

# Hearing properties, effects, or parts?

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## Abstract

Sounds are audible, and sound sources are audible. What is the audible relation between audible sounds and audible sources? Common talk and philosophy suggest three candidates. The first is that sounds audibly are properties instantiated by their sources. I argue that sounds are audible individuals and thus are not audibly instantiated by audible sources. The second is that sounds audibly are effects of their sources. I argue that auditory experience presents no compelling evidence that sounds audibly are causally related to audible sources. The third is that sounds audibly are related mereologically to their sources. I present and offer a defense of this third candidate.

## 1 Hearing sounds and hearing sources

Sounds are audible. By *sounds* I mean ordinary squeaks, blips, clatters, jingles, and burbles. Sounds have sources. By *sources* I mean things like floorboards, electronics, collisions, jiggled keys, and speeches. It is plausible that sound sources also are audible. Spoken language permits saying you hear floorboards, electronics, collisions, jiggled keys, and speeches rather than just their sounds. Audition prompts you to form thoughts about material bodies and happenings. Certain aspects of auditory experience, such as the way things appear grouped auditorily, are attuned to features of material objects and events rather than merely to features of sounds. Hearing informs you about the activities of material things, and it guides action accordingly without explicit reasoning on your part. You duck reflexively from something heard to approach from behind and turn without conscious thought towards the sources of sounds. Material things and happenings meet causal requirements on auditory perception, and it would be severe to deny they belong among what it seems to us we hear. I therefore assume in what follows that humans sometimes

hear material things or happenings. As shorthand, I call such audible items *sound sources* or just *sources*.

What is the *audible relation* between sounds and sound sources? The answer could be 'none'. You could hear sounds and hear sources and fail ever to hear sounds and sources to stand in any relation. This is unsatisfactory. Sounds have audible spatial and temporal features, and so do their sources. Sounds and sources thus may audibly stand in spatial or temporal relations to other sounds and sources. Sounds and their sources may audibly share or differ in direction, or exist at the same time or in succession. Moreover, if you hear sound sources, then sometimes you may hear them to be sources of sounds you hear. If you hear a source such as the jiggling of keys, then you may hear the jiggling keys to be the source of the jingling sound. When you do, you hear the sound to stand in some relation to its source. What relation?

Two candidates emerge from philosophy and common talk. The first stems from philosophical approaches that treat sounds as sensible attributes of material bodies. This account holds that sounds audibly are properties or qualities of their sources. According to this account, audible sources audibly *instantiate* their sounds.

The second candidate stems from the platitude that sounds are made by sources. This account of the audible relation holds that sounds audibly are effects brought about by their sources. According to this account, audible sources audibly *cause* their sounds.

This paper advances a third alternative. Among sources this account distinguishes happenings from material bodies. First, it holds that sounds audibly are constitutive parts of occurrent audible events. For example, the audible relation between the jingling sound and the audible jiggling of the keys is that of part to whole. Audible source events thus audibly *include* their sounds. Secondly, it holds that audible occurrences involve material objects. For example, floorboards rub and squeak, and keys jiggle and jingle. If material bodies are audible by humans, they audibly *participate* in audibly apparent sounds and happenings. According to this account, audible sources audibly are related *mereologically* to their sounds.

Section 2 describes reasons to reject that sounds are sensible properties audibly instantiated by audible sound sources. Section 3 argues that we have no compelling reason to accept that sounds audibly are effects of audible sound sources, and that audible causality does not provide the best explanation of auditory phenomenology. Section 4 describes and defends the view that sounds audibly are constitutive parts of their audible sources.

## 2 Properties?

Treating sounds as sensible properties is philosophical tradition. Locke (1975, II.viii) says sounds are secondary qualities of bodies, among colors, tastes, and smells. Pasnau (1999), Kulvicki (2008), and Cohen (2009) claim that sounds are audible attributes analogous to visible colors or shapes. Pasnau and Kulvicki each hold that sounds are audible properties of the objects we describe as the *sources* of sounds. Pasnau argues that we should say vibrating objects *have, possess, or bear* sounds, and Kulvicki argues that sounds are standing dispositions of ordinary material objects to vibrate in response to being 'thwacked'. Cohen (2009, p. 306) says it is permissible to regard sounds as properties exemplified by regions occupied by sources. Even Locke intimates that sounds are secondary qualities of *distal* bodies.

Suppose sounds are sensible properties or qualities of their sources, and suppose that both sounds and sources are audible. This suggests that sounds audibly are instantiated by things such as keys and collisions that sometimes we call sound sources. Subjects hear sounds to qualify or to be exemplified by their sources. Since visible objects visibly have colors, and felt surfaces tactually have textures, this parallels the sense in which subjects see colors or feel textures to qualify or to be exemplified by material objects. According to this account, sources audibly *bear* or *instantiate* sounds.

This account has three main strengths. First, it unifies the account of hearing sounds and sources with accounts of perceiving sensible properties and their bearers with other senses. In whatever sense it is true to say you see the jiggling keys in seeing their colors, shapes, and motion, you may hear the jiggling keys in hearing their jingling sound. Secondly, it deals neatly with hearing ordinary material things and happenings to be sound sources. You hear the jingling sound to belong to the jiggling keys. Thirdly, it captures the audibly apparent intimacy of the relation between sounds and their sources.<sup>1</sup> Indeed, treating sounds as audibly bound in the matter of sensible properties to their sources vindicates the impression that hearing sounds and hearing sources are not wholly distinct perceptual acts.

Despite these attractions, treating sounds as properties audibly instantiated by their sources has drawbacks. Audible sounds are best understood not as properties or repeatables but instead as particular, concrete, event-like individuals. Audible sounds are not simply attributes you hear ordinary material things to bear. Sounds are audible individuals you hear to have audible prop-

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<sup>1</sup>This *phenomenological intimacy* recently has been emphasized by Leddington (2011).

erties.

First, audible sounds are individuals or complex properties rather than simple properties.<sup>2</sup> So sounds are unlike hues or bitterness. You can hear multiple wholly distinct audible items at a time—for instance, something nearby on the left and something distant to the right. Such audible items are described and distinguished by their audible qualities, such as pitch, timbre, loudness, and duration. Thus, a version of the *many properties problem* arises for the objects of audition, and we require something to play the role of sensible individual, or feature bearer, for the audible attributes (see Jackson 1977; Clark 2000). It is natural to regard sounds among such audible individuals since we characterize sounds by audible pitch, timbre, loudness, and duration. However, it is not yet required. Sources alone instead could audibly bear or instantiate the audible qualities. Nevertheless, unless we eliminate them, audible sounds require for their characterization specific complexes of audible qualities. Thus, while audible sounds are not simple audible properties, either they are complex audible properties or they are audible individuals.

Secondly, audible sounds are particulars rather than repeatables or types. Qualitatively matching sounds commonly are treated as distinct countable items. I may speak of the sound to my left and of the distinct sound to my right, and I may speak of the sound now and of the distinct sound later, even if in other respects they are precise qualitative matches. Determinate colors and shapes, construed as repeatable properties, however, are not intelligibly treated as distinct things at each of their occurrences. While we can devise language to speak of determinate colors and shapes as particulars, common competent use tracks repeatables or types rather than particular instances. Conversely, while we can devise ways to speak of sounds as repeatables or types, this requires a grasp of the common competent use which treats sounds as countable by instances or instantiations rather than by types. So counting sounds by tokens rather than by types is the norm that guides the concept's application, and this norm is anchored in auditory awareness. '*That one*', uttered at a sound, in its most common usage picks out the instance heard rather than the repeatable or type. This contrasts with demonstrative reference to visible determinate colors and even to complex determinate tastes. '*That sound* was earlier than (/nearer than) *this sound*', said of qualitatively matching sounds, is unobjectionable, but, '*That color* is nearer than (/earlier than) *this color*', said of visually indistinguishable color instances, is odd unless context makes clear we are speaking of patches or regions. Whether visible colors are repeatables or particulars, audible sounds

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<sup>2</sup>Simple properties include but need not be exhausted by those that have, as Locke (1975, pp. 119–20) put it, 'one uniform appearance'. See also what Byrne and Hilbert (2008, pp. 395–6) call 'singularity'.

in the central case are not best regarded as repeatable quality complexes. Instead, the sounds revealed by auditory perceptual awareness are particular audible instances of such complexes.

Thirdly, since individuals instantiate or exemplify complexes of qualities, and since concrete things *perceptibly* bear sensible qualities, audible sounds are neither properties nor abstract individuals. Audible sounds therefore are particular concrete individuals. Audible sounds thus are not properties audibly instantiated by their apparent sources.

One objection is that sounds collapse into sources. The objection is that if sounds are particular concrete individuals that instantiate audible quality complexes, then sounds are identical with ordinary material things which instead should be regarded as sound sources. Let me respond in two steps. First, audible sounds are event-like individuals rather than object-like individuals, so they are not ordinary material objects. Sounds perceptibly persist and survive change, as do ordinary objects. Sounds, however, auditorily are individuated and identified in terms of patterns of change in audible features over time. What distinguishes the sound of an utterance of 'dolphin' from the sound of an utterance of 'infidel', or the sound of an ambulance siren from the sound of a police siren, is the pattern of audible features each exhibits through time. Moreover, sounds perceptually appear to persist in a manner that differs from ordinary material objects. An ordinary object appears visually or tactually to be fully present at each moment, in the sense that all that is required to be that thing is visibly or tactually present at that moment. Sounds, however, need not audibly appear to be fully present at each moment at which they exist. Audible individuals appear to occur, to unfold, and to require time to take place. This difference indicates that audible sounds are event-like individuals rather than object-like individuals. This, nevertheless, does not distinguish sounds from ordinary happenings such as vibrations, collisions, utterances, and clappings of hands, which we might hope to distinguish from sounds and to regard as sound sources.

The next step thus is to show that sounds are not identical to such events. Transactions by or among objects could occur soundlessly, as in a vacuum, below audible levels, or well muffled. This distinguishes sounds from events such as collisions and vibrations. In addition, while I allow that sounds have (though not audibly) both imperceptible features and ones perceptible through other senses, particular audible occurrences such as hand clappings and trombone playings typically have features sounds lack, such as changing colors, a stinging quality, spittle, and a brassy odor. Thus audible sounds are not identical with such events, which commonly are regarded as sound sources.

I have argued that audible sounds are particular, concrete, event-like individuals, and that they are not identical with what we regard as audible sound sources. The audible relation of audible sources to audible sounds thus is not that of property instantiation.

Treating sounds as audible individuals has a salient advantage. Distinguishing sounds from sources and from audible properties of sources allows that sounds may be audible independently from sources. A particular sound may be heard without thereby hearing its source. This readily explains a variety of attention and demonstrative reference to particular sounds that does not involve attending or referring demonstratively to their sources. Treating sounds as audible individuals allows that sounds are distinct particular objects of hearing, attention, and demonstrative thought. This seems crucial especially to explaining the phenomenology of purely musical listening. What Scruton (1997) calls *acousmatic listening*, for instance, requires attending to particular sounds but not sources.

### 3 Effects?

Common talk says ordinary material things *make* sounds: keys or jiggling keys *produce* or *generate* sounds. *Production* and *generation* connote modes of causation, so this talk says sounds are causal byproducts of their sources.

Suppose both sounds and sources are audible, and suppose sounds are effects of sources. If this relation between sounds and sources is audible, sources audibly produce sounds. According to such an account, the audible relation between sounds and sources is *causal*, and sounds audibly are *effects* of their audible sources.

This causal account has several advantages. It offers the most natural way to understand *audible sourcehood*. It treats sounds as caused by and thus as distinct from audible sources. Since perceiving an effect does not entail perceiving its cause, you may hear a particular sound without hearing its source. Sounds thus are audible independently from sources. It also permits that audible sounds may exist at places and times distinct from those of their audible sources, and that their audible qualities may differ, since effects need not resemble their causes. It thus allows that sounds are audibly independent from sources.

### *Hearing sources mediately*

Most philosophers who consider it say you hear sound sources only *mediately* or *indirectly* by or in virtue of hearing their sounds. Here is a famous historical example followed by a typical recent one:

When I hear a coach drive along the streets, immediately I perceive only the sound; but from the experience I have had that such a sound is connected with a coach, I am said to hear the coach. (Berkeley 1975, p. 194)

To be sure, we say that we hear the bird when it chirps, or the dog when it barks. But we only ever hear the bird, or the dog, by hearing the sound that it produces. (Batty 2010, p. 516)

This follows if sounds are *the* immediate objects of hearing. However, such a strong claim is not required. You may immediately hear silence or audible qualities but still hear sources only mediately by hearing sounds.<sup>3</sup> The weaker claim remains attractive: sounds are *among* audition's immediate objects. Why, however, say you hear sources only mediately?

M. G. F. Martin (2007, p. 707) says of vision, 'Our primitive idea of what it is to be seen, and for it too look a certain way, is for it to fix the way one then experiences, that is, the phenomenal nature of one's experience.' Thus, for instance, if on an occasion a material object's facing surface determines its look, while the remaining hidden parts make no contribution, the facing surface counts as a primary or immediate object of sight. Translating to audition: if on an occasion a sound determines how things auditorily appear (sound) to you—if the sound fixes the phenomenal character of your auditory experience—then the sound is a primary or immediate object of hearing.

This does not rule out that you see or hear things other than immediate objects of vision or audition. A mediate theorist about vision may hold that voluminous material objects are not among the immediate objects of sight because they do not determine how things look in the primary, privileged, or non-redundant way that their surfaces do. Nevertheless, such objects may be seen in virtue of their standing in appropriate relations to immediate objects of sight (see, e.g., Jackson 1977; Bermúdez 2000). Similarly, a mediate theorist about audition may hold that sound sources are not among the immediate objects of hearing because they do not determine how things sound

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<sup>3</sup>Thus sound may not be the tautological accusative of hearing (cf. Margolis 1960).

in the primary, privileged, or non-redundant way that their sounds do. Sources, however, may be heard mediately in virtue of their standing in appropriate relations to immediate objects of hearing. Just as you may see a voluminous object only mediately by seeing its surface, you may hear a sound source only mediately by hearing its sound.

Not every relationship between non-identical things is compatible with perceiving one mediately by perceiving the other. Plausibly, perceiving a particular thing requires being able to differentiate, discriminate, or distinguish it from the surrounding environment.<sup>4</sup> For a relationship to be *appropriate* for mediate perception requires that, where two things stand in that relation, perceiving one enables you to discriminate the other from its surroundings. *Room cohabitation* generally does not ground mediate perception. Touching my telephone does not readily allow me to discriminate my desktop from the surroundings.<sup>5</sup> *Property instantiation* may enable mediate perception. Seeing an object's color, form, location, and motion may enable you to single it out from its surroundings. Hearing a sound's timbre, loudness, location, and duration may enable you to discriminate it from its surroundings. *Parthood* also is appropriate for mediate perception. Seeing reasonably sized facing portions of an object's surface may enable you to locate and distinguish that object from its surroundings. Hearing reasonably sized unmasked temporal portions of a sound may enable you to discern its temporal boundaries and its location. Perceiving properties or parts of an item thus commonly enables you to single it out and to discriminate it from its environment. Perceiving an item's room cohabitants generally does not.

Suppose the audible relation between sources and sounds is *causality*, rather than *instantiation* or *parthood*. Is *causation* appropriate for mediate perception?

In general, perceiving an effect is not a way to perceive its cause. Seeing smoke is not seeing fire; touching footprints is not touching a foot. Odors are perceptible effects that illustrate the worry, since smelling an odor may not provide a way to smell its source.<sup>6</sup> In each case, the explanation is straightforward. Perceiving the effect does not enable you to locate and to discriminate the cause from its surroundings. Perceiving smoke, footprints, and odors does not put you in a

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<sup>4</sup>See, e.g., Strawson (1959); Dretske (1969, p. 20); Bermúdez (2000, p. 364); Siegel (2006, p. 434). Martin (2007, p. 706) says, of an expansive brick wall whose look depends on individual bricks, 'Do you thereby see any of the individual bricks? Not obviously so. After all, none of the individual bricks is segmented out for you in the visual array as a possible object of visual attention.'

<sup>5</sup>This example and those that follow are designed to satisfy a minimal causal requirement on perception. Whether an enriched counterfactual-supporting condition would explain which relations are appropriate for mediate perception is material for another paper.

<sup>6</sup>Batty (2010), for instance, says human olfactory experiences represent odors but not odor sources.



position to determine the place of and to 'segment out' fires, feet, and odorants as 'possible objects of perceptual attention'. Perceiving the effect does not in such cases secure the temporal, spatial, or qualitative information needed to single out its cause.<sup>7</sup>

The problem is that causal relations in general are too remote to support perceiving one item by or in virtue of perceiving another. This remoteness means that perceiving an effect cannot be counted upon to provide the information to single out its cause perceptually. Effects need not share spatio-temporal locations, nor boundaries, nor qualitative features with their causes. Thus, it is commonly held, for example by Dretske (1969), Bermúdez (2000), and Neta (2007), that seeing a material object *requires* seeing part of its surface.

So, if the relation between sources and audible sounds is causal, there is a threat to the claim that you hear sound sources mediately by or in virtue of hearing their sounds. The threat is that hearing the sound—the effect—does not enable you to discriminate the sound source—the cause—from its surroundings. Since a causal relation intervenes, the audible sound may exist long after, be located far from, and differ qualitatively from its source.

We are assuming both that you hear sound sources only mediately by or in virtue of hearing sounds and that the relation between audible sounds and their sources is causal. So there are two possibilities. The first is that you do not hear sound sources. Thus, sounds and sources are not audibly causally related. The second is that hearing is an exception and you hear sound sources by hearing the sounds they cause.

Put aside for now the second possibility, and suppose that the causal relation is a barrier to hearing sound sources mediately by hearing sounds. A description of auditory experience by Matthew Nudds suggests a solution. Nudds (2001) argues that perceptually experiencing the causal relation between a sound and a source is ineliminably multimodal. Nudds (2001) says that you hear sounds and that you visually perceive sound sources. You see keys jiggle or tricycles collide, and you hear their sounds. Nevertheless, you perceptually experience the visible keys as causally related to the audible sound. But perceptually experiencing the *production* of sounds is irreducibly multimodal. You hear sounds, see keys, and crossmodally perceptually experience their causal relation. Nudds, however, does not deny that you hear the sources of sounds. Nudds says you do hear sources, and you hear them in hearing sounds (see, e.g., 2001, p. 222; 2010,

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<sup>7</sup>Austin (1962, p. 16) says seeing a shadow on a blind 'is a doubtful case' of indirect perception, but for a different reason: it does not involve a 'kink' in the line of sight.

p. 118).<sup>8</sup> What is of interest here is Nudds's description of auditory experience. He says you normally hear the sound as apparently having been made or produced by a source. You hear the sound as having the non-intrinsic property of 'having been produced by a source of a certain kind' (2010, p. 118). According to this account, even without occurrently seeing the sound's source, you may be auditorily aware of the source as that which produces the sound you hear.

This characterization suggests a solution to the worry that causal relations are too remote to support mediately hearing sound sources. Suppose you hear sounds *as having been produced by* a source of a certain kind. Auditory experience thus may represent sound sources by encoding a descriptive condition: *the source of kind k which produced this sound*. The sound source qualifies as that which is heard because it satisfies the descriptive condition. According to this account, auditorily experiencing the passive causal relational feature of the sound is, crucially, what enables you to hear the source. Your auditory experience represents the sound and represents it as having been caused by a source; it thereby also represents the source.

This approach faces an obstacle. Given plausible assumptions about the relationship between perception and thought, it entails that audition does not enable demonstrative singular thoughts about sound sources. On auditory grounds, you can think of the source descriptively as that which causes or produces the sound you hear, but audition does not itself support a capacity to think demonstratively about *that* environmental event, which is the source of the sound, except perhaps by means of deferred ostension.

Remarks by other philosophers suggest they embrace this as intuitive:

In the case of audition, the primary objects of demonstrative identification are sounds, associated with phrases such as 'that barking' or 'that noise'. One may pick out the source of the sound via picking out the sound itself—we might then understand the demonstrative expression, 'that dog' as involving deferred ostension, perhaps as the descriptive phrase, 'the dog which is actually the source of this sound'. There is a clear contrast between the case of auditory perception of sounds and their sources with the case of colour or shape detection in the case of vision. We do not think of visual demonstrations of objects as proceeding via a demonstration, 'the object which possesses that colour'. So sounds count as phenomenal objects in auditory perception

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<sup>8</sup>Nudds nevertheless denies that sound sources belong among auditory appearances: 'And since nothing other than sounds can auditorily appear to us, how can our auditory experience represent anything other than sounds? In particular, how can it represent the objects that are the sources of sounds?' (2010, p. 120)

in a way that colours and shapes do not in vision—it may be misleading, then, to think of both cases simply in terms of features being organised together as features belonging to objects. (Martin 1997, p. 93; see also Nudds 2001, p. 222)

But does ordinary audition facilitate only descriptive thought or deferred ostension of sound sources? Grant Martin’s contrast between, on one hand, hearing sounds and sources and, on the other, seeing colors and objects (that is essentially the contrast discussed in Section 2). A more appropriate comparison in the current context is between, on one hand, hearing sounds and hearing sources and, on the other, seeing unhidden facing surfaces and seeing voluminous objects.<sup>9</sup> While some contrast admittedly remains, the case of visually demonstrating objects while seeing facing surfaces and the case of auditorily demonstrating sound sources while hearing sounds do not differ so greatly as to warrant believing that they involve distinct kinds of mechanisms of reference.

Intuitively, despite the availability of surfaces, vision enables demonstrative singular reference to voluminous objects. Similarly, despite the availability of sounds, nothing obvious about the phenomenology of auditory experience prevents saying that you can hear and entertain singular demonstrative thoughts about sound sources, such as floorboards, rambling speeches, or jiggling keys. Currently I hear *those* footsteps and *that* glass being set down. It is legitimate in response to, ‘What was that?’ asked on auditory grounds to reply, ‘the fridge door slamming shut’. I am not alone in thinking so. For instance, Robin Jeshion describes audition at the outset of a recent essay on singular thought.

We stand in relations to the objects in our world. Some of these relations are fairly direct, immediate. Sitting in the garden, I am surrounded by a mass of rose bushes abloom, a skittering finch singing, and grapes ripening overhead. . . . I can visually attend to the rose itself and think *that is lovely*, where ‘that,’ as it functions in my thought, refers deictically to the object I attend to—that very rose. I can hear the warbling finch and think *it sounds cheery*, where ‘it’ functions in my thought to refer to the individual finch I am auditorially attending to. (Jeshion 2010, p. 1)

The parallel with visual demonstratives suggests that audition-based thought concerning a sound source need not involve descriptive contents furnished by auditory experience that men-

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<sup>9</sup>Martin was responding to Campbell concerning attention and the attribution of features to objects in vision and audition.

tion a sound and its apparent causal features. Moreover, auditory experience provides no unique reason to deny that you can form singular demonstrative thoughts about *that* event, which is the sound's source, without referring first to a sound, as deferred ostension would require. Compare the visual case. Suppose you see a tree only mediately by seeing its bark and leaves. It remains phenomenologically plausible that vision enables you to refer demonstratively and to form singular thoughts concerning the tree, and that doing so does not require you to refer to the bark and leaves. In a range of cases, including those mentioned above, it is phenomenologically inapt to say that auditorily demonstrating a source requires referring to a sound and its apparent passive causal features.

Talk of descriptive thought and deferred ostension thus mischaracterizes certain cognitive activity that is grounded in occurrent audition and that concerns apparent sound sources. So the potential solution being considered does not provide what we might wish for: a phenomenologically plausible account according to which auditory awareness enables subjects to think demonstrative singular thoughts about sound sources.

Return now to the second possibility. The background worry is that a causal relation is too remote to enable hearers of sounds to discriminate sound sources from the surroundings. But suppose that this is a special case and that you do hear sound sources by hearing the sounds they cause. Martin (2007, p. 707) does allow that you may see a material object by seeing its effect. However, he cites as examples cases such as seeing a burglar by seeing the moving curtain, or seeing a statue by seeing the drapery covering it, in which the effect is spatio-temporally contiguous with the cause.<sup>10</sup> Perhaps hearing sources is more like seeing a curtain's movement and thereby seeing a burglar than like seeing a footprint but failing to see a foot. Martin's examples and other 'good' cases are noteworthy because the causal relation is intimate enough that perceiving the effect provides the information to discern the cause. Seeing clothing supported by a human, for instance, enables you to single out that human in its surroundings. Christo and Jeanne-Claude's wrapped structures, including the Pont Neuf and Reichstag, are nice examples. So suppose the causal relation between sounds and sources is sufficiently *intimate* that hearing sounds *does* provide information that reliably enables you single out their sources. For instance, suppose hearing sounds informs you about the spatial and temporal locations of material objects and events. Moreover, suppose hearing sounds provides distinctive qualitative information about the activities of material things. If so, hearing a sound may place you in a position to discriminate its source from

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<sup>10</sup>The statue example is from Matthew Nudds.

the surroundings. Thus, given an appropriately *constrained* causal relation, you may hear a sound source mediately by or in virtue of hearing the sound it produces.

Does hearing sounds ever enable you to single out and to discriminate sound sources from their surroundings? There is no clear reason to deny it. First, in everyday listening situations, a sound is audible approximately when its source makes it, and a sound's duration matches the duration of the activity that produces it. Secondly, in a wide range of normal listening conditions, sounds auditorily appear to be located in some direction at a distance, roughly at the locations of the things and events that make them. You can hear where the keys hit the floor by hearing where a sound auditorily appears to occur. Thirdly, objects and events tend to have distinctive sound signatures that aid in distinguishing them from their environments. If audible sounds are spatially and temporally contiguous with audible sources, then, coupled with the distinctive qualitative information sounds provide about their sources, hearing a sound could place you in a position to single out and to discriminate its source from the surrounding environment. Thus, you may hear a source mediately by or in virtue of hearing the sound it produces.

One objection is that auditory discrimination is limited in ways vision is not. For instance, audition's spatial acuity does not match vision's, so sounds and sources commonly lack audibly sharp boundaries. This raises a more pressing concern. When two loudspeakers make simultaneous qualitatively indistinguishable sounds, the result often is an auditory experience as of a single sound with a single source. Thus, vision easily differentiates qualitatively indistinguishable individuals at distinct locations, but audition may not. But what holds for sound sources also holds for sounds. Two distinct sounds may appear as one when two distinct sources appear as one. That, however, is no reason to deny that you ever discriminate sounds from their surroundings or differentiate distinct simultaneous sounds. So it is no reason to deny that you ever discriminate sources from their surroundings or differentiate distinct simultaneous sound sources. At worst, this is an illusion of number that points to a diminished role for spatial features, relative to vision, in individuating objects of audition. It exposes a limit on audition's use of space to distinguish distinct simultaneous individuals that match qualitatively. Of course, this limitation is accompanied by strengths, such as a capacity to discriminate on the basis of temporal and qualitative differences inaccessible to vision.

Here is where the discussion stands. We have supposed that you hear sound sources only mediately by or in virtue of hearing their sounds, and that the relation between sounds and sources is causal. The remoteness of causal relations introduces a risk that hearing a sound does not en-

able hearing a source because hearing an effect does not enable you auditorily to discriminate the cause from its surroundings. Perceiving an effect in general does not suffice to determine the place, time, or qualitative profile of its cause. However, well-motivated assumptions about the spatial, temporal, and qualitative relations between audible sounds and their sources constrain the causal relation in a way that makes plausible that hearing a sound enables you to discriminate the sound's source from its surrounding environment. Thus, if sources make sounds, you may hear a source mediately by hearing its sound.

None of this, however, demonstrates that a causal relation between sounds and sound sources is *audible*. Audibly apparent causal features are unnecessary to establish that you hear sound sources by hearing their sounds if the account sketched above is correct and hearing sounds enables you to discriminate sources from their surroundings. So apparent causal features are idle in explaining how you could hear sound sources mediately by or in virtue of hearing sounds. Thus, if sounds and sources are audible, then even if sources cause sounds, and even if sources are audible only mediately by hearing their sounds, no reason yet exists to accept that audible sources audibly stand in causal relations to their sounds.

### *Against hearing causality*

The preceding assumed that hearing sounds mediates hearing sound sources. Humans may, however, hear sounds and hear sources but not hear sources by or in virtue of hearing sounds.<sup>11</sup> Sources may be among the immediate objects of audition, or there may be no principled distinction between mediate and immediate hearing. So allow that you hear sounds and hear sources but do not hear sources mediately by hearing sounds.

Why, in either case, hold that sources *audibly cause* sounds?

We say sources 'produce', 'generate', and 'make' sounds. Other talk, however, lacks transparently causal content. We say, 'that firecracker was loud', 'that band is discordant', and 'this concert has a cacophonous sound'. The audible relation between sources and sounds thus should not be read directly from common language.

The claim also does not follow from the physics. Theoretical and scientific understanding means we can discover and know about the producers and causes of sounds, but we can do so without hearing them to stand in causal relations to sounds.

It does not follow from hearing sources of sounds. Hearing a source does not entail hearing

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<sup>11</sup>See, for instance, reasons explicated in Clarke (1965), Martin (2007), Neta (2007), or Matthen (2010).

it to be a source. It also does not follow trivially from hearing a source to be a sound source. It is intelligible, for example, that sounds are properties audibly instantiated by the things or events that are heard to be their sources and thus that audible sourcehood is not audibly causal.

The evidence that audible sources audibly stand in causal relations to audible sounds could be found in auditory experience, attention to which may support the claim that you hear not just sounds and sources but also a causal relation between them.

Some philosophers hold that humans do not perceptually experience causal relations. According to this view, observers may perceptually experience objects and events, along with their spatial and temporal features, but do not perceptually experience causality. Others hold that humans sometimes perceptually experience causation (e.g., Bayne 2009; Butterfill 2009; Siegel 2009). Here, I simply grant that humans may perceptually experience causality. Moreover, I assume that humans may do so auditorily. For example, you could auditorily experience a succession of sounds as causally related. This could explain the apparent relation between sounds and echoes. Or you could hear one source to cause another source. For instance, you could hear the slamming of the door to cause the rattling of the window. The question is whether you hear sources to stand in causal relations to *their* sounds.

An effective way to argue that you perceptually experience causality is by phenomenological contrast (Siegel 2009). Suppose, controlling for other differences, that perceptually experiencing two events without experiencing them to be causally related may differ phenomenologically from perceptually experiencing those two events to be causally related. For instance, visually experiencing the flipping of a switch and the illumination of a lamp may differ phenomenologically from visually experiencing the flipping of the switch to cause the illumination of the lamp. In the former case, you visually experience the two events as distinct, discrete happenings that occur in sequence. In the latter case, you visually experience the two events to be *unified* in a way missing from the former. Phenomenological contrast arguments invoke visually experienced causality as the best way to explain the phenomenological difference.

Can we argue by phenomenological contrast that sources audibly cause sounds? This requires that hearing a sound and hearing its source sometimes differs phenomenologically from hearing a sound, hearing its source, and auditorily experiencing them as unified. Imagine hearing just the flip of a switch and its sound. Does hearing the flip and hearing the sound differ phenomenologically from hearing the flip, hearing the sound, and auditorily experiencing them as unified? Not obviously, since it is difficult to imagine an ordinary case of hearing just the sound and the source

but *failing* to auditorily experience the sound and the source as somehow intimately related.

As an aid to imagination, consider an alternative.<sup>12</sup> Imagine hearing two distinct sounds that share a source, hearing the source, but hearing the source to be the source of just one of the sounds. For example, imagine hearing a snoring sound and a mumbling sound made by Ezra while sleeping. Suppose you hear the two sounds and you hear Ezra. But suppose at first you hear Ezra to make only the snoring sound and not the mumbling sound. Later, you might recognize and hear Ezra to be the source of the mumbling sound. Thus, hearing a sound and hearing its source contrasts phenomenologically with hearing a source *to be* the source of the sound. In the latter case, the sound is phenomenologically *unified* with its apparent source in a way that calls for explanation.

However, not just any phenomenological unity supports perceptually experienced causality. There are differing ways for experienced things to seem unified or disunified. Pains and colors may be co-consciously unified; a scene's elements may appear spatially unified; a sensible property may appear unified phenomenologically with its bearer; a perceptible part may seem unified phenomenologically with the whole. Thus, to ground a compelling contrast argument, the apparent unity must be of a sort best explained by the perceptual experience as of a causal relation.

The contrasts that best support perceptually experienced causality involve events that are perceptually experienced as wholly distinct. Such contrasts allow us to control for other forms of apparent unity to ensure that the phenomenological unity that emerges lacks a better explanation. The flipping of the switch is a particular visible occurrence, and the illumination of the lamp is a visibly separate, spatio-temporally discrete occurrence. Each can be visually identified as an independent perceptible happening. Contrast arguments highlight the noteworthy fact that sometimes such wholly distinct happenings nonetheless perceptually seem unified or interdependent in a respect that is best interpreted as revealing a causal interaction.

Hearing a sound and its source is not such a case. The flipping of the switch is a particular audible occurrence, and its sound is a distinct audible particular. The two evidently are not identical. However, the audible switch flipping and its audible sound are not evidently auditorily experienced as wholly distinct individuals. When you auditorily experience a sound to be phenomenologically unified with its source in the manner of audible sourcehood, audition does not present sources and sounds to have discrete locations, to occur at distinct times, or to differ in audible appearance. The audible flip and its sound are not audibly separate or wholly distinct occurrences.

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<sup>12</sup>The case that follows was first put to me as a counterexample by Michael Martin.



Thus, the apparent unity that generates the auditory phenomenological contrast does not require for its explanation the auditory perceptual experience of a causal relation. The apparent unity and the phenomenological contrast are, for instance, compatible with the auditory experience of a part-whole relation. Audible causality thus is not necessary to capture the phenomenology of audible sourcehood.<sup>13</sup>

Multimodal perception nevertheless may support an apparent causal relation between sources and sounds. Nudds, for instance, claims that you perceptually experience visible events to cause audible sounds. The case is apt for contrast arguments. You may see a source, hear a sound, and perceptually experience the source to be distinct from the sound. You may visually experience an event without auditorily experiencing a sound, and you may auditorily experience a sound without visually experiencing any event. And yet, there sometimes is phenomenological unity between a visible source and an audible sound, as when you watch and listen to a televised speech. This phenomenological unity may collapse. For example, when watching poorly dubbed video, the impression of unity between what you see and what you hear breaks down. Thus, you may see an event and hear a sound, but not perceptually experience them as unified in any matter that suggests sourcehood. Seeing a mouse and hearing a roar may yield a similar result. So the requisite phenomenological contrasts exist.

Again, this does not yet demonstrate that the phenomenological unity is best explained by the perceptual experience of causality. The unity could result from cross-modal *feature binding*, or an impression of the *identity* of what is seen and heard, or of the *parthood* of what is heard to what is seen. Multimodally experienced causality nonetheless may best fit the phenomenology in certain cases, such as those which include a time gap between seeing an event and hearing its sound. So grant for now that multimodally experienced causality in some instances best explains the phenomenologically apparent unity between sounds and sources.

This concession, however, still does not establish the principal claim. A multimodally experienced causal relation between a source and a sound does not show that audible sound sources audibly are causally related to their sounds. Take, for instance, a multimodal case in which you visually experience an event, auditorily experience a sound, and auditorily experience a sound source. Suppose, to ensure the case supports apparent causality, that the visual and auditory ex-

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<sup>13</sup>Audible causality also does not suffice to capture the phenomenology of audible sourcehood. You could, for instance, hear the slamming of the door to cause the sound of the window rattling without hearing the door's slamming to be the source of the window's sound.

periences do not occur simultaneously. For instance, introduce a gap so that the visual experience of the source entirely precedes the auditory experience of the sound and of the source. The visible event and the audible source thus need not be perceptually identified. And suppose that the phenomenological unity between the visible event and the audible sound is best explained as multimodally experienced causality. This does not support the claim that the phenomenological unity that holds between the audible source and its audible sound is of the same type that holds between the visible source and its audible sound. Indeed, it would be odd to describe the case as one in which a sound twice perceptually appears to be caused.

A natural reply is that auditorily experiencing a source to be causally related to a sound requires that the audible source is perceptually identified with the visible source, which may require simultaneously hearing and seeing the source. However, even perceptually identifying the audible source with the visible event perceptually experienced to cause the audible sound does not suffice to auditorily experience the source to cause its sound. Perceptually identifying a visible event with an audible event does not suffice to hear that event to bear—*audibly*—all those features you see or multimodally perceive it to have. You may perceive a visible item to be the very same item you hear but nonetheless fail to hear that item to be blue or square. You may even hear it to be a thing which has visible and multimodally perceptible features, but you need not hear the visible and multimodally perceptible features it has. Perceptually identifying a visible source with an audible source does not mean hearing that source to bear its multimodally perceptible causal features. Thus, an audible sound source, when perceptually identified with a visible event that is multimodally experienced to cause a sound, need not audibly cause its sound.

Here is a final reply on the causal account's behalf. After many courses of perceptually experiencing visible events and audible sounds to be causally related, and after perceptually identifying visible events with audible sources, you may come to *auditorily* experience such events to be causally related to their sounds. This might occur, for example, through parasitic crossmodal transfer akin to what enables you to see the solidity of visible objects thanks ultimately to touch. So you may come to hear sound sources to cause their sounds thanks ultimately to multimodal experience. This is the best hope, but mentioning the possibility provides no new evidence to support audible causality. Any influence from a background of multimodal experience should have been evident in each of the prior arguments, including those focused on cases of hearing sounds and sources (this is one of the pressing lessons of multimodality). Attention to auditory and multimodal phenomenology, however, reveals nothing distinctively causal in the audible re-

lation between audible sources and their sounds.

Since sounds and sources do not audibly differ in spatio-temporal respects, and since they are not auditorily experienced as wholly distinct, discrete or independent events, the audible relation between sources and sounds lacks the marks typical of (and perhaps necessary for) perceptible causality. The auditory perceptual experience of a causal relation thus may not provide the best explanation for the phenomenological unity that holds between audible sounds and their audible sources. The phenomenological evidence does not ground a compelling argument that sounds audibly stand in causal relations to their audible sources.

#### 4 Parts

We have considered two candidates for the audible relation sounds bear to their sources. The first is that sounds audibly are properties *instantiated* by sources. The second is that sounds audibly are *effects* of sources.

I want to propose a third. According to this account, the audible relations between sounds and sources are mereological. Sounds audibly are constituent *parts* of everyday audible events, such as collisions and vibrations, which involve material bodies.

Material things rub, vibrate, jiggle. Sometimes they do so in the presence of a surrounding medium, such as air. When they do, they may rub, vibrate, or jiggle loudly, at high pitch, or with rough timbre. In doing so, they sound; there is a sounding. The sound is something done by the body or bodies. It is a particular event characterized by the instantiation or exemplification of acoustical attributes. Material things in the presence of a surrounding medium partake in complex happenings that include sounds as well as activities beyond sounds. In the course of sounding, objects also vibrate, collide, transmit energy, change shape, cool off. The instantiation of these properties need not be audible as such.

An audible sound is a particular instance of a pattern of audible qualities over time and location. Objects figure in occurrences that involve more than just audible sounds. When you hear a sound, it also is plausible that you may hear a broader occurrence that includes more than just a sound. Such more encompassing events, I claim, are something you hear when you hear what I have called the sources of sounds. Furthermore, such audible sources audibly include sounds as constitutive parts. The sounds you hear audibly are mereological parts of such audible sources. The audible relation between audible sounds and their audible sources is that of part to whole.

Suppose you stomp your foot on the floor in air. Your foot and the floor collide. Because there is a medium, they do so loudly and percussively. They sound. The sound you hear is a particular event-like individual characterized by its audible features over time. It is part of a more complex occurrence that has aspects or features that may be inaudible. You may hear that more complex occurrence which includes a foot stomping, a release of energy, vibrations, a painful sensation, and a sound. The sound audibly is a constituent part or audible aspect of the broader happening which we usually just call ‘the stomping of the foot’. Thus, you hear the sound, which is the sound of a stomping that occurs in a surrounding medium. You also may hear the stomping event, which audibly includes a sound.

This account has certain benefits when compared with the others. You can perceive a part without perceiving the whole. For instance, seeing proper parts of a house, such as a shutter or even a facade, does not entail seeing the house.<sup>14</sup> Likewise, you may hear the sound without hearing the stomping. Sounds therefore are audible independently from sources. Nonetheless, audible sounds and audible sources are not *wholly* distinct. The sound is not merely an independent byproduct of the audible source. Thus, sources do not just have their audible attributes dispositionally; they include parts with audible features. The foot stomping and the sound audibly occur during the same interval and in the same region, and both the stomping and the sound appear loud and percussive. The stomping is not audibly loud merely as a matter of its causal dispositions or thanks to its audibly seeming to put out or cleave off sounds. The stomping seems audibly to be loud immanently. According to the account I am offering, this is explained by its having or including a loud sound, which is partly constitutive of the stomping as heard.<sup>15</sup> Finally, the account respects the sense in which sounds may seem audibly *bound* to or *unified* with their sources. According to the mereological account, sounds audibly are bound to audible sources in the manner in which individuals perceptibly belong as parts to a whole. This is distinct from any phenomenologically apparent manner in which perceptible properties belong to or qualify their bearers.

The mereological account is compatible with hearing sound sources mediately by or in virtue of hearing sounds. As earlier, parthood may ground mediate perception. Some philosophers hold that you see voluminous objects by or in virtue of seeing their facing surfaces. The facing surface

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<sup>14</sup>For extended discussion, see Clarke (1965); see also Neta (2007).

<sup>15</sup>This is compatible with the sound’s seeming like an excrescence in the strict meaning of *outgrowth* or *addition*, so long as the excrescence fails audibly to separate from the host.

fixes how things look, but seeing the facing surface may enable you to discern and to distinguish the object visually from its surroundings. Similarly, you may hear environmental occurrences by or in virtue of hearing their sounds. An audible sound is an audible part of an event that takes place during an interval at a location. The sound fixes how things appear auditorily (how they sound). Localizing a sound in time and space nonetheless may enable you auditorily to localize its source in time and space. You also may auditorily discern distinguishing qualitative characteristics of the source in hearing its sound. Hearing sounds thus enables you to single out and to discriminate sources from their audible (and audibly silent) surroundings.

The mereological account also allows that you meet perceptual requirements on auditory attention, demonstrative reference, and singular thought about environmental happenings that are not sounds. If demonstrating an item does not depend upon referring to some perceptible proper part of it, then on the basis of audition you may single out occurrences—for example, *that* foot stomping—without mediating descriptions or deferred ostension. Despite the availability of sounds, audible sound sources thus are potential subjects of demonstrative singular thought.<sup>16</sup>

The mereological account explains why you never hear a source in absence of a sound. According to this account, an audible sound is partly constitutive of each broader event you hear. The broader event you hear is not wholly distinct from the sound you hear. Indeed, the audible sound audibly is a constituent of the complex broader audible event. Thus, an audible sound exists whenever an audible source does. A necessary condition for hearing a source is sufficient for the existence of a sound. This explanation remains neutral about whether or not hearing sound sources is mediated by hearing sounds. Even if you do not hear sources mediately by or in virtue of hearing their sounds, any occurrence you hear audibly includes a sound.

The phenomenological evidence supports the mereological account. When you hear a sound, hear its source, and hear the source to be the source of the sound you hear, the audible source and the audible sound are not simply phenomenologically unified—they share an audible appearance. The sound and source do not auditorily appear to occupy wholly distinct spatio-temporal regions. Instead, the sound and its source appear auditorily to overlap in space and time. They bear neither mismatched nor duplicate audible qualities. They share audible qualities. Nevertheless, the source may be heard to bear features sounds lack, such as being a speech or a collision. This suggests that what explains the phenomenological unity that holds between audible sounds and

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<sup>16</sup>This is so even if you hear sources mediately by or in virtue of hearing their sounds. See, e.g., Bermúdez (2000) for a discussion of the visual parallel.

their audible sources is that sounds are auditorily experienced to be partly constitutive of audible sources.

Someone might object that an audible occurrence I say you hear, and which I call a sound source, does not *include* a sound. The reason is that such an occurrence could have occurred without a sound. For instance, you hear the stomping of the foot, but that event could have occurred soundlessly, as in a vacuum.

A stomping of course could occur without a surrounding medium, or on plush carpet, in which case it would be soundless and inaudible. We must consider two possibilities. First, suppose that particular events are *fragile*. Stompings in air differ from those that occur in vacuums in a salient respect: those in air are soundings, and those in vacuums are not. You hear only occurrences with associated sounds. If particular events are fragile, the stomping you hear, which occurs in the presence of a surrounding medium, could not have occurred in a vacuum. Secondly, suppose that particular events are not fragile. If so, the stomping you hear, which occurs in a medium, might have occurred in a vacuum and thus soundlessly. This, however, does not imply that the stomping you hear does not actually include a sound. It shows only that the sound is not essential to that stomping. Nevertheless, including a sound is necessary for an actual occurrence's audibility. The possibility of soundless occurrences thus does not imply that the actual events you hear lack sounds as constituent parts.

What about the intuition that the event you hear—*that* foot stomping—does not *actually* include a sound and thus could have occurred soundlessly? Note that the counterfactual claim now is a consequence of an intuition rather than a reason and so cannot support the initial objection. I explain away the intuition as follows. The occurrence you hear may *include* an event that could have occurred soundlessly. But hearing a particular individual does not imply hearing each of its parts. Thus, while you hear the occurrence of the stomping, you need not hear those aspects of it that could occur soundlessly. Nevertheless, even if you do not hear such aspects, you may still hear the broader occurrence as including or as having them. This is one auditory example of 'presence in absence' (Noë 2005).

A related objection is that according to the mereological account you do not hear ordinary material objects such as keys or dogs. I claim that you hear sounds and that you hear complex environmental happenings that include sounds as constitutive parts. According to this account, the events you hear involve material objects. But perceiving an object does not require perceiving each of its parts, and perceiving an event does not require perceiving each of its constituents. For

example, you may see a flash of motion without seeing that which moves. Hearing is notable in that it is plausible that you do not auditorily experience ordinary material objects as such, while you do auditorily experience their activities.<sup>17</sup> It is counterintuitive to say you can auditorily single out material objects because auditory experiences do not reveal three-dimensional solid bodies with rich internal spatial structure as such. Nor does audition clearly distinguish distinct material objects engaged in an audible happening from each other. You may hear clapping but be unable to single out each of two individual hands; you may hear the stomping of a foot but be unable to distinguish the foot from the floor. Nevertheless, the account does permit that on auditory grounds you could become aware of ordinary material things. And, if you hear them, you even may hear material objects to be constituents of audible occurrences. Any audible material objects, however, audibly are constituents of audible happenings in a way that differs from sounds. They are more like protagonists or sufferers of audible occurrences that involve sounds. Thus, for example, you may hear the keys and hear them to be that which jiggles and jingles. The mereological account has the resources to explain auditory awareness as of ordinary objects. I remain neutral here about whether any such hearing of material objects is mediate or immediate, and about whether it supports demonstrative singular reference.

A further objection begins with a disanalogy between the case of seeing a surface and a voluminous material object and the case of hearing a sound and a sound source. I have argued that in each case you perceive a part and perceive that of which it is a part. The part perceptibly belongs to the whole. However, there is an important difference. When you see a material body, you are in position to see the unhidden parts of its facing surface. But you also may visually experience it as more than unhidden surface. You may visually experience the object to be a thing with other parts that in principle you could bring into view. It looks to have hidden but nonetheless visible parts. While seeing a particular material object does not require seeing each of its parts, you may visually experience it to be a thing with presently hidden, unseen, but nonetheless visible parts. However, when you hear a sound, the broader occurrence of which the sound is a part includes other constitutive parts and features that you could not ever hear or bring into earshot. For instance, the stomping may include not just a sound but also a dust cloud, a pain, and a reddening of the foot, none of which is audible as such. So why say you hear events other than sounds in which these inaudible features figure? If the perceptual experience as of something's including more parts than currently are perceived requires that each of a perceptible item's parts must be

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<sup>17</sup>This is the insight behind Scruton's (1997; 2009) account of sounds as 'pure events'.

perceptible (even if not presently perceived), then this threatens the audibility of sound sources.

My reply is that the relevant possibilities for perception are not restricted to one sense. The events you hear are perceptible other than through audition, and this shapes the perceptual experience of hearing them. Hearing as of something that is or could be seen or touched makes a difference to the phenomenology of auditory experience. This involves two commitments. First, auditory experience shares objects with other modalities, such as vision. If audition and vision share objects, and if sounds are not visible, then you hear something other than sounds which could possess visible attributes. Secondly, hearing as of something which has visible features, for instance, affects auditory perceptual experience.

Start with the first. Consider a multimodal perceptual experience that attributes features associated with different sense modalities. For example, you may see something yellow and feel something fuzzy, or see something bright and hear something loud. Now consider a multimodal perceptual experience that attributes features associated with different senses to a common object of experience. For example, you may perceptually experience as of something yellow and fuzzy, or as of something bright and loud. In the latter case, a single perceptible item is experienced to be both yellow and fuzzy, or both bright and loud. The identity of the item seen and felt, or seen and heard, is experientially evident. The thing seen to be bright perceptibly *is* the thing heard to be loud. Such apparent crossmodal identification commonly breaks down, as when you watch a film that is poorly dubbed film or a television program with a temporally offset soundtrack, or when you hear the bang of thunder long after seeing the flash. These cases contrast phenomenologically with those in which crossmodal identity is perceptually apparent.

Now consider the second. Suppose you hear and see an individual, and that the identity of what you hear with what you see is experientially evident. You perceptually experience a single individual to have both audible and visible features. Now imagine hearing as of something that you do not see, but which you have a long history of both hearing and seeing. You thus hear it and recognize it as something which has visible features. You need not hear or perceive those visible features, but, plausibly, you do hear and perceptually experience it to be something that has unseen but nonetheless visible features. You hear it to be the sort of thing that could be brought into view. My claim is that hearing something and perceptually experiencing it to be a thing which could be seen or that has unseen visible features differs phenomenologically from hearing something and not perceptually experiencing it as a thing that could be seen or that has visible features. Hearing as of something that has visible or tactile features differs phenomenologically



from hearing as of something without such features. Thus you might hear as of events that have inaudible parts. The audibility of an individual does not require that each of its parts is audible.<sup>18</sup>

A final objection is that any view in which sounds are not effects of environmental happenings must be false. I agree, but I do not deny that sounds are effects. Audible sounds are event-like individuals, and happenings in the environment cause sounds. Stepping on a loose floorboard causes a sound, as does shaking the hand that holds the keys. I am skeptical that the *audible* relationship between sounds and the events which in the first instance you hear and hear to be their sources is causal. The mereological account does not hold that on a strict understanding you hear a (soundless) foot stomping or keys jiggling *per se*. It holds that the source you hear is more encompassing and also includes a sound. According to the mereological account, the audible relation between the audible sound and the broader audible event is that of constitution or parthood. Audible sounds audibly feature in audible occurrences that involve material things and happenings.<sup>19</sup> Audible sourcehood thus need not be audible causality.

Two further benefits warrant mention. First, the mereological account captures a respect in which ‘sounds’ talk parallels ‘looks’ talk. We speak about how things look and about the looks of things. One way we use such talk is to say, ‘The apple looks red’, or to say, ‘The look of the apple is red’. The former uses ‘looks’ as a verb, and the latter uses its nominalization. Each may attribute to the apple itself the appearance of having a certain visible quality. The nominalization, ‘the apple’s look’, may pick out a visually accessible feature of the apple itself. We also speak about how things sound and about the sounds of things. One way we use such talk is to say, ‘The collision sounds loud’, and to say, ‘The sound of the collision is loud’. The former uses ‘sounds’ as a verb, and the latter uses its nominalization. The mereological account treats such sounds statements as analogous to looks statements in the following respect. ‘The collision sounds loud’ and ‘the sound of the collision is loud’ may attribute to the collision itself the auditory appearance of having a certain audible quality rather than state that it manifests the causal disposition to give

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<sup>18</sup>That is, it is not the case that every audible individual is such that each of its parts is audible. I am refraining from the stronger claim that every audible individual is such that it is not necessary that each of its parts is audible. The broader lesson is that for an individual to be perceptible by means of a given modality of sensory perception does not require that each of its parts is perceptible through that modality. This of course does not imply that audibility does not require some audible proper part. The mereological account may retain that requirement, and causal theorists may object.

<sup>19</sup>This does not require denying that audible sources cause sounds. If we utilize Lewis’s (1986, pp. 172–5) explanation in terms of piecemeal causation, we can explain the intuition that the whole causes the part.

off sounds which possess that quality. The nominalization, 'the collision's sound', may pick out an auditorily accessible feature of the collision itself rather than one of its audible byproducts. On its own, this is not a great advantage. But it points to a more critical consequence.

Some hold that, with respect to material things, auditory awareness is *epistemically deficient* when compared with vision (cf. Austin 1962, pp. 115–6). Seeing an ivory-billed woodpecker differs evidentially from hearing one. In certain details, of course this is true. According to the mereological account, however, the evidential *status* of audition need not differ in principle from that of vision. The mereological account allows for the evidential parity of vision and audition regarding, respectively, material things and their activities. By this I mean that audition need not provide only indirect or mediate awareness of sound sources while vision provides direct or immediate awareness of material things. Audition need not enable only deferred ostension or descriptive reference to sound sources while vision enables demonstrative singular reference. Auditory awareness of sound sources need not be merely descriptive, and auditory acquaintance with sources need not be just by proxy. According to the mereological account, the evidential status of hearing the activities of an ivory-billed woodpecker need not differ in kind from that of seeing it.

## 5 Conclusion

Three views of the audible relation sounds bear to their sources warrant consideration. The first is that sounds audibly are properties *instantiated* by sources. Audible sounds, however, are best understood as particular audible individuals, so instantiation is not the audible relation between sources and sounds. The second is that sounds audibly are *effects* of sources. Audibly apparent causality, however, is not necessary to hear sound sources mediately by or in virtue of hearing sounds. Moreover, whether or not hearing sounds mediates hearing sources, the phenomenology of auditory experience provides no compelling evidence for an audible causal relation between audible sources and their sounds. The third candidate is that sounds audibly are constitutive *parts* of audible sources. According to this mereological account, you hear happenings in your environment to include audible sounds. Sounds are among the audible appearances of their sources. This account explains your capacity auditorily to attend and to refer demonstratively to happenings beyond sounds. And it implies that the evidential status of hearing sound sources need not differ

in kind from that of seeing ordinary material things.<sup>20</sup>

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