

Twentieth-Century Music

<http://journals.cambridge.org/TCM>

Additional services for *Twentieth-Century Music*:

Email alerts: [Click here](#)

Subscriptions: [Click here](#)

Commercial reprints: [Click here](#)

Terms of use : [Click here](#)



Actor-Networks in Music History: Clarifications and Critiques

BENJAMIN PIEKUT

Twentieth-Century Music / Volume 11 / Issue 02 / September 2014, pp 191 - 215

DOI: 10.1017/S147857221400005X, Published online: 22 May 2014

Link to this article: http://journals.cambridge.org/abstract_S147857221400005X

How to cite this article:

BENJAMIN PIEKUT (2014). Actor-Networks in Music History: Clarifications and Critiques. *Twentieth-Century Music*, 11, pp 191-215 doi:10.1017/S147857221400005X

Request Permissions : [Click here](#)

Actor-Networks in Music History: Clarifications and Critiques

BENJAMIN PIEKUT

Abstract

This article offers clarifications and critiques of actor-network theory and its usefulness for music historiography. Reviewing the work of ANT theorists Bruno Latour, Annemarie Mol, and other social theorists (such as Georgina Born and Anna Tsing), the author explains that ANT is a methodology, not a theory. As a general introduction, the author outlines ANT's methodological presuppositions about human and non-human agency, action, ontology, and performance. He then examines how these methodological principles affect three concerns of music-historical interest: influence, genre, and context. In conclusion, he addresses problems related to temporality, critique, and reflexivity. He draws on music-historical examples after 1960: John Cage, the Jazz Composer's Guild, Henry Cow, Iggy Pop, and the Velvet Underground.

I would not be the first to observe that music is a special, and exemplary, case for investigating matters of social theory. Georgina Born has analysed four orders of social mediation in music. We relate to each other, she explains, as collaborators in the course of a musical performance, in the imagined communities that are animated by these performances, in the identity categories and hierarchies enacted in sonic practices, and in the social modes of its production and distribution.¹ Indeed, music is enfolded in these socialities because of the many allies required by musical sound to exist and endure. This is not a trite paean to music's evanescence (it's close!), but an acknowledgement of music's weakness, the extent to which it requires collaborators in order to touch the world, each irreducible to the next – molecules that transfer energy and vibrate in concert; enzymes that produce feelings of anticipation, release, and pleasure; technologies of writing, print, phonography, amplification, and digitality to extend the 'here and now' to the 'there and then'; instruments that are themselves tangles of labour, craft, and materials; human or machine performers that render text or code into event; archives and repertoires that extend cultural meaning historically; corporeal protocols that discipline the performing body; and finally the regimes of material-semiotic meaning that condition each sounding and make it significant. What do sounds want? What are they lacking?² Musical sound makes many differences in the world,

<piekut@cornell.edu>

For their help with this article, I wish to thank Robert Adlington, Georgina Born, Michael Gallope, Lydia Goehr, Tamara Levitz, Roger Moseley, Gavin Steingo, and Richard Taruskin. This article was also improved by feedback I received at the Commensurable Distinctions conference of the Japanese Artists and Globalization group at UC Irvine, the Department of Musicology Distinguished Lecture Series at UCLA, and the Music, Digitisation, Mediation conference at Oxford.

- 1 Georgina Born, 'For a Relational Musicology: Music and Interdisciplinarity, Beyond the Practice Turn', *Journal of the Royal Musical Association* 135/2 (2010), 232.
- 2 W. J. T. Mitchell, *What Do Pictures Want? The Lives and Loves of Images* (Chicago: University of Chicago Press, 2006).

but it is also a weak entity that requires entanglements; or, perhaps more accurately, music is a *strong* entity precisely because of the many entanglements that it is necessarily caught up within. Whatever music might be, it clearly relies on many things that are not music, and therefore we should conceive of it as a set of relations among distinct materials and events that have been translated to work together. So complicated are these interconnections, again following Born, we might discover that the categories of the musical and the social are difficult to ascertain.³ Glossing Bruno Latour, we could say that ‘music’, like ‘society’, does not exist. ‘It is the name that has been pasted onto certain sections of certain networks, associations that are so sparse and fragile that they would have escaped attention altogether if everything had not been attributed to them.’⁴ The task for scholars, then, is to trace this ramshackle set of promiscuous associations that spill out across conventional parsings of the world.⁵

In light of these observations, it is no surprise that the language of networks has begun to creep into music studies. It comes with risks. While musical entanglements clearly connect many different kinds of things, the term *network* is often used to mean something thinner: a series of relations between like and like.⁶ Composer A knew violinist B, who travelled to San Francisco and met composer C, a childhood friend of writer D. For example, the curators of the ‘Inventing Abstraction, 1910–1925’ exhibition at the Museum of Modern Art (2012) make much of their topological investments: ‘Abstraction was not the inspiration of a solitary genius but the product of network thinking – of ideas moving through a nexus of artists and intellectuals working in different mediums in far-flung places . . . Vectors connect individuals whose acquaintance with one another during these years could be documented.’⁷ Ideas apparently move through this network, but must do so mysteriously, because the inscriptions, institutions, technologies, media, and performances that produce far-flung association disappear entirely from the account. Instead, the authors give us connection without mediation. They visualize their network like a railroad system or a gas pipeline (circulating not fuel, but ideas). But this network – network 1 – is the functioning result or achievement of another type of network – network 2 – that encompasses all the labours necessary to make network 1 actually work: things such as state regulatory agencies, maintenance equipment, corporate barons, international standards bureaus, and so on.⁸ Network 2 enrolls distinct, irreducible collaborators (such as music), and it is not as easily visualized as network 1 (again, like music). But it is this second sense of network, I hope to show, that has the greater analytical potential.

3 Born, ‘For a Relational Musicology’, 208.

4 Bruno Latour, *The Pasteurization of France* (Cambridge: Harvard University Press, 1988), 216.

5 A fine example of this kind of sprawl can be found in Tia DeNora’s *Music in Everyday Life* (Cambridge: Cambridge University Press, 2000), in which she follows configurations of elements that might be at once emotional, technological, ethical, and sonic.

6 Bruno Latour, ‘On Recalling ANT’, in *Actor Network Theory and After*, ed. John Law and John Hassard (Malden, MA: Blackwell, 1999), 15–25.

7 See the exhibition’s online guide here: www.moma.org/interactives/exhibitions/2012/inventingabstraction/?page=connections. This text also appears in the catalog and the wall text at the show itself.

8 I am summarizing Bruno Latour, *An Inquiry Into Modes of Existence: An Anthropology of the Moderns* (Cambridge: Harvard University Press, 2013), 27–46.

Another risk of network language is the theoretical valorization of a particular topography – the margins, the third space, the in-between – as the proper site for a network analysis. In this way of thinking, networks are always decentred, egalitarian, and non-hierarchical. But the subject of this article, actor-network theory (ANT), provides an approach to studying all kinds of tangles, regardless of whether they are visualized as decentred or hierarchical.⁹ As I hope to make clear, ANT is a methodology, not a topology; it does not go looking for network-shaped things, but rather attempts to register the effects of anything that acts in a given situation, regardless of whether that actor is human, technological, discursive, or material.¹⁰ Despite that misleading ‘T’ in its acronym, ANT is not a theory; it constructs no coherent, universal, or totalizing stronghold.¹¹ Instead, it offers a repertoire of questions and terms that are adaptable, variable, and open to new sites and situations. What is the ultimate goal of an ANT analysis? To provide an empirically justified description of historical events, one that highlights the controversies, trials, and contingencies of the truth, instead of reporting it as coherent, self-evident, and available for discovery. ANT is above all a methodology that helps us to attenuate normative assumptions about our object of inquiry, to put aside vague or reified concepts such as ‘music’, ‘society’, or even ‘network’. At their best, the principles associated with ANT keep us from offering banal descriptions that mistake explananda for explanantia.

The following sketch of ANT is an attempt to think about the translations necessary to make this methodology work for historical studies in music. What does this approach have to offer? What are its blind spots, and what are the special, specific properties of music in history that might lead to new elaborations of ANT that are particular to our discipline? Far from a unified collection of texts, ANT is more like an ongoing critical conversation with many positions and differing voices. But I will refer most often to Latour because he has been prolific and persistent in articulating his methodological views; this article is also influenced by other ANT-associated scholars, including Annemarie Mol, Michel Callon, John Law, and Antoine Hennion; and by Georgina Born, who, though not identified with ANT, has contributed important insights in the area of music and mediation and the sociology of aesthetics, some of which I will examine later in this article.¹² As an ethnographic method

9 Indeed, we would do well to avoid searching for limitless networks for their own sake; asymmetries, or cuts, or edges, are constantly being performed – that’s how hierarchies and borderlines take shape. Born interprets the practice of cutting as the creation of a ‘constitutive outside’ through disappearance and exclusion. For more on this point, see Born, ‘For a Relational Musicology’, where she discusses several such examples of constitutive othering. See also Benjamin Piekut, *Experimentalism Otherwise: The New York Avant-Garde and Its Limits* (Berkeley: University of California Press, 2011), for other examples of exclusions and limits in the history of experimental music.

10 As Annemarie Mol and John Law put it, “‘The social’ doesn’t exist as a single spatial type. Rather, it performs several *kinds of space* in which different “operations” take place.’ Annemarie Mol and John Law, ‘Regions, Networks and Fluids: Anaemia and Social Topology’, *Social Studies of Science* 24 (1994), 643.

11 Annemarie Mol, ‘Actor-Network Theory: Sensitive Terms and Enduring Tensions’, in *Soziologische Theorie kontrovers* (*Kölner Zeitschrift für Soziologie und Sozialpsychologie*, special issue 50), ed. Gert Albert and Steffen Sigmund (Wiesbaden: VS Verlag, 2010), 269. Available at <http://dare.uva.nl/document/213722> (accessed 29 March 2014).

12 Of the ANT scholars listed here, only Hennion has written about music; see Antoine Hennion, ‘Music Lovers: Taste as Performance’, *Theory, Culture & Society* 18/5 (2001), 1–22; and Antoine Hennion, ‘Those Things That Hold Us Together: Taste and Sociology’, *Cultural Sociology* 1/1 (2007), 97–114.

emerging from sociology, the appeal of ANT for ethnomusicology is obvious, and for this reason the argument here will be directed at some specific problems for music history writing.

Latour has previously eschewed the role of historian, claiming that he uses history ‘as a brain scientist uses a rat, cutting through it’ in order to follow the mechanisms of a given network.¹³ This comment indicates the extent to which the dimension of time is undeveloped in his thinking, a matter to which we will return later in this article. But there are nonetheless many reasons for historians to read Latour’s work, and the following theoretical discussion will outline four useful methodological principles; they have to do with agency, action, ontology, and performance. ANT is certainly not reducible to only these four, but together they are a good starting point. Equipped with a sense of these four terms, we will then examine three concerns of music-historical interest – influence, genre, and context – with a view to altering how we put them to work. In conclusion, we will address some questions that remain for actor-network analysis, which (like any methodology) is better at some things than others. This is not the place for a complete introduction to ANT and the social theory that it has instigated. It has been around for some time now, and there are several introductory texts; Latour himself has written two of them.¹⁴ What follows are my own selective comments on those aspects of his thinking that I believe will prove most productive for music historians. Although my examples will come from experimental music, the methodological claims made here are relevant for any object of musicological study.

* * *

ANT posits a particular understanding of *agency*. In music studies, a proprietorial model – one ‘has’ agency or one does not – has stubbornly persisted, despite much productive work in philosophy, the social sciences, and gender studies that understands agency as the result of events that produce subjects that act and objects that are acted upon. Moreover, the very fluidity of these arrangements – or the manner in which relationships in the real world multiply, overlap, and change – calls attention to the motile web of relations that define and enable any actor’s role. The network affords an actor certain ways to work; change the network, and you change the actor. ANT authors are generally more interested in the effects of actions than in their causes. What does an action produce? Some effects, of course, but also an actor. In this sense, ANT’s grammar of agency constantly shifts from active to passive and back again: an actor acts, an actor is enacted. As Mol explains, ANT invites us to tune in to these shifts and inversions, to linger on the uncertainties and consider how they might enrich our analyses.¹⁵ The point is not to do away with human subjects and active verbs, but rather to propose another layer of complexity, to add to the repertoire of analysis

13 Latour, *Pasteurization of France*, 12.

14 Bruno Latour, *Science in Action: How to Follow Scientists and Engineers Through Society* (Cambridge, MA: Harvard University Press, 1987); Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford and New York: Oxford University Press, 2005).

15 Mol, ‘Actor-Network Theory’.

so that we might trace more clearly the differences that are produced in a network. Such an orientation decouples agency from intention and will. It is an action or an event – not an intention – that manifests an agency. If something makes a difference, then it is an actor.

Although he is often criticized for supposedly ignoring power differences among human and non-human actors, a serious reading of Latour's work shows that he offers no general theory of non-human agency.¹⁶ The questions of what an actor is in a given situation, and how it might act, belong properly to empirical investigation, not theoretical speculation.¹⁷ One does not simply 'grant' agency to non-humans. Latour and Michel Callon stress this methodological emphasis repeatedly: 'Our empirical program does not claim either that humans and artefacts are exactly the same or that they are radically different.'¹⁸ The analyst places all actors on an equal ontological footing precisely to avoid absconding, unwittingly, any of them from one's account; symmetry is merely the methodological starting point for an inquiry into the alliances, creases, and asymmetries of the real world, always encountered *in medias res*. Beginning an inquiry with these distinctions already in place 'makes it impossible to register the different asymmetries that chains of associations produce when they encounter one another'.¹⁹ Marking this distinction between method and theory is crucially important for assessing the various critiques levelled against Latour (by authors who often do not mark it), and also for distinguishing Latour's claims about non-human agency from other neo-materialist perspectives (such as neo-vitalism or object-oriented ontology).

In the introduction to his *Oxford History of Western Music*, Richard Taruskin advances a clear model of agency in music history. He writes:

16 Edwin Sayes, 'Actor-Network Theory and Methodology: Just What Does It Mean to Say that Nonhumans Have Agency?', *Social Studies of Science* 44/1 (2014), 134–49.

17 In a debate that accompanied the publication of Graham Harman's *Prince of Networks: Bruno Latour and Metaphysics* (Melbourne: re:press, 2009), Latour insists that he is interested in methodological claims, not metaphysical ones; see Bruno Latour, Graham Harman, and Peter Erdélyi, *The Prince and the Wolf: Latour and Harman at the LSE* (Aldersford, UK: Zero Books, 2011).

18 Michel Callon and Bruno Latour, 'Don't Throw the Baby Out with the Bath School! A Reply to Collins and Yearley', in *Science as Practice and Culture*, ed. Andrew Pickering (Chicago: University of Chicago Press, 1992), 360. See also Michel Callon and Bruno Latour, 'Unscrewing the Big Leviathan: How Actors Macro-structure Reality and How Sociologists Help them Do So', in *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-sociologies*, ed. K. Knorr-Cetina and A. V. Cicourel (Boston: Routledge and Kegan Paul, 1981), 280.

19 Bruno Latour, 'For David Bloor ... and Beyond: A Reply to David Bloor's "Anti-Latour"', *Studies in History and Philosophy of Science* 30/1 (1999), 127. Marilyn Strathern notes in her sharp analysis of ANT that we must pay attention to how tangles get cut, but Latour would agree with her argument: '[T]here is no refuge for the social anthropologist in the idea of hybrids, networks and invented cultures either', she writes. 'These do not, of themselves, indicate a symmetrical, sharing morality. They are not of themselves the resistant, transgressive stands they might seem; not the revitalised assembly or parliament of things Latour so freely imagines. For neither a mixed nature nor an impure character guarantees immunity from appropriation.' Marilyn Strathern, *Property, Substance, and Effect: Anthropological Essays on Persons and Things* (London: Athlone Press, 1999), 135.

[Discourse] creates new social and intellectual conditions to which more statements and actions will respond, in an endless chain of agency ... No historical event or change can be meaningfully asserted unless its agents can be specified; and *agents can only be people*. Attributions of agency unmediated by human action are, in effect, lies – or at the very least, evasions.²⁰

Put aside that bit about agents only being people for a moment, and this passage becomes remarkable for its resonance with ANT thinking: Richard Taruskin, actor-network theorist! He wants to challenge pat explanations of historical change that appeal to the mysterious magic of things such as ‘organicism’ or ‘modernity’, insisting instead on mediation and local manifestations of agency that can be pointed to. So far, so good. But the difference of opinion on non-human agency is both less and more significant than it seems, for it turns at one level on a difference of definition. For Taruskin, agency requires sentience.²¹ For ANT, an actor need not realize, understand, or intend the difference it makes, but it nonetheless should be accounted for in the analysis. In fact, despite its provocative stance and the shrill responses it has occasioned, ANT puts forward a weak claim about agency. Something makes a difference. What is it? This minimal notion of agency fosters uncertainty about what an actor might be. From this position of uncertainty, one investigates empirically in order to specify the nature of this agency, somewhere along the ‘many metaphysical shades between full causality and sheer inexistence’.²² So ANT does not throw out intention or consciousness altogether, but it does suggest that differences get made in other ways, too.

In both perspectives, however, mediation is critically important. For example, Taruskin would insist that it was not a matter of historical necessity that an avant-garde developed in the mid-1800s, but rather an active bunch of true believers who put Karl Franz Brendel’s Hegelian philosophy of history into practice in their music criticism.²³ And yet, another level of mediation escapes this account; the reader of *Neue Zeitschrift für Musik* in Vienna is situated in a network that pulls together a cup of coffee, a cafe, and a text – Brendel is not there. He acts, of course, but this action is mediated by another actor, the printed copy of NZfM.²⁴ Though it may specify in greater detail the different roles of the human and non-human, a conventional framing of Brendel as the real actor and the NZfM as a mere tool also risks overlooking the ways that the wider network constrains and enables human action. How many copies of NZfM were printed? Who bought them? How were they disseminated across Europe? Where did they fail to reach? In what ways was the spread of the

20 Richard Taruskin, *The Oxford History of Western Music, Vol. 1: Earliest Notations to the Sixteenth Century* (Oxford: Oxford University Press, 2005), xviii (emphasis in original).

21 He has made this point clear in ‘Agents and Causes and Ends, Oh My’, *Journal of Musicology* 31/2 (April 2014), 272–93.

22 Latour, *Reassembling the Social*, 72.

23 See Taruskin, *Oxford History of Western Music*, 3: 411–42.

24 Even Taruskin implicitly acknowledges the importance of these non-human actors when he includes in his account the dissemination of his *Geschichte der Musik in Italien, Deutschland und Frankreich von den ersten christlichen Zeiten bis auf die Gegenwart* and *Neue Zeitschrift für Musik*.

New German School therefore uneven?²⁵ The answers might be uninteresting, but that is a conclusion that one can reach only through empirical investigation. One ascribes agency to the journal not as a substantial theoretical claim about non-human agency, but as a weak methodological claim about how to conduct research; that is, by identifying actors minimally and then following them along pathways that might otherwise have receded from critical view. At the very least, misattributing effects to Brendel alone, at the expense of the inscription that does the work, is, in effect, an evasion. The methodological implication is that one should not decide in advance what an actor can (only) be.²⁶

As an example of indeterminate agency in a given musical setting, consider the role played by the Jazz Composers Guild in the early decision of the Association for the Advancement of Creative Musicians to restrict membership in that latter organization to African Americans. The New York composers who founded the Guild in 1964 attempted to take control of their means of artistic production by self-producing festivals and concerts and arranging rehearsal space for their membership. Short-lived, the organization buckled under economic pressures, and also under the pressures of racial discourse at the time. Although some members prided themselves on the interracialism of the group, others were suspicious or exasperated with their white colleagues. At one of the first meetings of the AACM, founded a few weeks after the Guild unravelled in May 1965, Muhal Richard Abrams referred to these conflicts mediated by race when he averred that

an interracial organization has to be awfully strong, brother, because it can be torn apart. We can see evidence of it in the Composer's Guild in New York. People are trying to contribute things to the white members and withhold it from the colored members – in the same group. This was stated by one of the originators of the organization, if you read the account in *Down Beat* magazine.²⁷

Within a few moments, the AACM would decide to remain an all-black organization. This is a productive example to consider with regard to the dynamics of agency. By making a difference on the proceedings, the Guild acts as a single entity in this meeting of the AACM; it is 'nonfigurative', as Latour would say, but it is still an actor.²⁸ Like any single

25 I'm grateful to Dana Gooley for his help clarifying this example.

26 As Taruskin points out, Howard Becker's *Artworlds* offers a take on cultural production that is similar to his own: the history of art is a story of all the people who participate in its production. This sociological approach to the history of art attempts to register the effects of all human actors, and thus bears a family resemblance with ANT, which expands the registration drive to include agencies of all kinds, human and not. Another difference worth noting is that ANT, unlike Becker, does not decide in advance that the aesthetic domain is a bounded social space. Furthermore, as I will point out in the conclusion, a musicological approach informed by ANT will take seriously the agency of the aesthetic object, which is something that Becker has been criticized for failing to do; see, for example, Antoine Hennion, 'Baroque and Rock: Music, Mediators and Musical Taste', *Poetics* 24 (1997), 415–35.

27 Quoted in George E. Lewis, *A Power Stronger Than Itself: The AACM and American Experimental Music* (Chicago: University of Chicago Press, 2008), 113.

28 He would call it an 'actant', but space prohibits a full parsing of the difference; Bruno Latour, 'Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts', in *Technology and Society, Building Our Sociotechnical Future*, ed. Deborah J. Johnson, and Jameson M. Wetmore (Cambridge, MA: MIT Press, 2008 (1992)), 165–6.

actor, this one sits at the intersection of many others, often at cross-purposes (the members of the Guild disagreed about the lessons – painful or affirmative – of interracialism). And, paradoxically, the Guild manifested an agency in Chicago after it had fallen apart in New York City.

But how does the Guild act? How does it touch the world in Chicago in May 1965, after it had ceased to exist as an organization? A consideration of these questions leads to a second methodological principle, which has to do with the nature of *action* in a network of associations – namely, the way that an action is always a kind of translation. Although coverage of the Guild had already appeared in *The Nation*, *The New York Times*, and some smaller jazz rags, a profile by Robert Levin in the May 1965 issue of *Down Beat* constituted a new level of attention.²⁹ The piece was based on an interview with Guild co-founder Bill Dixon, who acted on this occasion as spokesperson for the organization. As we have seen, members of the nascent Chicago organization read this publication.

Pause to consider how agency was manifest in this historic moment. It is difficult to interview twelve people, and this difficulty results in our first translation – collective to spokesperson. As spokesperson, Dixon could not help but reduce and inflect the many conflicting voices in the organization, and Levin further translated his spoken account by converting it to written text, editing and narrativizing along the way. ('To say something is to say it in other words', comments Latour.)³⁰ Once printed at *Down Beat*'s production facility, this inscription enabled the Guild to act in a much wider range than it had before – copies of the magazine were shipped all over the world, including to Chicago, where Abrams read the account and performed one more translation when he reported on the Guild's experiences with interracialism (or, to be precise, he reported on his reading of an article that narrativizes one account by a spokesperson about the Guild's experience with interracialism). The AACM made a decision, and the Guild thereby acted one more time by inflecting that decision.

How does this action take place? Through a chain of translations that disperse, mediate, and circulate agency. Agency is not concentrated on a single entity, the Guild. It is leaky, enacted by collectives (the Guild, AACM, *Down Beat*), individuals (Dixon, Levin, Abrams), and materials (printed copies of *Down Beat*) that function as delegates – the Guild delegates Dixon, Dixon delegates Levin, Levin delegates a magazine, the magazine delegates a reader, and this reader, Abrams, delegates the AACM to act. In Chicago, the Guild expresses an agency that was not intentional. It is a drifting agency that translates action at great distances, but also becomes open to revision and interpretation in the course of this dispersal. Finally, this agency is deferred. It is not something that the Guild 'had' and then 'used' in a single, coherent moment. Rather, it unfolded fitfully in time and space.³¹

29 Robert Levin, 'The Jazz Composers Guild: An Assertion of Dignity', *Down Beat*, 6 May 1965, 17–18.

30 Latour, *Pasteurization of France*, 181.

31 On the relationship between non-humans and deferred human intention, see Trevor Pinch, 'On Making Infrastructure Visible: Putting the Non-humans to Rights,' *Cambridge Journal of Economics* 34 (2010), 77–89.

There is one more point that I would like to clarify about the kind of action that involves a spokesperson or delegate, and that is that a spokesperson need not be a person. Many different kinds of things represent, summarize, exhort, cajole, afford, implore, or persuade. A book such as John Cage's *Silence* might end up in Blackwell's bookshop in Cambridge, where it is picked up by (say) a young guitarist named Fred Frith, who is in the middle of writing new music for his band, Henry Cow. The book represents Cage, speaking for him in his absence. It communicates some ideas about chance, and the budding composer integrates them into his new piece, 'Nirvana for Mice' (he uses playing cards to choose the durations and pitches of the melody).³² Moreover, the book might make its own associations in the mind of its purchaser, associations that are distinct from the ones that Cage would make – perhaps it sits on the shelf next to Artaud's *Theatre and Its Double*, or Watts's *Zen and the Art of Motorcycle Maintenance*, or Cardew's *Nature Study Notes*, and maybe these casual, quotidian associations bend or twist Cage's pronouncements about experimental music. That's what happens when a network reaches far and lasts long: it drifts.³³ It starts going places and interacting with things and people that could not be foreseen. It gets twisted up, misconstrued, repurposed, compromised, or revised. It moves, unpredictably. As I see it, the role of the historian is to document and explain these drifts and shifts in valence, not to dismiss them as perversions or 'incorrect' versions of Cagean thought (for example). Such dismissals, in fact, are all too common in exegetical scholarship on Cage's philosophy and aesthetics, scholarship that is so focused on explaining what Cage *meant* that it bypasses the realities of what Cage meant *in the world*, where his spokespersons travelled widely and often forged unforeseen connections.

A third methodological principle of ANT has to do with *ontology*. In contrast to the older philosophical meaning of ontology as a branch of general metaphysics concerned with being and existence, ANT writers tend to follow how networks of actors constitute, or enact, different realities; they emphasize specificities and differences, rather than universals.³⁴ Such a conception of ontologies bears methodological implications: by not deciding ahead of time what we are going to find in the world, we allow entanglements to emerge in all of their messiness. I have previously argued that experimentalism was a network produced through the combined labour of composers, performers, audiences, patrons, critics, journalists, scholars, venues, publications, scores, technologies, media, a particular means of distribution, and the continuing effects of race, gender, class, and nation. What I mean by this ridiculous list is that experimentalism was necessarily a collection of many *kinds* of entities – human, material, technical, social, etc. – despite earlier narratives that stressed

32 Frith describes this connection in his contribution to the liner notes for *The Henry Cow 40th Anniversary Box*, Recommended Records, 2009.

33 For another example of experimental music's drift into rock, see Elizabeth Lindau, 'Goodbye 20th Century!: Sonic Youth Records John Cage's "Number Pieces"', in *Tomorrow is the Question: New Directions in Experimental Music Studies*, ed. Benjamin Piekut (Ann Arbor: University of Michigan Press, 2014), 15–38.

34 The new literature on ontology, particularly in anthropology and science and technology studies, is vast and growing. For a useful survey, see Annemarie Mol's introduction in 'The User's Guide to the Ontological Turn', <http://somatosphere.net> (accessed 21 March 2014).

such musical concerns as ‘process over object’, performer freedom, spontaneity, and all the other usual descriptions. These latter qualities do not float independently in some abstract aesthetic space; they are contingent upon all the other actors that practice, perform, inscribe, and localize them in concrete ways. The ontology of experimentalism, therefore, is compound and contingent. Being means ‘being related’ and ‘being in the world’. Michel Serres gets at one aspect of this expanded view of ontology when he writes, ‘Our relationships, social bonds, would be airy as clouds were there only contracts between subjects. In fact, the object . . . stabilizes our relationships, it slows down the time of our revolutions . . . The object, for us, makes our history slow.’³⁵ He means that relationships among humans require non-humans to keep them together; the social extends out across the objects we share.

I am specifically arguing against what I regard as the consensus view of any large musical or historical grouping, be it a style, movement, institution, or genre. Writers on experimentalism tend to begin with a list of people and works – a list that is already known – and then set forth the qualities they share. Lost are the uncertainties and volatilities of ontological formation, as well as the web of relations that support the resulting group. To tweak a phrase from Latour, associations do not hold together because they are true, but *because they hold together* we say that they are true.³⁶ An ontology concerned with what things actually are in the world cannot allow all the things that do the holding together to disappear from its theoretical account, nor can it reduce and simplify the compound form of being that results from these associations.

What does a plural ontology of experimentalism look and sound like? It spread not just through books such as *Silence*, scores published by Peters, or concerts and festivals in West Germany, but also through sound recordings.³⁷ Indeed, if a Cage scholar takes seriously this material multiplicity and follows her actors and their delegates, then she will begin to chart what could be called, at least after 1960, a ‘vernacular avant-garde.’³⁸ Iggy Pop did not learn from Harry Partch by studying scores with the master; instead, it was a photo of the composer’s fantastical cloud-chamber bowls on the back of his *Plectra and Percussion Dances* LP that set the young tinkerer to work on his own new instruments.³⁹ And far removed from the seminar rooms of Darmstadt, the musicians of Henry Cow heard Cage the same way they heard Coltrane, through boutique and discount labels like CBS’s Music of Our Time, Deutsche-Grammophon’s Avantgarde, and Hor Zü Black Label, where Cage and his ilk mixed and mingled with the likes of Gruppo di Improvvisazione Nuova Consonanza, Luciano Berio, Alice Coltrane, and the Soft Machine. Frith later recalled:

35 Michel Serres, *Genesis* (Ann Arbor: University of Michigan Press, 1995 (1982)), 87.

36 Latour, *Pasteurization of France*, 185. Latour riffs here on William James, ‘Lecture VI: Pragmatism’s Conception of Truth,’ in *Pragmatism* (1907; repr. New York: Longmans, Green, and Co., 1908), 197–236.

37 David Grubbs, *Records Ruin the Landscape: John Cage, the Sixties, and Sound Recording* (Durham, NC: Duke University Press, 2014).

38 I refer to Miriam Hansen’s highly influential idea of vernacular modernism; see her ‘The Mass Production of the Senses: Classical Cinema as Vernacular Modernism’, *Modernism/Modernity* 6/2 (April 1999), 59–77.

39 Piekut, *Experimentalism Otherwise*, 187.

I was buying contemporary music records randomly, because there would be these compilations of contemporary music series, put out by cut-price labels ... There would be a label with Cage, Berio, Maderna, something or other, and then there would be electronic music with Mimaroglu, and then there was one which had the Penderecki piece on it ... I was just curious, you know?⁴⁰

Henry Cow were not alone. One of their Cambridge tutors, the composer and journalist Tim Souster, did his part in clarifying and publicizing this vernacular avant-garde. In one article in the London *Observer*, he offered careful analyses of La Monte Young, Terry Riley, and Cornelius Cardew, along with the Soft Machine, the Who, and the Velvet Underground in his emergent grouping of adventurous musics. His recommendation of 'some records to try out' gives a good sense of this freely mixed category: *White Light, White Heat* (Velvet Underground), *In C* (Terry Riley), Avantgarde's *The New Music* compilation (featuring Karlheinz Stockhausen, Earle Brown, and many others), *The Marble Index* (Nico), and *Variations IV* (Cage).⁴¹ This brief excursion through the vernacular avant-garde illustrates how experimentalism has been materialized and enacted differently in different spaces of reception and production – its being was always multiple.

The fourth and final methodological principle, *performance*, is imbricated with the previous three, but it deserves to be isolated and recognized on its own. An ANT approach to history traces activities, events, and procedures – in short, it provides accounts of the enactment of realities. In light of the other principles I have discussed, it is apparent that humans are not the only actors that do the performing, but also things as well. ANT thus makes its own contribution to the longstanding project of studying illocutionary effects. Although the thinkers in this tradition – Goffman, Austin, Derrida, and Butler – have been extraordinarily influential, ANT scholars generally choose to remain zoomed in closer on the performances they study, a methodological decision that leads one writer, Annemarie Mol, to describe what she does as 'empirical philosophy'.⁴² This approach stresses ethnographic and historical research into the realities of everyday performances, and, following Christopher Pinney and many others, it shows that 'things happen' in ways that are not reducible to discourse alone.⁴³

This analytics of expanded performance can take us, in the words of Born, 'beyond the practice turn'.⁴⁴ She argues that musicology's recent interest in performance as a way out of its traditional investments in philology and the authoritative score has led to an over-emphasis on the micro-socialities of musical encounter, at the expense of investigating larger forms of social mediation. Carolyn Abbate's urgent argument for a refocusing of musicological inquiry towards the social and ethical dimensions of the performance moment

40 Fred Frith, interview with the author, Oakland, California, 12 November 2011.

41 Tim Souster, 'Through the Sound Barrier', *The Observer* (magazine), 5 October 1969, 56–7.

42 See Annemarie Mol, *The Body Multiple: Ontology in Medical Practice* (Durham, NC: Duke University Press, 2002).

43 Christopher Pinney, 'Things Happen: Or, From Which Moment Does That Thing Come?', in *Materiality*, ed. Daniel S. Miller (Durham, NC: Duke University Press, 2005), 256–72.

44 Born, 'For a Relational Musicology'.

can be seen as an exemplary case of this shift in music studies.⁴⁵ Although music's drastic qualities lie beyond texts, a more expansive understanding of performance would complicate the isolability of the ineffable moment of musical performance. Who would deny the agency of a training regimen that develops fine motor skills in the hands, or the indispensability of the instrument and its history to those moments of transcendence that Abbate documents? (Abbate certainly would not.) To register these effects is not to say that there is not something specific and irreducible to music's ineffability, but rather to insist that there is never only the ineffable, that music's non-discursive effects and its momentariness form one corner of a network that also includes other moments, as well as durative, non-momentary objects and body practices. We will return to this point at the end of this article.

* * *

With these clarified understandings of agency, action, ontology, and performance, we now turn to three areas of concern for music historians. The first is that of *influence*, which is a kind of event that often floats abstractly in musicological scholarship. In this work, scholars comb through musical details to turn up evidence of one figure's influence on another, or the influence of a whole genre on the works of a composer. In these accounts, influence becomes a technique for erasing all the mediators that actually perform the act of influence. Any relation of influence surely relies upon many things to work – how else does composer A touch composer B, separated by fifty years, than by virtue of her scores, performances, recordings, or writings? An ANT scholar takes it as axiomatic that ideas, aesthetics, or sensibilities do not travel from one place to another telepathically; rather, this stuff is mediated and enacted in the world through specific events and materialities.

The spread of an influence is always necessarily the spread of something else – speech (not very far), a person (farther), a manuscript (farther still), a published text (even farther), and then a score, a taped recording, a mass-produced LP or CD, a published interview, and so on. An ANT approach begins with this latter motley of stuff in a methodological reversal of the vague alchemy of conventional thinking about influence. Should not common sense dictate that we keep track of the material circulation of music's concrete forms? A striking example of this kind of approach can be found in Barry Shank's careful study of the sound-world inhabited by the Velvet Underground in the 1960s.⁴⁶ Instead of assuming and accepting the provenance of the band's droning textures, Shank literalizes their connection to Indian classical music by tracing the specific effects of a single album, Ali Akbar Khan's *Music of India: Morning and Evening Ragas* (1956), on VU's two most important aesthetic progenitors, La Monte Young and Tony Conrad. (Both have recounted the shock and awe they experienced upon encountering this recording, the first LP-length document of Indian classical music to be released in the West.) It was not simply Indian classical music that influenced Young and Conrad (and, by extension, Cale and VU), but the specific 'unending

45 Carolyn Abbate, 'Music – Drastic or Gnostic?', *Critical Inquiry* 30/3 (2004), 505–36.

46 Barry Shank, "'Heroin'; or, The Droning of the Commodity,' in *The Political Force of Musical Beauty* (Durham, NC: Duke University Press, 2014), 108–46.

buzz' of Shirish Gor's tamboura that made the difference. With this research, Shank has refused to allow influence to excuse itself from his analysis. In place of this elusive and undertheorized notion, he provides an empirically robust accounting of the nature of this connection, full of history, contingency, and singularity.

The problem of tracing connections across time and space is evidently quite difficult when the network in question exists in the second half of the twentieth century, when thousands upon thousands of LPs were moved from here to there along distribution channels that remain for the most part uncharted. The relative difficulty of such materially focused investigations of influence is no excuse not to do it, though, for this is perhaps the most important way that musical ideas are mediated in the period between 1965 and about 2000 – a large number of such mediations might, for example, come in the form of the cultural misunderstandings detailed by George Lipsitz, which we have already likened to a kind of drift.⁴⁷ This conception of influence, revised to mean *circulation*, is all the more critical in cases of small-scale, marginalized, informal, or underground systems of distribution.⁴⁸

Another topic that would benefit from an ANT-informed approach is *genre*, for what is a genre if not an unstable collection of related entities? Eric Drott's recent article on this subject is illuminating in many respects.⁴⁹ In stark contrast to the rather fixed categories historically employed by musicologists, Drott's genres are fluid groupings that get made, re-made, and altered through their many iterations. Moreover, these assemblages link together 'a variety of material, institutional, social, and symbolic resources'. He writes, 'The fact that such groupings must be continually enacted and re-enacted – no matter how stable, secure, or familiar they may appear – means that their legitimacy depends on how many people recognize them, take them up, and thereby reproduce the specific configuration of texts and contexts that they establish.'⁵⁰ In other words, because a genre is a grouping (and not merely a group), there is always a chance that it will come to an end or become superseded by a competing association. Drott is careful to note, though, that this does not mean that we are free to make genres just as we please, for genres enlist material, discursive, institutional, and symbolic resources to perpetuate and strengthen a given grouping. It is one thing to dream up a new genre at the bar one night with a few friends, but something entirely different for a bricks-and-mortar store to partition its shelf space in a particular way that channels the movement of its shoppers – the first grouping comes easily and is easily undone, but

47 George Lipsitz, 'Creative Misunderstanding in Inter-Cultural Communication', in *Dangerous Crossroads: Popular Music, Postmodernism and the Poetics of Place* (New York: Verso, 1996), 159–70.

48 For one fine example of this kind of work, see Amy Beal, 'Copyright Royalties: New Music Distribution Service,' in *Carla Bley* (Urbana: University of Illinois Press, 2011), 51–6. Bley and Mantler's New Music Distribution Service was a critically important mail-order institution in the 1970s and after; one could envision similar work on Recommended Records and Rough Trade distribution, the role of the flyer wall at Rough Trade's London shop, or studies of historically important concert-producing organizations and management companies, such as Music Now (UK) or Performing Arts Services (US). For a history of Music Now, see my 'Indeterminacy, Free Improvisation, and the Mixed Avant-Garde: Experimental Music in London, 1965–75', *Journal of the American Musicological Society* 67/3 (2014), forthcoming.

49 Eric Drott, 'The End(s) of Genre', *Journal of Music Theory* 57/1 (2013), 1–45.

50 Drott, 'The End(s) of Genre', 12.

not the second. Another more contemporary example would be the iTunes algorithm that leads the browser from one known knot of musical taste to another likely, but unknown, one; such taste technologies both respond to and create consumer patterns. They form structures that are revisable, but within limits; this is what Latour calls an *asymmetry*. ‘Act as you wish, so long as this cannot easily be undone’, he writes.

As a result of the actants’ working certain things do not return to their original state. A shape is set, like a crease. It can be called a trap, a ratchet, an irreversibility ... The exact word does not matter so long as it designates an asymmetry. Then you cannot act as you wish. There are ... directions, and some are made stronger than others.⁵¹

When Iggy Pop, for example, was hanging out with the ONCE Group in Ann Arbor, experimenting with contact microphones and homemade instruments and listening to free jazz records, his career could have unfolded in a number of different directions. Once he signed with Elektra, however, certain directions were foreclosed as rock was increasingly emphasized – fugitive relations were converted into lines of force. This affiliation determined bookings, press, distribution, and audiences, and could not easily be undone.

One particular virtue of Drott’s model is how effectively he balances the different types of actors that make up a grouping. Yes, genres enlist many kinds of humans (musicians, listeners, marketers, producers), technologies (MP3 players, instruments), and architectures (concert halls, clubs, classrooms), but they also enlist more fleeting (or less material) elements such as expectations, behaviours, and competences for listeners, or even – I would add – certain favoured gestures and modes of bodily comportment that are readable for competent participants in a genre. The analytical sensitivities of ANT, and especially its manner of conceiving of ontology, make it possible for us to register fully the hybrid reality of genres. In place of stability, cohesion, and homogeneity, Drott’s theory offers only contingency: genre without guarantees. In this approach, all actors are thought to engage in practices of partial belonging and ambivalent collaboration, so it is the stability of genre formations that needs to be explained, rather than their transgression or destabilization.

Finally, we might approach *context* differently from a perspective informed by ANT and other recent social theory. This notion – so widespread that its appearance often escapes notice completely – does a lot of unrecognized work in music studies. One might refer to a context to explain the intentions of historical actors, the social constraints they might be performing within, the discursive or institutional setting that affects modes of listening, pressures from the political domain, or the situated meanings of a musical gesture. Placing a musical work or historical figure into context has often served to critique claims for music’s autonomy. But we often turn to context to include in our narratives all the stuff which seem possibly relevant, but not *as* relevant as the other more important things that are at the centre of the study. But why this prevarication? Something either makes a difference or it does not. If you remove it from a situation, does the situation change?

51 Latour, *Pasteurization of France*, 160.

The danger of context is that it accepts and uses as explanations those stabilized contingencies that are themselves the formations that need to be explained, rather like the experience of Joan W. Scott's famous critique.⁵² As Anna Tsing writes, '[C]ontext gets in the way: context identifies the actors in advance, making it impossible to attend to how they make themselves *through* networks.'⁵³ Moreover, context identifies entire domains in advance; for example, the political domain – to take one frequently invoked context – is not some self-same, coherent structure that can be shown to influence, enable, or form the domain of the musical. No, it is – like music – a variegated, plural network that is persistently re-enacted in patterns and ruptures that strengthen or weaken existing attachments. When we speak of music reproducing as well as affecting politics, we are really attempting to come to terms with a network of associations – neither strictly musical nor political – that falls across, and mixes up, disciplinary assumptions about what counts as context. Latour comments on this impurity:

Unfortunately for those who make systems, actors do not stand still for long enough to take a group photo; boxes overlap; arrows get twisted and torn; the law seeps into biology, which diffuses into society. No, alliances are forged not *between* nice discrete parties but in a disorderly and promiscuous conflict that is horrible to those who worship purity.⁵⁴

Context always harbours assumptions about how the boxes are drawn and where the arrows should point, but ANT resists any such normative presumptions. As with agency or action, Latour's method aids analysis by multiplying uncertainty: when I invoke context, which pre-existing categories come along for the ride? In using these categories, how might I find myself drawing borderlines that are at odds with the ones drawn by my historical actors?

* * *

By understanding agency as an eventful relation among actors of all kinds, and by conceiving of ontology as contingent and plural, and observing action as a series of mediations that circulate reference – by taking on these methodological principles, we are equipped to meet and describe the world with an appropriate level of complexity. ANT presents theoretical opportunities to music scholars, but that does not mean that the method is without weakness. Every method is limited. As we have already observed, temporality is not a strongly operative term in Latour's work, but it has long been a distinguishing feature of Born's anthropology.⁵⁵

52 Joan Wallach Scott, 'Experience', in *Feminists Theorize the Political*, ed. Judith Butler and Joan W. Scott (London and New York: Routledge, 1992), 22–40.

53 Anna Tsing, 'Worlding the Matsutake Diaspora: Or, Can Actor-Network Theory Experiment With Holism?', in *Experiments in Holism: Theory and Practice in Contemporary Anthropology*, ed. Ton Otto, and Nils Bubandt (London: Blackwell, 2010), 47.

54 Latour, *Pasteurization of France*, 206.

55 See Georgina Born, *Rationalizing Culture: IRCAM, Boulez, and the Institutionalization of the Musical Avant-Garde* (Berkeley: University of California Press, 1995).

Her recent methodological writings shed new light on the temporalities of cultural production and invention.⁵⁶ Like Latour, she is interested in micro-interactions and their implications, but more than Latour, she explains these implications with reference to different orders of temporality. In an important article that sets out the terms of a renewed theory of cultural production, she recapitulates known critiques of Bourdieu – his failure to account for diachrony, transformation, and change – and offers instead a four-level schema of the multiple temporalities of the art object:

[F]irst, narrative or diegetic time, what for music has been called its ‘inner time’; second, the Husserlian dynamics of retention and protention that map the art corpus or genre as a distributed object; third, and relatedly, the variable temporalities constructed by the object in terms of the movement of repetition and difference, reproduction and invention in genre; and fourth, the temporal ontologies or philosophical constructions of cultural-historical time manifest in notions of ‘classicism’, ‘modernism’, ‘postmodernism’, ‘tradition’, ‘innovation’, ‘avant-garde’, and so on, concepts that form part of the calculative agency of artists and that supervise the creation of any cultural object.⁵⁷

This schema allows Born to account for invention in concrete ways, and it does so in a more variegated manner than that allowed for by Deleuzian or Bergsonian models, which might flatten out time to a single kind of unfolding.⁵⁸

Born’s theoretical innovation constitutes a trenchant challenge to the theorist using actor-networks to understand music history, but we can also use the concerns of ANT to inflect her contribution. Each of her four orders of time operates in concrete ways. Large philosophical constructions of cultural time, such as ‘postmodernism’, for example, are large to the extent that they are built up from many discourses, practices, and objects – they are temporal categories that are enacted and materialized. The differences in orders, which Born so precisely delineates, might be seen as differences in the dispersal and duration of groupings. A historical category such as postmodernism pulls together many things (such as cultural texts and theories) into materialities (such as books, videotapes, LPs, scores, and magazines) and performances (such as concerts, broadcasts, screenings, lectures, or idle chatter) that have spread widely – and unevenly – across the globe. By contrast, a performance such as ‘Forty Minutes’ (1974) by the Spontaneous Music Ensemble also gathers many things (musicians, instruments, audiences, recording equipment) into materialities (soundwaves, LPs, CDs, digital sound files) and performances (a concert, a play-

56 Born points out this deficiency in Latour’s thought in ‘On Tardean Relations: Temporality and Ethnography’, in *The Social After Gabriel Tarde: Debates and Assessments*, ed. Matei Candea (London: Routledge, 2009), 230–47.

57 Georgina Born, ‘The Social and the Aesthetic: For a Post-Bourdieuian Theory of Cultural Production’, *Cultural Sociology* 4/2 (2010), 25–6.

58 Furthermore, her expanded analytics of temporality allow her to address the shortcomings that she identifies in Alfred Gell’s influential theory of mediation; see Georgina Born, ‘On Musical Mediation: Ontology, Technology and Creativity’, *Twentieth-Century Music* 2/1 (2005), 23.

back), but it does so on a smaller scale. The duration of these two temporal spans varies widely, but they are both networks of association that become delineated through new and repeated acts of grouping. But ANT's attempts to erase the differences between micro- and macro-scales have tended to concentrate on 'strength' in terms of spatial metaphors, suggesting that there remains much work to be done before the method can match the analytical detail of Born's orders.⁵⁹

An example can illustrate how ANT might stimulate specific sensitivities in history writing. Two versions of experimental music existed through the 1950s, one focused on technological or scientific invention and the other on sonic invention; to a certain extent, these two versions met in the contact zone of electronic music. By the mid-1960s, the sonic orientation, promulgated most strongly by Cage, had won out. Why?⁶⁰ There are surely many reasons, not least of which was Cage's growing fame, represented for specialists by the publications of the *Indeterminacy* LP, his scores, and *Silence* by 1961, and for popular audiences by the appearance of Calvin Tompkins's long profile in the *New Yorker* in 1965. But in the electronic music realm, the ascendance of Cage's version of experimental music coincided with the unprecedented flood of cheap transistors into the consumer market, which made it possible for brave dabblers to experiment with live electronic sound outside the large, more conservative institutions such as university-based electronic music studios. Moreover, the new availability of inexpensive electronic equipment meant that young technologists could more easily be absorbed into Cage's narrative.⁶¹ The emerging hegemony of Cage's position is a story of multiple temporalities – the temporal arc of the composer's career, as well as the increasingly elaborate expansion and unfolding of his artistic corpus, but also that of a much larger techno-material shift owing to the post-war surplus in the US and Japan, not to mention the stockpiles of cheap military electronics left over from World War II. Cage's version of experimentalism was successful to the extent that it came out of strong alliances with these diverse actors.

One might conceive of Born's approach to temporality as a critique of Latourian methodology, but it is also an exhortation to think harder about how one's approach to history writing might be enriched by ANT's repertoire of questions and terms. In turn, a Latourian approach suggests an area of further inquiry for Born, who follows Alfred Gell by concentrating in her theoretical work on the agency of artworks, as opposed to ordinary, non-aesthetic objects. By urging us to keep in view all those actors that have effects (even the lowly transistor), ANT makes room for non-aesthetic, quotidian temporalities in the analysis

59 See Callon and Latour, 'Unscrewing the Big Leviathan', for their discussion of micro- and macro-scales.

60 I am summarizing an argument in Bernard Gendron, *Downtown Scenes: Experimental Music in Late 20th Century New York*, manuscript in progress.

61 Indeed, the masculinist tinkerer mindset could also be folded into rock's DIY ethos rather easily in the coming decades, which suggests one possible path that experimental music practice took into the popular music field; on the extension of experimentalism into rock, see Piekut, *Experimentalism Otherwise*, 177–98, and Lindau, 'Goodbye Twentieth Century!'.

of uneven historical networks: the materialities that are theorized in this account are not simply art objects, but all kinds of objects that impinge on cultural history.⁶²

Born's generative work also suggests a second weak spot that ANT shares with much contemporary social theory: the murky distinction between *analytic* and *ethno-ontologies*.⁶³ In other words, does the scholar bring ontological presuppositions to the study, or does she allow the ontologies of her actors to emerge? Latour's insistence that 'actors know what they do and we have to learn from them not only what they do, but how and why they do it' has proven problematic to other commentators.⁶⁴ The perspective of the ethnographic or historical subject is obviously important for the ways it allows us to suspend belief in our own ontologies and trace new, emerging, or surprising configurations, but no actor is cognisant of the forces being exerted in every situation, and Latour's nonchalant insistence on individual judgements would seem to ignore the work of repetitive, widely dispersed and habituated patterns of association – the enduring configurations of race and gender come to mind.⁶⁵ Furthermore, we might turn Latour against himself and insist that unwitting actors make effects that they do not intend.⁶⁶ In fact, contrary to Latour's apparent ethno-ontological position, ANT also advances a rather normative conception of ontology – to its credit. It may not decide from the outset what it will discover, but the method leads almost necessarily to the kind of ontological multiplicities discussed earlier in this article. To take one example, the work-concept that Lydia Goehr has analysed so brilliantly may be the basis for a narrative that privileges the composer-hero over other musical actors, or that idealistically denies music's material and social forms, or that removes the work from history or social responsibilities, but this does not mean that it constitutes an ontology.⁶⁷ Rather, as Goehr argues, it is a *concept* that emerges historically and eventually regulates musical practice and discourse. Accounts of musical works that take this work-concept for granted

62 There are clear resonances with histories of material culture, and Jann Pasler's work is exemplary in this regard; see 'Material Culture and Postmodern Positivism: Rethinking the "Popular" in Late-Nineteenth-Century French Music', in *Writing Through Music: Essays on Music, Culture, and Politics* (New York: Oxford University Press, 2007), 417–49. See also recent work in organology, for example: Eliot Bates, 'The Social Life of Musical Instruments', *Ethnomusicology* 56/3 (2012), 363–95.

63 Born, 'For a Relational Musicology', 241–2.

64 Bruno Latour, 'On Recalling ANT', 19. For a discussion, see Chris McLean and John Hassard, 'Symmetrical Absence/Symmetrical Absurdity: Critical Notes on the Production of Actor-Network Accounts', *Journal of Management Studies* 41/3 (2004), 493–519.

65 Donna Haraway, 'The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others', in *Cultural Studies*, ed. Lawrence Grossberg et al. (New York: Routledge, 1991), 332 n. 14.

66 As Foucault put it, 'People know what they do . . . but what they don't know is what what they do does' (quoted in Hubert L. Dreyfus and Paul Rabinow, *Michel Foucault: Beyond Structuralism and Hermeneutics*, 2nd edn (Chicago: University of Chicago Press, 1983), 187). This notion of 'what people don't know,' or the effects that escape actors' intentions, is an important dimension of Foucault's analytics of power, but is comparatively underdeveloped in Latour's work.

67 Lydia Goehr, *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music* (New York: Oxford University Press, 1992).

simply ignore the many historical, social, and material mediations that occur whenever music is performed.⁶⁸

The ANT scholar is concerned with adding back in these many mediators, whether the historical or ethnographic informant recognizes them or not; in this sense, the analyst maintains a privileged position in tracing the outlines of a given network, Latour's assertions to the contrary notwithstanding. As Anna Tsing has pointed out, an actor's discursive representation of a world and his place in it may not accord with his 'untheorized assemblages of practice'.⁶⁹ An empirical description of the latter can be brought to bear on the former; where there is discrepancy between the two, such a comparison would constitute a mode of critique.

Although commentators are correct to note that 'race, class, gender, colonialism, and industrial interests tend to be absent from actor-network analyses', it does not necessarily follow that this absence owes to flaws in the method itself.⁷⁰ In spite of Latour's blindness to the institutional effects of gender and race, ANT does offer tools for analysing cultural politics, particularly in its approach to ontology. This ontological politics unfolds along three axes. First, ANT enlarges the scope of its representations to include previously ignored actors, and it insists on their relationality: no actor is ever alone. Second, it highlights controversies over the stabilizations of relations that we call facts, and thus demands that we register uncertainties and contingencies – things could be otherwise. Third, ANT's ontological politics reconfigures the domain of the political itself. As Alcipandi and Hassard write:

Politics is not ... exclusively about 'giving voice' by or in itself, but can also be based, for instance, on how laboratory assemblies enact objects in order to give voice to them. The point here is to try to compare different techniques of re-presentation by arguing that there are many other ways of carrying out politics than usually considered.⁷¹

Therefore, to say that ANT is uncritical because it is primarily concerned with providing rich, realist descriptions of the world would be to dismiss too hastily a methodology that can make specific contributions. For instance, time and again I encounter difficulties introducing critical studies of race to my undergraduate students for whom race analysis can only mean searching for evidence of individual prejudice. To this most superficial register, I endeavour to add others: the ways in which race thinking becomes materialized in housing policy, or how it is choreographed in styles of holding one's body, or where it might be inscribed indirectly within texts, or how it might be woven into fundamental concepts

68 Born discusses Goehr and the work-concept in 'On Musical Mediation', especially 26–8.

69 Tsing, 'Worlding the Matsutake Diaspora', 58.

70 David J. Hess, *Science Studies: An Advanced Introduction* (New York: NYU Press, 1997), 110.

71 Rafael Alcadipani and John Hassard, 'Actor-Network Theory, Organizations and Critique: Towards a Politics of Organizing', *Organization* 17/4 (2010), 424. See also Matthew C. Watson, 'Cosmopolitics and the Subaltern: Problematizing Latour's Idea of the Commons', *Theory, Culture & Society* 28/3 (2011), 55–79. I disagree with Whittle and Spicer's assessment of ANT ontology as one that does not denaturalize; Andrea Whittle and André Spicer, 'Is Actor Network Theory Critique?', *Organization Studies* 29/04 (2008), 611–29.

such as property, creativity, or medicine. Human responsibility has to remain in the picture ('I didn't discriminate against your mortgage application – it was my federal housing policy!'), but these responsibilities are always entwined, enabled, fettered, or extended.⁷² The point of these examples, I tell my students, is that the being of race is multiple, as the work of Amade M'Charek and Robin Bernstein makes clear.⁷³ This ontological description of race thinking – the practicalities involved in enacting its reality, as Mol might say – is not an acritical scholarly practice, especially when it is offered up in response to the ideology of colour-blindness that constantly surprises in its very intransigence. But it is not the kind of critique that blows away the haze of ideology to reveal the facts underneath, nor does it dismiss those facts as so many inventions of the powerful.⁷⁴ Rather, like Foucault, Latour wishes to detail the 'precarious and fragile' history of facts – which are very real even though they emerge from a 'network of contingencies'.⁷⁵

What are the relations that make up a given object of study? What are the controversies that have accompanied its unfolding in time and space? How have differences been rendered into equivalences? What were the trials and compromises that produced a given configuration? Latour investigates such questions using a renewed empiricism that does not merely report facts based on evidence, but instead accounts for the multifarious labourers (human and not) that make something true but open to revision. And yet, even a renewed empiricism is not a transparent window on the past. No scholar can include every actor in a historical account (unless you want to discuss the role of gravity in the composition of *Music of Changes*); one must make decisions about which actors to follow, or where one draws the boundary lines of relevance. What are the assumptions that motivate a programme of research, that guide the choice of relevant actors, and that shape the narrative that results? And what about those moments when the evidence is slim – a special problem for historians – or practically non-existent? Is the ANT theorist barred in these cases from speculation based on theoretical models? This would be a high price to pay for a renewed empiricism.⁷⁶

Anna Tsing offers an elegant and promising response to this quandary with her idea of worlding. If, as she argues, actors engage in practices of world-making that always include gaps, misunderstandings, and omissions, then the analyst must struggle against two enemies

72 Jane Bennett offers an elegant reformulation of political responsibility in human/non-human networks in *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010), 20–38.

73 Amade M'Charek, 'Beyond Fact or Fiction: On the Materiality of Race in Practice', *Cultural Anthropology* 28/3 (2013), 420–42; Robin Bernstein, 'Dances with Things: Material Culture and the Performance of Race', *Social Text*, 27/4 (2009), 67–94.

74 Bruno Latour, 'Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern', *Critical Inquiry* 30 (2004), 225–48.

75 Foucault, quoted in Gérard Raulet, 'Structuralism and Post-Structuralism: An Interview with Michel Foucault', *Telos* 55 (1983), 206. For a perceptive discussion of Latour on critique, see Jonathan Sterne and Joan Leach, 'The Point of Social Construction and the Purpose of Social Critique', *Social Epistemology* 19/2–3 (2005), 189–98.

76 For a complementary discussion, see Michael Gallope, 'Why Was This Music Desirable? On a Critical Explanation of the Avant-Garde', *Journal of Musicology* 31/2 (2014), 199–230. Gallope makes a case for why 'critical explanations' are necessary when an actor's explanations are unsatisfying or betray the workings of an ideology that has receded into the background of thought.

at once. On the one hand, we resist our own privileged contexts and domains, which pre-structure our investigations and identify our actors in advance. On the other hand, we always come up against the limits of our informants' understanding of their worlds, which are never complete. By imagining 'relevant webs of relationality', Tsing's analyst transforms the acritical realm of context into a space of more heuristic speculation about strange worlds, which should be, at best, 'partial, tentative sketch maps'.⁷⁷ In this sense, '[W]orlding offers provisional guides both for and against disorientation; when we cannot identify figures, we grasp at the worlding projects of our informants and start making up our own in translation of theirs.'⁷⁸ Like Latour, she seeks an alternative to the presumption of an omniscient observer, but unlike him, she defends a limited power of observation, and will grant her actors the same kind of partial understanding – she models an imaginative back-and-forth between analytic and ethno-ontologies, one that recognizes the limits of both.⁷⁹ For instance, in my research on experimental music in 1960s London, I was surprised to discover that most of my historical actors there had interpreted and explained Cagean indeterminacy in terms of performer creativity and expression. My tentative sketch map of their worlding projects – the venues they booked, the publications they contributed to and read, the musical and business collaborations they forged, and the conversations about history and aesthetics they shared – led me to conclude that indeterminacy was twisted up with free improvisation to a far greater extent than I had initially imagined. But the narrative that I wrote – in which Cagean experimentalism had taken a swerve into jazz and popular musics, as one part of an ambivalent congeries of musical spontaneity – initially struck one of my actors as strange, because it jumped off the well-worn tracks laid down by previous accounts of the music. In this case, the worlds imagined by the researcher and the historical actor were both revised in a back-and-forth process.⁸⁰

To sum up, a Latourian accounting of networks does not cover up asymmetries, but instead issues a realist description of associations and the hierarchies and inequalities they create; it is ontologically indeterminate, allowing the shape of the networks to emerge empirically. It documents how actors forge associations, thereby denaturalizing inherited accounts and restoring contingency to narratives of genesis. It traces networks comparatively, combining ethno-ontology with an analysis of untheorized assemblages of practice. Its attention to and revision of relevant webs of relationality provides the grounds for noticing where diverse actors make and maintain cuts and perform externalizations. In these ways, a desire like the one for a more inclusive, socially diverse experimentalism will make demands of methodology but it cannot make demands of historical reality, which unfolded along patterns and structures that were most certainly not inclusive. Attending carefully to this distinction will temper the impression that ANT is only interested in writing the stories of history's victors. It should be clear by now that ANT is a research methodology that

77 Tsing, 'Worlding the Matsutake Diaspora', 50.

78 Tsing, 'Worlding the Matsutake Diaspora', 50.

79 See also Whittle and Spicer, 'Is Actor Network Theory Critique?'

80 Piekut, 'Indeterminacy, Free Improvisation, and the Mixed Avant-Garde'.

is committed to empirical work. A rigorous and theoretically elaborative empiricism will respect the heterogeneity of different actors, and it will follow closely the events that produce their arrangement. Resolutely nominalist, ANT resists theory only insofar as that theory might reduce or simplify a complex cultural field that might lead us to new theorizations if we attend carefully to its specifics, rather than treating them as ‘merely illustration’.⁸¹ At its best, then, ANT helps us to tell surprising, interesting, and new stories about music and its many allies.

* * *

One might point out that I have adumbrated principles and methods that amount to little more than careful historical and social analysis. That is partially true, but ANT offers a fresh way to study different kinds of grouping, the role of non-humans in the creation and extension of those groupings, and the indeterminate shapes that result. We began this article by noting some problems with the language of networks, and I would like to point out one more: networks imply the simple connection of pre-existing actors. The word gives no sense of the movement and events through which these arrangements come into a contingent kind of being, or how the actors gain their characteristics through the many kinds of association. With this in mind, I have begun to think of the things that I study as ‘historical ecologies’, though one might bring the concerns of actor-network theory to bear on them.⁸² An ecology is a web of relations, an amalgamation of organic and inorganic, or biological and technological, elements that are interconnecting and mutually affecting. In other words, like experimentalism or anything else, an ecology is an emergent, hybrid grouping that connects many different kinds of things. It has real boundaries that mark it off as distinct from its surrounding environment, but those boundaries are variable and open. And, just as ANT weakens the claim to agency in order to highlight the wide range of differences that an actor might make, an ecology contains a whole gradient of relationships, from indifferent coexistence to highly interested antagonism. Most of all, an ecology presents a variegated temporality, with cyclic processes and repeating patterns of iteration that create dynamic kinds of stasis, as well as the possibility of change.⁸³ Each of the relationships in an ecology has its own history of emergence, change, and decay; some associations are fleeting, while others endure by virtue of strong connections to other lasting actors. Most importantly, an ecology is a haphazard, unpredictable conglomeration of

81 Marilyn Strathern, ‘Artefacts of History: Events and the Interpretation of Images’, in *Culture and History in the Pacific*, ed. Jukka Siikala (Helsinki: The Finnish Anthropological Society, 1990), 38; for more on this point, see Tia DeNora, ‘Musical Practice and Social Structure: A Toolkit’, in *Empirical Musicology: Aims, Methods, Prospects*, ed. Eric Clarke and Nicholas Cook (Oxford: Oxford University Press, 2004), 35–56.

82 Many thanks to James Nisbet for helping me to clarify this metaphor; see his *Ecologies, Environments, and Energy Systems in Art of the 1960s and 1970s* (Cambridge, MA: MIT Press, 2014). For useful surveys of ecology in ethnomusicology, see Lisa Gold, ‘Time and Place Conflated: Zaman dulu (a Bygone Era) and an Ecological Approach to Change in Balinese Shadow Play Music’, in *Performing Arts in Postmodern Bali: Changing Interpretations, Founding Traditions*, ed. Kendra Stepputat (Graz, Austria: Studies in Ethnomusicology, 2013), 13–77; and Benjamin Brinner, ‘An Ecosystems Approach to Javanese Performing Arts: The Career of R. Ng. Martopangrawit as a Case Study’, *Ethnomusicology*, forthcoming.

83 See Born’s many publications on the idea of dynamic stasis.

things and processes. From this perspective, distinctions between social, technological, or musical domains are difficult to make; an ecology wanders across these three and many more. Methodologically, the implication is that we do not pre-restrict our investigations to the musical domain, but rather throw out the idea of the musical altogether. This kind of work responds to Mol's observation that 'to be is to be related'. The term *historical ecology* is not elegant, but it is the best thing I can come up with to capture something about what it means to study the emerging past with these principles in mind.

In conclusion, I wish to raise the possibility that the methodological sensitivities I have surveyed can provide the grounds for fully understanding the emerging interest in (or return to) music's agency, evident in the recent work of Barry Shank and James Currie, among others.⁸⁴ In this work, 'the music itself' returns with a difference. Its power is distinct but inseparable from other agencies, because it arrives in a tangle. Registering the specific effects that musical sound contributes to an ecology is a scholarly endeavour quite distinct from the earlier project of isolating its 'purely musical' characteristics. In that old musicology, sound's wild couplings fell out of the analytical picture, but in the ecological approach, relations *are* the units of analysis. As I hope to have shown, ANT offers useful tools for speaking of alliances of all kinds, but there remain question marks with the method and its fit with projects of music history. Some of these question marks concern the uses and misuses music scholars might make of ANT, and others concern the method's treatment of time, reflexivity, and critique. Bearing these uncertainties in mind, the theoretical tactics sketched here are one writer's attempt at developing tools to grapple with the history of an untidy world.

Bibliography

- Abbate, Carolyn. 'Music – Drastic Or Gnostic?' *Critical Inquiry* 30/3 (2004), 505–36.
- Alcadipani, Rafael and John Hassard. 'Actor-Network Theory, Organizations and Critique: Towards a Politics of Organizing'. *Organization* 17/4 (2010), 419–35.
- Bates, Eliot. 'The Social Life of Musical Instruments'. *Ethnomusicology* 56/3 (2012), 363–95.
- Beal, Amy C. *Carla Bley*. Urbana: University of Illinois Press, 2011.
- Bennett, Jane. *Vibrant Matter: A Political Ecology of Things*. Durham, NC: Duke University Press, 2010.
- Bernstein, Robin. 'Dances with Things: Material Culture and the Performance of Race'. *Social Text* 27/4 (2009), 67–94.
- Born, Georgina. *Rationalizing Culture: IRCAM, Boulez, and the Institutionalization of the Musical Avant-Garde*. Berkeley: University of California Press, 1995.
- Born, Georgina. 'On Musical Mediation: Ontology, Technology and Creativity'. *Twentieth-Century Music* 2/1 (2005), 7–36.
- Born, Georgina. 'On Tardean Relations: Temporality and Ethnography', in *The Social After Gabriel Tarde: Debates and Assessments*, ed. Matei Candea. London: Routledge, 2009. 230–47.
- Born, Georgina. 'For a Relational Musicology: Music and Interdisciplinarity, Beyond the Practice Turn'. *Journal of the Royal Musical Association* 135/2 (2010), 205–43.
- Born, Georgina. 'The Social and the Aesthetic: For a Post-Bourdieuian Theory of Cultural Production'. *Cultural Sociology* 4/2 (2010), 1–38.
- Brinner, Benjamin. 'An Ecosystems Approach to Javanese Performing Arts: The Career of R. Ng. Martopangrawit as a Case Study'. *Ethnomusicology*, forthcoming.

84 Shank, *The Political Force of Musical Beauty*; James R. Currie, *Music and the Politics of Negation* (Bloomington: Indiana University Press, 2012).

- Callon, Michel and Bruno Latour. 'Unscrewing the Big Leviathan: How Actors Macro-structure Reality and How Sociologists Help them Do So', in *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-sociologies*, ed. K. Knorr-Cetina and A. V. Cicourel. Boston: Routledge and Kegan Paul, 1981. 277–303.
- Callon, Michel and Bruno Latour. 'Don't Throw the Baby Out with the Bath School! A Reply to Collins and Yearley', in *Science as Practice and Culture*, ed. Andrew Pickering. Chicago: University of Chicago Press, 1992. 343–68.
- Currie, James R. *Music and the Politics of Negation*. Bloomington: Indiana University Press, 2012.
- DeNora, Tia. *Music in Everyday Life*. Cambridge: Cambridge University Press, 2000.
- DeNora, Tia. 'Musical Practice and Social Structure: A Toolkit', in *Empirical Musicology: Aims, Methods, Prospects*, ed. Eric Clarke and Nicholas Cook. Oxford: Oxford University Press, 2004. 35–56.
- Dreyfus, Hubert L. and Paul Rabinow. *Michel Foucault: Beyond Structuralism and Hermeneutics*. 2nd edn. Chicago: University of Chicago Press, 1983.
- Drott, Eric. 'The End(s) of Genre'. *Journal of Music Theory* 57/1 (2013), 1–45.
- Gallope, Michael. 'Why Was This Music Desirable? On a Critical Explanation of the Avant-Garde'. *Journal of Musicology* 31/2 (2014), 199–229.
- Goehr, Lydia. *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music*. New York: Oxford University Press, 1992.
- Gold, Lisa. 'Time and Place Conflated: Zaman dulu (a Bygone Era), and an Ecological Approach to Change in Balinese Shadow Play Music', in *Performing Arts in Postmodern Bali: Changing Interpretations, Founding Traditions*, ed. Kendra Stepputat. Graz, Austria: Studies in Ethnomusicology, 2013. 13–77.
- Grubbs, David. *Records Ruin the Landscape: John Cage, the Sixties, and Sound Recording*. Durham, NC: Duke University Press, 2014.
- Hansen, Miriam. 'The Mass Production of the Senses: Classical Cinema as Vernacular Modernism'. *Modernism/Modernity* 6/2 (1999), 59–77.
- Haraway, Donna. 'The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others', in *Cultural Studies*, ed. Lawrence Grossberg et al. New York: Routledge, 1991. 295–337.
- Harman, Graham. *Prince of Networks: Bruno Latour and Metaphysics*. Melbourne: re:press, 2009.
- Hennion, Antoine. 'Baroque and Rock: Music, Mediators and Musical Taste'. *Poetics* 24 (1997), 415–35.
- Hennion, Antoine. 'Music Lovers: Taste as Performance'. *Theory, Culture & Society* 18/5 (2001), 1–22.
- Hennion, Antoine. 'Those Things That Hold Us Together: Taste and Sociology'. *Cultural Sociology* 1/1 (2007), 97–114.
- Hess, David J. *Science Studies: An Advanced Introduction*. New York: NYU Press, 1997.
- James, William. 'Lecture VI: Pragmatism's Conception of Truth', in *Pragmatism*, 1907; repr. New York: Longmans, Green, and Co., 1908. 197–236.
- Latour, Bruno. *Science in Action: How to Follow Scientists and Engineers Through Society*. Cambridge, MA: Harvard University Press, 1987.
- Latour, Bruno. *The Pasteurization of France*. Cambridge, MA: Harvard University Press, 1988.
- Latour, Bruno. 'For David Bloor ... and Beyond: A Reply to David Bloor's "Anti-Latour"'. *Studies in History and Philosophy of Science* 30/1 (1999), 113–29.
- Latour, Bruno. 'On Recalling ANT', in *Actor Network Theory and After*, ed. John Law and John Hassard. Malden, MA: Blackwell, 1999. 15–25.
- Latour, Bruno. 'Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern'. *Critical Inquiry* 30 (2004), 225–48.
- Latour, Bruno. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford and New York: Oxford University Press, 2005.
- Latour, Bruno. 'Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts', in *Technology and Society, Building Our Sociotechnical Future*, ed. Deborah J. Johnson and Jameson M. Wetmore. Cambridge, MA: MIT Press, 2008. 151–80.
- Latour, Bruno, Graham Harman, and Peter Erdélyi. *The Prince and the Wolf: Latour and Harman at the LSE*. Alresford, UK: Zero Books, 2011.
- Latour, Bruno. *An Inquiry Into Modes of Existence: An Anthropology of the Moderns*. Cambridge, MA: Harvard University Press, 2013.
- Levin, Robert. 'The Jazz Composers Guild: An Assertion of Dignity'. *Down Beat*, 6 May 1965, 17–18.
- Lewis, George E. *A Power Stronger Than Itself: The AACM and American Experimental Music*. Chicago: University of Chicago Press, 2008.

- Lindau, Elizabeth. 'Goodbye Twentieth Century!: Sonic Youth Records John Cage's "Number Pieces"', in *Tomorrow is the Question: New Directions in Experimental Music Studies*, ed. Benjamin Piekut. Ann Arbor: University of Michigan Press, 2014. 15–38.
- Lipsitz, George. 'Creative Misunderstanding in Inter-Cultural Communication', in *Dangerous Crossroads: Popular Music, Postmodernism and the Poetics of Place*. New York: Verso, 1996. 159–70.
- M'Charek, Amade. 'Beyond Fact or Fiction: On the Materiality of Race in Practice'. *Cultural Anthropology* 28/3 (2013), 420–42.
- McLean, Chris and John Hassard. 'Symmetrical Absence/Symmetrical Absurdity: Critical Notes on the Production of Actor-Network Accounts'. *Journal of Management Studies* 41/3 (2004), 493–519.
- Mitchell, W. J. T. *What Do Pictures Want? The Lives and Loves of Images*. Chicago: University of Chicago Press, 2006.
- Mol, Annemarie. *The Body Multiple: Ontology in Medical Practice*. Durham, NC: Duke University Press, 2002.
- Mol, Annemarie. 'Actor-Network Theory: Sensitive Terms and Enduring Tensions', in *Soziologische Theorie kontrovers (Kölner Zeitschrift für Soziologie und Sozialpsychologie, special issue 50)*, ed. Gert Albert and Steffen Sigmund. Wiesbaden: VS Verlag, 2010. 253–69. Available at <http://dare.uva.nl/document/213722>, accessed 29 March 2014.
- Mol, Annemarie and John Law. 'Regions, Networks and Fluids: Anaemia and Social Topology'. *Social Studies of Science* 24 (1994), 641–71.
- Nisbet, James. *Ecologies, Environments, and Energy Systems in Art of the 1960s and 1970s*. Cambridge, MA: MIT Press, 2014.
- Pasler, Jann. 'Material Culture and Postmodern Positivism: Rethinking the "Popular" in Late-Nineteenth-Century French Music', in *Writing Through Music: Essays on Music, Culture, and Politics*. New York: Oxford University Press, 2007. 417–49.
- Piekut, Benjamin. *Experimentalism Otherwise: The New York Avant-Garde and Its Limits*. Berkeley: University of California Press, 2011.
- Piekut, Benjamin. 'Indeterminacy, Free Improvisation, and the Mixed Avant-Garde: Experimental Music in London, 1965–75'. *Journal of the American Musicological Society* 67/3 (2014), forthcoming.
- Pinch, Trevor. 'On Making Infrastructure Visible: Putting the Non-humans to Rights'. *Cambridge Journal of Economics* 34 (2010), 77–89.
- Pinney, Christopher. 'Things Happen: Or, From Which Moment Does That Thing Come?', in *Materiality*, ed. Daniel S. Miller. Durham, NC: Duke University Press, 2005. 256–72.
- Raulet, Gérard. 'Structuralism and Post-Structuralism: An Interview with Michel Foucault'. *Telos* 55 (1983), 195–211.
- Sayes, Edwin. 'Actor-Network Theory and Methodology: Just What Does It Mean to Say that Nonhumans Have Agency?' *Social Studies of Science* 44/1 (2014), 134–49.
- Scott, Joan Wallach. 'Experience', in *Feminists Theorize the Political*, ed. Judith Butler and Joan W. Scott. London and New York: Routledge, 1992. 22–40.
- Serres, Michel. *Genesis*. Ann Arbor: University of Michigan Press, 1995.
- Shank, Barry. *The Political Force of Musical Beauty*. Durham, NC: Duke University Press, 2014.
- Souster, Tim. 'Through the Sound Barrier'. *The Observer* (magazine), 5 October 1969, 56–7.
- Sterne, Jonathan and Joan Leach. 'The Point of Social Construction and the Purpose of Social Critique'. *Social Epistemology* 19/2–3 (2005), 189–98.
- Strathern, Marilyn. 'Artefacts of History: Events and the Interpretation of Images', in *Culture and History in the Pacific*, ed. Jukka Siikala. Helsinki: The Finnish Anthropological Society, 1990. 25–44.
- Strathern, Marilyn. *Property, Substance and Effect: Anthropological Essays on Persons and Things*. London: Athlone Press, 1995.
- Taruskin, Richard. *The Oxford History of Western Music*. Oxford: Oxford University Press, 2005.
- Taruskin, Richard. 'Agents and Causes and Ends, Oh My'. *Journal of Musicology* 31/2 (2014), 272–93.
- Tsing, Anna. 'Worlding the Matsutake Diaspora: Or, Can Actor-Network Theory Experiment With Holism?', in *Experiments in Holism: Theory and Practice in Contemporary Anthropology*, ed. Ton Otto and Nils Bubandt. London: Blackwell, 2010. 47–66.
- Watson, Matthew C. 'Cosmopolitics and the Subaltern: Problematizing Latour's Idea of the Commons'. *Theory, Culture & Society* 28/3 (2011), 55–79.
- Whittle, Andrea and André Spicer. 'Is Actor Network Theory Critique?' *Organization Studies* 29/04 (2008), 611–29.