the 'grand old man' of physiological acoustics, Hermann Helmholtz, in the 19th century: "in music...no [...] perfect representation of nature is aimed at; tones and the sensations of tone exist for themselves alone, and produce their effects independently of anything behind them."¹¹ Both the leading figures of the hard sciences and the avant-garde of arts production have, for their own differing ends, forwarded the idea that sound was non-purposive: from this we can deduce that it is up to each individual to inject his or her own meaning into those many sounds that exist with no clear communicative functions beyond their indexical ones.

The fact that Cage's propositions still seem radical is a testament to the state of affairs that O'Callaghan decries throughout his book: namely, that "visuocentrism" has led us to conceive of sounds as mysterious or, more appropriately, ethereal entities. Among philosophers and critics of perception, O'Callaghan is not alone in realizing the cultural differences that have been ascribed to sound *vis a vis* vision: Jonathan Sterne has drawn up a fairly exhaustive "audio-visual litany" that outlines, along with the methods of orientation ascribed to seeing and hearing, the moral and ethical character that we are supposed to deduce from them (Sterne's decision to call this list of binary oppositions a litany is indeed grounded in the fact that these oppositions have "theological overtones"

to them.)¹² In this cataloging of contrasts between sight and sound, the latter is generally given a subjective and immersive role that precludes a real understanding of things, whereas vision aids in ratiocination and the understanding of objective reality. Sterne makes it clear in no uncertain terms that, while he finds this litany "a powerful ideological frame for the history of the senses," he nonetheless considers it inaccurate to interpret vision as a "rational, technical and spatial sense, and nothing more" while also interpreting hearing as "a temporal and non-technical sense, and nothing more."¹³

Whereas Sterne's 'litany' is concerned with confronting the absolutist and antagonistic duality of sight and sound (and the presumptions that we have to 'choose one or the other' in order to orient ourselves both spatially and culturally), O'Callaghan is more concerned with the complete subsumption of sound by vision. He claims that this is already reflected in the English language, particularly in philosophical discourse on perception, while "neutral or non-visual language - *recognize, discern, perceive* - has acquired a palpably visual tinge."¹⁴

Certainly there are even more examples from the realm of argumentative or persuasive language that can be added to O'Callaghan's inventory, such as the not infrequent habit of interlocutors asking if listeners "*see* what [they're] saying." This seems a sad state of affairs for lovers of the sonic experience, and, despite the argument over the perceptual immediacy and endurance (both physiological and psychological) of visual vs. aural data, "sonophiles" must cede defeat to the greater variance in characteristics that can be ascribed to visible bodies in space. There seem to be a limited number of characteristics, by comparison, attributable to sounds: frequency, timbre, and loudness do not seem to hold a candle to the wealth of visible characteristics relating to color, shape, relief etc. Another battle for the audio purist is also lost in the accuracy of information received: anyone who knows of head-related transfer functions (HRTFs), for example, knows that there is a certain asynchronous character, however minute, with audio information reaching the ears. This is something that cannot be argued as easily for binocular vision.

Allies against visuocentrism?

The visuocentric viewpoint has met with its vociferous counter-arguments within (unsurprisingly) the sphere of musical composition. Pierre Schaeffer, the pioneering composer of concrete music, while making an argument for sounds' being "much simpler to grasp than images," simultaneously claims that sounds enjoy a greater "vibrational tolerance", as it were:

The difference between hearing and seeing lies not only in the difference between the seven octaves of mechanical vibrations and the one octave of perceptible electromagnetic vibrations. The eye is confronted with an infinite variety of stimuli, say in a painting, and the role of the eye is to select from them a topography, a geometry, with colors intervening only from a qualitative point of view. The ear, on the other hand, establishes relationships between all mechanical vibrations that impinge upon it.¹⁵

Schaeffer, nonetheless, acknowledges the primacy of the visual in human culture, noting that it is "almost fifty years in advance of music" (citing the development of silent films long in advance of sound films, and also conceding that "vision is essential for survival and for the existence of science and technology."¹⁶ On this last note, Schaeffer is in accord with O'Callaghan, who also recognizes vision's evolutionary / survival potential as such (e.g. "whenever stimuli across modalities are incongruous, vision wins.")¹⁷ Although most thinkers are not foolish enough to suggest vision as the only sense aiding in survival, there are numerous implications throughout literature on the senses that suggest it as the leading sense in this regard, and that other non-visual modes of orientation towards survival are being progressively downgraded: Diane Ackerman, for example, acknowledges the usefulness of the olfactory sense in "scout[ing] danger," but also notes of smell that "evolution keeps trying to gently tug it from our hands."¹⁸

Schaeffer is largely credited with re-introducing the Greek concept of acousmatics into the musical realm; dealing with sounds that were heard without knowledge of their causes (the term owes its origins to the Greek *akusmatikoi*, or pupils of Pythagoras who

listened to him lecturing from behind a curtain. Philosophers such as Roger Scruton have also acknowledged this view as aesthetically relevant (O'Callaghan, in fact, namechecks Scruton rather than Schaeffer when discussing it in a synopsis of his work.)¹⁹ The foundation of the acousmatic aesthetic seemed intimately tied up with a skeptical of visuocentrism, and its ability to limit imaginative activity rather than to expand it, as Schaeffer describes:

When I listen to a violin being played, my attention is drawn to the gestures of the violinist and to the technical aspects of his instrument for producing sounds - my understanding of the music he makes is affected by what I see. But when I listen to the radio or recordings, I am forced to modify my listening, to penetrate into the sounds alone. This corresponds, in a way, to reasoning either by deduction or induction. Listening to live orchestral music is essentially deductive listening, it is strongly deduced from vision, whereas listening to the radio or a phonograph is inductive or acousmatic listening.²⁰

However, in his attempts to create a more listening-intensive sonic culture, Schaeffer nonetheless found himself using language that more appropriately refers to visual phenomena, and which will bring us eventually to one of O'Callaghan's key arguments. In imagining a new form of composition that would make good on Kittler's theory that frequencies had triumphed over 'notes' or 'tones' as the new (or re-discovered) fundamentals of organized sound, Schaeffer coined the term "sound object", or *objet sonore* (see his 1966 treatise *Traité des Objets Musicaux*.) The *objet sonore* was "synthesised together from a continuum of auditory perceptions"²¹, and was somewhat paradoxical in that it was a transcendent *essence* labeled as a physical *object*. The goal of the *objet sonore* was to shift attention "away from the physical object that causes [...] auditory perception, back towards the content of this perception"²² - and, in this process, to allow listeners to personally interrogate their own certainty about sonic phenomena. This concept would itself be refined or spun off into subsequent discoveries like Luc Ferrari's more aleatory *objet trouve* ['found object'], referring to a 'sonic object' "found by chance...an idea that did not exist beforehand."²³

Whatever the case, no matter how ambiguous this hybrid "essence-object" was that Schaeffer proposed, it still did not sever the last cord between listening and visuocentrism. While it can safely be assumed that both O'Callaghan and Schaeffer want to remove listeners from the perceptual falsehood that sounds are their sources, e.g. that a note played on a tuba *is* the tuba, Schaeffer still suggests another speculative object - however ambiguous its coordinates - in the place of this sound-source confusion. This brings us, at last, to a central plank of O'Callaghan's argument: sounds must be conceived of as *events* rather than objects. This conception does not involve a simple inversion of the present situation into audiocentrism, where the visual perception of objects like glass panes and trains would be irrelevant, but simply suggests that greater emphasis be placed upon what changes those objects are affecting in their respective environments. So, events proceeding from the objects, such as "train oncoming" or "glass breaking" would more properly be recognized as sounds.

The medium and the message

If a "tyranny of the visual" does exist, it is certainly noting what characteristics of vision cause it to be separated from audition in the first place, a condition that would seem to be a prerequisite for its being in competition with audition and presumably conquering it. Sound's relation to the temporal dimension is among the most important of these differences, as O'Callaghan suggests below:

...We identify the sounds we hear, such as the sounds of spoken words and sirens, by the ways that they are stretched out in time or by their patterns of variation over time. While visible objects at least seem to be wholly present at any moment at which they exist, it is reasonable to think sounds require more than a mere instant.²⁴

In addition to their ability to be stimuli which endure over time, the relation of sounds to spatiality provides another crucial differentiation between sounds and visible phenomena, with the philosophical debate over sounds' spatiality being much more of an 'open' matter than the visible world - of the latter, O'Callaghan admits that "one of the

most striking aspects of visual experience is its rich spatial content."²⁵ There is also something to be said for the immediacy of the visual environment's comprehensibility relative to that of sound, which "might require 'working out'" or might "stem from inferences based on audio data."²⁶ At the same time, one can make the argument (as Denis Smalley does) that sound furnishes us with a superior awareness of distinct spaces or atmospheres, much as vision provides us with a clearer understanding of distinct objects and physical forms. Smalley, in his theory of acousmatic music, goes as far as to propose the "nesting" of "compositional space" within "listening space,"²⁷ itself suggesting various flavorings of sonic space that are differentiated by their levels of intentionality or passivity (both O'Callaghan and Smalley, incidentally, take their cues from Jens Blauert's work on spatial hearing.)

This perceptual ambiguity of sound's positioning in space has led to ambitious theories like that of the metaphysician Peter Strawson, who ends up being called in for some critiquing in O'Callaghan's work: in the second chapter of his essay *Individuals* (titled, conveniently enough, 'Sounds'), Strawson proposes a fantastic world devoid of spatial properties called the "no-space world." Curiously, this world is also referred to as a "purely auditory world," because, per Strawson's argument, this speculative environment would be "stripped down from all the dimensions which would be derived by any other senses apart from hearing."²⁸ We can assume that Strawson's world would be one without bodies, and in fact much of Strawson's work is based upon the conceptualizing of the possibility of disembodied experience (though Strawson's objections to Cartesian dualism, in which any given person is "really two persons: one a soul that thinks and the other a body that sweats"²⁹ requires him to do some serious metaphysical acrobatics to reconcile this conviction with his views on the possibility of such experience.)

Theorist Jean-Paul Caron argues for the materiality of sound by claiming "hearing, like odour, gives us also information about the material composition of objects: metal and glass sound very different, etc etc...this points to a intrinsically spatial and identifying function of hearing, making, thus, Strawson's inquiry sounds almost futile."³⁰ Both Caron and O'Callaghan makes similar statements refuting Strawson's concept of auditory experience as being non-spatial - with both implying spatiality as being distinguished in terms such as "left-right" even when in spatially limited environments

(O'Callaghan is referring specifically here to listening that takes place via stereo headphones.) Of course, much of Strawson's theory about the non-spatiality of his hypothetical 'purely auditory' world may also come from the fact that *sounds themselves* lack a distinguishable "body" as the objects of vision might: that is to say, sounds do not feature 'surfaces' and 'cores' or any kind of internal / external distinction, as much as we may like to speak of such qualities when trying to parse complex experiences of organized sound (this is especially true for certain paranoiacs who, when they speak of "hidden messages" carried within some other sonic shell, like to speak of sounds being nested within one another.) All this aside, the aforementioned non-spatiality does not mean that sounds have "an all-out inability to represent space or spatial characteristics of sounds," or that they "lack all spatial features that we are able to discern."³¹

This brings us to O'Callaghan's belief that the existence of a propagating medium is a necessary prerequisite for the existence of sounds, an argument he advances by again de-objectifying sound. That is to say, he uses the example of the vacuum to again remind us of perceptual inconsistencies between the audial and visual realms. Playing devil's advocate to his own theory, he wonders why we cannot think that "sound is present, although inaudible, in a vacuum?"³² Once again, O'Callaghan forwards this as a conceit that is informed by too much visuocentrism, i.e. the knowledge that visual objects continue to exist even in total darkness. More importantly, though, "no suitable description of audible qualities to sounds is available in the case of vacuums."³³

Breaking the wave theory

Another aspect of visuocentrism is its tendency to domesticate the ethereal or ephemereral qualities of sounds by making them equivalent to the visual phenomena used to represent them. This is a tendency that has markedly increased with the advent of spectrograms, sonograms and waveform readouts that visually represent sound but - as O'Callaghan may argue - are never more than representative abstractions. The somewhat misinterpreted science of cymatics proposed by Dr. Hans Jenny (named after the Greek *kyma*, or wave) also testifies to the common belief in sounds and their carrier waves as being interchangeable concepts. This is more the fault of Jenny's epigones than Jenny himself, since he identifies numerous other types of waves or "vibrations of a pure form" exhibiting periodicity - microwaves, radio waves etc. - in addition the acoustic

vibrations that have become the exclusive point of interest for the artists mining his work for ideas. Of course, it was acoustic vibration that Jenny used (in a modern update of Ernst Chladni's experiments³⁴) to demonstrate its role in shaping physical forms, though the simple "all is vibration" conclusions that have been drawn from Jenny's experiments have done their part to reinforce the theory of sounds as waves. In response to those following such a "wave theory" of sounds, O'Callaghan protests that

...the wave is not just a parasitic item passing through the medium; it constitutes a dynamic occurrence that takes place within the medium. The existence, propagation and boundaries of the wave depend on processes that occur in and essentially involve a medium, so to highlight the medium-dependence of the wave and its attributes is to highlight the wave's event-like characteristics.³⁵

A potentially radical component of O'Callaghan's event theory is the realization that *sounds* do not travel merely because *pressure waves* do - he feels passionately enough about the falsehood of such assumption to say that "complacently accept[ing]" it is to accept "a caricature of scientific doctrine."³⁶ For O'Callaghan, the fact that vibrating objects create pressure waves jars with the human experience of sounds: for one, though these pressure waves are traveling outward from their source(s), humans generally do not experience this state of sonic transit unless the *sources themselves* are traveling. The colorful descriptive image that O'Callaghan uses for this false state of affairs - the "auditory missile" - immediately brings to mind the type of hyperbolic, metaphorical language that has long been a feature of music journalism and record album reviews, in which sounds are seen as identical with objects hurtling through space, crashing down upon the listener's head etc., rather as events that proceed from these colorful intrusions.

O'Callaghan does not take issue here with the fact that sound is perceived as *directional* (i.e. "coming from"), yet he feels that this sense of directionality is truly experienced in a less dramatic way, as much as understanding the truth of the matter may make for less compelling reviews of extreme metal albums. In addition to the "auditory missile," O'Callaghan proposes an "auditory breeze," basing his distinction upon the fact that a breeze implies "direction, but no distance."³⁷ This conception of

sound may be a little less solipsistic than that of the "missile" - in the sense that the latter conception envisions all categories of sound as being "meant for" a pre-selected human target - yet O'Callaghan maintains that neither of these conceptions really tells us anything more about a sound than the fact that it has a causal source. That is to say, they do not decisively prove that sounds travel.

Yet dismissing the traveling nature of sounds is not enough to immediately dissuade wave theorists, and therefore O'Callaghan turns to what he perceives as a trump card or would-be "gotcha" moment. In a later chapter of *Sounds*, he provides us with the wave theorists' example of constructive and destructive interference. In the latter situation, sound waves that are out of phase cancel each other out, while in the former, sounds can seem doubled in their intensity by being *completely* in phase (a phenomenon that is clearly visible when visualized in any audio editor software: the visible peaks and troughs of two identical sinusoidal waveforms will double in size if those sine waves are placed on separate audio tracks and then 'mixed down' to a single track.)

O'Callaghan admits that, in this and other situations, waves do carry information *about* sounds, yet he holds firm in saying that "interference phenomena do not undermine the view that sounds are distal events."³⁸ In the case of destructive interference, the existence of "no sounds" is in fact often rectified merely by the hearer's shifting their viewpoint and removing themselves from the node in which there seem to be no sounds (provided they have the ability to do so - whether there are sonic environments large enough or sealed enough to disallow this re-shifting of perspective is another issue.) It is our limited vantage point, as per O'Callaghan, that creates an illusory sense of non-sound in the case of destructive interference, and in the somewhat more intuitive circumstances of constructive or additive interference - the sum of vantage point and the source events' spatio-temporal arrangement is the culprit in both scenarios, not the sounds' equivalency to pressure waves.

O'Callaghan's own "trump card" is played shortly after making this realization, as he introduces the popularly known concept of the Doppler Effect, i.e. the perceived change in sounds' audible frequency as their source approaches and then recedes from a stationary listener. O'Callaghan firstly clarifies that there are not one, but two variations on the Doppler Effect: the "subject-motion" variant (in which a mobile individual races past a stationary sound source, such as a loudspeaker) complements the

mentioned, more commonly studied "source-motion" variant. O'Callaghan, weighing his options for how to explain these phenomena in terms of his event theory, eventually determines these effects to be illusory differences in perceived sonic pitch. Again, O'Callaghan believes that a shift in the listener's location is to blame, and not a "change in the world of sounds" themselves.

O'Callaghan's event theory could run into problems if we consider what constitutes an "event" to be on the microscopic level rather than on a level more unequivocally perceptible. He himself acknowledges as much, and grants imperceptible molecules full status as objects, but he pays less attention to this issue than to a different type of event, the interface (i.e. sounds' encountering material barriers or obstructions that can be absorptive or reflective of a primary sound.) Though sounds do not seem to be produced by collisions between air masses and barriers - or, indeed by the collision of one medium with another, e.g. water with air - does not disqualify interfaces from being sound events in themselves. As O'Callaghan puts it,

If being a sound is being a medium-disturbing event, then what makes something a sound is just that it is an occurrence with the physical makeup required of such a disturbing [...] If a window interacts with a medium to produce a disturbance, that window makes a sound no matter how its activities arise.³⁹

However, the story does not end there - most individuals will still have a "perceptual bias" towards whatever source they understand to be the primary sound source, such as a gaggle of angrily honking geese that hector a listener until he or she slams a door on them. This bias will tend to view the newly muffled goose honking as just being a "non-ideal" representation of that sound, though this assumption of ideal conditions brings us a little too close to needing something like the "full sunlight" conditions that will be mentioned below. In taking an alternative view to this, O'Callaghan must clarify his own event-based theory somewhat by distinguishing between discreet events and single events that endure spatio-temporal transformations.

In citing the example of barriers, which O'Callaghan will return to later in the book with his musings on echoes, O'Callaghan points to something that he believes to be a shortcoming of our descriptive language relating to sounds: namely, he encourages us to think of multiple sound events in terms of transmission rather than generation. Instead of both the geese and the door "generating" separate sounds (which would imply that the sound is distinct from an event), *transmission* instead allows us to conceptualize the permutation of an already-existing wave disturbance in the propagation medium. O'Callaghan would therefore argue (though using slightly more personalized examples than my own) that the newly muffled, yet still insistent honking of the geese would not constitute the generation of a second discreet event, but would instead be another phase in the "causal history" of the original event.

The problem of cross-modal correspondences

In the final chapter of his book, O'Callaghan discusses the theory that the distinct senses provide complementary information to each other; that our perceptual system provides a "composite snapshot" of all information available to use at a given spatio-temporal point. Matthew Nudds, a collaborator of O'Callaghan's, and fraternal member in the Aristotelian Society (the two share a recent [2013] book of further essays on the perception of sound) has likewise noted that "there are some properties that objects can be perceived to have with more than one sense...one can both see and feel the shape of something, for example."⁴⁰ Even if we dismiss the fact that Nudds is speaking of objects rather than the events O'Callaghan prefers to conceive of, this statement still has much truth to it.

This realization of the inter-communication of the senses leads O'Callaghan to wonder how much *synchronization* is possible between any two (or more) modalities. His view here appears to be a skeptical one, in line with what Fred Dretske has said on the subject:

...seeing and feeling movement are much different even though the same thing (movement) is represented in both modalities. Even when the senses overlap in their representational efforts- as they do in the case of

spatial properties, they represent different ranges of determinable properties.⁴¹

This realization is important in order to preserve his event theory of sounds, which again sees them as being the result of objects' interactions rather than objects themselves, and which may communicate the presence and location of honking geese though it is never "the geese" full stop. In order to illustrate how irreconcilable visual and audial data are, O'Callaghan alights upon the ideal lighting conditions that are proposed for seeing: the full-spectrum character of sunlight, he contends, "incorporates complete detail about the range of reflectance characteristics a surface exhibits," whereas "no such normatively significant medium exists in the case of sounds."⁴² Of course, there are manifold arguments within the sound recording and sound reinforcement communities as to what the optimal *conditions* are for listening to either "live" or reproduced sound: however, O'Callaghan would be correct in saying that there are no acoustic conditions (i.e. coefficients of materials' sound absorption) that would present to us a "naked" sound.

Taken from a strictly neurological perspective, the ability to perceive across sensory modes is a distinct reality for many. For one, the commonly held assumption that sensory deprivation leads to functional reorganization of the senses has been confirmed in hemodynamic or electromagnetic studies conducted on the blind, while the growing literature on synesthetes confirms that certain individuals do have lifelong sensory correspondences between two or more sensory modalities - from which we get the famous examples of "hearing colors" and "tasting shapes", as well as more exotic variants like mirror-touch synesthesia (in which "a tactile hallucination is triggered by observing touch to another person.")⁴³

O'Callaghan, however, would argue that "there is a difference between thinking or believing that something is present and experiencing it as present,"⁴⁴ and thus makes sure that the neurological condition of synesthesia is not thought of as anything other than an illusory or hallucinatory state. He quickly leaves the study and etiology of synesthesia to other more capable researchers, and differentiates it from cross-modal illusions that might be "adaptive and advantageous" owing their being "intelligible responses to unusual or extraordinary situations."⁴⁵ O'Callaghan's phrasing here is unfortunate, and sadly glosses over the numerically small, yet significant, cases in which

synesthesia has occasioned "unusual or extraordinary" *responses* to normal situations - Dr. Luria's famous "Patient S." was one such individual, whose highly subjective cross-modal illusions facilitated for him a prodigious ability for memory recall.⁴⁶ Testimonials from synesthetes also regularly make mention of their condition's ability to enhance environments aesthetically, so there are levels on which this condition is not a disruption or disadvantage.

This utilitarian argument for good cross-modal experiences (i.e. they are useful only insofar as they contain an "adaptive" significance) is perhaps the weakest portion of O'Callaghan's thesis, and in fact the concluding chapter on these cross-modal experiences seems superfluous in that it makes no further compelling arguments for his 'event theory' of sounds. The confirmation that "modality-independent or multimodal principles shape auditory experience, and ground a level of content that cannot be characterized in purely auditory terms"⁴⁷ is one of the easiest arguments of O'Callaghan's to intuit. For O'Callaghan's prospective detractors, though, this may be a necessary means of refuting the idea that he is constructing an "audio-centrism" to put in visuo-centrism's place, if it should ever be dethroned.

Recorded and Cinematic Sounds: Sonic or Cinematic Reality?

It may be worth our while to briefly return to Pierre Schaeffer's previous comments on the 'late' introduction of sound to film, as they relate to another area of O'Callaghan's thesis - a chapter on the perceptual dilemmas presented by recorded sounds, or how perception differs during 'live' encounters with a sound source and situations in which "information about [an] original sound event is through technical means transduced, preserved, transmitted, and reproduced as a new sound."⁴⁸ Regarding these comments, it would be worth considering whether this late blossoming of the sound film owed itself more to technical constraints, or something more to do with the uncanny nature of hearing - particularly the misconception of sounds as ephemeral entities that existed in the silent film era as well as now. It is also worth considering that the respective histories of the major screen-based entertainments - cinema and television - were very much inversions of each other where the addition of sound was concerned. Television, once a far more "live" broadcast medium than what currently exists, was seen as the direct successor to radio programming, making television essentially an adding of sight

to sound rather than what occurred with the introduction of the sound film. Since all these optical media involved some sort of remove from the original sound source, though, they did much to enhance in us the erroneous feeling that sounds "travel" to us in both space and time.

I do not believe O'Callaghan feels his book's discussion is a 'complete' overview of the ways in which we come to perceive recorded sounds, though I am left wondering if more attention couldn't have been given to another salient aspect here: namely, the presence of some sort of "system noise" that is endemic to almost all experiences of recorded sound, whether they are ultimately used as stand-alone recordings or as accompaniments to filmed material. Distortions and partial obfuscations of the original source material have come about in the past via the surface noise of vinyl albums and 'tape hiss' (or, more accurately, "electrical noise in the electrical circuits of the recorder, [which] can [also] consist of extraneous acoustic sounds which are picked up by the microphone.")⁴⁹ Of course this was also possible during moments in which the motor of a film projector would temporarily malfunction, causing the audio encoded on the filmstrip to "wobble" or briefly shift dramatically in pitch.

Location recording already introduces one level of perceptual inaccuracy, owing to the common shortcomings of microphones (e.g. susceptibility to wind effects, and the filtering or equalization processes that must compensate for this.) Meanwhile, the "perfect" reproduction of sounds within the more controlled environment of the studio still seems a near impossibility, as Richard Holmes warned decades ago:

No recording studio is absolutely quiet. If the readers are too far from the microphone when recording, the microphone amplification must be increased, and unwanted acoustic noises such as rustling of papers, air conditioner fans, and squeaking of chairs will be picked up.⁵⁰

In all the cases where the surface noise of recorded media or the system noise of an apparatus exists, the act of listening is as much a matter of "listening to the playback apparatus" as it is a matter of listening to captured sounds. Jonathan Sterne has aptly noted this, though we can ignore his subjective and Attali-esque aside that "wishing away the noise of the machine...suggests wishing away the noise of society."⁵¹ I believe

this simultaneous act of listening to recorded material and to a playback device - which may still be an object of perceptive focus even when operating rather smoothly - is worth more consideration than O'Callaghan gives it. If, for no other reason, because the sound reproduction ability of these devices are still noticeably lacking when compared with the acuity of the human ear.

Strangely, though, O'Callaghan seems correct to note how "we say with confidence that we hear our conversant's voice during a telephone conversation, but more readily abandon thinking that we really see the president during a live televised speech."⁵² He does not mention how the asynchronous historical development of audio and video technologies figures into this, though we can make certain assumptions regarding the same. The history of direct, personal communication via audio-exclusive means (telephone, two-way radio) is much more storied than the comparatively recent history of Internet telephony or video-link communication. In spite of this, film (arguably moreso than less 'immersive' experiences with television and other 'small screen' media) presents a special challenge for O'Callaghan's attempt at "sonic realism," which it throws into conflict with the purposes of a more provisional "cinematic realism". As Wendy Yu puts it,

The purpose [of film] is to have spectators believe what is happening *while* they experience it. If the audience can see, hear, and feel what is happening to the extent that they allow themselves to believe what is happening in the film for that moment, then that is the height of cinematic realism.⁵³

In other words, the project of cinematic realism is the believable projection of a fictional scenario (which does hold true for documentary film as well - while the action may not be scripted, viewers can still indulge in the fiction that they were "present" in the shooting location or perhaps that they were the "flies on the wall" during surreptitiously recorded scenes.) *Contra* O'Callaghan's wishes, participants in the cinematic experience are fully open to illusory perception ("suspended disbelief"), being mostly cognizant of the fact that they are "adopting the temporal perspective of the camera," and therefore

generally unconcerned that "one cannot perceptually experience something to have happened long ago."⁵⁴

Another part of the cinematic experience missing from O'Callaghan's discussion of recorded sounds - and one which might have served the author better than reminding film viewers of the obvious fact that they are temporally and spatially distant from the filmic action - is the treatment of deliberate post-production illusions (as opposed to the unintentional encounters with sonic infidelity in the pre-production or recording phase.) One such illusory effect, the "Indiana Jones punch" sound, is described by sound designer Ben Burtt as follows: "the early Hollywood filmmakers discovered that a punch requires an exaggerated thwack to emphasize that it might really hurt...literal reality couldn't be as exciting."⁵⁵ Such emphatic sounds designed for certain film scenarios are often, in fact, created using alternative sources rather than sampling stock recordings of a naturally-occurring phenomenon: rather than playing with the frequency equalization and compression of a recorded thunderstorm, for example, a more emphatic version may simply be created from scratch by hammering upon a metal "thunder sheet" designed especially for this simulatary purpose. That this emphatic sound is a kind of manipulative "hyperreal" conceit has not gone unnoticed by film's leading *auteur*-critics, whose rebellion against sonic manipulation (meant here both as a clandestine shaping of sound, and the coercive effects thereof) is grounded in a more all-encompassing politics of authenticity.

Case in point: the filmmaker Jean-Luc Godard was another individual besides O'Callaghan who called himself a "sonic realist," a designation he adopted on the grounds that he did not engage in post-production illusions as mentioned above. Godard not only refused to use certain "illusory" sounds as stand-ins for their naturally occurring counterparts, but did not rely on mixing of discreet audio material so that, for example, individual characters' voices were no longer clearly audible above the din of the urban environment in which they were filmed. Yet Godard's refusal to differentiate among different types of sounds, or to foreground certain elements of the sonic environment, is profoundly *unrealistic* - that is to say, still illusory - in that it does not take into account humans' innate inclination to focus attention on certain sounds or to develop their personal hierarchies thereof, a fact that holds particularly true for human speech. O'Callaghan has noted, in fact, that human neonates

distinguish and prefer speech to non-speech sounds, and infants from 5-9 months discern phonemes distinctive to their own language. So, a special sensitivity to language-specific kinds of sounds adds to our explanation for why the experience of hearing speech in a language you know has such a salient, distinctive character.⁵⁶

Godard, by assuming that the non-discriminatory nature of the microphone is a capable stand-in for the sophisticated differentiating capabilities of the human ear, is a sonic idealist rather than a sonic realist. Those who take a similar approach in, say, the "lo-fi" fringes of recorded music (e.g. those who prefer a full band to be placed within a single room and recorded onto one audio track, as opposed to being multi-tracking the discreet sound sources) are similarly passing off another idealized illusory situation as objectively experienced "reality." Especially where film is concerned, these attitudes do more to reinforce vision as a "superior" sense than they do to institute the kind of sonic egalitarianism or multiplicity that Godard might hope for: the camera is given the luxury of zooming in on and selecting certain objects, whereas the microphone and subsequent sound-shaping apparatus in the audio "signal chain" are not allowed to approximate our innate ability to "tune in" and "tune out" certain audio events within a complete sonic scene. Such audio activists' connection to otic reality is no less illusory than the sound sculptors who wildly exaggerate the audial characteristics of hand-to-hand combat noises.

Criticism - O'Callaghan, Schaeffer, and the phenomenological reduction?

It is interesting (and maybe somewhat refreshing) that O'Callaghan's treatise does not deviate into discussions of organized or composed sound in order to illustrate any of the key points within. The musicological or simply creative implications of O'Callaghan's work are left largely up to the reader. As the work and documented thought of Pierre Schaeffer has made clear, though, the "sonic realism" agenda of Casey O'Callaghan has not been absent from sonic creativity in recent decades - a fact for which Schaeffer has boasted that "for years, we often did phenomenology without knowing it (which is much better than talking about phenomenology without practicing it)."⁵⁷ Both 'concrete

music' and its successors - e.g. the Acoustic Ecology movement - have aimed at developing a so-called "hybrid discipline" or "a bridge between the realism of the scientific description of sounds provided by acoustics, and the 'psychologism' of its musical or cultural appreciation,"⁵⁸ a description that has been noted in numerous places as being very close to Husserl's original aim for phenomenological study.⁵⁹ In fact, by viewing music as a field that "tends as much to set the grounds for knowledge as to create works of art,"⁶⁰ Schaeffer comes strikingly close to the phenomenological project of O'Callaghan, and also proposes an art that would - depending on the listener's personal inclinations - be capable of either to revealing the truth of our perception of sound, or allowing us to become lost in a less inquisitive, yet refreshing aesthetic experience.

As strong as O'Callaghan's essay may be in giving the reader a new phenomenological understanding of sounds, its author is more than a little vague about what he hopes to achieve by gradually dismantling the "tyranny of the visual" - the book ends with a final warning against accepting that state of affairs as immutable, but with no resounding coda otherwise. It is probably best to supplement O'Callaghan's work with that of other sympathetic sonic researchers in order to reinforce the idea that his project of is more than a "self-help" project, or that it is a sonic complement to something like Jane Bennett's "Thing Power": her somewhat visuocentric re-sanctification of material objects (see esp. her wish "to become better able to 'be surprised by what there is to see.'")⁶¹

O'Callaghan does note that, though his account "makes the place of sounds in the world unmysterious," it "might be thought to add mystery to how we perceive them."⁶² This, in effect, gives him a kind of common purpose with the acousmatic composers, and a similar risk of critical censure for evoking "mystery" in any form whatsoever. Though it has to be mischievously noted at this late stage in the game that Schaeffer is never mentioned by name in O'Callaghan's book, one more common point between these two individuals needs to be recognized (and which may go some way to explaining the absence of O'Callaghan in your local media studies department's reading list.) The critic Brian Kane ultimately castigates Schaeffer for his "desire to create a 'hybrid discipline' capable of grounding both acoustics and musical practice", on the grounds that "the phenomenological aspects of Schaeffer's work transform this project into a mythical thinking, where history is wholly absent."⁶³ That Kane later defers to Marx in the same

breath that he uses to shun "ideology" is highly amusing, though it is ultimately disturbing that such critics cannot see the value in a philosophical or metaphysical undertaking that does not bind itself to political economy.

Kane, naturally, would counter that it is more naïve to see the study of sounds themselves as both the "alpha and omega" of phenomenological investigation:

The process of phenomenological reduction lends to the sound object a strange trajectory: methodologically, one discloses the sound object only at the end of the investigation, after a series of reductions; but ontologically, the sound object is absolutely *first, a priori*.⁶⁴

Kane continues by casting suspicion on the desire "re-visit" the audio experience as a teleological enterprise, a critique that is not too unlike the ones previously directed at John Cage (i.e. that Cage's purported desire to kickstart a culture of non-purposiveness exemplified by "just sounds" was purposive in itself.) "One can only be re-acquainted with something to which one was already familiar," he protests - I believe that he is essentially writing off the whole enterprise as a drag on progress, since it requires giving oneself a "remedial education" in a field that, were it truly important, would allow its researchers to more easily remember its minutiae.

O'Callaghan is not implicated, at least in this instance, for taking the same approach, but we can well see that being the case: O'Callaghan's frequently re-stated definition of sounds is that they are *extra-mental* [emphasis mine] particulars that persist through change, a point whose teleological implications O'Callaghan does not dwell on in his book, but which would seem to imply that sounds exist indifferently of history or, more specifically, the anthropocentric belief in the meaning of human history. Critics such as Kane find this unacceptable, stating that if new modes of listening

[demand] a critical discourse capable of defending its merits in the face of overwhelming misunderstanding, stupefaction or, even worse, utter indifference, this critical discourse must resist the reliance upon ahistorical ontologies as a form of reassurance.⁶⁵

Kane's suspicion towards the phenomenological project of Schaeffer, driven by the historical materialist convictions of the former, offers us another round in the ongoing battle between the experience-oriented values of empiricists and mystics and the doctrinally oriented values of scholasticism. Schaeffer has of course been down this road long before, having had his ideas criticized by followers of a more doctrinaire school of serialist composition. Cage's self-professed anarchism, likewise, ran afoul of scholastics for its perceived inability to articulate a specific plan of action, and, indeed for Cage's that favoring of psycho-spiritual projects largely unsupervised by their own creators, that "invigorate action" in "quite different ways in different places and times."⁶⁶ Both the subsequent 'schools' of Cage and Schaeffer remain committed to the phenomenological study of sounds-in-themselves and cognizant, if not outright encouraging, of the ways in which this research willfully forgoes control and authority.

That O'Callaghan's work says so little, if anything, about the acculturation of sounds, does not make his critique without merit, and I will not assume some sort of assent-by-omission on O'Callaghan's behalf: he may very possibly believe that ferreting out the illusory aspects of listening is tantamount to doing the same for less purely subjective activity in the realm of social conduct. If anything, O'Callaghan's thesis is to be valued for leaving this work to others. The modern world's visuocentrism is multiplying rather than evaporating, owing to the increased proliferation and miniaturization of screen-based communicative tools (and can an audio-only version of something like "Google goggles" even be conceived?) It is a complex and daunting enough task to staunch the flow of this culture and to re-orient it towards an appreciation of sound *qua* sound, without also having to make an archaeological project of it. That is far from impossible to do, yet there is something to be said for re-acquainting the users of any tool or technique with its instruction manual before they attempt to re-shape the world with it. What's more, at this stage in the game, O'Callaghan's non-reliance upon "finger pointing" also minimizes the social divisions that would otherwise take place during this learning (or re-learning) process.

O'Callaghan's work may yet find its place among the critiques of power that, despite much enthusiasm for sonic categories of speech, music, and noise, have been strangely reluctant to analyze sound-in-itself, even as it presents itself as an alternative force to, say, the inauthenticity of logocentrism. More recent theoretical developments, such as

Jane Bennett's acknowledgement of "an existence peculiar to a thing, that is irreducible to the thing's imbrication with human subjectivity"⁶⁷ seem to demand a more concerted examination of sound events, even if one goes into this venture by first perceiving those sounds - like Schaeffer - as speculative "objects."



composed April 2013 - previously unpublished

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