# Sound's Matter: 'Deleuzian Sound Studies' and the Problems of Sonic Materialism

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This article evaluates the theoretical and practical grounds of recent debates around Christoph Cox's realist project of a 'sonic materialism' by returning to Gilles Deleuze, a key theoretical resource for Cox. It argues that a close engagement with Deleuze's work in fact challenges many of the precepts of Cox's sonic materialism, and suggests a rethinking of materialism in the context of music. Turning to some aspects of Deleuze's work neglected by Cox, the 'realist' ontological inquiry Cox affirms is challenged through the 'onto-ethology' that Deleuze and Félix Guattari develop in their *A Thousand Plateaus*, with this diversely constructive theory of relations explicated through musical examples from John Cage and Pauline Oliveros. To conclude, this article suggests that Deleuze can indeed be understood as subscribing to a materialism, but a materialism that is practical rather than doctrinal.

Keywords: Gilles Deleuze, Félix Guattari, Christoph Cox, sonic materialism, realism, politics of sound and music, John Cage, Pauline Oliveros

## Introduction: 'Deleuzian sound studies' revisited

For over fifteen years the philosopher Christoph Cox has been developing a distinctive and influential sonic ontology, what he has variously named a realist, materialist, or naturalist account of the nature of sound (see, among other pieces, Cox 2003; 2006; 2009; 2011).[1] This has recently led to the publication of his monograph *Sonic Flux: Sound, Art, and Metaphysics* (2018a), in which Cox draws on philosophers including Gilles Deleuze and Friedrich Nietzsche and canonical figures in experimental music and sound art such as John Cage, Pierre Schaeffer and Christian Marclay in order to put forward the most

[1] My thanks to Edwin Mak, Lilith Newton, Maximilian Spiegel, George Tomlinson, Marie Thompson, and the two anonymous reviewers for their comments on earlier versions of this article.

complete theoretical explication of his 'sonic materialism' (4, and *passim*) yet.[2] Through this project Cox has been a key figure in arguing for sound art as a field deserving of serious philosophical inquiry, as well as in taking the realist and materialist inclinations of philosophy's 'speculative turn' (Bryant, Srnicek and Harman 2011) and the 'ontological turn' in the arts and humanities (Kane 2015) and putting them to work in the field of sound.

Cox is not alone in embarking on such a project through the thought of Deleuze. Like the attempt to go 'beyond representation and signification' (Cox 2011) that Cox's Deleuzian inquiry into sound involves, there is a widespread sense that Deleuze offers the means to break with the 'metaphysics of being, representation, and identity' that is purported to characterise the mainstream of cultural theory and which is said to be inadequate to dealing with music, sound, and noise (Herzogenrath 2017, 3). But it is precisely this characteristic of work on Deleuze and sound that in 2015 led Brian Kane to charge Cox and others within what he names 'Deleuzian sound studies' with premising their accounts of the nature of sound on a misguided approach to ontological inquiry, an approach that cannot but conceive of sound in an essentialist manner (2015). By emphasising the Deleuzian 'virtual'—understood as a realm of difference and inexhaustible potential that is the condition for the stable objects, subjects, and identities of the empirical 'actual'—these theorists, Kane argues, necessarily neglect the ways in which sound as an object of study is inextricably bound up in historical, cultural, and institutional formations (2015, 15-16). For Kane this, in turn, leads to these theorists affirming an opposition within the study of sound, between an 'auditory culture' that inquires into such formations and a 'sound studies' that takes as its focus the essential nature of sound.

In the few years since the publication of Kane's article, the debates and conflicts it names have only amplified. The starting point for my discussion here will be the critical positions on Cox developed by the sound theorists Annie Goh and Marie Thompson. Informed by Kane's critique of 'Deleuzian sound studies', Goh and Thompson have

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[2] Other theorists have described their approach to sound as a sonic materialism, most prominently Salomé Voegelin (2014, 5). While there are overlaps between Cox's sonic materialism and that of Voegelin and others, I intend to focus on Cox here first in order to engage with some of the problems his sonic materialism poses as precisely as possible, and second to provide a platform for another perspective on what a specifically Deleuzian sonic materialism could look like.

separately argued that, in failing to provide an account of the cultural and political contingency of given epistemological situations, the ontological turn in sound studies risks rendering invisible the racialised and gendered characteristics of our discourses on sound (Goh 2017; Thompson 2017a). Cox has since responded to the criticisms from Kane as well as those from Goh and Thompson, suggesting that Kane's understanding of what constitutes ontological inquiry is unnecessarily restrictive (Cox 2018a, 131-33) and that Goh and Thompson repeat the errors he finds in the mainstream of cultural theory by taking an anti-realist position that reduces nature to culture (Cox 2018b). While I affirm aspects of his response to Kane, I find that his response to Goh and Thompson does not adequately respond to the problems they raise, and moreover I believe that elements of this response are symptomatic of the blind spots that Goh and Thompson diagnose in his thought. In particular, by ascribing an anti-materialist position to Goh's and Thompson's projects in marked contrast to their own affirmations of materialism, Cox raises many questions regarding how we are to understand his own commitment to materialism.

In this article I am going to take what I find to be lacking in Cox's response to Goh and Thompson as a catalyst for rethinking what we could mean by a Deleuzian sonic materialism or Deleuzian sound studies. I aim to suggest an opening of this term in light of the diverse forms Deleuzian work on sound takes, and in particular through the 'Deleuzian turn' that is said to have taken place in musical research (Macarthur, Lochhead and Shaw 2016). This Deleuzian turn appears to have a quite different set of commitments than the avowed realism of what Kane calls Deleuzian sound studies, with the editors of the recent volume *Musical Encounters with Deleuze and Guattari*, for example, stressing a continuity between this Deleuzian work on music and ongoing research in cultural musicology (Moisala et al. 2017, 8). By inquiring into the philosophical conditions of this apparent split within 'Deleuzian sound studies' itself, or a gap between 'Deleuzian sound studies' and what we could call 'Deleuzian musical research', I aim to provisionally outline an alternative Deleuzian sonic materialism to that developed by Cox.

This article will proceed in three parts. First I will briefly sketch out the central features of Cox's sonic materialism. In the key second part I will outline the criticisms of Cox put forward by Annie Goh and Marie Thompson, as well as Cox's responses to these criticisms, and take the Goh-Thompson-Cox exchange as an opportunity to consider what Cox means when he says that he is a realist. Third I will turn to some aspects of Deleuze's work neglected by Cox, specifically the importance to Deleuze's thought of his

collaboration with Félix Guattari and of the philosophy of Benedictus de Spinoza, and suggest that the 'onto-ethology' developed by Deleuze and Guattari in *A Thousand Plateaus* challenges essentialist ontological inquiry in favour of a diversely constructive theory of relations. I will explicate this with musical examples from John Cage and Pauline Oliveros, and conclude by suggesting that Deleuze can indeed be understood as subscribing to a materialism, but a materialism that is practical rather than doctrinal.

## Cox's sonic materialism

My focus here is on what I take to be three, perhaps *the* three, core features of Cox's *Sonic Flux* project. First is his opposition to what he calls 'orthodox cultural theory' (Cox 2018a, 16), a broad term encompassing approaches including psychoanalysis, phenomenology, poststructuralism, and deconstruction. Second is his ontological divergence from this 'orthodoxy' towards a sonic materialism, realism, or naturalism centred on the concept of the 'sonic flux' (2). Third is his claim that, contrary to Kane's position that sonic ontology constitutes a sound studies 'without' auditory culture, there is in fact a complementarity between sonic ontology and auditory culture, as evidenced through Cox's claim that human expressions 'contribute' to the sonic flux. The weight of the debates around Cox's position lies in this third aspect: the claim of a complementarity between approaches to sound. The key question is of what this complementarity looks like, and if Cox's account can accommodate cultural inquiry as he suggests it can, or if it necessarily diminishes the auditory culture side of sound studies.

On Cox's account, orthodox cultural theory is intrinsically linked with a rejection of realism. For this theory, 'culture' is construed as a 'system of signs' from which there is no way out; that is, through which there is no access to extradiscursive reality (15). (This already raises a crucial question—namely, why does requiring a mediation between the real and subjective experience amount to a denial of reality?) Furthermore, Cox takes the position that the analytical frameworks of orthodox cultural theory, frameworks that operate in terms of representation and signification, are 'confounded by the sonic' (3). Cox thus links two arguments together in his rejection of orthodox cultural theory—first that this orthodoxy holds a 'deep suspicion' towards any notion of a 'fundamental reality' that exceeds representation and signification (15), and second that the methods of orthodox cultural theory are in some way inadequate to dealing with sound. As Cox puts it, '[t]he theories of textuality, discourse, and visuality at the heart of cultural theory remain largely

unresponsive to the sonic, failing to confront the powerful, asignifying materiality that characterizes so much experimental work with sound' (14).[3]

As such the link between these two arguments is found in the 'powerful, asignifying materiality' that sound has some relation to. This signals the next, and most important, feature of Cox's thought: the reason for Cox's rejection of 'orthodox cultural theory' is that the very nature of sound eludes its analytic strategies. And what is the nature of sound? Cox seemingly makes this clear when defining his concept of the sonic flux, understood as 'the notion of sound as an immemorial material flow to which human expressions contribute but that precedes and exceeds those expressions' (ibid.). This position is materialist insofar as it affirms that matter is, in the final analysis, all there is—that 'thought depends on matter, but matter does not depend on thought, language, or conceptualisation' (6). It is realist insofar as it maintains that reality is 'mind-independent'—that 'the flows of matter and energy that fundamentally constitute the world are autonomous from the human mind and indifferent to our beliefs, desires, and descriptions of it'. Sonic flux is not the only material flow, and, drawing from Deleuze and Guattari as well as Manuel DeLanda,[4] Cox speaks of the flux of matter and energy being 'articulated into various layers or strata' (30), naming among these the physiochemical, the organic, genes, money, and language. But the sonic flux has a special status for Cox, insofar as it 'elegantly and forcefully manifests' the other flows of the natural world (3). The exceptionality of the sonic, for Cox, derives from its purportedly distinctive resistance to representation (133), its characteristics of 'temporality and ephemerality' that evade objectification and identification (152).

But Cox's project towards a sonic ontology has a second aspect. Alongside an account of the sonic flux in general—that is, as a material flow—there are 'more regional analyses of its capture and coding by various nonhuman forces and assemblages, and by human communities and social formations' (7). It is in this respect that experimental music and sound art are important to Cox's project, with Cox noting that sonic flux is 'a sensuous

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[3] The term 'asignifying' derives from the work of Deleuze and Guattari, referring in the first instance to Guattari's attempts to develop a form of semiotics in which sign behaviours are not reducible to acts of signification. I will return to the question of semiotics later.

[4] DeLanda's *A Thousand Years of Nonlinear History*, where he enumerates diverse 'flows of matter energy' (1997, 28), seems of particular importance to Cox.

reality discovered, investigated, and manifest by experimental composers and sound artists throughout the twentieth and twenty-first centuries' (31). Much of *Sonic Flux* is given over to documenting a potted, 'nonlinear' history of these moments of the capture of the sonic flux, broadly outlined as constituting a departure from the symbolic art of music, where 'chords and ratios give way to frequencies and vibrations, logic to physics, and musical meter to physical time' (87). As Cox puts it, '[i]f music belongs to the symbolic, then sound belongs to the real'. In this way, for Cox, a sound installation

> can do more than merely reveal itself to be an entity among other entities. It can disclose the material forces that generate entities and can thus thwart the reification that would take such actual, empirical things as constituting the whole of ontology. (133)

This concern with artistic works and a certain art history suggests why cultural inquiry into practices with sound can serve, as Cox puts it, as a 'vital extension' of the theory of sonic flux. An extension, perhaps, but what is less clear is whether Cox leaves any room for cultural theory to make any genuine contribution to the theory of sonic ontology. In order to address this question I turn now to the criticisms of Cox's thought developed by Annie Goh and Marie Thompson.

## Cox and his critics: what is Cox's realism?

Goh and Thompson integrate critiques of Cox into their own distinct projects. In the case of Goh, this involves a contribution to the field of archaeoacoustics that attempts to account for the particular situated knowledges of the listeners of the past (2017, 283). In the case of Thompson, it concerns the argument that an uninterrogated racialised perceptual standpoint risks undermining the capacity of work within the ontological turn in sound studies to hear the violence that whiteness enacts (2017a, 266).

Goh draws on work in feminist epistemology, particularly that of Donna Haraway, in order to challenge the perpetuation of traditional metaphysical dualisms in the field of sound studies (2017, 283).[5] Chief among these dualisms are those of subject-object and nature-culture, and Goh proposes revisiting debates in sound studies concerning the 'nature of sound' with Haraway's notion of 'natureculture' in mind. For Goh, while Cox purports

[5] See Haraway (1988).

to overcome the Kantian divide of noumenon and phenomenon, in his attempts to do so he in fact perpetuates another set of classical dualisms, among them reason and desire, matter and language, and nature and culture, neglecting both 'the problem of the body' and 'the processes of knowledge production' that seem, in their own ways, to span each of these divisions (286). By opposing the 'mind-independent reality' of 'sound-in-itself' to an 'orthodox cultural theory' in which nature is presented as only a projection or construction of culture, Cox, Goh argues, perpetuates a division between the ontology of the object and the epistemology of the subject, a division that reinstitutes the command of a masculine-coded subject over feminine-coded nature (287). Against this position, Goh proposes adopting Karen Barad's notion of 'onto-epistemology' and emphasising 'the co-constitution of knowledge through material phenomena, apparatuses, and discursive practices between human and non-human actors' (287). What onto-epistemology implies, then, is the 'inseparability of ontology and epistemology, nature and culture, language and matter'.

Thompson's engagement with Cox is somewhat more direct and central to her argument. She is concerned with what she calls the 'origin myth' of the ontological turn, where 'old' questions of 'culture, signification, discourse and identity' are rejected in favour of a turn to the realist and materialist themes that Cox favours (2017a, 266). Like Goh, Thompson uses the term 'onto-epistemology' to 'foreground the entanglement and co-constitution of ontology ... and epistemology' (279n26). She contends that Cox's concern with the 'nature of sound' risks 'uncritically naturalizing' the specific onto-epistemology that underlies it (270), arguing that Cox's ontology is predicated on what she calls, following Nikki Sullivan, a 'white aurality' (266). This white aurality, says Thompson, silences the historical traces of its constitution (269).[6] Thompson does not aim to dismiss Cox's project of a sonic ontology, but rather to emphasise its situatedness and bring attention to the 'particular historical, geographic, social, aesthetic, epistemological and technological milieu' that makes the formulation of the theory of sonic flux possible (273). The risk of white aurality, Thompson argues, is of amplifying the material dimension of sound at the expense of giving due consideration to its sociality (274).

What both Thompson and Goh wish to contest in Cox's sonic realism is, in Thompson's words, a perceptual standpoint that is 'both situated and universalising' (266),

[6] See Sullivan (2012).

a viewpoint that presents itself as neutral and unmarked by context, and thus at least potentially all-encompassing. Across these two pieces, Goh and Thompson repeatedly stress that their goal is not to reject ontological inquiry *per se*, but to situate and contextualise the ontological claims we make, with Goh turning to the challenges that feminist epistemology has made towards the supposed neutrality of scientific knowledge (2017, 283) and Thompson to the black studies scholar Fred Moten's notion of a 'paraontology' that faces up to the exclusion of blackness from (existing) ontologies (2017a, 268).[7] Both thinkers themselves affirm a certain kind of sonic materialism, with Goh making reference to the 'sonic ways of knowing' that Julian Henriques considers in his account of reggae sound system culture (Goh 2017, 290; Henriques 2011) and Thompson to the 'phonic materiality' that Moten associates with the resistance of the object to subjective control (Thompson 2017a, 280n51; Moten 2003, 1).

With this in mind, Cox's response to the critiques of Goh and Thompson is surprising. In this response, Cox attempts to argue again for the complementarity of sonic ontology and cultural analysis, and to clarify how he understands this complementarity. Cox sees two options. In the first, which he claims Goh and Thompson take, the real is conceived as a social construct, folding nature into culture and ontology into epistemology. In the second, which he says he takes, culture is conceived as an outgrowth of nature (Cox 2018b, 234). For Cox, only his approach is viable. But this distinction, I argue, does not face up to the criticisms that Goh and Thompson develop. To reiterate, their argument is rather that any ontology and any account of the real or of nature must face up to the epistemological position from which it is posited. In Thompson's words, '[o]ne does not *have* perspective, but is *in* and (re)produced through perspective (2017a, 274): it is not that the things of the real world are cultural constructions, but that our experience of the real is inextricably bound up in our contingent epistemological perspective. Thompson is clear on this:

> In arguing that Cox's sonic ontology is reliant on perspective, I am not seeking to affirm that there can be no sound without a listening subject, nor am I seeking to deny that sound has something to do with materiality and matter. Rather, what I wish to foreground is the role of white aurality in constituting a sonic materiality that can be cleanly distinguished as

[7] See Moten (2013), as well as Chandler (2014).

> preceding sociality, discourse, meaning and power, and its role in consequently defining the virtues of 'modest' sound art. (Ibid.)

On this basis it is difficult to see why Cox claims that '[o]nto-epistemology supposes that the material real offers no ontological resistance, that it can be carved into whatever shape suits a subject, culture, or language' (236). Cox, it seems to me, gets the criticisms put forward by Goh and Thompson backwards. What they are challenging is not the autonomy of nature or the object, which is not their topic of concern, but rather the autonomy and authority of the subject. To say that ontology and epistemology are inseparable is *not* to say that nature does not exist without culture, but only that the very human project of ontological inquiry is inseparable from epistemology. When Cox says that for Goh and Thompson 'the *things to which ontology refers* are products of human perception and conception' (ibid.), he attributes to them a position they do not hold.

This misattribution plays out further in Cox's response to the accusation that his position is Eurocentric (Goh 2017, 287; Thompson 2017a, 272), where he notes that intellectual traditions seeking to describe the nature of reality are far from exclusive to Europe (Cox 2018b, 237). This is certainly the case, though the extent to which these diverse traditions constitute 'realisms' that can be meaningfully linked to each other is a matter for comparative philosophy. But moreover, as Robin James has noted, the premise of Goh's and Thompson's positions is that whiteness and Eurocentrism are not 'one option among fungible, interchangeable options' (2018): what white aurality does, on Thompson's account, is render its position invisible, and in so doing invisibilises the relationships of domination and subordination it holds with other positions (2017a, 272).[8] We can agree with Cox's statement that we 'cannot avoid having ontological commitments and making ontological claims' (2018b, 235) and envision realisms that are in some way competing, in dialogue, or irreducibly plural, and Cox alludes to allowing for such a stance. But, as Thompson argues through her 'white aurality' thesis, it is hard to see how we could situate Cox's position within such a framework.

Cox's response, then, fails to deal directly with many of the theoretical questions asked of him. Indeed, it may primarily serve to provoke more questions. Some of these

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[8] Similarly, Christopher Swithinbank has convincingly argued that what is neglected in the recent materialist concern with 'vibration' is an account of power (2018).

questions persist from *Sonic Flux*: when Cox reaffirms at the close of his response to Goh and Thompson that 'the sonic flux is immemorial, preceding and exceeding human contributions, but ... it is profoundly shaped by cultures, societies, languages, and politics' (240), it remains unclear what form this 'profound shaping' takes. By adopting a Deleuzian account of passive synthesis, Cox aptly depicts the emergence of mechanisms that 'capture, filter, and structure' the sonic flux—the ear, recording technologies, and so on—but in what way, through what mechanisms, these biological evolutions and cultural artefacts then act back on the sonic flux such that they are more than merely epiphenomenal remains, in my view, unclarified. And with this remains the question of in what way cultural inquiries serve as 'vital extensions' of the inquiry into sonic flux—if what they are addressing is indeed epiphenomenal, then what can they tell us about the sonic flux itself?

Drawing my persisting questions for Cox together is a desire for him to clarify the sense in which he is a realist. A tension is present within Cox's position through his affirmation of a scientific realism. When he claims, puzzlingly, that Thompson's onto-epistemological challenge to the 'origin myth' of the ontological turn constitutes a 'creationist' attempt to 'undermine established scientific knowledge' (237), he provokes the question of how he himself understands the workings of scientific knowledge. Cox states that the 'situated yet universalizing' position that Thompson attributes to the subjective stance of white aurality 'is simply a description of knowledge itself' (238), and follows this with a defence of knowledge that transcends particularity:

> Of course it is true that scientists, historians, and moral theorists are particular human subjects situated in particular social and cultural contexts; but these subjects regularly make claims that transcend this particularity, offering evidence and arguments that establishes their conclusions as knowledge—knowledge compelling not only to themselves and their local group but to anyone who follows the chain of reasoning and evidence. (Ibid.)

This is a justifiable, if contestable, claim within the philosophy of science. But it is surprising to hear from a philosopher defending a position that seems grounded not in the workings of normal science[9] and universal reason, but in an ontological reading of a Nietzsche who

[9] The term used by Thomas Kuhn to describe the everyday workings of scientific practice within a scientific paradigm (1996).

famously stated that '[t]here is *only* a perspectival seeing, *only* a perspectival knowing' (1998, III: 12). What Nietzsche's perspectivism entails has been the subject of much debate, and, like his related notion of interpretation, it seems to be more than an epistemological category, with Cox noting the expansiveness of Nietzsche's sense of interpretation (2018a, 80-81, 160-61). But it is nevertheless difficult to see how the Nietzsche who both philosophically and performatively affirmed a plurality of interpretations and perspectives could be said to adopt a 'universalising' position with regards to knowledge, and in what ways Nietzschean perspectivism could be said to differ from the perspectivism Thompson proposes. This, to say the least, requires clarification.

Similarly, Cox defends his position against the critique put forward by Brian Kane first with recourse to debates in metaontology, in which the notion that 'ontology does not come in degrees' (Kane 2015, 12) has been challenged through the explication of a plurality of senses in which 'to exist' can be understood (Cox 2018a, 131).[10] This may seem like an aside, as he takes this statement as a point from which to affirm his own alternative Nietzschean-Deleuzian-DeLandian ontology. But when Cox then states that rejecting ontology 'would make no sense at all' as 'ontology simply describes the set of entities one takes to exist' (2018b, 235), we must ask how he is accommodating the interpretive and ethical charge of Nietzsche's thought that renders Nietzsche's work as a challenge to ontology as commonly understood, and that characterises the rethinking of ontology that Deleuze attempted from at least his 1962 reading of Nietzsche (Deleuze 2006a) onwards. Deleuze is explicit on this: in a presentation delivered in 1967 he stresses that the classic ontological question, '*what is this?*' (2004, 94), may limit from the beginning the kind of inquiry we are able to embark upon, and he argues for a multiplication of the questions we ask. It should not only be a case of 'what exists?', but also, and more so, '*who? how? how much? where and when? in which case?*' (96). This multiplication underlies the pluralism that Deleuze will come to emphasise across his work, leading to the paradoxical 'magic formula' of his and Guattari's *A Thousand Plateaus*, 'PLURALISM = MONISM' (1987, 20).

Cox, in his responses to Kane, Goh, and Thompson, turns to defending a certain kind of realism, and a certain conception of ontological inquiry that breaks with a Frege-Russell-Quine philosophical lineage—that is, a conception that breaks with the notion of

[10] Cox's reference point for this position is the survey volume by Berto and Plebani (2015).

existence being determined by a single existential quantifier, in favour of a multiplication of modes of existence.[11] But these defences do not appear to be defences of Cox's own realism and ontology. Recourse to the authority of analytic metaontology and normal science does not seem to help Cox's argument, and may in fact hinder it, confusing what exactly his particular notions of realism and ontology involve. Not only this, such a slippage between conceptions of realism and ontology may signal a more fundamental problem in Cox's thought.

One of Cox's affirmations of scientific realism is telling in this regard. He states, citing Maurizio Ferraris (2014), that '[*k*]*nowledge* of the fact that water is $H_2O$ requires concepts and language; but that water *is* $H_2O$ is independent of any human knowledge or apprehension' (2018b, 236). But what it means to make such a claim is far from self-evident. Indeed, Hasok Chang, in his detailed historical and philosophical study *Is Water $H_2O$?*, takes debates around this very question as an opportunity to reevaluate how 'realism' has functioned in science and the philosophy of science and to argue for an irreducible pluralism in scientific practice and theory, while yet maintaining a form of realism (2012). This example makes clear something that Cox does not acknowledge, namely that challenges to the kind of realism he seems to favour emerge not only as part of a continuation of anti-scientific postmodern cultural theory in the arts and humanities, but well within the mainstream of the philosophy of science. When Cox responds to Goh's and Thompson's engagement with Haraway he remarks that she was a former professor of his, but does not discuss how he would respond to the 'modest witness' argument that underlies Thompson's critique of him (Cox 2018b, 240n17; Thompson 2017a, 266; Haraway 2004). When Goh—citing not only Haraway but Evelyn Fox Keller, Susan Bordo, and Sandra Harding, among others—gives Cox the opportunity to respond to feminist perspectives from within the philosophy of science, instead of taking this opportunity Cox turns to polemic, denouncing Goh and Thompson as harbouring a general anti-science (and even 'creationist') attitude.

Running parallel to the complexity of these debates on realism in philosophy, science, and, indeed, the arts, Cox's understanding of what the real is seems quite simple: it is material flux. Cox's realism seems to declare not only that reality is in some sense mind-

[11] Kris McDaniel's recent *The Fragmentation of Being* is also informative on this point (2017).

independent, but that we can—and do—know what it is. We have the impression that Cox derives this from the natural sciences, but without clarity on his position within the philosophy of science and science more generally it is not clear what justifies this assertion, or that of his theory of the sonic flux. Even the most traditional questions of the philosophy of science—is the theory of sonic flux falsifiable?—seem difficult to answer. Lost is a sense of how 'realism' and 'materialism' are terms of significant debate, and how 'matter' is a famously slippery term, not least within the arts and humanities.[12] The declarative character by which Cox's exposition of the theory of sonic flux often unfolds can be thrilling, but it is equally liable to raise the questions of why we should accept his account of the real, how it could accommodate the perspectivism or pluralism that seems apt of the Nietzschean or Deleuzian position he claims to be taking, and, moreover, by what means we could persuade him of another position.

## Sonic materialism and Deleuzian materialism reconsidered

The Nietzsche-Deleuze conjunction takes us to the crux of my contention with Cox's sonic realism. In *Nietzsche and Philosophy* Deleuze argues that 'matter' is a secondary notion to that of force and the relation of forces (2006a, 7), and notes that for Nietzsche physical concepts like matter cancel out or equalise the work of forces (45). The issue with idealism, on Deleuze's reading of Nietzsche, is not that it fails to be materialism, but that both positions neglect the more fundamental problem of difference (129).[13] And Deleuze seems

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[12] On this point, and more generally for another significant Deleuzian alternative to Cox's sonic materialism, see Schrimshaw (2017). Cox aligns himself with speculative realism, but he does not affirm the most common means by which theorists associated with that tendency justify their claim to realism, such as a rationality that allows 'thought to think beyond itself' that Suhail Malik argues for in a dialogue with Cox (Joselit, Lambert-Beatty, and Foster 2016, 26). Without recourse to something like this rationality it can be difficult to determine first of all why human notions such as language and subjectivity should in any way be opposed to nature, and second by what means we could then 'translate humanity back into nature' as Cox desires. For Cox the human seems a remarkably unremarkable feature of the universe, and so it is unclear why the behaviours of humans should be any less real than anything else.

[13] Cox's earlier work in the history of philosophy does in fact ascribe such a position to Nietzsche, regularly posing perspectivism as a challenge to the unified truths of metaphysical and scientific realism (see, for instance, Cox 1999, 47-50). It is not clear to me what underlies the apparent

consistent in arguing that a physical account of matter is not enough, even if the valence of the term 'matter' itself changes through his work with Guattari. From his reading of Nietzsche through to the necessary distinction between semiotic expression and physical content in *A Thousand Plateaus* (Deleuze and Guattari 1987, 143), across Deleuze's thought we find various formulations of a complex link between the corporeal and the incorporeal.[14]

For Cox, 'force' seems to be a property of physical matter, or perhaps a synonym for it. While the status of 'matter' changes in Deleuze's thought, *physical* matter remains not an explanatory notion but a notion that must itself be explained. Cox, on the contrary, can readily declare sound to be 'a physical, intensive force' (2018a, 14) and refer to intensive differences operating at the level of 'physical, chemical, and biological matter' (28), among many other examples. Cox seems to conceive of matter as physical, and accessible in its physicality. On Cox's account we know perfectly well that the world consists of physical matter and physical matter alone, and we know how this matter behaves. We know that the flows of matter are articulated in different ways, but also that one stratum of articulation, the sonic flux, in some way reflects matter's fundamental behaviour in a particularly immediate way. And we know that sound art is interesting because it allows us to experience something of the sonic flux and thus something of the reality of matter itself. This seems to necessitate an ontological hierarchy that is not present in Deleuze's thought, where physical matter stands over and above the ideal and the incorporeal. What is at issue in the criticisms of Cox is not, then, that he claims that culture emerges from nature, which for a certain definition of nature would be accepted by everyone in the debate. It is rather that for Cox physical nature at its most uncaptured and unchanneled is the standard against which all levels of articulation are judged. While different strata are said to have relative autonomy (30), it is difficult to see how the sonic and material flux can be anything but an overdetermining reference point for realms like language and culture.

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shift Cox's thought undergoes with regards to realism, so I will not consider how his theory of sonic flux relates to this earlier work. I am, however, left wondering what the consequences of carrying the Nietzschean terminology of perspectivism from an 'antirealist' context (161) into a realist one are.

[14] On this see Colebrook (2014).

To put this in different philosophical terms, ultimately my objection to Cox's sonic realism, and to his reading and use of Deleuze, concerns how he conceives of the relation between the finite and the infinite. For Cox, the infinite seems nameable as material flux, and this is the perspective that he starts from. From this starting point, finite beings seem necessarily subordinated to this higher order. This is the position that Alain Badiou critically attributes to Deleuze (2005, 74), arguing that Deleuze's notion of the virtual asserts a totalising monism, with the finite beings of the actual forming only 'superficial stampings or simulacra' (2000, 96, 74) of an affirmed infinite (72). On Badiou's account, Deleuze adopts a position that Éric Alliez describes as a 'last phenomenology' (2001, 30), what Badiou himself calls a 'natural mysticism' (2004, 80) through which there is a 'giving up of all interiority' (2000, 86). This is presented as a phenomenological gesture, but a 'last' phenomenological gesture, because it adopts a subjective position of immersing oneself in an absolute 'outside'.[15]

Badiou's reading of Deleuze, where actual beings are relegated to an effectively epiphenomenal status as effects of the virtual, is echoed in Brian Kane's reading of 'Deleuzian sound studies'. Will Schrimshaw also links this to a phenomenological position with regards to Cox, suggesting that there is a phenomenological notion of matter at work in sonic materialism, a matter that is sensed and experienced (2017, 113).[16] And as Timothy Bewes similarly argues regarding the adoption of the Deleuzian term 'affect' (2018), by

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[15] This is also something like the position Quentin Meillassoux takes when he criticises the 'subjectivist' character of the notion of 'Life' or 'a Life' in Deleuze's late work, which on Meillassoux's account 'absolutizes' features of subjectivity (Dolphijn and van der Tuin 2012, 72-73). When Cox departs from Meillassoux by arguing that Meillassoux does not have an adequate account of time (Cox 2018a, 167-68), I suspect that Meillassoux's response would be that Cox's notion of time is itself subjectivist, a transcendental conception of time that does not depart enough from the Kantian position.

[16] While Cox rejects any association between Deleuze and 'idealist' philosophies like those of phenomenology and of Kant (2018a, 28), Deleuze's relation to these philosophies is much more complex and vexed than Cox suggests. For example, in Deleuze's own words, the philosophy of difference emerges from the exploration of a 'furtive and explosive moment' in Kantianism itself (1994, 58). Cox's denial of any such continuing link raises the question of how and to what extent Cox himself can then adequately address and exit these Kantian and phenomenological positions.

giving a complete conceptual determination to our nonhuman, beyond-human 'outside', be it nature, matter, or affect, by rendering it substantial and knowable, a reified experiencing subject is affirmed, purportedly in the name of an external objectivity. This seems to me the precise philosophical position that Goh and Thompson challenge in their arguments against Cox, a position where we finite experiencers are said to experience the infinite in its fullness. But this does not seem to be the position on the finite-infinite relation that Deleuze takes.

Badiou's reading of Deleuze is marked by a constitutive exclusion that is echoed by what I believe to be a constitutive neglect in Cox's reading of Deleuze, both centring around the figures of Benedictus de Spinoza and Félix Guattari. While Cox asserts himself to be developing a Deleuzian 'immanent metaphysics' (2018a, 6), he makes only passing mention of Spinoza, Deleuze's exemplary philosopher of immanence. Badiou, meanwhile, does address Deleuze's Spinoza, but he omits what I take to be the key aspect of Deleuze's reading of Spinoza's ontology, namely Deleuze's demand that 'substance turn on finite modes' (Deleuze 1992, 10; Deleuze 1994, 304), that 'substance must itself be said *of* the modes and only *of* the modes' (1994, 40). What Deleuze is opposing here is an understanding of Spinoza's thought where the infinite, eternal substance of 'God, or Nature' (Spinoza 1994, E IV, Preface) takes primacy over the finite things of the world that are its expressions, where any identity of the finite seems to be dissipated and absorbed into the infinite.[17] Deleuze argues, on the contrary, that the infinite is not conceivable other than through the procedures of the finite. As with Goh's and Thompson's defence of a certain materialism, this is not to deny the existence of a reality exceeding any subjective apprehension of it, but only to insist on the conditional relation that finite things have to any such reality.

This position can, admittedly, be difficult to conceive through the logic of actualisation—naming the passage from virtual to actual—that underpins the philosophical framework of *Difference and Repetition*,[18] but it comes to be clarified through Deleuze's

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[17] This is the position Hegel lays out in his *Lectures on the History of Philosophy* (1995).

[18] Though if we take individuation and not actualisation to be the key to *Difference and Repetition*, as I think we should, we find a somewhat different character to the relation. But more than this, the 'virtual' of *Difference and Repetition* is not composed of anything like an indeterminate

work with Guattari. To sum up what Guattari contributes to Deleuze's thought following their encounter in the late 1960s is far beyond the scope of this article, but I will name a few suggestive features.

First is the notion of transversality, described by Guattari as early as 1966, in the context of clinical psychotherapy, as 'a dimension that tries to overcome both the impasse of pure verticality and that of mere horizontality: it tends to be achieved when there is maximum communication among levels' (Guattari 2015, 113). While naming a directly practical concern here—and for Guattari the practical is never far away—such a notion comes to be extended far beyond the psychotherapeutic institution, as in Guattari's late formulation of 'The Three Ecologies' (2000). Guattari here expands the notion of ecology beyond nature to social relations and subjectivity (especially collective subjectivities), three realms that obtain relative autonomy but which any successful political project must bring into a kind of equilibrium (3). In order to theorise such a combination of intrinsic relation and relative autonomy, Guattari devoted a great deal of his theoretical efforts in the 1970s and 1980s to semiotics, producing a Hjelmslev-Peirce hybrid conception of signs that can be heard throughout *A Thousand Plateaus*.[19]

For Guattari, unlike Cox, dismissing semiotics in favour of a concern with the material real would not be comprehensible—even the most material of inquiries involves dealing with signs, even the most minimal discursive rendering of natural processes involves a translation into signs, and even the natural sciences are not concerned with the discovery of external realities but are always involved in constructive and creative processes with signs (1984, 90). The aim is not to access nature or the real in itself, but rather to recognise that 'signs pervade even physical fluxes' (88), or, in the translation favoured by Éric Alliez and Gary Genosko, to make 'signs work flush with the real'.

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material flux, but rather of determinate 'Ideas'. This is a term that Deleuze draws from Plato and Kant in order to elaborate the link between the finite activity of posing problems and the way in which these problems come to transcend their finite origin. I elaborate on the 'Idea' as a response to Brian Kane's 'Deleuzian sound studies' argument in Campbell (2017).

[19] This particular conception that is present in *A Thousand Plateaus* is developed across Guattari (2012) and is presented in its most complete form in Guattari (2011).

These two strands of an upturned Spinoza and Guattari's semiotics are combined in *A Thousand Plateaus* with the work of the early twentieth century ethologist Jakob von Uexküll, producing Deleuze and Guattari's notion of 'onto-ethology'. Uexküll analyses biological life in terms of its *Umwelt* or milieu, showing not only the process of co-constitution that takes place between animal and environment, but furthermore stressing that what is under consideration is less the animal than the diverse relations and affects that can take place within the inaccessible whole of the environment (Deleuze and Guattari 1987, 257). From Deleuze's reading of Spinoza they add to this an experimental impulse, a concern with the unanticipated and unanticipatable. For Spinoza 'no one has yet determined what the body can do' (1994, E III, P2, Scholium), of what affects it is capable, the signs it can emit and encounter. The question of what finite bodies can do (Deleuze and Guattari 1987, 256), rather than the question of infinite nature in its fullness, guides Deleuze and Guattari's understanding of nature as a vast set of experimental practices constructing new relations.

This is but the briefest of outlines, and this is only one way of approaching these problems: as Simon O'Sullivan has vividly shown, starting from the perspective of the finite allows Deleuze to construct many diverse and complex formulations of how this can then relate to the infinite (2012). Another reason why I will not elaborate this image of Deleuze and Guattari in detail here is that instances of such alternatives to Cox's sonic materialism are already at work in what we could call 'Deleuzian musical research'. Among many other examples, Edward Campbell outlines a possible Deleuze-Guattarian contribution to the field of musical semiotics in his influential *Music After Deleuze* (2013), while Marie Thompson herself develops a rich account of musical experimentation through a reading of Deleuze's Spinoza (2017b). But I will offer two brief examples that are deserving of further inquiry, both concerning composers who Cox credits as contributing to his theory of sonic flux but whose work can be seen with a renewed richness when read differently to how Cox requires.

First is John Cage, and the 'number pieces' that were his musical focus in the final years of his life. Contrary to Cox's insistence that 'Cage's music is ... always about the sonic real, sonic materiality itself' (Cox 2018a, 93), my claim here is that these works are concerned with a diverse and complex set of relations. The system for writing these 'number pieces' was remarkably simple, using chance operations to determine time brackets, sometimes fixed and sometimes flexible, within which performers can sound

notes from a small selection (Cage and Retallack 1996, 122). From these basic conditions, a great variety of pieces emerged, with the methods used saying little of their performative potentials—from cacophony to an austere subtlety that may have been Cage's tribute to his late friend Morton Feldman. The vast plurality of relations taking place at many levels between score and performance leads to a striking diversity of outcomes from similar, minimal materials. One of the most significant aspects of these pieces is their inclusion of a degree of improvisation and performative freedom, in contrast to the negation of selfhood that Cage demanded in earlier works. Benedict Weisser argues that these pieces allowed for Cage a 'reconciliation with certain elements of musical expression he had previously treated with diffidence' (2003, 177), and we can see with these works that Cage maintains his challenge to performative individualism, but resituates it, not in the demands of the composer or a fidelity to a transcendent 'nature' or 'sound-in-itself', but in the listening capacities of the performer and their sensitivity to their environment.

Weisser also remarks on the significance to Cage's late compositions of his encounter with Pauline Oliveros's work *Deep Listening* (179). In his response to Goh and Thompson, Cox notes the importance of Oliveros's notion of the 'sonosphere' to his theory of sonic flux (2018b, 239), and they do seem to have much in common: Oliveros's account of the sonosphere suggests an interest in sound in all of its primordial materiality, 'beginning at the core of the earth and radiating in ever increasing fractal connections, vibrating sonically through and encircling the earth' (2011, 163), and she describes her approach to improvisation as involving 'listening to everything that I can possibly perceive in order to tune to and flow with the Sonosphere' (2006, 481). In Douglas Kahn's words, Oliveros takes the sonosphere to '[resonate] among personal and interpersonal, musical, earth, and cosmological scales informed by physics and metaphysics' (2013, 174), and Kahn notes the influence of the spiritual tradition of Theosophy on Oliveros's articulation of an 'experiential physics' that allows listeners a certain immediate contact with the natural world in a way that mathematical modelling in the sciences denied (176). But as this suggests, affirming the existence of the sonosphere is far from the extent of Oliveros's musical practice, and it is coupled with the cultivation of subjective and intersubjective practices of listening (2005) and social practices, with Martha Mockus noting the specificity of collective lesbian sociality in Oliveros's work (2008).

Rather than taking aim at 'nature', the sonosphere, or sonic flux alone, what we see in these images of Cage and Oliveros are composers trying to navigate between the 'three

ecologies' of nature, society, and subjectivity, to remediate the relation between them, and to renew the constructive and creative role of the listener-performer in relation to an ontology of sound. Such an approach is premised not on the affirmation of the ultimate value and determination of the infinite real or of nature, but in finite experimental practices based on the dictum that 'we do not know what a body can do'. This pluralises the ways we understand sound: it becomes a transdisciplinary object that is at once and irreducibly natural, social, and subjective in character. The absence of audile techniques (Sterne 2003) or listening subjectivities from Cox's analyses risks, as Goh and Thompson have argued, silencing the social and the subjective, risks failing to account for how these are constituted and why we would want to cultivate diverse practices and modes of listening, and risks losing the sense of what we refer to when we speak of 'nature'.

## Concluding remarks: a final note on materialism

What now of materialism? I still wish to affirm that Deleuze is a materialist, but not in the way that Cox supposes him to be. A distinction offered by the philosopher Patrice Maniglier is useful for framing this. Maniglier says of a dogmatic materialism that it follows what he, citing an *Encyclopedia Britannica* definition, names the Materialist Credo: that 'all facts (including facts about the human mind and will and the course of human history) are causally dependent on physical processes, or even reducible to them' (2018). Against the problems that such a physicalist materialism raises, some of which I have been addressing here, Maniglier proposes another materialism. This materialism is a *task*, a practice that faces up to the materialities we encounter—matter itself among them, but also work, the body, race, gender, power relations—and accepts that these are not objects 'out there' waiting to be represented by us.[20] On the contrary, this materialism concerns an openness to what Deleuze calls a 'thought of/from the outside' that may shatter our epistemological preconceptions (Deleuze 2006b, 70, translation modified)—it involves recognising that these materialities

[20] This aligns with Etienne Balibar's account of Marxism, at least in one of its phases, as a 'strange materialism without matter' (2014, 23). While I do not want to go quite as far as embracing such a matterless materialism, I do believe something like this position is a crucial counterweight to Cox's realism.

> are critical elements that cannot be taken on board without changing the very way we represent things in general and altering the very position of the activity of representing things in the balance of our practices. They can be said to exist in the exact measure as they change us ... Which is not to say that they exist only for us, since it is not we who are the measure of their existence ... They are outside of us, although it would make no sense to posit them as objects of representation. (Maniglier 2018)

Rather than accommodating the materialities of gender and race as Goh and Thompson ask of him, Cox affirms with DeLanda that 'historically, left political thought has been staunchly realist' (2018b, 240), and elsewhere argues that realist philosophical positions are 'driven by a rigorously democratic and atheist egalitarianism that seeks to restore the value of universality, equality, and truth' (Eşanu 2018, 76). For Cox, citing Badiou, philosophical realisms 'advocate a rejection of identitarian, cultural, and communitarian particularism in favour of a properly democratic universalism and cosmopolitanism' (77).

By opposing particularity to universality Cox fails to accommodate the complex relation between the two that Deleuzian political thought seems to demand, what Guillaume Sibertin-Blanc has precisely captured by reading the diverse practices and struggles that constitute Deleuze and Guattari's 'becoming-minoritarian' through the lens of their Marxism (2009). This issue is reflective of the tensions present throughout Cox's combination of Deleuze and realism, where finite practice is dismissed in favour of the absolute of the universal. It strikes me that what Deleuze has to offer to sonic materialism is not this, but rather a materialism of accepting our finitude, our contingency, and our mutability, and of facing up to the problems this poses.

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