

A Thesis Submitted for the Degree of PhD at the University of Warwick

Permanent WRAP URL:

<http://wrap.warwick.ac.uk/184925>

Copyright and reuse:

This thesis is made available online and is protected by original copyright.

Please scroll down to view the document itself.

Please refer to the repository record for this item for information to help you to cite it.

Our policy information is available from the repository home page.

For more information, please contact the WRAP Team at: wrap@warwick.ac.uk

Audition and the World:
An Account of the Materiality of the
Objects of Auditory Perceptual
Experience

By

Maria Giovanna Corrado

A thesis submitted in partial fulfilment of the requirements for the degree of
Doctor of Philosophy in Philosophy

University of Warwick, Department of Philosophy
May 2023

Table of Contents

Chapter 1	The Materiality of the Objects of Auditory Perceptual Experience	5
Chapter 2	Perceiving Bodies	14
Chapter 3	The Spatiality of Auditory Perceptual Experience	43
Chapter 4	Against Indirect Auditory Perception	62
Chapter 5	Material Things and the Notion of Force	86
Chapter 6	The Audibility of Force	104
Chapter 7	Mind-Independence in Auditory Perceptual Experience	128
Bibliography		138

To my mother and father,
Anything I love resembles you
Whatever disappoints me is unlike you.

Acknowledgements

For the completion of this thesis I am particularly grateful to Matthew Nudds, Naomi Eilan, Guy Longworth, Hemdat Lerman, Thomas Crowther, Quassim Cassam, and other philosophers I had the good fortune to meet.

Declaration

This thesis is submitted to the University of Warwick in support of my application for the degree of Doctor of Philosophy. It has been composed by myself and has not been submitted in any previous application for any degree.

Abstract

The study of perception has often taken the perspective of vision and, to date, less attention has been dedicated to the other senses, including hearing. Research in auditory perception itself has been predominantly occupied with sounds, overlooking further aspects of the auditory perceptual experiences that we ordinarily undergo. Carrying out an inquiry in auditory perception, I present an account of the material objects of auditory perceptual experience. Examining the objects of auditory perceptual experience via the notion of force, a power essential to material bodies, we come to appreciate that we are ordinarily auditorily presented with material bodies. A set of auditory perceptual experiences, such as that of the crunching of a carrot, evidently present us with material bodies in presenting us with bodies in interaction, exerting and being governed by force. This will further provide an opportunity to uncover biases in our understanding of what constitutes objects of material nature and how we consider these to be present in perceptual experience.

The first part of this thesis looks into the sources of these biases, beginning with a sceptical challenge set out by Hume and considering a set of responses to this. Hume is sceptical of the idea that what we perceive continues to exist unperceived which we may derive from experience of material bodies. As I will observe in chapter two, philosophers have often assigned a central role to spatial aspects of material bodies in the resolution of this issue. Given so, in chapter three, I identify the source of a challenge as to whether the auditory presents us with material bodies in the thesis that auditory perceptual experience does not present us with spatially extended bodies. In the second part, I develop my positive account. In chapter four, posing a challenge to indirect accounts of auditory perception, according to which we hear material bodies indirectly via auditory perceptual experience of sounds, I begin to put forward the claim that there is a set of cases of auditory perceptual experience in which we do appear to be presented with material bodies. In chapter five, I move on to assess our conception of the material taking a short historical excursus in the understanding of the power of bodies to exert and be governed by force. In chapter six, I turn to consider what it means to be perceptually sensitive to this condition of materiality and in what sense such power can be considered to be present in auditory perceptual experience. In chapter seven, I finally point to a further direction of inquiry into mind-independence that the account developed in this thesis opens.

Chapter 1

The Materiality of the Objects of Auditory Perceptual Experience

What if you could only rely on your auditory sense and could neither see, touch, smell, nor taste? Would the world as it normally appears to you in sensory experience be present in your auditory experience? Imagine, further, that you held no recollection of experiences in other sensory modalities or that you were simply born this way, just with your auditory sense. Would experience strike you as if you were presented with a world of ordinary, bodily objects, such as rocks, pens, and books?

Some may be tempted to reply that if you could only undergo auditory experiences, you would be presented only with a world of sounds, ephemeral things that unfold. And, hence, that experience would not strike you as presenting you with ordinary, bodily objects which you would otherwise experience in other sensory modalities. My main goal is to dissuade from this view, while providing for a sense in which we can make sense of the fact that in auditory perceptual experience we are strikingly presented with material bodies. I argue that in being auditorily presented with forceful interactions, such as the crunching of a carrot or the squishing of a sponge, we are, strikingly, auditorily presented with material bodies. Hence, were we to undergo perceptual experience that is only auditory, we would be strikingly presented with the world as it is inhabited by ordinary, material bodies.

To reach this conclusion, we ought to reevaluate a series of assumptions that we make about our conceptions of familiar, intertwined notions, including the material, the spatial, and the mind-independent. Carrying out this inquiry in auditory perceptual experience will, hence, have the added advantage of uncovering biases informing such conceptions. Once such biases are unravelled, we will come to appreciate the materiality of the objects of auditory perceptual experience, and we may further draw conclusions concerning what is present in other sensory modalities.

Let us step back and consider, first, what you may be prepared to say about auditory perceptual experience in an ordinary case, when all senses are normally in order. We may distinguish between two general approaches. Some of you may maintain that, in normal circumstances, you may hear ordinary, material bodies dependently on other sensory modalities, which do enjoy presentation of material bodies. Some others of you may maintain that you, in fact, auditorily perceive ordinary, material bodies, while it does not matter

whether this is apparent to you in auditory experience. In what follows, I look at both types of approaches in turn, observing that neither considers how material bodies are phenomenally present in auditory perceptual experience. I point out that since this is due to a visual or tactile bias as to how material bodies may be phenomenally present, existing accounts of auditory perceptual experience remain wanting and are not equipped to fully address the question that opened this chapter.

Some may claim that the auditory perceptual contact that we ordinarily hold with a world inhabited by ordinary, material bodies is indirect. That is to say that, unlike visual and tactile experience, in which we are directly presented with material bodies, we may hear material bodies only via perceptual experience of sounds. You may hold that being presented with a material body means being presented with entities three-dimensionally extended in space. In auditory perceptual experience, however, while we are presented with items seeming to have a direction or a location, it does not seem to us that we are presented with three-dimensional entities taking up space. So, you may hold that it does not seem to us that we are auditorily presented with ordinary, material bodies. In case you believe that sounds are entities different in nature and distinct from material bodies, you may hold that we hear material bodies only via being auditorily presented with sounds – which may or may not stand in some ontological relation with material bodies or with occurring collisions in which material bodies participate.¹ You may consider claiming that it is past experience that enables a perceptual or a cognitive association of some type between the sounds that you perceive and the material bodies to which they may be somehow related. Say, that it is because at some point you have seen bodies collide while perceiving a given sound that an association between the two was made.²³ Based on these assumptions, you may then generally claim that we may hear ordinary, material bodies dependently on associations with other sensory

¹ I do not assume that just in case you hold that sounds are not material bodies, then you would appeal to association with other modalities. You might have independent reasons for holding, for instance, that perception is cross-modal. Engaging in the current hypothesis is just a way to assess what, in principle, the auditory alone can yield.

² This option would suggest that the connection is learned and that it is not intrinsic of auditory perceptual experience. In principle, there might be ways in which a connection is intrinsic of auditory perceptual experience, but it is not learned.

³ There is division in the literature as to whether so-called sound sources include collisions or bodies involved in collisions. This difference is captured by some with the distinction between ‘event source’ and ‘thing source,’ whereby the latter often refers to bodies as sources more specifically.

modalities.⁴ We find many literature examples in the vicinity of this thesis. To mention some, consider the extracts that follow. Berkeley remarks,

I grant we may in one acceptation be said to perceive sensible things mediately by sense: that is, when from a frequently perceived connection, the immediate perception of ideas by one sense suggests to the mind others perhaps belonging to another sense, which are usually connected with them. For instance, 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, 1713, 45

Hume suggests,

I hear on a sudden a noise as of a door turning upon its hinges; and a little after see a porter, who advances towards me. This gives occasion to many new reflections and reasonings. First, I never have observed, that this noise could proceed from anything but the motion of a door; and therefore conclude, that the present phenomenon is a contradiction to all past experience, unless the door, which I remember on the other side of the chamber, be still in being.

Hume, 1739, T 1.4.2.20, SBN 195-7

Broad asserts,

Now in this case even the plainest of plain men would admit, with very little pressure, that when he says, 'I am hearing Big Ben' this is short for what would be more fully expressed by saying 'I am hearing Big Ben striking.' With very little more pressure he would admit that all that he literally hears is a series of booming noises of a certain kind.

Broad, 1951, p.4

⁴ Not only those who think that auditory perceptual experience consists in a perceptual relation with sounds may appeal to a role that other sensory modalities may play. A representationalist may also hold that representing a sound is not equivalent to representing a material body, for, say, the standard ways of representing a material body, as bounded, continuous, and occupying space, do not carry over to the auditory case. So, also a representationalist may recur to connections with representations in other sensory modalities.

Along with Berkeley, Hume, and Broad, you may consider hearing bodies to be indirect, via perception of sounds. If you hold that, normally, hearing material bodies is enabled by association with other sensory modalities, such as vision and touch, you may be hesitant to provide a positive answer to our initial question. You may tentatively claim that even though all auditory perceptual experience does is present us with sounds, sounds may still indirectly put us in contact with a reality of material bodies outside of us. For instance, you may argue that whenever sounds are caused by material bodies, we may enter in cognitive or perceptual contact with them via sounds. However, in lack of experience in the other sensory modalities, this may not be apparent to you in auditory perceptual experience. In lack of any association with other sensory modalities, you may begin to doubt that in case your other senses were numbed, or you have never had any experience other than the auditory, you would be presented with the ordinary material bodies that are normally present in your perceptual experiences. For how things appear in the experience that you undergo, the auditory, alone, may not suffice for perceptual experience of a world of material bodies.

Some, by contrast, may, in some sense, attempt to defuse the importance of this issue. You may hold that the objects of auditory perceptual experience are material bodies even though you may not be able to tell that this is the case for how things appear to you in auditory perceptual experience.⁵ You may then think that, in ordinary cases, auditory perceptual experience of sounds yields perceptual contact with a world of material bodies precisely because sounds, or at least some sounds, are nothing other than bodies or collisions involving material bodies.⁶ You may, further, claim that any association with other sensory modalities is not necessary for auditory perceptual experience of a world of material bodies. If we were only to rely on the auditory sense, insofar as auditory perceptual experience consists in a relation with material bodies, you may think that you would be assured by the claim that the objects of your experience are in fact material bodies.

Drawing a distinction between the nature of the objects of perceptual experience and what a perceiver can tell, there is a sense in which those leaning towards this approach may

⁵ In the literature a difference is not always clearly drawn between the ontology of sounds, *i.e.*, what kind of entities they are, and the objects of auditory perceptual experience. It is not obvious that defining the nature of sounds will automatically also define what the constituent objects of perceptual experience are. In other words, asking what the objects that we perceive are, is not equivalent to asking what the nature of an object is.

⁶ A catholic view of the objects of auditory perceptual experience, as defended by Soteriou (2018), holds that these could be different kinds of things.

not be moved by my inquiry. Yet, there are several reasons why we may take issue with this approach. To start with, we may doubt that a reduction of sounds to material bodies or to collisions involving material bodies holds. For all a subject can tell, from the perspective of their auditory perceptual experience, it does not seem that they are presented with three-dimensional entities or stuff that is extended in space. If you think that ordinary, material bodies are entities extended in space, holding that auditory perceptual experience consists in a relation with material bodies, you would then maintain something that, on the face of it, is at odds with how things seem. In this sense, perceptual experience of material bodies may still not count as the correct characterization of our auditory experiences, if this fact is not in line with how things seem.

Furthermore, while we may agree that, in principle, there is a difference between the nature of the objects of perceptual experience and what a perceiver can tell from their perspective, we may doubt that this distinction is pertinent to the current inquiry.⁷ We may concede the point that a subject may possibly stand in a perceptual relation with material bodies regardless of whether they can tell that this is the case. However, what is called into question is not, strictly speaking, what a perceiver can tell based on the experience that they undergo. By drawing a distinction between what a perceiver can tell and the constituent objects of their perceptual experience, we have not got rid of a question about how material bodies may be phenomenally present in auditory experience. Accordingly, insisting on the thought that what a perceiver can tell is not necessarily relevant to what sort of perceptual contact they may enjoy with a world of material bodies is, in some sense, beside the point of an inquiry into how material bodies are phenomenally present in experience.

Moreover, we may notice a difference between the auditory and other sensory modality, particularly the visual one. In the visual case, it seems that things could not be the way they visually seem to be, unless one is presented with material bodies. To be presented with a material body means, according to some, to be presented with matter extended in space. If things were the way they seem to us visually, they would have to consist in material bodies occupying space. By contrast, if we were visually hallucinating a three-dimensional object, things would not be the way they seem, and we would not be presented with a three-

⁷ In the visual case, the possibility of undergoing illusory or hallucinatory experiences threatens that we are ever presented with material bodies (*cf.* screen off problem). Yet, the claim that we might not be able to discern cases in which we are presented with material bodies from cases in which we are not, does not show that the objects with which we are presented are not material. The claim that any two experiences are indiscernible does not entail a claim about their nature, for there is a difference between what we can tell and how things are. *Cf.* Martin (2006).

dimensional object. Interestingly, the same does not hold for the auditory case. For, it seems that whereas things could not be the way they visually seem unless material bodies are present, things could be the way they auditorily seem in the absence of material bodies. We do not seem to be presented with extended stuff in auditory perceptual experience. While perceptual experience of material bodies is deemed, by some, to require spatial extension, the auditory does not seem to deliver this. Accordingly, in the auditory case, things could be the way they seem in the absence of material bodies. Even if sounds were in fact material bodies or collisions involving these, the contrast with the visual case suggests that, *prima facie*, how things appear in auditory experience does not settle the question as to whether we are auditorily presented with material bodies. In other words, unlike the visual case, a doubt as to the materiality of the objects present in auditory perceptual experience stems from how things appear in auditory experience. Given this peculiarity of auditory experience, appealing to a distinction between what one can tell and the nature of perceptual experience would not bring us very far.

It seems safe to reach a preliminary conclusion that if you either consider sounds to be nothing other than material bodies, or collisions involving material bodies, or you consider associations with other sensory modalities to deliver perceptual contact with material bodies, you would not be equipped to provide a satisfactory answer to our initial question. For, both approaches lack an account of how material bodies may be phenomenally present in auditory perceptual experience. Since, as I will argue in the course of the chapters that will follow, it is due to a visual and tactile bias that existing approaches are unprepared to explain how material bodies are phenomenally present in auditory experience, either of these approaches remain wanting.

The literature has provided a great many accounts as to how material bodies are phenomenally present in visual and tactual sensory experiences, leaving the territory relatively unexplored as to how material bodies may be phenomenally present in experience via the remaining sensory, perceptual modalities. We may describe visual encounter with material bodies as experience of three-dimensional bodies taking up space. In touch, we may characterise experience of material bodies as involving the resistance to action and movement that material bodies pose. What aspects of material bodies, if any, may be phenomenally present in experience via other sensory modalities? And what is the criterion for the materiality of the objects of perceptual experience to which we refer in evaluating this? Is our criterion suited to encompass the auditory case?

Merely deciding on the constituent objects of auditory perceptual experience without considering how these may be phenomenally present in the auditory experiences we undergo, would result into overlooking what I hope that the reader will eventually find a central aspect of auditory perceptual experience. Reflecting on the dynamic aspect of auditory perceptual experience and reevaluating our criteria of materiality, we come to appreciate that a set of auditory perceptual experiences that we ordinarily undergo strikingly present us with material bodies. In at least some auditory cases, we are auditorily presented with bodies engaged in forceful interactions, hence, exerting and being governed by forces. By the exercise of not relying on the visual, or the spatial, to evaluate the materiality of the objects of auditory perceptual experience, we learn of this way material bodies are phenomenally present in perceptual experience. We, moreover, come to recognise how often we may be biased by a particular framework in dwelling with these notions.

While I will spend the first half of the discussion to follow (chapters 2-3) to explore the roots of scepticism as to whether we may be auditorily presented with material bodies, I will defeat this and develop my positive thesis in the second half (chapters 4-7).

In the next chapter, I take up a challenge from Hume's scepticism about the idea of continued existence unperceived. The world that surrounds us is populated, among other things, by material bodies, that is, hard, concrete bodies which move, collapse, persist change and are subject to forces. It is especially due to these types of entity and, particularly, to the way that they are phenomenally present in experience, that we may conceive of a world of mind-independent entities and draw a belief that such a world is available to us via the senses. It is the distinctive way material bodies appear in experience that gives rise to the idea that we are presented with entities that persist our experience of them. Hume holds that our impressions of material bodies, appearing persistent, may not legitimately deliver the idea that they exist unperceived, and points out that the very idea is ill-grounded and ought to be forgone. While some may no longer consider Hume's thesis to pose a real treat to our sensory knowledge of the world, considering how it may apply to the auditory provides us with an opportunity to assess gaps in existing accounts of auditory perception. For this purpose, I will focus on a set of contributions that has attempted to address Hume's sceptical account by safeguarding a link between the way material bodies present themselves in experience and our belief that what we perceive exist independently of our minds and experiences. Such contributions point to aspects of bodies – particularly spatial ones – which, on the face of it, do not appear to feature in auditory perceptual experience. While there is plenty of disagreement, in the literature, as to how to correctly describe the phenomenology of auditory

perceptual experience, the most diverse accounts seem to agree in accounting for it as somehow appearing perishing and dynamic. So, we are faced with a question as to whether auditory experience is apt to give rise to the idea that we are presented with mind-independent bodies by presenting us with material bodies. Taking up Hume's challenge, hence, sets off an inquiry into how material bodies are conceived to be present in perceptual experience.

In the third chapter, I argue that material bodies, as we may visually conceive of them, that is, as entities three-dimensionally extended in space, do not appear to be present in auditory perceptual experience. I will look at the thesis that, since the auditory is not inherently spatial, it may not present us with material bodies, at least independently of other sensory modalities. Distinguishing between types of spatial sensitivity, which may or may not characterise the auditory, I will conclude that, indeed, insofar as we may not be auditorily presented with matter taking up and extending in space, we may not be presented with material bodies as visually conceived.

In the fourth chapter, I will evaluate the consequences of this initial, sceptical conclusion. The thesis that we may not be auditorily presented with matter taking up space may lend initial support for an indirect account of auditory perception, as so far broadly characterised above. I challenge the indirect thesis by arguing that it is not equipped to fully explain, or explain away, apparent differences between sets of cases of hearing bodies. In some cases of hearing bodies, in contrast to others, there is an intelligible link between reports of hearing bodies and the auditory experiences that we undergo. Consider, for instance, hearing the washing machine ending its cycle via perceiving a beeping sound versus hearing the crunching of a carrot. I argue that what we report hearing appears intrinsic to the auditory experience that we undergo in the latter, but not in the former case. As I thus challenge the indirect thesis, I begin to motivate a view according to which in at least some cases of auditory perceptual experience we do appear to be immediately presented with material bodies. However, in the absence of spatial extension, I move on to seek a criterion of materiality suited to encompass the objects of auditory perceptual experience.

In the fifth chapter, I turn to explore our conception of the material. I argue that the power to exert and be governed by force is a sufficient condition for materiality. Contra a Lockean, mechanistic account of force, I defend a dynamic notion of force, according to which force is an essential power of material bodies, which is correctly conceived as independent of matter's intrinsic spatial configuration. Taking into account that the auditory is a dynamic sense able to capture, among other things, movement, flow, and interactions, is

a more promising strategy to appreciate the materiality of the objects of auditory perceptual experience. If we appreciate this character of the auditory, we come to resolve doubts as to whether it presents us with material bodies.

A notion of force, as dynamically conceived, is suited to encompass the objects of auditory perceptual experience, and it may account for differences in cases of hearing bodies, which the indirect thesis is not equipped to accommodate. In the sixth chapter, I explore what sensitivity to the presence of this condition for materiality, i.e., the power to exert and be governed by force, consists in, and how this applies to the auditory case. I reach the conclusion that, for how things appear in auditory experience, we may be strikingly auditorily presented with material bodies, for we may directly, auditorily perceive the power of bodies to exert and be governed by force.

In the seventh and final chapter, I return to the humean challenge that began this inquiry, and I begin to evaluate the extent to which the way material bodies appear in auditory perceptual experience is apt to legitimately give rise to the idea that what we perceive exists mind-independently. I, thus, outline possible directions for future inquiries.

Chapter 2

Perceiving Bodies

It is common sense to believe that what we perceive are objects that exist independently of our minds and of our experiences of them. A prominent research line sees this belief as bound up with our perceptual experience of material bodies and to phenomenal awareness of aspects of their nature. Furthermore, such experiences are said to be inherently linked, in some way, to the idea that the objects we perceive continue to exist unperceived and, hence, independently of our minds and experiences. In the current chapter, I begin to explore this line of thought by looking at Hume's sceptical stance and at ways of addressing it. While Hume seems sympathetic to the thesis that experience of material bodies, in particular, is in some sense responsible for the idea of continued existence unperceived, Hume nonetheless holds that the idea is illegitimately derived from sensory experience and ought to be dismissed. Others, by contrast, seek to safeguard the role that experience of material bodies plays in legitimately giving rise to the idea of continued existence unperceived. With a specific interest in the auditory, we may evaluate the extent to which their approach might apply to the auditory case. Given a connection between the commonsensical idea that what we perceive continues to exist unperceived and the way material bodies, specifically, show up in experience, we find motivation to embark on an inquiry into how, if at all, material bodies may phenomenally show up in auditory experience.

Here, I look at Humean scepticism, as it generally concerns the senses, and at ways to address it. What I will defend as a possible solution to Hume's scepticism about whether experience may give rise to the idea that what we perceive continues to exist unperceived, relies on aspects of our experience of material bodies which do not seem to be phenomenally present from the perspective of a subject undergoing auditory experiences. In the next chapter, I argue that they are in fact not present in such a way. This raises the question, addressed in the remaining chapters, as to how, if at all, we may be auditorily, phenomenally presented with material bodies.

Scepticism about Continued Existence Unperceived

Hume (1739) is sceptical about the senses delivering perceptual knowledge of a world outside of us. Here, I focus on what Hume says about the origins of the idea of the continued existence unperceived of the things that we encounter in experience in ‘Of Scepticism with Regard to the Senses’ (1739, 1.4.2). In what follows, I will explain in steps in what sense Hume holds that this idea cannot legitimately originate in experience. Hume begins with a vivid description of the way in which experience give rise to the attribution of continued existence of items we perceive, and then goes on to argue that, ultimately, we ought to distrust this idea. Hume (1739) describes the coherence and constancy our impressions as follows,

After a little examination, we shall find, that all those objects, to which we attribute a continued existence, have a peculiar constancy, which distinguishes them from the impressions, whose existence depends upon our perception. These mountains, and houses, and trees, which lie at present under my eye, have always appeared to me in the same order; and when I lose sight of them by shutting my eyes or turning my head, I soon after find them return upon me without the least alteration. My bed and table, my books and papers, present themselves in the same uniform manner, and change not upon account of any interruption in my seeing or perceiving them. This is the case with all the impressions, whose objects are supposed to have an external existence; and is the case with no other impressions, whether gentle or violent, voluntary or involuntary. This constancy, however, is not so perfect as not to admit of very considerable exceptions. Bodies often change their position and qualities, and after a little absence or interruption may become hardly knowable. But here 'tis observable, that even in these changes they preserve a coherence, and have a regular dependence on each other; which is the foundation of a kind of reasoning from causation, and produces the opinion of their continued existence. When I return to my chamber after an hour's absence, I find not my fire in the same situation, in which I left it: But then I am accustomed in other instances to see a like alteration produced in a like time, whether I am present or absent, near or remote. This coherence, therefore, in their changes is one of the characteristics of external objects, as well as their constancy.

(...)

Having found that the opinion of the continued existence of body depends on the COHERENCE and CONSTANCY of certain impressions, I now proceed to examine

after what manner these qualities give rise to so extraordinary an opinion. To begin with the coherence; we may observe, that tho' those internal impressions, which we regard as fleeting and perishing, have also a certain coherence or regularity in their appearances, yet 'tis of somewhat a different nature, from that which we discover in bodies.

Hume, 1739, T 1.4.2.18, SBN 194-197

In these passages, Hume describes a common aspect of our everyday perceptual experience. As we go about our day and look around, at least some objects appear to preserve a general stability in our surrounding. Every so often, we look away and come back to a scene to find that the objects populating that scene are just as we left them. And even when the objects that we encounter in experience have undergone alterations, they preserve a coherence that let us just go by thinking that they have continued to be. Hume explains that, because there is a certain constancy in their appearance and because even when they undergo changes or alterations, they still exhibit a certain coherence, we believe (mistakenly, as he'll argue) that these objects in our surroundings continue to exist when we are not perceptually aware of them. Our impressions of objects to which we attribute continued existence are characterised by a 'peculiar constancy,' as whenever, say, we look away for a moment we seem to find them again as we look back. Things do not appear to change despite the fact that we have looked away or lost sight of them, feeding into the opinion that they continue to exist unperceived. Moreover, despite undergoing changes, these objects appear to maintain a coherence over time. So, even when they change to the point that they are hardly recognisable, they strike us as having continued to exist. Since, as Hume explains, past experience has accustomed us to changes that things may undergo regardless of our perceptual conditions of them, e.g., of whether we are 'present or absent, near or remote'. So, we come to the opinion that things can change independently of given changes to do with us.

Upon describing these aspects of constancy and coherence that characterise our everyday experience of the things surrounding us, Hume holds that we might not attribute continued existence to all sensory objects alike. To reiterate, in the passage above, Hume remarks that,

(...) tho' those internal impressions, which we regard as fleeting and perishing, have also a certain coherence or regularity in their appearances, yet 'tis of somewhat a different nature, from that which we discover in bodies.

Hume points out that the coherence, or regularity, that also characterises ‘fleeting and perishing’ internal impressions is somewhat different from that discovered in our impressions of bodies. So, we have a further, crucial remark that, in our everyday perceptual experience, the attribution of continued existence attaches in particular to ordinary, bodily objects, such as the books you left on the desk or the pile of dishes in the sink you re-encounter unwashed.⁸

While remarking that we attribute continued existence to bodies due to their coherent and constant appearances, Hume holds that the idea that things continue to exist unperceived cannot originate in experience in a legitimate way. To be clear, Hume does not deny that we do have a belief that things continue to exist unperceived or that we attribute continued existence unperceived to sensory objects. Nor does Hume deny – as we just saw – that our impressions of bodies exhibit a certain coherence and constancy. As I will move on to explain in some detail, what Hume does deny is that the idea of continued existence unperceived, and, therefrom, the relevant belief, may be legitimately formed from experience.

Let us first notice that Hume begins the section ‘Of Scepticism with Regard to the Senses’ of his *Treatise*, with considering whether it is possible for the senses to give rise to the idea of continued existence unperceived: as opposed to the question of whether they actually do give rise to the idea, Hume embarks on his inquiry by asking whether, in principle, that is a possibility for the senses.⁹ Essentially, Hume points out that the thesis that

⁸ As promised at the outset, the purpose of this discussion is to motivate an inquiry into how material bodies may phenomenally show up in auditory experience by showing that ways to address Humean scepticism about continued existence unperceived, which rely on presentational aspects of material bodies, do not apply to the auditory case – a thesis that I will develop across this and the next chapter. In the course of this chapter, I will explain how Hume motivates scepticism about experience legitimately giving rise to the idea of continued existence unperceived. For reasons I will illustrate later, according to Hume, the impressions of coherence and constancy are, hence, not apt for legitimately giving rise to the idea of continued existence unperceived. However, let me note at this stage that there is a question as to whether we have corresponding impressions of coherence and constancy in the auditory case to begin with. In a sense, in the absence of any corresponding impressions, the proposition that auditory experience may generate the idea of existence unperceived may be considered by some a non-starter. And that is regardless of whether ways of addressing scepticism do or do not work in the auditory case. I ask the reader to, nonetheless, go along with the strategy of the current chapter, as its purpose is, more specifically, to draw implications as to how, if at all, material bodies phenomenally show up in auditory experience.

⁹ By arguing that the senses cannot (rather than they do not), Hume is in the position to argue that the idea cannot *legitimately* originate in experience. Essentially, since it is impossible that the senses give

the idea of continued existence unperceived originates in experience, involves a contradiction in terms. By arguing that it is not a possibility for the senses to give rise to the idea of continued existence unperceived, Hume concludes that the idea cannot arise in experience in a legitimate way. Consider the following passage,

To begin with the SENSES, 'tis evident these faculties are incapable of giving rise to the notion of the continued existence of their objects, after they no longer appear to the senses. For that is a contradiction in terms, and supposes that the senses continue to operate, even after they have ceased all manner of operation. These faculties, therefore, if they have any influence in the present case, must produce the opinion of a distinct, not of a continued existence; and in order to that, must present their impressions either as images and representations, or as these very distinct and external existences. That our senses offer not their impressions as the images of something *distinct*, or *independent*, and *external*, is evident; because they convey to us nothing but a single perception, and never give us the least intimation of anything beyond. A single perception can never produce the idea of a double existence, but by some inference either of the reason or imagination. When the mind looks farther than what immediately appears to it, its conclusions can never be put to the account of the senses; and it certainly looks farther, when from a single perception it infers a double existence, and supposes the relations of resemblance and causation betwixt them. If our senses, therefore, suggest any idea of distinct existences, they must convey the impressions as those very existences, by a kind of fallacy and illusion.

Hume, 1739, T 1.4.2.3, SBN 188-189

The passage above addresses the idea of the *continued* existence of the objects that we perceive and that of their *distinct* existence in turn. Hume maintains that the senses cannot give rise to the idea that their objects continue to exist beyond the point that they are present to the senses. Hume points out that this supposition involves a contradiction in terms, and it depends on wrongly positing that the senses continue to operate when they do not. Hume then explains that while the senses are in operation, it would only be permissible to say that

rise to the idea, it is not the case that our idea originates in experience in a legitimate manner. If it does, it is in an illegitimate way.

they intimate the existence of anything beyond by producing the idea of the distinct, rather than the continued, existence of their objects, as that would not wrongly assume that the senses continue to operate when they do not. However, that is also out of the picture, according to Hume. For, it is evident – Hume suggests – that the senses only present us with a single perception, and nothing beyond that. To Hume, a single perception consists in whatever we are immediately presented with in experience. As I will explain more in what follows, for Hume, whatever we are presented with, is presented within a single perception: we cannot have the impression of a distinct existence, for we cannot have an impression distinct from whatever we are immediately presented with.¹⁰ Hume is, thus, sceptical about whether the idea of the continued existence unperceived of the things that we experience may legitimately originate in experience. Since the senses cannot present us with continued or distinct impressions, Hume concludes that if the senses do produce the idea of anything existing beyond what is given in experience, it would be by a kind of fallacy and illusion.

Let me further explain how Hume reaches this conclusion. One may wonder why we should agree with Hume's claim that the senses cannot legitimately generate ideas whose content is beyond the senses' current operation. And, therefore, claim that we would not have to perceive the unperceived in order to get the idea of continued existence unperceived from experience. The claim that we can only get it thus is due to Hume's commitment to experience as a 'single perception'. Hume holds that whenever the mind seeks conclusions beyond what is found in experience at any given point in which the senses are in operation, 'its conclusions can never be put to the account of the senses' (see extract above). So, when the mind infers existence beyond 'a single perception,' it goes beyond what can be derived from the senses. That is why, in the passage above, Hume holds that if the senses were to produce the idea of continued existence unperceived, it would have to be by presenting us with those very existences. We may explain this in the context of what is known as Hume's

¹⁰ Arguably, those who may want to hold that, in perceptual experience, we perceive entities distinct from us, would not say that we perceive such distinct entities via distinct experiences. They would hold that any suitable single or immediate experience may consist in presentation of a distinct entity. Those who hold that, in perceptual experience, we perceive entities distinct from us, will be in conflict with Hume's claim that perception of entities distinct from us *requires* distinct experiences. So, some would hold that it is plausible that we are never presented with distinct experiences, but it seems wrong to hold that this is required for perceiving distinct entities. As I will further explain in what follows, this requirement stems from Hume's understanding of the relation between ideas and impressions.

‘copy principle’.¹¹ Generally speaking, the ‘copy principle’, as found in the *Treatise*, involves the thesis that all ideas are copies of impressions. For simplicity, we may apply this principle to the present inquiry and draw from it the thesis that an idea that originates in experience is a copy of an impression.¹² We may then observe that ideas cannot be copies of impressions we do not have – when the senses are not in operation. Unless they can be copies of impressions, ideas cannot originate in experience. Accordingly, the idea of continued existence unperceived is not legitimately formed on the basis of the coherence and constancy of our impressions. For, in order to originate in experience, the idea of the continued existence of the things that we perceive would require experience of them while they are unperceived. We need to think of this as the upshot of the ‘copy principle,’ as to originate in experience the idea of continued existence unperceived would require an impression of which it can be a copy.

Since we cannot perceive things while they are unperceived, the idea that they exist unperceived cannot originate in experience.¹³ It is in this sense that Hume holds that the supposition that the idea of continued existence unperceived originates in experience, involves a contradiction. For sensory experience to give rise to the idea of existence unperceived of an object would require an impression of an object unperceived. An impression of something unperceived is a contradiction for it essentially requires experiencing the unexperienced. Hence, sensory experience cannot give rise to the idea of the continued existence of sensory objects.

To be clear, insofar as Hume does not deny that, in fact, we do have this idea, he says that it is the product of some kind of fallacy and illusion. Again, for the senses to be responsible for originating this idea, they would either have to operate when they do not or they would have to present us with a distinct existence – and neither, according to Hume, is possible. Essentially, there is no possible impression of which the idea could be a copy. So, if the senses seem to give rise to the idea, as they do, it is by a kind of fallacy and illusion.

Having established that the idea of continued existence unperceived cannot arise from an operation of the senses, and, consequently that it cannot be the product of well-grounded

¹¹ In the *Treatise*, Hume asserts that, ‘All our simple ideas in their first appearance are deriv’d from simple impressions, which are correspondent to them, and which they exactly represent’. (1739, 1.1.1.7/4)

¹² This principle refers to simple ideas, whereby complex ideas are reducible to simple ideas that are copies of impressions.

¹³ To concede the point to Hume, one would have to assume that it is not possible to treat the idea of continued existence unperceived as a complex idea – or, rather, that if it were a complex idea, at least some of the single ideas that make it up would not be copy of impressions.

reasoning, Hume attributes the production of the opinion of continued existence unperceived to a further faculty, namely the imagination.¹⁴ Insofar as existence unperceived is not an idea that could originate in experience, Hume appeals to the imagination to fill in for impressions that we cannot have in the attribution of continued existence unperceived to the objects that we experience. Later in this section of the *Treatise*, Hume explains that while the vulgar fall prey to the imagination in assuming that the senses present us with a world inhabited by things that continue to exist outside of our perception of them, the educated philosopher is capable of working out that the idea of continued existence unperceived cannot originate in experience. Since reflection reveals that the idea cannot originate in experience, it is in virtue of their rational capacities – along with knowledge of the relevant facts¹⁵ – that philosophers are in the position to tell that the idea of continued existence unperceived cannot originate in experience.

Given the contribution of the so called ‘copy-principle’ to Hume’s argument, some may regard Hume’s conclusion that the idea of continued existence unperceived cannot originate in experience, to hinge on a somewhat restrictive view of how an idea may originate in experience. Accordingly, as hinted above, one may be tempted to simply give up on the thesis that the ideas that originate in experience are copies of impressions, and to allow for further ways in which ideas may originate in experience. The aim of such a move would be to show that what we are in the position to observe may give rise to the idea of continued existence unperceived would avoid a contradiction in terms. In principle, this seems like a promising strategy to address Hume’s sceptical thesis. However, in order to pursue this strategy, we need to show that the idea that things continue to exist unperceived does not require an experience of the unperceived in order to originate in experience.¹⁶ One way to do

¹⁴ When reasoning about the origins of the idea we find that the idea cannot legitimately arise from experience. So, the idea cannot be the product of reasoning. One may object that it may still be a product of reasoning in the sense of emerging from considerations about what we perceive. However, the relevant considerations suggest that we do not legitimately form the idea from experience. So, reasoning about what we perceive suggests that we cannot legitimately form the idea. In this sense, reasoning does not back up the idea or provide an explanation of how it is legitimately formed. The idea cannot legitimately emerge from experience. Plus, when we think about the idea we find that it cannot emerge from experience. So, Hume would consider that we do not find a justification for the idea in reasoning. Since the idea cannot legitimately emerge from experience nor from reasoning, so long as we do employ the idea, it ought to be the product of some other faculty.

¹⁵ As I noted that the argument ought to be understood in the context of the copy principle, I assume that an educated philosopher would know that ideas are copies of impressions.

¹⁶ One thing is to be open to further ways in which we may consider ideas to originate in experience, other than by being copies of impressions, and, hence, more generally reject the copy principle; another is to argue that the idea of existence unperceived would not require an experience of what we

that is to positively show that the idea can originate from what we are in the position to observe. I consider two possible approaches to this end; and I present below two examples from the literature that put these to work.¹⁷

As an outline of the first approach, one may argue that an impression of continued existence would not require experience of the unperceived, for what we are capable of perceiving *over time* suffices to explain how the idea of continued existence unperceived is legitimately formed. According to this approach, we may explain how the idea of continued existence unperceived is legitimately formed in experience, if we take into account what we may perceive over time and not only what is immediately present in experience. Perceptual capacities operating over time enable perception of continuous entities. Even though it is not possible to undergo a single impression of existence unperceived, over time we are capable of perceiving continuous entities. One may attempt to argue that this suffices to explain how the idea is legitimately formed in experience, while avoiding a contradictory requirement.

Alternatively, adopting the second approach, one may argue that we may be capable of making sense of what we are in the position to observe in terms of the idea that things continue to exist unperceived in the context of a theory of perception. So long as we may perceive the enabling conditions of perception, what we may immediately perceive may legitimately give rise to the idea of continued existence unperceived. Accordingly, we may avoid a requirement for experience of the unperceived while stumbling upon a contradictory thesis, to explain how experience legitimately gives rise to the idea that the things that we observe exist unperceived.

In what follows I will expand on how these two general approaches may serve as solutions to Hume's sceptical thesis. I will then move on to posit a question as to whether such solutions may work in the auditory case. To be clear, whereas I reject the first approach, I argue that while the second approach may provide a pathway to a solution, it cannot serve the auditory case. For, it relies on presentational aspects of material bodies which we seem to lack in auditory perceptual experience.

Experienced Continuity

are not in the position to perceive. One may reject the copy principle, while this particular idea may still require an experience of what we cannot perceive.

¹⁷ A further approach which I do not consider here is to directly take issue with the other part of Hume's argument hinging on the claim that the idea of continued existence unperceived cannot legitimately arise in experience for we cannot be presented with *distinct* impressions.

As pointed out above, upon describing the constancy and coherence of our impressions, which may lead one to form the opinion that the things that one observes continue to exist unperceived, Hume makes a special reference to a particular range of objects, namely ordinary bodies, such as ‘these mountains, and houses, and trees’ (see extract above). As I have observed, Hume remarks that while internal impressions may also exhibit some coherence and constancy, these internal impressions are fleeting, and we would not attribute continued existence to such items that we experience. In other words, unlike our impressions of bodies, such ‘fleeting and perishing impressions’ do not quite give rise to the idea of continued existence. This suggests that it is the impression of bodies, more than of any other things, which leads – by a kind of fallacy and illusion, for Hume – to the idea, or rather the opinion, for Hume, that they continue to exist unperceived.

To expand on this, we may say that bodies are among the things that we encounter in experience that appear to preserve a certain stability in our surrounding and continuity over time. In a similar vein, Burge (2010) describes representing a body as perceiving a particular as cohesive, bounded, solid, and spatio-temporally continuous. We may observe that the attributes of bodies make them suited to be the kind of things whose experience may lead us to the idea of continued existence unperceived. Essentially, insofar as bodies are the kind of things that appear spatio-temporally continuous, stable kind of entities, experience of bodies may be responsible for the idea of continued existence unperceived.

For the reasons provided above, however, Hume would tell us not to take too seriously such coherence and constancy of our impressions of bodies, if we want to be educated philosophers. For the idea of continued existence unperceived ultimately cannot legitimately arise from experience. To be sure, Hume describes our impressions of constancy and coherence as partly responsible for the opinion that what we observe continues to exist unperceived, and points out that these strikingly regard our impressions of bodies. For Burge (2010), coherence and constancy are just part of what, legitimately, perception of bodies consists in. Whereas for Hume the idea of continued existence is the product of a kind of fallacy and illusion, for Burge (2010) we are capable of perceiving continuous entities: so long as we are capable of perceiving bodies, we are capable of perceiving things continuing to exist. Hume does not deny either that our impressions of bodies legitimately strike us as coherent and constant – but argues that this would not suffice for giving rise to the idea of continued existence unperceived, which requires impressions that we are not in the position to undergo. Notwithstanding this, it may be tempting to draw from Burge’s account of perception of bodies a thesis that we ought not to distrust any idea formed on this perceptual

basis. In a sense, insofar as perception of bodies consists in perception of things *continuing* to exist and insofar as it is legitimate, we may have a pathway to explain how experience may legitimately give rise to the idea of continued existence unperceived. Following this thought, we may attempt to show, contra Hume, that we ought not to treat the attribution of continued existence unperceived to a kind of fallacy or illusion. Let us explore this thought further. To anticipate, in what follows, as a way of further spelling out Hume's position, I explain why, nonetheless, Burge's account does not succeed to refute Hume's sceptical stance.

According to Burge (2010), representing a body means perceiving a particular as cohesive, bounded, solid, and spatio-temporally continuous.¹⁸ Representing something as having those features is representing it as a body. Having those features is something that we can perceive of a thing, so we can perceive a thing as a body.¹⁹ According to Burge (2010), cohesiveness and boundedness are geometrical properties: 'Cohesion is spatial connection of all points in, or parts of, a shape or objects. Boundedness is the having a perimeter inside which all points or parts of the shape or object fall.'²⁰ (2010, p.446) Moreover, it is constitutive of our perception of these kinds of things that we perceive such bodies as maintaining their cohesiveness and boundedness over time. Perceiving particulars as spatio-temporally continuous requires the capacity of tracking them over time.

As we saw above, Hume contends that whenever the mind seeks conclusions beyond what is presently available to the senses such conclusions cannot be explained by appeal to the senses: the senses generate ideas based on whatever is presently available in experience. Burge (2010) seems opposed to this claim, at least in the sense that Burge observes that it is a

¹⁸ Although Burge thinks that whereas the capacity to perceive solidity is sufficient for perception of material things, it is not necessary. (2010, p.465-471)

¹⁹ To be sure, the representational content of perceptual states, according to Burge, is not fixed by any individual's capacity to distinguish the kinds that are attributed, but by routines for processing proximal stimuli that provide likely cues to environmental kinds as well as causal interactions between individuals and environmental kinds that biologically explain the formation of perceptual systems. Moreover, according to Burge (2010), successful perceptual representation is always necessarily of particulars and is not fully determined by perceptual attributives. Insofar as indistinguishable particulars may occur and attributions can be veridical of more than one given particular, according to Burge (2010) the referents of perception are particulars. So, the token singular perceptual content is essential to veridical perceptual representation of a body.

²⁰ According to some, spatial properties ought not to count merely as geometrical properties in order to count as physical properties, that is, properties of physical objects (see discussion in *Spatial Representation*, 1993). However, for the time being, I bracket this issue, as my focus is on the extent to which experience of continuity may address Humean scepticism about continued existence unperceived. I will turn to issues concerning space and materiality in the next chapter.

mistake to consider perception to consist in a momentary capacity.²¹ It is mistaken, according to Burge,

To regard perception as a momentary ability whose exercise can be entirely understood in terms of what can happen in a moment (...) the input that yields any given perceptual state — whether as of an object in motion or at rest — is never momentary. Individual perceptions are formed on the basis of visual stimulation over short periods of time, including across saccades.

Burge, 2010, p.445

Besides claiming that experience is not momentary, Burge maintains that tracking bodies over time involves perceiving cohesive and bounded bodies *beyond* stimulation intervals. So, according to Burge, not only is perception itself formed by stimulation over short periods of time, but it may also stretch beyond stimulation intervals, as in the case of perception of bodies. To be clear, we have here an account according to which individual perceptions are themselves never momentary, as they consist in stimulation intervals that extend over short periods of time. Moreover, perception of bodies over time stretches beyond individual stimulation intervals. Burge maintains that what enables perceivers to keep track of bodies over time are, in essence, systematic relations with perceptual memory and anticipation, whereby tracking principles are often associated with the capacity to anticipate continuities. (2010, p.447) Burge does not think that dependence on memory and anticipation makes perceiving spatio-temporal continuity non-perceptual (if that was a worry for you). For, Burge maintains that tracking principles obtain at relatively low levels of representation in perceptual systems. (2010, p. 447) These simpler perceptual capacities explain or underly our ability to perceive things as bodies or spatio-temporally continuous things.²² Perception

²¹ It would be mistaken to hold that Hume's conclusion that we cannot perceive continuous existence stems from Hume's supposed commitment to individual perceptions as momentary. It seems reasonable to maintain that Hume would hold that it is equally not possible to get the idea of continuous existence from an individual perception that stretches over time. We may suppose that a continuous impression may give rise to an idea of continuity. However, an idea of continuity derived from a continuous impression would not be an idea of continuous existence unperceived. So, we do not need to understand the thesis that the senses generate ideas on the basis of whatever is presently available to be incompatible with a conception of an individual perception as stretching across short periods of time.

²² In effect, in *Origins of Objectivity*, one of Burge's targets – which Burge opposes – is the thesis that representation of bodies involves more than perceptual capacities and, in particular, that it is cognitive. The capacity to represent bodies is, according to Burge, constitutively independent of language and thought. To perceive something as a body, an individual must have perceptual capacities that are appropriately tuned to the kind body. So, Burge argues that perception, prior to thought, can

of bodies, hence, is the upshot of low-level capacities for tracking continuous entities over time.

To recap, Burge holds that we are capable of perceiving bodies, spatio-temporally continuous entities. Our ability to perceive spatio-temporally continuous entities, in turn, depends on the capacity to keep track of them over time beyond stimulation intervals. This capacity, according to Burge, operates in low levels of perceptual systems. This low-level capacity ultimately results in perception of bodies as spatio-temporally continuous entities. In short, perception of bodies consists in perception of spatio-temporal continuous entities. Because we are capable of tracking entities over time, we are capable of perceiving them as spatio-temporally continuous entities.

Suppose that all this is true. In what ways might it begin to address Hume's scepticism about the idea of continued existence unperceived?²³ In order to explain how the idea is legitimately formed in experience, we ought to find a candidate experience which shows that what we are in the position to experience may legitimately give rise to the idea of continued existence unperceived. Why would stretching perception over time begin to provide us with an explanation of how the idea of continued existence unperceived may be legitimately formed in experience? If perceptual mechanisms operating over time enable perception of continuous entities, may we avoid a contradictory requirement of perceiving things while unperceived in order to explain how the idea is legitimately formed in experience?

group particulars according to these attributes, namely, cohesiveness, boundedness, solidity, and spatio-temporality.

²³ Note that Burge would reject the current inquiry from the start. Burge's (2010) target in *Origins of Objectivity* is Individual Representationalism – leading Burge to advance a position dubbed 'Anti-Individualism' (see 'Anti-Individualism' in Burge, 2010). In essence, Burge (2010) rejects the view that an individual cannot have representational capacities unless the individual themselves has the resources to represent constitutive conditions for such representational capacities. (p.287) Moreover, Burge (2009, 2010) maintains that the objective import of perceptual experience is not down to the individual, in the sense that constitutive conditions on objective representation ought not to be represented by the individual. Burge's account is, in brief, that perceptual systems encode the likely distal cause of proximal sensory inputs. They transform sensory inputs in perceptual representation according to law-like regularities that connect a given proximal stimulus with a distal cause that normally produces it. Insofar as the function of perception is to capture patterns that are independent from the subject, in some sense, for Burge (2009, 2010) objectivity is implicit in the capacity to perceive. To be sure, for the current purposes, I bracket this discussion and only draw from Burge (2010) a thesis about perception of bodies to assess the extent to which it may serve us with a solution in the current inquiry. For discussion as to the role of phenomenal consciousness for objective import in contrast to Burge's position, see Eilan (2011).

The intended solution is as follows. Perception of entities as spatio-temporally continuous is constitutive of perception of bodies. Say we can indeed perceive entities as continuous, due to a perceptual capacity for keeping track of entities over time. One may be tempted to conclude that the idea of continued existence may legitimately originate from such experiences. Accordingly, if what we are capable of drawing from perception operating over time, as opposed to only whatever is currently available to the senses, is allowed among the ways in which experience may generate the idea of continued existence unperceived, then perhaps there would be no requirement – however contradictory – for a single experience of things as they are unperceived. Given Burge’s account of perception of bodies, some may suggest that Hume failed to factor in what we are capable of perceiving over time (or rather perception resulting from mechanisms operating over time) in evaluating whether experience may generate the idea of continued existence unperceived. If we only factored in individual perceptions, or, perhaps more generally, experience at any given point in time, without counting what ideas experience may give rise to from its operation over time, we would not be in the position of explaining that we are capable of perceiving entities as continuous and that we may form ideas on this perceptual basis.²⁴

However, the thesis that we may draw ideas from experience operating over time, is not incompatible with Hume’s account. I think that a more charitable reading of Hume (1739) sees the capacity to draw ideas over time from experience as incorporated within Hume’s distinction between simple and complex ideas – whereby complex ideas are made up of simple ideas that are copies of impressions. We may legitimately form complex ideas drawn from experience over time, so long as they ultimately consist in a combination of single impressions. We may speculate that continuity may be accounted for by Hume as a complex idea made up of single impressions of a given sensory object. In this sense, Hume is not oblivious to what ideas we are in the position to draw over time from experience. Hume may, nonetheless, not consider this to suffice for legitimising the idea of continued existence unperceived.

Low-level mechanisms for tracking things beyond stimulation intervals may be granted to result in perceptual experience as of continuous entities. Granted that we may thereby have an impression of continuity, or that we may undergo experience as of

²⁴ To be exact, this thought does not require commitment to the claim that experience is not momentary. It suffices for the current argument to acknowledge that, we may draw ideas from experience operating over time, regardless of whether individual perceptions are momentary or stretch over short periods of time. I refer the reader to footnote 13.

continuous entities, a Humean sceptic would not be swayed by experienced continuity, and might nonetheless reject the claim that an impression of continuity suffices for the idea that things continue to exist unperceived. Only so long as we have some form of evidence, in experience, of continuous existence unperceived, may we say that we may undergo experience giving rise to the idea that things continue to exist unperceived. While a low-level capacity of tracking things over space and time may result in perceiving things as continuous, experienced continuity may only generate the idea of continuity over time, compatible with the existence of these things being dependent on one's own perceptions. Accordingly, while we are in the position to experience continuity, that does not suffice to legitimately give rise to the idea that what we perceive continues to exist unperceived.²⁵

Ultimately, then, we may not have found a candidate *experience* that may generate the idea of continued existence unperceived. In this sense, Burge's account of perception of bodies is not immune from Hume's scepticism about the idea of continued existence unperceived. While we may experience continuity or entities as continuous, we still have not provided grounds for rejecting Hume's thesis that the idea of continued existence unperceived partly relies on the imagination, filling in for experiences that we cannot have.²⁶ Or, to put this in terms of the Burgean thesis, we may agree that it is not a faculty of the imagination that fills in for those gaps in our experience of continuous entities, but, rather, a legitimate, low-level, tracking capacity. Even so, however, this has not served us with a candidate *experience* on the basis of which the idea of continued existence unperceived may legitimately arise. Granted that perception of bodies is perception of continuous entities,

²⁵ One may push this claim further and call into doubt whether we may legitimately represent or perceive entities that continue to exist in so long as we are not capable of perceiving them while unperceived. We may concede that keeping track of entities over time does enable perception of entities that continue to exist unperceived, while, so long as this is not evident in experience of entities as continuous – that is, so long as the fact that they continue to exist unperceived is not itself present in experience – it may not serve as a solution to Hume's scepticism about the idea of continued existence unperceived.

²⁶ A proponent of Burge's account of perception of bodies may protest that we ought not to imply that it is a faculty of the imagination to fill in for experiences that we cannot have. For it is perceptual capacities, that is, low-level capacities for keeping track of entities, that result in perception of entities as continuous. Conceding this point will, however, not change the fact that experienced continuity does not suffice for the idea of existence unperceived. However, the thesis that tracking capacities may enable identification of one and the same item deserves a separate treatment, and touches on separate issues. The approach currently pursued is to do with the presentational aspects of material bodies, rather than with re-identification.

holding this to be experience that may legitimately give rise to the idea of continued existence unperceived begs the question against Humean scepticism.²⁷

Appeal to Theory

To contrast Hume's scepticism about the idea of continued existence unperceived, we need to show that what we are in the position to experience may legitimately enable us to form the idea of continued existence unperceived. The previous strategy failed, as perceiving entities as continuous does not avoid an, as yet contradictory, requirement of experience of the unperceived as the basis for the idea that what we perceive exists mind-independently. An alternative strategy is to appeal to a role that a rudimentary theory of perception may play in making the idea of continued existence unperceived intelligible. Appeal to a theory of perception may then enable us to explain how an experience that we currently have may suffice for the idea that what we perceive continues to exist unperceived. As we shall see, this strategy does not hinge on experience of continuity or on pointing to an idea that we may be capable of drawing from experience over time. For, it purports to show that, at any point in time, a given, suitable experience may be apt to legitimately act as a perceptual basis for the idea of continued existence unperceived. In what follows, I first look at a suggestion from Evans (1985) which provides initial motivation for an appeal to theory. I then look at how this suggestion is integrated in Brewer's (2020, 2021) account of a metaphysics of experience suited to give rise to the idea of continued existence unperceived.

Let us begin to consider the extract from Evans that follows,

Hero²⁸ must be able to understand the hypothesis, even if, in fact, he never believes it to be the case, that the phenomena of which he has experience should occur

²⁷ One may consider a tracking capacity to involve more than experience of continuity and point out that it involves the ability to perceive one and the same entity over time, holding that that is just what keeping track of an entity consists in. The thesis that we are capable of keeping track of one and the same individual item over time and across different experiences of it, and, relatedly, whether our criteria for identification address Humean scepticism, deserve a separate treatment (see footnote 19). The focus here is on *experienced continuity*, as an opportunity of further spelling out Hume's view.

²⁸ Hero is what Evans names a posited subject handling the idea of continued existence unperceived.

unperceived.²⁹ Now, the idea of unperceived existence or rather the idea of existence now perceived, now unperceived, is not an idea that can stand on its own, stand without any surrounding theory. How is it possible that phenomena *of the very same kind* as of those of which he has experience should occur in the absence of any experience? Such phenomena are obviously *perceptible*; why should they not be perceived? To answer this question, some rudimentary theory, or form of a theory of perception is required. This is the indispensable surrounding for the idea of existence unperceived, and so, of existence perceived. (It is not to be thought that the idea of existence unperceived is an additional hurdle to be surmounted after the idea of existence perceived has been understood; the two ideas are sides of a single idea: the idea of an objective world.)

Evans, 1985, pp. 261–262

In this passage, Evans suggests that the idea of continued existence unperceived – or as Evans puts it, existence now perceived, now unperceived – cannot stand on its own. In particular, Evans claims that the idea requires the context of a theory in order to make sense and, hence, be intelligible to one. What motivates this two-folded claim? The subject matter itself. Let us be clear that we ought not to understand the claim to be that because the idea cannot originate in experience, then it requires a surrounding theory to be intelligible. We need to read Evans as suggesting that it is the subject-matter itself that motivates an appeal to theory – it is in this sense that Evans’ remark provides initial motivation for this move. It is the subject matter itself that prompts an appeal to theory, for what is involved in the idea that things continue to exist unperceived only makes sense in the context of a rudimentary theory of perception.

It may be difficult to show the point to a philosopher, whose grasp of these notions may presuppose familiarity with the relevant theoretical backgrounds. But we may attempt to consider the perspective of the ordinary perceiver and consider how they would explain what the idea of continued existence unperceived involves. Would they themselves not, in making

²⁹ Evans (1985) is responding to Strawson’s *Individuals* and particularly to the inquiry as to whether a subject undergoing purely auditory experience would be able to conceive of a framework enabling them to reidentify what they perceive. Here I read Evans as suggesting that before even checking whether this is possible, Hero must have some prior understanding of what existence unperceived consists in. An understanding of the idea for which Hero in meant to check that purely auditory experience suffices. This appears to suggest that Evans does not understand the inquiry to be about the origins of the idea but rather about its verification in experience.

sense of it, mention elements of a rudimentary theory of perception? Evans puts the point in terms of the claim that understanding the idea of continued existence unperceived involves understanding that things of the very same *kind* of the things that we perceive exist unperceived. But I think that this comes with even further baggage which might not be necessary to assume in order to drive the point home. For, it seems to allude to the claims – or a possible reading of them – first that things are of a certain kind and, second, that things may be of a certain kind independently of whether they are perceived or unperceived. I think that this way of presenting the point alludes to possibly further elements whose reference only the philosopher, or someone employing the relevant theories, would be in the position to appreciate. Additionally, it is doubtful that the ordinary perceiver, without recourse to a theory, would immediately grasp the idea that the nature or the ontological kind of the objects of perception may have anything to do with whether they exist perceived or unperceived. But it may not be necessary to put the point in these terms. This distinction matters for there is a danger that only those further theoretical elements, which we have employed to spell out the idea, may require a theory to make sense of them. In which case, we would have failed to show that the idea itself requires a theory to make sense. We ought to bear this in mind as we are confronted with the claim that the idea that the things that we experience exist while we do not experience them does not make sense without some rudimentary theory of perception.

A rudimentary theory of perception gives meaning to the idea of existence now perceived, now unperceived – while it is crucial to note that these count as two sides of the same coin, so to say. Let us then consider exactly why the idea of continued existence unperceived only makes sense if aided by a surrounding, rudimentary theory of perception. Evans explains that the idea of existence unperceived ought not to be conceived as ‘an additional hurdle to be surmounted after the idea of existence perceived had been understood’ (1985, p.262). Hence, the meaning of the idea of existence unperceived ought not to be severed from that of existence perceived. A subject may grasp what it means that something, which they perceive, exists unperceived in grasping what it means that it is perceived. This suggests that, it is in grasping conditions for perception, a subject may grasp that what they perceive exists unperceived. To begin to mention some such conditions, these include those that rely upon spatial notions, such as being in the wrong orientation or there being something on the way. They also include factors in the world that are causally necessary for perception, in the absence of which perception doesn’t occur, e.g., the absence of light, as

well as deficiencies in a perceiver, e.g., being inattentive or asleep. (Evans, 1985, p. 263)³⁰ Generally speaking, the thought is that making sense of the idea that what we perceive exists unperceived is the same as making sense of the idea that we may perceive what at times is not perceived. Grasp of conditions for perception implies grasp that we may perceive things that continue to exist unperceived. So, an understanding of what perception involves, within some form of a rudimentary theory of perception, would enable a subject to understand what is involved in the idea of existence unperceived as well as perceived.

To further explicate this suggestion, Evans puts it in the following terms. Say we trace how a child comes to learn to utter 'It's raining,' while this utterance is initially tied to a given pattern of experience. For this to be an assertion about the objective world, Evans suggests, it must loosen its tie with experience, to some extent, as we would want to say that it is true even when no experience is occurring. This is intuitive as we would not want to say that the utterance is just an utterance concerning one's experience. At the same time, this tie must not be altogether severed, as we want to say that what makes the statement true in the absence of the experience is *the very same* as what may be affirmed on the basis of experience. Crucially for our current interests, we may note that, if we were to completely sever this tie between the perceived and the unperceived, say, for whatever independent reason, we would lose our chances to make sense of the idea that what is at times perceived obtains in the absence of perception. We may begin to see how this suggestion may enable us to explain how we may get the idea of existence unperceived from experience without running into the self-contradictory requirement for experience of the unperceived.

So far, I have considered an interdependence between grasp of the conditions for perception or existence perceived and grasp of the idea of continued existence unperceived. Before turning to considering exactly how this claim may aid us in addressing Hume's scepticism, allow me a short digression. Notice that while Hume considers what gives rise to the idea of continued existence unperceived and questions its legitimacy, based on how the idea is formed, there is a slight shift of gear in this extract from Evans (1985) such that the question now appears to do with the intelligibility of the idea and not so much with whether the idea is legitimately formed.³¹ So, let me take the opportunity to explain how these questions are interwoven.

³⁰ I will briefly return to what these conditions involve according to Evans (1985) and how they relate to mind-independence in chapter 7.

³¹ I think that this what comes under what Brewer defines as an 'intuitive datum', namely that 'the subjective nature of our perceptual experience intelligibly explains our belief in the continued existence unperceived of its ordinary physical objects'. (Brewer, 2020, p.4)

Generally speaking, we may distinguish between conceptual and epistemic challenges, whereby the former challenges are concerned with both the meaning and the origins of our concepts and ideas, and the latter with notions to do with knowledge, evidence, justification, belief, and so on. As we observed, Hume does provide us with a psychological explanation of how the idea (or opinion) of continued existence unperceived is formed, assigning a crucial role to the imagination. Seeking the origins of the idea, Hume is interested in settling whether the idea is legitimately formed. While Hume does provide an account of how we come to form the opinion that what we perceive continues to exist unperceived, Hume questions whether the idea is legitimately formed.³² The ‘copy principle’ provides standards on how an idea is legitimately formed. Assessing the formation of the idea of continued existence unperceived by appeal to this principle, results in a sceptical stance: it threatens the legitimacy of the idea thus formed. While Hume’s inquiry concerns the origins of the idea (or concept), as it questions whether it is legitimately formed, Hume’s sceptical stance further provides us with an epistemic challenge. For, it calls into question a type of justification for the belief that things continue to exist unperceived. So long as the idea does not *legitimately* arise from experience, but is, rather, a product of a fallacy and illusion, there is a type of corresponding justification that a belief involving the idea lacks.³³ In other words, in employing an idea that is not legitimately formed, the belief that what we perceive continues to exist unperceived lacks a form of justification.³⁴

Having said that, how may Evans’ claim about what gives meaning to the idea of continued existence unperceived bear any relevance to whether the idea is legitimately formed in experience? The point is that before we even begin to seek an experience apt to legitimately giving rise to the idea of continued existence unperceived we need to factor in that the meaning of such idea is at least partly given by a surrounding, rudimentary theory of perception. Hume considers whether the idea may be legitimately formed based on what is immediately present in experience. The claim that the idea itself cannot stand on its own – or only makes sense within the context of a rudimentary theory of perception – is something to be taken into account when accounting for how experience may legitimately give rise to the

³² In effect, we may say that for Hume (1739) the questions as to the origins of an idea and as to whether an idea legitimately arises from experience coincide. As, for Hume, an idea that legitimately arises from experience is an idea that is a copy of an impression, which is how Hume believes that ideas originate in experience.

³³ Williams (2008) refers to this type of epistemic justification as ‘rational-foundational,’ involving a Humean conception of justification which is evidentialist and internalist.

³⁴ It is a further question, which I currently bracket, in what ways this challenge may threaten the possibility of perceptual knowledge.

idea of continued existence unperceived. One may infer from Evans' suggestion that the idea of existence unperceived may only make sense to a subject within a rudimentary theory of perception, that we may not find a suitable experience sufficing for the idea of continued existence unperceived, without some role being played by a theory of perception. There is a sense in which this claim may *prima facie* be understood as lending support to the Humean thesis that we cannot get the idea of existence unperceived from experience alone. However, to address Hume's sceptical claim, Brewer (2020, 2021) implements Evans' remark in a metaphysics of conscious perceptual experience. Brewer presents an account according to which what we are in the position to observe may suffice for the idea, insofar as formal conditions derived from a theory of perception are a constitutive part of the metaphysics of conscious perceptual experience. Roughly, if we were to accept that a surrounding theory is required for the idea to be intelligible, we could then expect that, so long as the theoretical element that gives meaning to the idea is a constitutive aspect of experience, experience itself may give rise to the idea.

Implementing Evans' remark in an account of the metaphysics of conscious perceptual experience, Brewer (2020, 2021) argues that we might explain how current experiences suffice for the idea of continued existence unperceived if a formal or theoretical element is a constitutive and evident part of the metaphysics of perception. Given the direction of this strategy, two things are in order. First, I look in some more detail at how Brewer considers theory to be part of experience, to serve the thesis that what we are in the position to observe is evidence for its existence unperceived. Given these settings, I then consider in some more detail how experience, so conceived, may legitimately give rise to the idea of continued existence unperceived. I finally turn to draw some implications for the auditory case.

Brewer holds that perception is not merely the confrontation by the subject with objects that exist independently, but it is structured by a simple theory of perception. Accordingly, Brewer defends a two-dimensional metaphysics of conscious perceptual experience, whereby the two dimensions are given by,

1. the particular objects and their properties that one is acquainted with at that time,
2. the subject's spatial point of view at that time and other relevant circumstances enabling a subject's acquaintance with those things.

Brewer, 2020, p.9

Burge (2010) and Brewer (2011) both defend metaphysics of perceptual experience that assign a role to the subject's perspective or standpoint. Whereas for Brewer (2011, 2020, 2021) perspectival conditions belong to a set of conditions that describe the formal aspect of perception, for Burge things are always represented in some way, i.e., representational content is necessarily structured, as things are always represented from a certain perspective. However, for Brewer, not only is this dimension of conscious perceptual experience a constitutive part of it, but it is also an evident aspect of experience – enabling a perceiver to consciously form their belief that things continue to exist unperceived from it. Brewer's (2020, 2021) view, dubbed Perceptualism, holds that formal conditions on experience, derived from a simple theory of perception, are themselves evident in experience. Accordingly, elements required for a perceiver's belief in continued existence unperceived are evident in the way things are for one undergoing any given suitable experience.

In comparison with Hume, one might say, Brewer provides the educated philosopher with a different set of facts about experience, or what a perceiver is in the position to tell about their experience. As observed above, Hume holds that the philosopher is someone who can work out by reason that the idea cannot arise in experience. But Hume also claims that the philosopher is an *educated* individual. By this, I observed that Hume must allow that the philosopher knows some of the relevant facts about experience, i.e. facts about the relation between ideas and experience. We may understand Hume and Brewer's contributions to part ways in what they hold comes into the equipment of the educated philosopher, as Brewer does, and Hume does not, assign a role to a rudimentary or simple theory of perception.

Brewer argues that Hume is wrong to claim that it is not possible for my current experience to give rise to the idea of continued existence unperceived. Appeal to theory adds a second dimension to experience. So, in understanding how experience may give rise to the idea, we are now allowed to draw from a second dimension of experience: what is evident in experience is not only the sensory object but also the obtaining of enabling conditions, i.e., the satisfaction of spatiotemporal and other independent enabling conditions, which may fail to obtain, including the subject's position, orientation, and perceptual circumstances. As an educated philosopher, I would know that my current perception of my phone resting on the desk in front of me, is evidence that a set of enabling conditions obtains.

The obtaining of a set of conditions enables my perception of the phone, which is there anyway. In other words, the obtaining of this set of conditions for my perception of the phone, is object-independent. Brewer characterises enabling conditions as follows,

A simple theory of perception, with spatiotemporal and other enabling conditions on perception *that are independent of what is there in the world anyway and may subsequently fail to be met*, namely her position, orientation and perceptual circumstances, is essential to the metaphysics of conscious perceptual experience itself

Brewer, 2020, p.4, my italics

The essential role of such *object-independent enabling conditions upon her acquaintance with those things, which may subsequently fail to obtain*, is what makes their continued existence unperceived intelligible from the perceiver's own point of view.

Brewer, 2020, p.9, my italics

Brewer stresses that formal conditions are object-independent or independent on what is there anyway, and they may subsequently fail to obtain. The idea that there are object-independent, enabling conditions, implies that things might be otherwise for me or not obtain at all. So long as formal conditions on perception are an evident aspect of experience, it is evident to me that things could be otherwise for me. Such evident conditions include, for example, that if I were standing away from the cup, the cup would look smaller to me, or that I could see a different side of the cup, if I were seeing it from a different perspective. These are conditions on my perception: it is evident that they obtain, and their obtaining secures perception of what is there. It is in this sense that we may understand Brewer to hold that when a simple theory of perception is evidently a constitutive part of perceptual experience, what I currently perceive may legitimately give rise to the idea that what I perceive continues to exist unperceived. This suggestion differs from Burge's contribution not only in stressing that spatio-temporal conditions are evidently a constitutive element of experience. While representation of bodies, as Burge conceives it, is also spatio-temporal, the key of Brewer's suggestion is that the obtaining of spatio-temporal conditions is evidence of the obtaining of conditions of perception. It is this latter ingredient that crucially makes it possible to legitimately derive the idea from experience: evidence of the obtaining of spatio-temporal conditions just is evidence of the obtaining of conditions for perception, and, hence, of perception of what exists perceived or unperceived.

Along with Brewer, we may, thus, conclude that, *contra* Hume, the idea of continued existence unperceived does not require an experience of the unperceived, for what we are in

the position to currently observe may suffice for the idea of existence unperceived. Only if experience were considered to be the bare presentation of whatever it is before the mind, one would have no way of drawing the idea, from experience, that what one experiences is independent of one. By contrast, awareness of object-independent, enabling conditions upon perception serves as evidence of the mind-independence of what one perceives, and, hence, of existence now perceived, now unperceived.

Humean Scepticism as it Concerns the Auditory

One may have reservations as to whether Brewer's approach – or my reading of it – ultimately succeeds. My place, however, is to assess whether a Brewer-style account works in the auditory case, in order to draw a set of implications for the auditory. While it seems to make a cogent case against Humean scepticism, Brewer's solution, as developed from Evans, relies on apparent aspects of experience that the auditory may lack.³⁵ As it turns out, a rudimentary theory of perception, as so far outlined, may not be apt for providing formal conditions to structure auditory experience and, hence, explain how auditory experience may legitimately give rise to the idea of existence unperceived. The formal aspect of experience includes, according to Brewer, the subject's position, orientation, and further spatiotemporal enabling conditions. Evidence of enabling conditions takes the form of spatiotemporal conditions for perception of bodies. But when we turn to how things auditorily appear to us, it may *prima facie* seem that we are not presented with spatially extended bodies. So, it is not obvious that the idea of existence unperceived can be explained in this way. The role of the next chapter is to assess whether we are auditorily presented with spatially extended bodies. As it turns out that we are not, it follows that there is an as yet unaddressed Humean sceptical challenge concerning the auditory and the idea of existence unperceived that we need to consider. Moreover, based on how things may auditorily appear to us, we may begin to doubt that we are ever auditorily presented with material bodies. As will emerge in following chapters, I will argue that so long as we conceive of material bodies as we would visually conceive of them, as matter extending and taking up space, we would not be in the position to appreciate that we are in fact, evidently, auditorily presented with material bodies.

³⁵ By extension, the strategy drawn from Burge (2010), which I have rejected for different reasons – would also not apply to the auditory case.

In the meantime, assuming that we are not in fact auditorily presented with spatially extended material bodies in such a way that makes Brewer's solution applicable, here are some tentative solutions and their respective rejections. Some may propose a reading of the role played by a rudimentary theory of perception that does not rely on perceiving spatially extended bodies *per se*. Accordingly, one may propose that it is not down to acquaintance with the obtaining of spatiotemporal conditions, including the subject's orientation and position, that the idea of existence unperceived is legitimately derived. One may argue that it is the fact that perception occurs *per se* that might count as evidence of the obtaining of its enabling conditions. Accordingly, it would not be a problem if, in the auditory case, we would not be evidently presented with the enabling conditions for perceiving bodies. However, it is not *prima facie* clear how the mere obtaining of perception would provide evidence for the idea of existence unperceived; for it is not clear that one would be in the position to observe that perception has obtained, if not by observing the obtaining of enabling conditions. Accordingly, we would not be served with evidence for existence perceived, and, consequently, nor for existence unperceived. That is, this approach would not serve as a solution to Hume-like scepticism.

Alternatively, despite not being evident to a subject, from the perspective of their experience, one may suggest that Brewer's two-dimensional metaphysics of perceptual experience factually holds in the auditory case. That is, one may forgo a commitment to Perceptualism while retaining a commitment to a two-dimensional metaphysics of perceptual experience. As explained above, Brewer's two-dimensional metaphysics of perceptual experience, holds that, one dimension of perceptual experience consists in a relation with ordinary bodies, otherwise known as the 'object view' (Brewer, 2011, 2018), and another in the relevant enabling conditions. One may hold that auditory perceptual experience consists in a relation with ordinary material bodies plus enabling conditions, while this metaphysics is not evident in experience. So, one would accommodate the fact that it does not seem to us that we are auditorily presented with bodies, while still attempting to argue that auditory perceptual experience is so constituted. While this approach would not likewise function as a response to Hume-like scepticism, Brewer himself would not accept that the *de facto* holding of a two-dimensional metaphysics of experience suffices. In effect, Brewer (2020, 2021) rejects views according to which it is simply the identity of the relata of conscious acquaintance as physical objects that *de facto* continue to exist unperceived that suffice for the intelligible explanation of the belief. For the nature of conscious perceptual experience perceptual is not merely a brute stipulation but a thesis which is motivated by a subject's

conscious perspective. It cannot merely be a stipulation that the objects are de facto things that exist unperceived for, according to Brewer, it is precisely the presentational structure that motivates the identification of ordinary material bodies themselves. It is the formal requirement that provides the necessary internal motivation for the assignment of its relata, which makes belief in existence unperceived, intelligible from the point of view of the perceiver. Hence, to return to the auditory case, while we could not appeal to a perceptualist view so long as spatiotemporal conditions are not evident in auditory perceptual experience, we may also not appeal to a de facto view in so long as we do not seem to be presented with three-dimensional bodies. Accordingly, we would not have auditory perceptual basis to tell that what we perceive exist mind-independently.

If we want to hold on to Perceptualism, which is essential for the effectiveness of Brewer's solution to argue that the idea of existence unperceived may legitimately arise from auditory experience, we ought to adopt a metaphysics of auditory perceptual experience, where formal conditions are a constitutive as well as an evident element, which involves a view other than that of the object view. That is, while it may be possible to adopt a solution similar in spirit to that which Brewer proposes, which makes a theoretical element evidently constitutive of perceptual experience, other conditions, suited for auditory perceptual experience ought to be specified.

By way of fully motivating a sceptical stance for the auditory, in the chapter that follows, I further investigate whether auditory perceptual experience presents us with spatially extended material bodies. While I argue that it does not, further on, I suggest that this only brings to light a presumption as to how material bodies phenomenally show up in experience. Further on, I will pursue another option, viz. that what is evident in auditory perceptual experience does not meet the standards of a formulation of an object view, according to which we are presented with three-dimensionally extended bodies, but it still provides sufficient elements for materiality.

Let us take stock. We hold a commonsensical belief that what we perceive exists independently of our minds and experience, which may be put in terms of the belief that the objects of our experience continue to exist unperceived. A constitutive element of such belief is the very idea of continued existence unperceived. There is a question as to what the origins of this idea are, and, more specifically, as to whether we are in the position to derive it legitimately on the basis of how the very objects of experience strike us to be as we undergo perceptual experience of them. Hume provides a sceptical argument that delivers a negative

answer to this question. In short, Hume's thesis is that we ought to dismiss the idea of continued existence unperceived because we may not legitimately derive it from sensory experience: the idea turns out to be a product of a fallacy or illusion. We may consider where this leaves us, while identifying different possible directions of inquiry. Firstly, one may reflect upon whether we ought not to dismiss the idea as fallacious, considering how else it may be derived if not in experience. The very approach may be put to question by considering why the idea ought to be derived from experience to be legitimate and what the upshot of not being so derived may be. One may further consider whether the idea is necessarily bound to perception of material bodies, as so far assumed. In effect, we may have grounds to believe that, as sensory experience puts us in contact with the outer world, sensory objects besides material bodies are mind-independent. We may then explore the extent to which such sensory experiences, whose constituents are objects other than material bodies, may give grounds to the idea of continued existence unperceived. In the above, I have considered accounts that see the idea of continued existence unperceived to be especially bound to perception of material bodies; due to aspects of their nature these are considered to be particularly suited to give rise to the idea of continued existence unperceived. We may further pursue this approach with a special interest in the auditory in mind, and ask whether we may avail ourselves of such strategy in the auditory case. This prompts a question, to which the next four chapters will be dedicated, as to whether auditory perceptual experience may strike us as presenting us with material bodies. In the final chapter, I will return to the idea of continued existence unperceived and consider the extent to which auditory perceptual experience may provide grounds upon which this idea may be legitimately derived.

Chapter 3

The Auditory, the Spatial, and the Material

The previous chapter looked at Humean scepticism about whether sensory experience may legitimately give rise to the idea of continued existence unperceived. I considered solutions to Hume's scepticism as it concerns the senses in general and I posed a question as to whether these may specifically work in the auditory case. As such solutions exploit aspects of material bodies that are evidently present in experience, a question arises as to whether we may be similarly auditorily presented with material bodies. The accounts I have considered so far conceive of material bodies as, among other things, spatially extended. Via appeal to formal enabling conditions on perception as evidentially constitutive of perceptual experience, Brewer (2020, 2021), in particular, provides a cogent case against Humean scepticism. Such formal enabling conditions essentially consist in spatial conditions for the presentation of material bodies. The aim of this chapter is to argue that auditory perceptual experience does not meet conditions for presentation of material bodies as spatially conceived: in the course of this chapter I will show that the spatial aspect of auditory perceptual experience does not suffice for presentation of material bodies.

Given that material bodies are conceived as necessarily spatial, one line of research in the literature has attempted to resist the thesis that the auditory is not essentially spatial in order to show that purely auditory perceptual experience may present us with material bodies. After presenting a set of reservations about this strategy, I adopt an alternative approach. Regardless of whether the spatial aspect of auditory experience is purely auditory, that is, of whether auditory experience is essentially spatial, I argue that in no case does the spatial aspect of auditory experience suffice for presentation of material bodies.

I begin by sketching a thesis one may draw from Strawson's (1959) *Individuals* that insofar as purely auditory experience is non-spatial, it cannot present us with material bodies. I then move on to argue against an attempt to resist the thesis that the auditory may not present us with material bodies, an attempt that rests on the claim that auditory perceptual experience is spatial. Firstly, I offer counterexamples to this move by exploring ways in which it is possible to be spatially sensitive without being presented with material bodies. This shows that there are at least some forms of spatial sensitivity that do not suffice for presentation of material bodies. Secondly, I move on to focus on the auditory case more specifically. I argue that the spatial sensitivity that we may enjoy in auditory experience does not suffice for presentation of material bodies. Accordingly, we seem to lack corresponding

auditory grounds for the idea of continued existence unperceived via presentation of material bodies.

A Purely Auditory World

What if we were only equipped with auditory perceptual experience and had no access to, or recollection of, perceptual experience in any other sensory modalities? In the hypothetical scenario that Strawson's (1959) depicts we would lack presentation of material bodies, for equipped with auditory perceptual experience alone we would undergo experience that is essentially non-spatial. In what follows, I delve into this hypothetical scenario by looking at the two premises that compose it,

- (1) perceptual experience of material bodies is necessarily spatial
- (2) auditory perceptual experience is not essentially spatial

Thus, purely auditory perceptual experience may not be experience of material bodies.³⁶

To be sure, the hypothetical scenario that Strawson depicts is, for Strawson, only instrumental to an inquiry into our conceptual framework for identification, which is beyond my current concern. However, in order to understand why a purely auditory world is conceived as a world deprived of material bodies we first need to partly consider Strawson's own inquiry.

Strawson's *Individuals* (1959) begins by providing a descriptive account of our abilities to think about particulars, or individually identified items, and make identifying statements in conversation with others. Strawson explains that, for how things are with us, what enables us to identify individual things is a unified, spatio-temporal framework for identification. According to Strawson, the unified character of our spatio-temporal framework – what enables us to make identifying statements across different occasions – is conferred by material bodies, spatio-temporally continuous kind of entities. Let us consider what this means. Strawson asks whether there is any class or category of particulars which is

³⁶ Notice that this should not be read as the claim that it is not possible to undergo auditory perceptual experience of material bodies, but rather that it is possible to undergo auditory perceptual experience without perception of material bodies.

basic to particular-identification. An argument is construed from the premise that identification rests ultimately on location in a unitary spatio-temporal framework of four dimensions, one temporal and three spatial dimensions. The only suitable objects that can constitute a framework so characterised are those which can confer upon it its own fundamental characteristics. That is, they must be three-dimensional objects that endure through time. Among the categories of objects that we may encounter in experience, Strawson argues that material bodies meet these requirements. In this sense, material bodies, which are three-dimensional objects enduring through time, are held to be the constituents of our spatio-temporal framework for identification of individual things.³⁷ ³⁸ Essentially, for Strawson, this means that any identifying thought or statement ultimately rests on identification of material particulars, whereby identification of material particulars does not rest on any further identification. More generally, this implies that since material bodies make perceptual experience spatial, non-spatial experience cannot be experience of material bodies.

Given this setting, in the second chapter of *Individuals*, Strawson probes the role of our spatio-temporal framework for identification. Strawson asks whether there could be a conceptual scheme which was like ours in that it provided for a system of identifiable particulars, but was unlike ours in that material bodies are not basic particulars.³⁹ Given the mutual dependence between material bodies and space, the attempt turns out to involve considering whether we would be capable of identifying items while disposing of both space and material objects. Speculating on the possible furnishing of a non-spatial world, Strawson suggests that we ought to dispose of outer sense. That is, of all sensory modes of perception of outer or of public objects.⁴⁰ For Strawson, this narrows down to the question as to whether,

³⁷ Notice that Strawson also argues that, 'We might regard it as a necessary condition of something being a material body, that it should tend to exhibit some felt resistance to touch; or, perhaps more generally, that it should possess some quality of the tactual range. If we do, then this is a more stringent requirement than any that Descartes intended by 'extension' or Locke by 'solidity'; that is to say, it is a more stringent requirement than that of three-dimensional occupation of space'. P. 40

³⁸ According to Strawson, there is a complex relation of mutual dependence between identification of places and identification of individual things. A requirement for identification of a material body is that it is continuous in space. Strawson takes this to mean that it is essential that there is a continuous set of places that a body occupies within intervals from when it is identified at a place and then at another. At the same time, places are themselves defined in terms of the relation of things. So, any identifying thought or statement ultimately rests on a system of spatially continuous material bodies.

³⁹ As Strawson raises this hypothesis, he explicitly mentions an interest in defining conditions for perceptual knowledge of the world. In a similar sense, we may interpret the question to be whether the status of material bodies as basic particulars is a condition for our ability to tell that we perceive mind-independent things that material bodies are basic particulars.

⁴⁰ This may sound at first confusing, as one may wonder whether the possibility of engaging in objective identification is already ruled out by how the experiment is set up: if we rule out outer sense, or the ability to perceive public objects, would it not be obvious that we cannot engage in

equipped with sensory experience from a given modality that does not enable perception of the outer world, we may be capable of re-identification.

Strawson holds that sounds have no intrinsic spatial characteristics and openly assumes that sounds are the proper objects of auditory perceptual experience. (1959, p.65) These characteristics of auditory perceptual experience make auditory perceptual experience ideal furnishing for a conceptual scheme that is unlike ours, in that it would not rest on identification of spatio-temporal material bodies. Strawson is interested in what experiences may give rise to notions that make up a conceptual scheme for objective identification and whether non-spatial experiences may fit the role. As auditory experience is not intrinsically spatial, it cannot furnish a spatial conceptual scheme for identification. So, Strawson asks us to consider whether we would be capable of re-identifying items based on experience that is purely auditory in character.

What does to conceive of this scenario consist in? Asking whether there could be such a scheme, Strawson means to ask whether we could make the idea of such a scheme intelligible to ourselves. For this we are asked to try and see whether a framework for identification deprived of the fundamental characteristics of our own framework would be conceivable. This means engaging in the intellectual attempt of disposing of the fundamental constitution of our own framework, viz. that of material bodies. Engaging in this attempt does not require as little as, say, closing our eyes and abstaining from touching, smelling and tasting, while only attending to auditory experience. As we are taking into account only purely auditory perceptual experience as the furnishing of a conceptual scheme for identification, it is important to dispose of ways in which the concepts we use may still depend on other sensory modalities that are not essentially non-spatial. So, the attempt must

objective identification? However, we may understand Strawson as considering precisely whether we may be capable of the same identifying thought when things are not outer, in order of probing the proposal that our unified spatio-temporal framework of reference is a guarantee of objectively picking out individual things. In a sense, we may read Strawson as setting himself a challenge: if we were capable of seemingly identifying thoughts and references in a framework based on the absence of outer things, then perhaps the way we do identify things is not a warranty for objectivity. We may read the aims of this experiment in a weak and in a less weak sense: one may read the aim of the experiment to literally just be that of checking whether identifying items in the world really rests on a basic system of material bodies. A perhaps more substantial understanding of the inquiry that involves conceiving of whether we may engage in objective identification without material bodies as basic particulars is as follows. If there were another framework thanks to which we could engage in seemingly identifying statements in the absence of outer sense, and, hence, of public objects, then our very own framework may not guarantee objective reference. We may hence doubt that the fact that we are equipped with such a unified, spatio-temporal framework really implies that we objectively think about things.

consist in that of imagining that all our senses are numbed, except for hearing, and that we hold no recollection of any of our ordinary, multisensory (in the sense of involving more modalities) past experiences or that we were simply born this way, just with our hearing sense.⁴¹ Of course, as we are still bound to what is intelligible to us, it may not be possible to dispose completely of the conceptual scheme we in fact have. Despite this inevitable limitation, we are asked: could a being whose experience was purely auditory have a conceptual scheme which provided for objective particulars?⁴²

For our current purposes, we may leave to one side Strawson's interest in identification per se and continue to focus on the scenario that has been depicted. So far, we learnt that auditory sensory experience is purported to be suited to deliver a scenario with no space. To be sure, it would be wrong to attribute to Strawson an interest in auditory perceptual experience that goes beyond what is instrumental to his inquiry. However, Strawson does provide the reader with some detail about the premise that purely auditory experience is not essentially spatial. Strawson holds that,

Whatever it is about the sounds that makes us say such things as 'it sounds as it comes from somewhere on the left', this would not alone (i.e. if there were not visual, kinaesthetic, tactual phenomena) suffice to general spatial concepts. (...) in supposing experience to be purely auditory, we are supposing a No-Space world.

Strawson, 1959, p.66

Strawson points out that whereas space is essential to visual perception, as whatever we perceive visually is 'necessarily extended at any moment' (p.65), it is possible to conceive of auditory experience that is not spatial. Notice that to make this claim about the auditory, Strawson need not deny that auditory perceptual experiences may enable us to make spatial judgments about our surroundings. As Strawson remarks,

⁴¹ This should factor in the hypothesis that the relevant concepts are innate. As while innate they may still hinge on what auditory experience makes conceptually available.

⁴² Let us bear in mind that Strawson's (1959) enquiry in descriptive metaphysics has the aim of describing the general structure of our conceptual scheme. Rather than arguing how a conceptual scheme ought to be or how an existing scheme could be improved, Strawson is interested in describing some aspects of the general structure of our conceptual scheme for how they are. So even when positing a world just of sounds, the interest is still in what we are actually capable of doing and what our actual capacities are down to.

Sounds seem to come from the right or the left, from above or below, to come nearer and recede (...) The fact is that where sense-experience is not only auditory in character, but also at least tactual and kinaesthetic as well— or, as it is in most cases, tactual and kinaesthetic and visual as well— we can then sometimes assign spatial predicates on the strength of hearing alone. But from this fact it does not follow that where experience is supposed to be exclusively auditory in character, there would be any place for spatial concepts at all. I think it is obvious that there would be no such place. The only objects of sense-experience would be sounds. Sounds of course have temporal relations to each other, and may vary in character in certain ways: in loudness, pitch and timbre. But they have no intrinsic spatial characteristics: such expressions as ‘to the left of’, ‘spatially above’, ‘nearer’, ‘farther’ have no intrinsically auditory significance.

Strawson, 1959, p.65.

Strawson does not deny that ‘on the strength of hearing alone’ we can tell the distance and the direction of things. Rather, he holds that, while purely auditory experience has no intrinsic spatial content, due to the de facto existence of correlations with other senses we are able, say, to hear things coming from the right or the left, to come nearer or recede (1959, p.66). De facto correlations with other sensory modalities enable spatial judgments on the basis of audible features. While spatial concepts may have originated in sensory experiences other than the auditory, we are capable of making spatial judgments due to correlations between the auditory and other sensory modalities. It is in this sense that we ought to understand Strawson to hold that it is possible to make spatial judgments on the strength of hearing alone, while spatial characteristics are not intrinsic to the auditory.

To take stock, given a mutual dependence between space and material bodies at least for what concern our own conceptual scheme for identification, in Strawson’s thought experiment disposing of space entails disposing of material bodies and vice versa. In other words, probing our own framework for identification, which rests on identification of material bodies, means disposing of material bodies and conceiving of a scenario without space. Auditory experience is claimed to be a fitting candidate for experience so characterised: a purely auditory world is conceived as a world without material bodies and space. This is so because auditory experience is not essentially spatial, hence it is possible to undergo auditory experience that is not experience of material bodies. Thus, we face the hypothesis that purely auditory perceptual experience, independently of other sensory-

modalities, is non-spatial and, hence, it may not present us with material bodies. Let us begin to consider how some may deal with this hypothesis.

In order to safeguard the thesis that in auditory perceptual experience we may be presented with material bodies a possible immediate reaction is to attempt to reject premise (2) that the auditory is not essentially spatial, while granting an interdependence of the spatial and the material, and hence the claim that we could not have material bodies without spatial extension. Claims about spatial features of auditory perception are commonplace in the literature. Pasnau (1999), Casati and Dokic (2005), O'Callaghan (2007b), among others, argue, on phenomenological grounds, that auditory perception involves experience of spatial properties such as distance and direction. Also, there is empirical evidence that hearing provides information about the locations of things and events in egocentric space (Shinn-Cunningham 2001a and 2001b, Bregman 1990, Hartmann and Wittenberg 1996, Mills 1972). Blauert's (1997) research project on spatial hearing supports the thesis that humans are capable to auditorily perceive spatial features such as direction and distance. One proposal is that we can tell the distance of what we hear based on volume and we can tell the direction of what we hear by computing differences in volume.⁴³ So, some contend that it is possible to compute spatial information of distance and direction in virtue of an audible quality like volume alone. A different version of this thesis is that, as O'Callaghan holds, 'audition has a prominent directional component that depends upon, for instance, differences in arrival time, phase, and level of sound waves at the two ears.' (2007 p. 15) While explaining how spatial features, such as direction and distance, are computed on the basis of audible features alone, some purport to show that auditory experience is spatial. Spatial characteristics are worked out based on audible qualities alone. While these qualities are not themselves spatial, such computations result in auditory spatial experience. They contend that the fact that spatial features are computed on the basis of audible qualities does not count against the claim that ultimately auditory experience is itself spatial.

However, these considerations may not serve the purpose of refuting the premise that the auditory is not essentially spatial, for they may well be compatible with it. A capacity for working out spatial features, such as distance and direction, based only on audible features may well be granted, but it is not clear that this counters the thesis that the auditory is not

⁴³ O'Callaghan (2010) however points out that there are no strict rules around the relationship between distance and loudness. He points out that a quieter instrument might be nearby and a louder instrument might be further away and we could mistakenly perceive them as being at the same location if we based our judgment on volume.

essentially spatial. Let us grant that spatial information may be computed on the basis of audible information alone, say, differences in intensity. It is a further question whether the thesis that spatial information is computed based on audible features alone, is enough to counter the claim that the relevant computations depend on further correlations. For this thesis is compatible with a thesis that, while employed in audition, spatial concepts do not have origins in auditory experience alone. Hence, it is not obvious that any dependency on correlations with other modalities is ruled out. At least, so long as one's interest is in what conceptual scheme, or what notions may be at our disposal, given the furnishing of a purely auditory world, it is crucial that the question of the origin of spatial concepts is addressed. Accordingly, considerations as to the spatial information we may derive on the basis of audible qualities may perhaps only have argumentative force to counter a-spatial theories of sounds, according to which sounds are not perceived as spatial, which, however, bear no necessary commitment to a conceptual thesis.⁴⁴

We may observe that simply rejecting the premise that the auditory is essentially non-spatial in order to reject the conclusion that it may not present us with material bodies would not take us as far as showing that purely auditory perceptual experience may present us with material bodies. We ought not to fall into the assumption that showing that the auditory is essentially spatial would somehow imply that it may present us with material bodies. As we saw, Strawson's own thesis is that material bodies make experience – and the derived framework for identification -- spatial. From this we ought not to hold that any spatial experience is an experience involving material bodies and we may conceive of forms of spatial sensitivity which, being independent from presentation of material bodies, may not suffice for presentation of material bodies.⁴⁵ Accordingly, even if the auditory were essentially spatial, it would not follow that it may possibly present us with material bodies.

What these considerations show is that there is a more pressing issue facing a strategy that relies on rejecting the claim that the auditory is not essentially spatial in order to hold that it may present us with material bodies. This strategy is based upon the assumption of an interdependency of space and material bodies. However, in the next section, I point to examples of spatial sensitivity that do not hinge on presentation of material bodies. Accordingly, showing that the auditory is essentially spatial would not guarantee that

⁴⁴ O'Shaughnessy (2000, p. 446), for instance, can be read as defending an a-spatial view of auditory perception.

⁴⁵ Eilan (2019) adopts a strategy severing a tie between space and material bodies in addressing Molyneux's question.

auditory experience may present us with material bodies. For, there are cases in which spatial sensitivity may not suffice for presentation of material bodies. In short, I suggest that we leave to one side the question as to whether the auditory is essentially spatial. Regardless of whether it is, I move on to argue that the spatiality of the auditory, independently of other sensory modalities, does not suffice for presenting us with three-dimensional extension. It follows that it may not present us with material bodies if spatially conceived.

Spatial Sensitivity without Material Bodies

In this section, I present cases of spatial sensitivity that do not hinge on presentation of material bodies. As there are examples of spatial sensitivity independent of presentation of material bodies, the attempt to secure the claim that the auditory presents us with material bodies, by rejecting the claim that it is not essentially spatial, is shown to be inadequate. The following is a description of a series of pieces of evidence of this sort of spatial sensitivity.

Burge (2010) gives us various examples of spatial sensitivity in what may perhaps be considered to be simpler life forms or less complex animals. To briefly mention a few examples,

Bacteria have magnetic sensitivities that orient them with respect to polar north. Amoebae have light–dark sensitivities that lead them to liquid areas likely to serve their chemical needs. Crickets use sound to locate mates. Birds are sensitive to magnetic, olfactory, and visual input that guides migrations.

Burge, 2010, p. 493

Burge presents cases of navigational capacities that may be considered simpler as they do not involve representational or perceptual capacities. Burge maintains that forms of spatial sensitivities are not necessarily perceptual or representational, for they are, more minimally, responses to proximal stimuli. They rely on simpler methods, such as beaconing, which can be explained in terms of momentary responses to proximal stimuli. Beaconing, path integration, landmark and map use are all cases of spatial sensitivity that do not seem to involve or require more complex perceptual capacities. In particular, they seem to bear no dependence on perception of material bodies. Let us expand on what these forms of spatial sensitivity consist in.

Navigation by beaconing consists in movement towards a target in response to a stimulation from the target, which may consist, for instance, in a magnetic field, a chemical, a light, or also a sound. Sensors on the body of the given organism are sensible to proximal stimulation which results in spatial sensitivity (Burge, 2010, p.498).

More complex cases of path integration involve sensitivity to distance and direction. Path integration involves the computation of a vector that integrates distances and directions of a journey. Burge explains that this is tested during displacement, when instead of making a journey back to the nest the organism moves towards a vector. The computation of a vector integrates distances and directions and does not depend on beaconing. So, they are computations of distances and directions themselves, as they do not depend on sensitivity to stimuli such as smells, sounds or lights. To compute distances and directions, animals use other sources of information including vestibular and proprioceptive sensory information. (Burge, 2010, p.500)

Landmark use differs from beaconing in that it uses landmarks not as target but as signs along the journey that facilitate reaching the target. A map-like system consists in an allocentric system lacking an egocentric origin based on a grid of spatial relation on a given terrain. An animal may be able to navigate the world by the use of a map. However, such map may have a geometrical structure that amounts to a pure geometry which may not concern or apply to physical space.⁴⁶

Moreover, while, as we have seen in the previous chapter, Burge holds that spatial representation or perception is constitutive of the representation of bodies, it is not constitutive of any perceptual or representational capacities. In fact, Burge (2010) argues that there can be primitive representational or perceptual capacities that do not exploit spatial capacities,

An animal could have a visual system capable only of attributing lightnesses or colours. The system could exercise primitive lightness and colour constancy that distinguishes reflectance from illumination, and thus from registration of surface stimulation by light. Such a system might be incapable of representing three dimensional shapes, or tracking locations of achromatic lightnesses, or locations of colours. It need not be capable of any constancies regarding three-dimensional space.

⁴⁶ For the difference between geometrical space and physical space see discussion in *Spatial Representation* volume (1993) including the General Introduction by Eilan, McCarthy, and Brewer.

The animal perceives lightness or colour, but lacks any capacity to attribute any spatial relations, including spatial relations between an occurrence of lightness or colour and the animal itself. If it perceives two colours at once, it cannot retain or use anything about the spatial relations between the colours. No spatial constancies are in its repertoire.

Burge, 2010, p.496

While simpler forms of spatial sensitivity do not require perceptual or representational capacities, Burge also argues that an animal may be capable of perceiving colour or lightness without spatial representation. The aforementioned, simpler cases of spatial sensitivity suggest that some forms of spatial sensitivity are possible in the absence of material things.⁴⁷

Campbell (1994) rejects Strawson's claim that material bodies are basic particulars, that is, that any form of identification ultimately depends on identification of material bodies. According to Campbell, the capacity to identify places is more basic. The thesis that it is possible to explain spatial sensitivity independently of material bodies is supported by cases in which animals, which do not have the capacity to think or identify about material bodies, are nonetheless capable of navigating the environment and show evidence of sensitivity to the environment to navigate. Campbell looks at cases in which animals use vectors or keep track of their own movements to compute distances and direction as examples of cases in which an animal is capable to identify places to navigate the world without thinking of them as material bodies. In effect, as we have seen above, forms of spatial sensitivity, which are simply guided by sensory stimuli such as lights, sounds, or magnetic fields, seem possible. So, there appears not to be a requirement that stimuli come from things that are material.

One may worry that the examples considered so far may not count as pertinent examples of spatial sensitivity without perception of material bodies as they only concern simpler life forms without conceptual capacities. In effect, Campbell offers an account of identification of places in thought and not merely an account of how we may be capable to navigate the world without relying on material bodies. With Burge (2010) we looked at cases of spatial sensitivity that are computational and, hence, do not involve conceptual capacities. According to Campbell, it is possible to explain how we can orient and navigate just with

⁴⁷ According to Burge (2010), a perceptual system could reach minimum requirements of objectivity without spatial representation, whereas spatial representation is required for higher level of objectivity (p.498). For Burge spatial perception is not required for objectivity, but it is required for the more complex capacity involved in perception of material bodies.

respect to features, whereby thinking about or identifying physical objects is not necessary for place identification.⁴⁸ As a reminder, Strawson (1959) maintains that one cannot objectively think about places if not relying on material bodies, for it is not possible to objectively pick out an individual if not by relying on identification of material bodies. Campbell's position, by contrast, is that it is possible to identify places without identifying material bodies, whereby our thought about places is only enriched by reference to material bodies.

Campbell argues that places need not be distinguished in terms of their spatial relations with material bodies in order to be identified. They can be identified by distinguishing them from features in the environment or by their relation to the animal. Accordingly, it may not only be possible to navigate in space without relying on material bodies but also to pick out and think about individual places without relying on material bodies. Campbell holds that place-identification is further enriched by the capacity to identify physical things due to their physical structure, which is given by a network of its properties and the way they interact. However, according to Campbell, (1994) it is the temporal, rather than the spatial, dimension of spatio-temporal thinking that requires the causal structure proper of material bodies. The fundamental role of material bodies in thought is played in constructing a narrative of events in the environment in which causal relationships between events are internal to the narrative and not given by implication for present or future movement or action. It is for this type of narrative that more than causally inert features are needed. According to Campbell (1994) a physical object has a causal structure. Some of the properties of a thing are just propensities to behave in a certain way in certain circumstances, such as being elastic and other dispositional characteristics. Yet, other properties such as size and shape, while not dispositional, still affects its propensity to behave. Campbell understands the networks of properties of a thing and the way in which they interact to determine the behaviour of the thing in various circumstances, to constitute the thing's causal structure. The object's causal structure is what enables the attribution of a common cause of a series of phenomena. This, in turn, enables informative identities about the landmarks we use to navigate the world. Campbell (2011) suggests 'You know how cooking an animal will affect its flavour, you know how damping a log will affects the way it burns, you know how whittling a stick will allow it to be used as cutlery. This is a matter of grasping counterfactual

⁴⁸ In the same volume, Brewer (1994) objects that the same system of representation may have different uses, now practical, now reflective. However, different uses do not imply different modes of representation.

dependencies: you know it would not taste like that if you did not cook it' (p.47). According to Campbell (2011) grasp of particularity 'includes grasp of the counterfactual dependencies between the state of an object at one time and its state later, perhaps after interactions with other objects. We use our grasp of these dependencies in acting on objects and predicting their behaviour.' Hence, grasp of particularity is grasp of the identity of an object persisting through time, whilst undergoing and surviving change.

We may further question whether identification of individual items may ever rely on spatial sensitivity alone, without material bodies. However, for the current purposes we may leave a this to one side. It suffices to notice that there is evidence of forms of spatial sensitivity that do not hinge on material bodies and that there is a case which may be pursued for a conceptual spatial framework, a way of thinking of space, which also does not require material bodies. This just shows that the route from showing that the auditory experience is spatial to showing that it presents us with material bodies is not as straightforward as some might have wished.⁴⁹ Showing that the auditory is essentially spatial may not mean that auditory spatial sensitivity suffices for presentation of material bodies. Given this, we may now move on to consider whether auditory, spatial sensitivity may ever suffice for presentation of material bodies.

The Spatiality of Auditory Perceptual Experience

Philosophical pronouncements as to what the objects of auditory perceptual experience are, can be organised around the spatial status that they assign to the objects with which we are presented.⁵⁰ More than a taxonomy in terms of spatial status, this counts as evidence of a common use of a strategy or argumentative route from phenomenological, spatial consideration – particularly about the location of what we are auditorily presented with – to conclusions about what the objects of auditory perceptual experience are. Given a route from

⁴⁹ Notice that Strawson ought not to be taken to be committed to the thesis that there cannot be space without material bodies. He is only committed to the claim that a unified framework enabling us to objectively identify items relies on material bodies. It is rather in the next step, as Strawson, considers what may an alternative framework be that he seems to assume that excluding spatiality excludes material bodies. But all he really needs excluding is the spatially unified framework of material bodies. So, these stories about spatiality without material bodies may actually be compatible with Strawson. It the strategy that one may adopt in response that may mistakenly assume that any form of spatiality will suffice.

⁵⁰ Notice that the current question is not a more general question about what we hear (more on chapter 4), but rather on what objects we are presented with.

spatial considerations to conclusions about the objects of auditory perceptual experience, disagreement as to spatial, phenomenological considerations about what we hear – particularly as to whether what we hear is presented proximally, medially, or distally located or a-spatially – have resulted in corresponding, divergent accounts about the objects of auditory perceptual experience.⁵¹ As we have already observed in the first section of this chapter, there are many and varying accounts and claims about the spatiality of auditory perceptual experience. However, in light of the considerations of the previous section, we have the grounds to call into doubt whether such spatial considerations succeed in showing that we may be auditorily presented with material bodies. Since there are forms of spatial sensitivity independent of presentation of material bodies, we may turn to consider whether forms of auditory spatial sensitivity do ever suffice for presentation of material bodies. Material bodies are spatially conceived as three-dimensionally extended bodies. In this section, I argue that we may not be auditorily presented with three-dimensional spatial extension. Hence, we may not be auditorily presented with material bodies as spatially conceived.

A route from distal, phenomenological, spatial considerations has led some to the conclusion that the objects of auditory perceptual experience are ordinary, material bodies. A specific example of such strategy goes from auditory distal presentation of sounds to presentation of material bodies via Occam's razor. Let us then first consider distal, spatial grounds upon which conclusions about the objects of auditory perceptual experience are built.

O'Callaghan (2010) maintains that sounds are experienced as occupying relatively stable, distal positions. O'Callaghan (2010) argues that hearing provides information about the location of things in our environment by presenting sounds as located. For instance, you hear an object dropping to your left because you hear the location of its sound. According to O'Callaghan, in order to provide locational information about the objects in our surrounding, sounds must themselves be experienced as located. O'Callaghan position as to the ontological relation between sounds and sources is that these are related in a part-whole relationship, whereby we hear the location of the keys in virtue of hearing the location of the sound that they make.

⁵¹ Notice that at the start, in chapter 1, I have pointed out that the issues considered in this thesis cannot be solved by thesis about the nature of the things that we hear. Notice that what I am doing here is considering what it is that we hear from phenomenological considerations. So, the approach is still relevant to the question what we can tell on the basis of what we are presented with.

Casati, Di Bona, and Dokic (2013) disagree as to the ontological relationship between sounds and sources and appeal to Occam's razor to reconsider O'Callaghan's mereological position. Occam's razor is, in essence, a strategy from economy with respect to how many entities are posited. As, when two things compete for the same property, one may reduce the number of things one posits. In general, appeal to this strategy may bring to light that there is in fact just one entity that needs to be posited. Casati, Di Bona, and Dokic (2013) argue that sound is not a proper part of a distinct event that is its source, but it is identical with the event source. There is no difference between hearing the sound and hearing the event source, as there is no difference between the sound and the event source. Appeal to Occam's razor may at first seem like a cogent move once one is onboard with O'Callaghan that we hear sounds as located. As sounds and sources may compete for what we hear as located, it may be tempting to conclude that we hear one and the same object.

However, we may notice that such initial spatial considerations would anyway not suffice for presentation of material bodies. Material bodies are conceived as three-dimensionally extended bodies. For when we consider how things appear in auditory perceptual experience, we do not seem to be presented with three-dimensionally extended matter. While we may concede that what we are presented with in auditory perceptual experience may appear located, it does not appear three-dimensionally extended. Hence, it is not possible to reduce what we are presented with to material bodies.

The key is to draw a distinction between two kinds of phenomenological considerations regarding location: attributing or identifying places, on the one hand, and perceiving something as taking up three-dimensional space, on the other. Consider the following distinction drawn by Malpas,

I do not mean by 'location,' 'locality', but 'the act of locating', and by 'the act of locating' I do not mean 'the act of establishing in a place', but 'the act of discovering the place of'. Even so 'location' is misleading because it implies that there is such a thing as discovering the place of sounds. Since sounds do not have places there is no such act.

Malpas, 1965, p.131

Malpas notices an equivocation in the meaning of location for what concerns auditory experience: the difference between 'the act of establishing in a place' and 'the act of discovering the place of.' While we are capable of assigning places to the things that we hear,

we are not capable of discovering their places, since we are not capable of perceiving them as *taking up* space.

Nudds (2001) observes differences between the internal structure of vision and audition. While in vision we see things as occupying a region of space, in audition we do not hear things as standing in any relation with the space they may occupy (Nudds, 2001, p.213-214). Following a remark from Martin (1992) about our ability to visual perceive empty regions of space, Nudds (2001) observes that in audition we cannot be aware of a space within which things could be located, and, in this sense, we cannot perceive things as taking up space.⁵²

In a similar vein, Broad (1952) writes:

‘There is the following important phenomenological difference between hearing a sound and seeing a flash. It would no doubt be quite usual to say "That flash *comes from* the lighthouse," just as we say "That sound *comes from* the clock." But there is this difference. The flash is literally seen as an occurrence of a certain colour within a *limited region remote from* the percipient's body. It may even be seen as having a definite shape and size, as, e.g., in the case of seeing a flash of fork-lightning. But the noise is not literally heard as the occurrence of a certain sound-quality within a limited region remote from the percipient's body. It certainly is not heard as having any shape or size. It seems to be heard as *coming to* one from a certain direction, and it seems to be thought of as pervading with various degrees of intensity the whole of an indefinitely large region sur- rounding the centre from which it emanates.

...

We may sum this up as follows. In its purely phenomenological aspect *seeing* is ostensibly *saltatory*. It seems to leap the spatial gap between the percipient's body and a remote region of space. Then, again, it is ostensibly *prehensive* of the surfaces of distant bodies as coloured and extended, and of external events as colour-occurrences *localized* in remote regions of space. In its purely phenomenological aspect *hearing* is

⁵² The explanation that Nudds (2001) provides for this phenomenological aspect of auditory perceptual experience is that our auditory sense, unlike vision, lacks a spatial field. However, in light of considerations from Burge and Campbell explored above, we do not need to accept this explanation. The thesis that spatial sensitivity needs not necessarily depend on material bodies provides argumentative grounds to posit that it may be possible to perceive a spatial field without perceiving material bodies. We may thus take the thesis that we do not appear to be presented with matter taking up space to merely suggest that we are not presented with three-dimensional bodies.

ostensibly prehensive, not of bodies, but only of events or processes as occurrences of sound-qualities. It is not ostensibly saltatory, for these events or processes are not heard as localized in remote restricted regions of space. They are heard rather as emanating from remote centres and pervading with diminishing intensity the surrounding space.

Broad, 1952, p.5

We cannot be aware of sounds as occurring, to quote Broad again (1952), ‘within a limited region remote from the percipient’s body. (A sound) certainly is not heard as having any shape or size’ (p.5). There is a difference between identifying a location on the basis of an audible feature, be that a sound or an audible quality, and auditorily identifying a three-dimensionally extended particular. Whereas we could, in principle, identify place on the basis of audible features, or use audible features as landmarks for movement and action, it does not appear to us that we are auditorily presented with particulars that are three-dimensionally extended in space. So, we lack the relevant phenomenological considerations for presentation of material bodies.

In auditory perceptual experience, we do not appear to be presented with things taking up space or with anything three-dimensionally extended. The spatial aspect of auditory perceptual experience does not suffice for presentation of material bodies. Since we cannot, based on spatial considerations alone, conclude that we are auditorily presented with three-dimensional extended matter, we lack spatial auditory phenomenological grounds for presentation of material bodies.

Conclusions

In the previous chapter, I argued that Brewer provides a cogent solution to Hume’s scepticism about the idea of continued existence unperceived. In essence, as we are evidently presented with three-dimensionally extended material bodies, we are evidently presented with formal conditions for perceptual experience. We may, hence, legitimately derive the idea of continued existence unperceived from experience. For what concerns the auditory case, insofar as we do not appear to be presented with three-dimensionally extended bodies, we do not appear to be presented with material bodies. Hence, it seems not to be possible to exploit Brewer’s solution to Hume’s scepticism in the auditory case.

While here I have focused on a strategy from spatial presentation to presentation of material bodies, there are several other arguments for hearing so called sound sources. Some insist that we do hear source, for that is what our taxonomies as well as what our ability to demonstratively refer to sources on the basis of auditory experience suggest. However, if we can't get there from spatial considerations, what is left to this claim? What phenomenology, if any, may support the thesis that we are presented with material bodies? The conclusion from three-dimensional extended matter to presentation of material bodies, just relies on extension. Whereas focus on spatiality cannot result into a claim that we are auditorily presented with material bodies, in the course of the next few chapters, I argue that our conception of matter does encompass what we are presented with in auditory perceptual experience.

Chapter 4

Against Indirect Auditory Perception

I can hear kids shouting in the playground, someone climbing up the stairs, my neighbour cutting the grass next door, a car driving off my street, and so on. It is common to report of the objects that we hear and the events in which they participate. Not only do we commonly report that we hear ordinary objects and the events in which they participate, but we also appear to act on the basis of hearing objects and events in which they participate. As when, for instance, you pull over the car as you hear an ambulance on the way, or you go to the door as you hear the postman approaching. Yet, this may seem at odds with the claim explored in the previous chapter that we may not ever be auditorily presented with material bodies, for we are not auditorily presented with three-dimensionally extended matter. The aim of this chapter is to begin to defuse this claim by arguing that, in at least some cases of auditory perceptual experience, not only are we presented with material bodies, but this is apparent to us in experience.

We may first observe that having previously motivated the claim that we may not ever be auditorily presented with material bodies paves the way for a view about indirect auditory perception of material bodies. One reaction to this claim is to maintain that while we are not in fact ever directly presented with material bodies, we are presented with sounds in virtue of which we may indirectly perceive material bodies. The aim of this chapter is to defeat this indirect response while beginning to defuse the claim that we are not ever auditorily presented with material bodies. I will present examples of cases of hearing and I will argue that the indirect view does not do justice to a difference in the role that experience plays in some of the cases that I consider. Essentially, in at least some cases of hearing, in contrast to others, there is an intelligible link between what one may truthfully hear and what is present in auditory perceptual experience. I argue that, in order to do justice to this difference across cases of hearing bodies, we ought to allow that there are at least some cases of auditory perceptual experience in which we are indeed presented with material bodies. While in this chapter I argue that in some cases of auditory perceptual experience we are presented with material bodies, in chapter five and six, I will look at our conception of materiality and argue that it is in fact suited to encompass the objects of at least some cases of auditory perceptual experience.

Scepticism and the Indirect Theorist

I used to live in Leamington Spa and, sometimes, especially at night, cars with modified engines would drive down the Parade. These machines are loud, aggressive and they hardly go unnoticed. I got accustomed to what they sound like and, in time, I learnt to recognise these cars upon hearing them. Despite the given differences that there might be between one modified engine and another – I am hardly a connoisseur – having so often undergone the relevant experiences, one could say that I have a grasp of some generality that characterises the engines of all or most of these cars.⁵³ A natural question arises as to why exactly it may be right to say that I hear cars with modified engines whenever I undergo the relevant auditory experiences.

Without aiming to provide an exhaustive list, it is possible to broadly distinguish between two kinds of approaches. One could claim that insofar as experience is essentially a relation with environmental elements, including ordinary material bodies, a subject is presented with, or encounters, these very objects in experience. Accordingly, it is in virtue of the fact that, undergoing the relevant auditory perceptual experience, I stand in a perceptual relation with a car with a modified engine, that I can hear a car with a modified engine. However, while it seems commonsensical to grant this in a corresponding visual case, the auditory case seems different. That is, in vision many would find it commonsensical to say that I can see the car because I am visually presented with it. In the auditory case, by contrast, we may not as easily grant that we are presented with the objects that we may truthfully hear. In the course of the previous three chapters, I have developed a sceptical view about auditory perceptual experience according to which we may not ever be auditorily presented with ordinary, three-dimensionally extended bodies, like cars. From the perspective of this view, the thesis that I hear the car because it is auditorily present is not tenable.

Essentially, as explored in the previous chapter, a sceptic would claim that we may not ever be auditorily presented with ordinary material bodies, because we are not auditorily presented with three-dimensionally extended matter. In the auditory experience that I undergo whenever I report that I hear a car with a modified engine, I do not seem to be presented in experience with a three-dimensional body or an object occupying space. So long as I do not seem to be presented with a three-dimensionally extended body, for all I could tell

⁵³ By generality, I mean that *ceteris paribus* I reliably capable of recognizing such cars upon hearing them.

from experience my auditory experience cannot consist in an encounter with an ordinary, material body.

To briefly reiterate, in the course of the previous three chapters, I have looked at a form of scepticism from Hume about whether the idea of continued existence unperceived may legitimately originate in experience. Having considered two standard ways of rejecting scepticism in non-auditory cases, I have pointed out that they centre around presentation of continuous, bounded, three-dimensional bodies. Responses to Humean scepticism standardly appeal to spatial aspects of material bodies to explain how the idea that we are presented with bodies continuing to exist unperceived may be legitimately formed in experience. Brewer's (2020, 2021) solution, in particular, centres around the idea that we are presented with material bodies and the presence of relevant enabling conditions for perception. Having then considered Strawson's thesis that purely auditory experience is non-spatial, I have motivated a thesis according to which we may not be auditorily presented with material bodies insofar as we are not presented with three-dimensionally extended matter. So long as we are not auditorily presented with three-dimensional bodies, we lack, in the auditory case, standard means to address Humean scepticism and argue that what is present in auditory perceptual experience may legitimately give rise to the idea of continued existence unperceived. Following this discussion, some may say that, so long as, upon hearing a car with a modified engine, we would not be auditorily presented with a three-dimensionally extended body, it would not be right to say that we are auditorily presented with an ordinary material body or, in this case, with a car with a modified engine. In short, it would not be right to say that one hears a car insofar as one is auditorily presented with a car.

Yet, we do commonly report that we hear ordinary material bodies and the events in which they participate, such as the keys jingling, the baby crying, the cars driving down the Parade. These reports, which we commonly, truthfully, make, may seem to be at clash with the sceptical view that we are not auditorily presented with material bodies. However, they are not if one adopts an indirect theory about auditory perception. The indirect theorist would seize the opportunity – so to say – and argue that whereas all that we are ever presented with in auditory perceptual experience are not bodies, but just sounds, by being auditorily presented with sounds, we can indirectly hear objects, such as souped-up cars. So, while we are not ever, directly, auditorily presented with a car, but only with a sound, we may truthfully, indirectly hear a car.

So, we come to the second approach to explain why exactly it may be right to say that I hear cars with modified engines whenever I undergo the relevant auditory experiences, that

is, the indirect approach. While we commonly report that we hear ordinary, material ordinary bodies and events in which they participate, according to some, the only objects of auditory perceptual experience are sounds. Proponents of this view maintain that the only objects of auditory perceptual experience are sounds, distinct entities from ordinary material bodies or events. Despite the fact that, accordingly, a proper characterization of one's auditory perceptual experience only cites the sounds that one hears, proponents of the indirect view hold that there is a sense in which we nonetheless correctly report that we hear ordinary material bodies and the events in which they participate. That is, *ceteris paribus*, whenever I report that I hear a car with a modified engine, although all that I ever auditorily experience is a sound, it is true, and hence right to say, that I hear a car with a modified engine. For, while all I auditorily perceptually experience are sounds, I indirectly hear ordinary, material bodies. In what follows, I will explain in more detail what this sense of indirectly hearing ordinary, material bodies, involves, by drawing examples of this view from the literature.

It is possible to find some evidence of a similarly oriented view in Broad (1952). Commenting on how any 'unsophisticated percipient' would describe what they hear, Broad asserts,

It is about equally common to speak of hearing a body and of hearing a sound. Thus, *e.g.*, one can say: 'I hear Big Ben' and 'I hear a series of booming noises.' Now in this case even the plainest of plain men would admit, with very little pressure, that when he says 'I am hearing Big Ben' this is short for what would be more fully expressed by saying 'I am hearing Big Ben striking.' With very little more pressure he would admit that all that he literally hears is a series of booming noises of a certain kind. He says that he hears Big Ben striking, because he believes or takes for granted that these sounds emanate from a certain bell as a result of a certain rhythmic process going on in it. In general I think that common-sense would readily accept the following translation of such sentences as 'I am hearing so-and-so,' where 'so-and-so' is a name or a description of a body. Such sentences, it would agree, are equivalent to: 'I am hearing such and such a noise, and I take it to be coming from the body so-and-so.'

Broad, 1952, p.4

Broad (1952) points to the fact that we commonly report what we hear in terms of the names or descriptions of bodies. However, Broad maintains that speaking of hearing bodies, that is, citing ‘a name or a description of a body’ in expressing what we hear, is genuinely only a manner of speaking and should not be taken literally. By contrast, Broad holds that all that we literally hear are ‘booming noises’ or, more generally, sounds of a certain kind.

Broad suggests that we report hearing bodies when we do not carefully express the meaning of what we say. However, if prompted to do so, we would readily adjust what we say to correctly express what we mean. As Broad explains how we would amend a report of the sort, Broad first quickly moves from talk of hearing bodies to putting this in terms of an activity or an occurrence involving given bodies. Broad states that ‘hearing the Big Ben’ is merely short for ‘hearing the Big Ben striking’, as if mixing up hearing a body with hearing an occurrence involving a body would not even be a confusion that we would be commonly thrown into.⁵⁴ So, Broad does not ponder on the possibility that hearing a body is a proper expression of what we hear, over reporting hearing an occurrence involving a body.⁵⁵ Broad seems rather intent on correcting any manner of speaking involving hearing bodies, be as individuals or as involved in an occurrence.

To Broad, whenever I report hearing Big Ben, which is just short for reporting hearing it is striking, what I literally mean is that ‘I am hearing such and such a noise, and I take it to be coming from the body so-and-so’—whereby ‘so-and-so’ is the name or description of a body. The literal meaning of expressions involving hearing bodies is constitutively dependent on hearing a sound plus some belief to the effect that I may cite a given body in what I say that I hear. What we actually mean to say, when we say that we hear bodies, is that we hear sounds and we take them to come from a certain body. So, when I say I hear Big Ben striking I mean that I hear a given sound and I believe that it is coming from Big Ben. Essentially, this account of hearing bodies consists in hearing sounds plus a belief that a sound comes from a given body.

⁵⁴ I understand reporting hearing a body, by citing a description, rather than a name, to be something of the like of ‘I hear the old, gothic tower in Westminster’ to refer to what goes by the name ‘Big Ben’. However, I raise a side-question as to whether Broad may understand expressions such as ‘Big Ben striking’ or ‘dog barking’ to be descriptions of bodies and considers ‘hearing the Big Ben’ short for what a description would involve. That may explain why Broad appears, in this passage, to attribute no relevance to whether we report hearing a body or an occurrence, as, according to this reading, either would be forms of citing a body, i.e. by name or by description, whose meanings Broad aims to make explicit.

⁵⁵ I consider later whether auditory perceptual experience may be more suited to capture the materiality of bodies as they are involved in interactions, rather than as individuals.

Notice a complication with this reading. Broad (1952) states that expressions of the sort of 'I am hearing Big Ben' and 'I am hearing a noise and I take it to be coming from a given body' are equivalent. Yet, any two equivalent sentences are both true in all possible situations. So, it is not possible to maintain that a sentence is false while it is equivalent to a true sentence. However, one should read Broad as claiming that the literal *meaning* of any sentence such as 'I hear body x' is equivalent to the meaning of any sentence such as 'I hear a sound and I believe it comes from body x'. In other words, Broad can be read as arguing that 'hearing Big Ben' is true just in case its meaning is equivalent to the meaning of 'I hear a sound and I believe it comes from body x'.

Assuming this is the correct reading of Broad's view, at least as outlined in the extract above, some may notice a difficulty with it. According to this thesis, it is true that I hear Big Ben just in case I hear a sound and I believe that it comes from Big Ben. Notice that the thesis would allow that it would be true that I hear Big Ben while I *falsely* believe that a sound, which I do hear, is coming from Big Ben. In other words, it is built in the account that it is correct to hold that we hear things so long as we have a relevant belief, even in cases when the belief is false. Here one may consider whether to supplement the account with some truth/success conditions. Accordingly, one may hold that it is true that I hear Big Ben when I hear a sound, plus I believe that the sound comes from Big Ben, plus it is the case that the sound comes from Big Ben.⁵⁶ Or one may simply insist with Broad on the claim that hearing bodies is no more than hearing sounds and holding some beliefs about some bodies and those sounds. According to this alternative, when one says one hears Big Ben one only means to say that one hears a sound and one believes that it is coming from Big Ben without any commitment to whether the sound is actually coming from Big Ben.⁵⁷ Either way, I consider this to be literature evidence for a version of an indirect account of auditory perceptual experience. Although the passage above is not strictly concerned with perceptual experience

⁵⁶ Let us briefly considered an objection from Jackson (1997) to Berkeley, which may apply here too. Jackson (1997) accuses Berkeley (1713) – and account from Armstrong inspired from Berkeley's view – of mixing up hearing with believing that one hears. Essentially, Jackson points to the fact that it may be true that one hears a coach regardless of what one believes that one hears. So, it would be wrong to claim that it is true that I hear a coach just in case I believe that there is a coach based on the sound that I hear. We may grant this point and pose a question as to whether the fact that it is true that I heard a coach – say because it is true that there is a coach where the sound I perceive comes from – suffices to explain a report that I hear a coach. Perhaps so long as we intend to explain how we report that we hear an object, we ought to include in the account an element a subject may report.

⁵⁷ In so far as one would not be committed to whether it is true or not that a sound comes from a given body, one may then consider conditions on hearing bodies to include perceiving a sound plus making a guess about its origins, rather than holding a belief.

(since hearing bodies involves having a relevant belief), it still counts as a version of an indirect theory according to which while we are only auditorily presented with sounds it is in some sense true that we hear bodies.

For Broad, the truth of claims to hear bodies depends on having a certain relevant belief about where a sound is coming from. Again, Broad holds that all that we literally hear are ‘booming noises’ or, more generally, sounds of a certain kind, whereas citing bodies in what we say that we hear consists in having a certain relevant belief about where the sounds that we perceive are coming from. As Broad (1952) states, ‘he hears Big Ben striking, because he believes or takes for granted that these sounds emanate from a certain bell as a result of a certain rhythmic process going on in it’. In this sense, hearing, either, say, Big Ben or Big Ben striking, can be understood as the product of a kind of inferential process. That is, one perceives sounds and, given that one also has a story of how sounds may come from bodies, one reaches the conclusion that one hears a given body insofar as it is thus related with the sound. I now further explore the indirect view by looking at evidence for its adoption in Berkeley (1713).

According to Berkeley’s (1713), sounds – which Berkeley considers to be sensible qualities – are among the immediate objects of the senses. To sensible qualities, like sounds, ideas are associated, whereby, at least in some cases, past experience is crucial to this association:

I grant we may in one acceptance be said to perceive sensible things mediately by sense: that is, when from a frequently perceived connection, the immediate perception of ideas by one sense suggests to the mind others perhaps belonging to another sense, which are usually connected with them. For instance, 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. It is nevertheless evident, that in truth and strictness, nothing can be heard but sound: and the coach is not then properly perceived by sense, but suggested from experience. So likewise when we are said to see a red-hot bar of iron; the solidity and the heat of the iron are not the objects of sight, but suggested to the imagination by the colour and figure, which are properly perceived by that sense.⁵⁸

⁵⁸ This passage from the *Dialogues* reports part of an exchange between Hylas and Philonous. It should be noted that it is not obvious that what Berkeley writes via Philonous reflects Berkeley’s view. So, while I use this

The passage presents the case of hearing a coach as a case of perceiving an object mediately by sense. While, ‘in truth and strictness’, all you can hear is a sound, you can be said to hear a coach in the sense of mediately perceiving it. Due to a frequently experienced connection – or more minimally an experienced connection – between a given sound and a coach, while all you can hear is a sound, the idea of a coach is suggested from experience.⁵⁹ Let us first notice, at least in passing, an ambiguity as to whether it is experience of a connection between a sound and a coach or experience of a sound to suggest the idea of a coach. What follows in the passage above suggests that the claim is that an object may suggest to the mind another object – as when solidity and heat are suggested by colour and figure. So, we may read the passage as claiming that experience of a sound may suggest the idea of a coach due to a previously experienced connection between the two. So, one can be said to hear an object, like a coach, in the sense of mediately perceiving it. While in ‘truth and strictness’ all one hears is a sound, a coach is mediately perceived or suggested from experience of a sound, due to a previously experienced connection.

Any given thing is said to be mediately perceived when it is suggested to the mind by what is immediately perceived. The passage suggests it might so happen that what is suggested is an idea of an object that ‘belongs to’ another sense. The passage alludes to the fact that mediate perception may involve a case of a cross between sense modalities. Where, in accordance with the Aristotelian thesis, any given modality is said to have a proper object, perceiving a proper object may suggest to the mind another, which is not its proper object, and which may be the proper object of another modality. While sounds are considered to be both the proper objects of audition and what is immediately perceived whenever I am said to hear, say, a coach, we may likewise mediately see the solidity and the heat of a bar of iron by seeing its colour and figure. So, for instance, we may also mediately perceive an object of touch by immediately perceive the proper objects of sight – or so we are told in the passage above.

There is a further question as to how the thesis that we may only mediately perceive a coach is related to Berkeley’s Idealism or the thesis that may be taken to entail that ordinary, material bodies, like a coach, are, in some sense, not ever perceivable. That is, we may ask

passage for evidence of an indirect thesis about auditory perception of ordinary material objects, like coaches, I do not assume that it will perfectly match Berkeley’s view.

⁵⁹ See Rickless (2013) for discussion of a technical use of ‘suggested’.

how the immediate/mediate distinction and a commitment to the Aristotelian thesis mentioned above sit with Berkeley's Idealism. We may understand the mediate/immediate distinction precisely to serve Idealism in that a coach may only be said to be mediately perceived while, in truth and strictness, one can only hear a sound. The Aristotelian thesis may further serve idealism in that only the proper objects of perception can be immediately perceived. So, only a sound can be immediately perceived by the auditory sense because sound is the proper object of audition, whereas an ordinary material body, like a coach, is not. Ultimately, it would follow from Idealism that, with reference to none of the sensory modalities, we may be said to immediately perceive a coach, or any material body. This leaves it open whether there are further reasons or commitments to Idealism to the effect that a coach, like any ordinary material thing, is not perceivable, which are independent of whether a given thing is a proper object of a given modality. However, because it is not my place to dwell on an exegesis of Berkeley, nor would I want to take the place of Hylas in replying to Philonous, for the purposes of the present discussion, I leave aside whether Berkeley's motivations for the claim that hearing bodies is a case of mediate perception, may have crucially to do with a view of proper objects of the senses or with other reasons to the effect that material bodies are never immediately perceived, in any of the modalities.⁶⁰

So, we are told that whereas in truth and strictness all we may hear are sounds, experience of sounds may suggest the idea of a body, whereby past experience is said to play some role. My case of hearing a car with a modified engine, for instance, would amount to undergoing an auditory experience of a sound suggesting to the mind the idea of a souped-up car, due to, quoting the passage again, 'a frequently perceived connection.' More generally, experience of a sound suggests the idea of a body, thereby associating a body to a sound, because one has experienced – perhaps frequently – a connection between the two. Notice that, the sheer claim that a body is associated to a sound due to an experienced connection does not even begin to explain how a sound and a body are connected up in the first place. The fact that I may have made this association before does not itself explain how the idea of a body was associated to (that of) a sound in the first place.⁶¹ In effect, all that Philonous may

⁶⁰ On an alternative reading, we may understand Berkeley to hold that we do perceive ordinary bodies and may do so immediately if ordinary bodies are nothing other than collections of sensible ideas. Even on this re-interpreted notion of a material body, we could not immediately hear a coach, because the idea of a coach is constituted by qualities perceived through vision and touch, so the sound of the coach can only suggest the idea of a coach and would not count as perception of it. However, all of this is subject to a great deal of interpretative debate.

⁶¹ I pose a further question as to whether a frequently perceived connection may suffice to create an object of experience in its own. In that case past experience of this combined object may explain how now that I hear just

mean is that ever since a given association was made in past experience, the idea of a body may continue to be associated to a sound just out of habit – leaving it possibly open how the association was made in the first place.

A difference between the two passages from Berkeley (1713) and Broad (1952) that I looked at thus far is that, according to my reading, one holds that sounds are connected up with other bodies populating the world due to some story of how this is the case: I hear ‘a series of booming noises of a certain kind,’ and a story of how ‘these sounds emanate from a certain bell as a result of a certain rhythmic process going on in it’ enables me to say that I hear Big Ben is striking. By contrast, the claim that experience of a sounds suggests the idea of a given body, may involve a simple application of a concept or idea on the basis of experience of a sound.⁶² Rather than a story involving premises that lead to a conclusion about where a sound is coming from, a reading of the passage from Berkeley (1713) is that hearing a body involves a simple application of an idea, a product of the fact that I have often made this association. We could say that this may capture the *seemingly* immediate manner in which we appear to refer to bodies on the basis of auditory experience.⁶³ Except from when we actively try to work out what is going on from what we hear, we often do not spend time reasoning – at least from all we could tell – about what object or what event we hear.

Given a thesis that we may not ever be presented with material bodies in auditory perceptual experience insofar as we are not presented with three-dimensionally extended matter, and given that, as a matter of fact, we do make true reports about bodies in the world

a sound and a coach is not available to me I can associate the sound to a coach because I have experienced the two as a combined object of experience.

⁶² Now, while Berkeley takes a suggestion to be different from an inference, it is a further philosophical question that I will leave open whether it is always right to distinguish an inference from a suggestion or whether the claim that the idea of a given material body or event is ‘suggested’ by experience should also, to some extent, be understood as a kind of inference. In other words, there is a question as to whether mediate perception, which occurs in cases in which the application of a given idea or concept is suggested by experience of sounds, involves a type of inference.

⁶³ In contrast to what I have said so far, some read Berkeley’s immediate-mediate distinction as concerning a sub-personal process or psychological mechanism that enables perceptual experience, rather than perceptual experience itself (Rickless, 2013; Winkler, 1989; Atherton, 1990; Pappas, 2000). Those who favour this reading may consider it to be compatible with a view of perceptual experience according to which bodies are perceptually present in auditory experience. Accordingly, associating a body to a sound would not be something a subject does, but rather a sub-personal process in virtue of which a subject may be perceptually presented with bodies. I think that even if that were the correct reading, it would not result in the thesis that we have perceptual experience of particular bodies. Notice, in fact, that all the model requires is that experience of a sound suggests the idea of a body. There is no requirement that experience of a sound suggests the idea of the very coach outside of me. So, the only cognitive contact that I have, according to this berkeleyan account, is contact that I have to a sound which is associated to a general idea of a body. Perhaps one way to characterise the account is that it provides an explanation of our capacity to recognise things by hearing sounds: the sound suggests (via a sub-personal process) the idea of a car, so I can be said to recognise the sound of a car.

via audition and we do act on their basis, the indirect theorist offers an account accommodating both of these claims. As I have argued in the previous chapter, we are not auditorily presented with spatially extended bodies of the sort that we encounter in vision. The indirect theorist captures this claim by holding that we are not ever directly presented with material bodies, but only with sounds, distinct entities from ordinary, spatially extended, material bodies. At the same time, we want to say that we may truthfully hear material bodies: it would be absurd to say that whenever I hear a dog barking or a car with a modified engine I suffer a systematic error. In a sense, an error theory about hearing bodies seems out of the picture, for we do want to accommodate the claim that there is a sense in which it may be true to hear a body. The indirect theorist does justice to the claim that, while we are not auditorily presented in experience with material bodies, we may nonetheless correctly report that we hear ordinary material bodies as we may indirectly hear them on the basis of auditory perceptual experience of sounds. What does to indirectly hear bodies consist in? I have looked at examples of an indirect proposal, according to which I may hear ordinary bodies on the basis of being auditorily presented with sounds by associating a body with a sound, or as I hold a corresponding belief that the sound with which I am presented comes from a given body. In general, an indirect theory just captures a sense in which I may truthfully report hearing bodies whilst not being directly auditorily presented with them. We are not auditorily presented with material bodies in experience and, yet, we do commonly report that we hear them. The solution of the indirect theorist is not to deny the correctness of such report, but treat them as true reports about our environment made on the basis of auditory perceptual experiences of sounds.

This is not an uncommon claim, or anything introduced *ad hoc* for the auditory case. It is possible to make a parallel to something that, I think, we would naturally hold for other sensory modalities. As we would not normally consider what we report seeing, or smelling, to be necessarily the object that constitutes the corresponding visual, or olfactory, experience. I could report that I smell lunch but only by smelling the smell, while lunch itself is not present in my olfactory experience.⁶⁴

⁶⁴ As a separate issue, we may notice that also in cases of epistemic seeing we would not commit to the thesis that the bodies involved in what we may be able to tell occurred are the very objects of the experience we undergo. *Seeing that* may be considered a form of epistemic seeing which is neutral as to what the constituent objects of visual perceptual experience are. Consider, relatedly, Dretske's (1969) account of epistemic seeing, seeing that a is F. Dretske (1969) distinguishes between primary and secondary epistemic seeing, distinguishing between 'cases where we see that b is P by seeing b itself, and the cases where we see that b is P without seeing b' (pp.79–80). So, in primary, but not in secondary seeing, one perceives that b is P by perceiving b itself. By contrast, there is an epistemic

In what follows, I will systematise some cases of auditory perceptual experience and argue that, whereas in some cases it is correct to say that we hear ordinary material bodies and that counts as no more than a true report about our environment, there are also cases in which we ought to accept that hearing bodies is a proper characterization of our auditory perceptual experiences, that is, that we are directly presented with material bodies.

Three cases

I hear a loud, high-pitched voice calling my name from a distance – there is my friend Antonia approaching. If I were an indirect theorist, as I have explained so far, I would say that I am able to hear Antonia calling my name because the loud, high-pitched tone of the sound of her voice prompted me to associate it with her or with a memory that I have of her. But do all cases of hearing bodies consist in no more than cases in which I may truthfully hear bodies based on perceptual experience of a sound? I argue that at least some cases of hearing bodies are cases in which we are directly auditorily presented with material bodies. As I explain below, in at least some cases of hearing, there is an intelligible link between what one may truthfully claim to hear and what is present in auditory perceptual experience. What best explains the presence of this intelligible link is that, in at least some cases, we are directly presented with material bodies. But let me take you there gradually. Let us consider the following three cases of hearing.

Scenario (1): The washing machine

Ned and David are at Ned's house. Suddenly they hear a beep. Ned, who is familiar with the environment – it's his house – can hear the washing machine finishing its cycle. David just hears a beep but cannot associate it with the washing machine finishing its cycle.

Scenario (2): The crunchy carrot

sense of seeing that does not require that we see the object b. More generally, there is no requirement that what I report that I see is the very constituent of my perceptual experience. Generally speaking, I could report something true about my environment based on a given sensory experience without the object of my report counting as the direct, constituent object of my sensory experience.

Tyler has lived all their life in an environment in which there are no carrots. Hence, Tyler has never eaten a carrot or heard anyone eating one. When Tyler moves to a place where people grow and eat carrots, for the first time Tyler has experience of someone eating a carrot. In time, undergoing the relevant auditory experience, Tyler is able to hear someone crunching a carrot.

Scenario (3): The bird

Matthew is an ornithologist. Susanna knows nothing about birds. As they walk in the forest, Matthew can recognise most, if not all the birds they hear singing; Susanna can only barely hear birds singing.

Let us first reflect on the cases above, leaving aside, for the time being, some of the individual circumstances of the subjects involved. Consider first the cases involved in the first and the second scenarios. You may notice that a beeping sound, in itself, says nothing of a washing machine finishing its cycle. Unless one takes a guess from the circumstances or one has previous beliefs or knowledge about the context, one would not be able to hear, from experience of the sound alone, as a consequence of what event in the world the beeping came about. You may hear the washing machine finishing its cycle because you have learnt what the beeping means – it beeps when it is finishing – not because you perceive the finishing of the washing machine. To be sure, it would be perfectly compatible with the experience of a beeping sound that anything electronic has produced it. However, elements of the event it might alert one of are not present in the experience of a beeping sound. It may be used to alert one of the washing-machine finishing its cycle, as well as of the oven or the air conditioning being switched on, or of there being water on the electric cooker – you get my point. Despite the fact that there is nothing in the sound itself that features elements of a washing machine finishing its cycle, it may be true that you hear this based on the beeping sound you perceive.

Let us turn to the second scenario. When hearing someone crunching a carrot, elements of the things involved in this episode that we may hear, appear – in some sense to be explained – intrinsic to the auditory experience that we undergo. Notice first that the phenomenally conscious experience that you undergo when hearing someone eating a fresh, crunchy carrot is strikingly, qualitatively different from that which you undergo when hearing someone eating a squishy, mushy banana. Think, also, of the qualitative differences in the auditory experiences that you undergo when hearing someone chewing a sponge cake versus

a tin of crackers. The auditory experiences that one undergoes when hearing a hard versus a soft object appear qualitatively different. Aspects of the material composition of the thing that is being eaten appear to make a qualitative difference, and, in this sense, appear intrinsic, to the perceptual experience that you undergo. So, we may expect that upon hearing someone crunching a carrot, not only may it be true that you hear this, but the crunchiness of the body involved in this episode is also apparent in the perceptual experience you undergo. We may, hence, observe that there is an intelligible link between what you may truthfully hear and the perceptual experience you undergo – a link that may be not be exploited in washing machine cases.

We may concede that cases tantamount to hearing the washing machine finishing its cycle upon perceiving a beeping sound, are cases in which one may truthfully hear the washing machine finishing its cycle, without the object of auditory perceptual experience being the washing machine or the episode in which it is involved – in accordance with the indirect thesis spelled out above. However, treating all cases of hearing bodies as indirect cases of hearing, in this fashion, may not enable us to distinguish such cases from cases like hearing someone eating a crunchy veggie, in which what we truthfully hear is intelligibly supported by the phenomenal experience that we undergo.

Consider a further example. Say that someone in the room opposite from yours drops a vase which breaks into pieces. When, from the opposite room, you ask them what happened, they try to cover it up by saying that they were just moving some furniture. However, you might not readily accept their explanation so long as you may find it apparent in the qualitative auditory experience that you underwent that something heavy fell and smashed to the floor. The sound of someone moving furniture bears no resemblance to the sound of a vase being dropped and breaking. Moreover, we may observe that the temporal unfolding of what you hear may suggest that something fell breaking into pieces rather than moved across the room. While you may not be prepared to say exactly what happened, it seems reasonable to claim that it may seem apparent to you in the auditory experience that you underwent, that ‘moving some furniture’ is not the correct characterisation of what was involved in the episode that took place in the opposite room from yours.

Arguably, in both the case of hearing someone eating a crunchy carrot and someone dropping and breaking a vase, the auditory experience that you undergo does seem to say something about the very interaction that took place. In this sense, not only may you truthfully hear someone eating a carrot based on what you perceive, but there is an intelligible link between what you truthfully hear and the perceptual experience that you

undergo. To the effect that the auditory experience that you undergo makes it in some sense apparent in experience what would be a true characterization of what happened.

We may draw on more examples to further elucidate the difference between these cases. Consider the auditory experiences one undergoes when hearing someone knocking the door versus someone buzzing. When hearing someone knocking versus hearing someone buzzing, we shall notice that the banging is present in experience in a way that the pressing of the buzzer is not. The buzzing sound, in isolation from its context, in itself says nothing of the event of which it may alert or inform one. While we may be in the position to hear someone at the door based on what we perceive, the buzzing sound itself features no element of the material episode that brought it about. The impatient person may press the buzz for longer, translating into a longer lasting buzzing noise. However, notice that there is no modulation to the electronic sound brought about by a person pressing the buzz. Which means that there is nothing intrinsic to the experience of a buzzing sound of the episode you may truthfully hear on this basis – someone pressing the buzz. By contrast, the experience that you undergo when hearing someone knocking appears to say something of the episode taking place. How hard a person knocks, whether the door is made of thin or thick wood, or, say, of a heavy metal, and so on, not only are environmental aspects that we may truthfully hear, but they also appear intrinsic to the auditory experience we undergo insofar we they modulate the auditory experience one undergoes. Generally speaking, there seems to be cases in which the auditory experience one undergoes matches, to say the least, the complexity of the event that one truthfully hears.

If I were an indirect theorist, here is the explanation that I would have at my disposal. An indirect theorist may hold that any case of hearing bodies and events in which they participate consists in a case in which perceptual experience of a sound prompts an association with a given object. Now, if the reader agrees that there is a difference between cases such as hearing the washing machine finishing its cycle on the basis of hearing a beeping sound and cases such as hearing someone crunching a carrot, the reader may begin to see that the explanation offered by the indirect theorist seems somewhat wanting, as it seems to leave something out. For, on the face of it, in some cases there is an intelligible link between the auditory experience that we undergo and what we may truthfully hear. That is, the experience we undergo makes the link to the object or event *intelligible*, rather than just a matter of brute association. This raises a question as to how such intelligible links between what we truthfully hear and the auditory experience that we undergo may be explained. My proposal is that such cases of hearing, in which aspects of the things that we may report

hearing appear intrinsic to the experience that we undergo, are just cases in which we are directly presented with material bodies. Would an indirect theorist be able to accommodate the presence of this intelligible link otherwise?

The indirect theorist offers an explanation of hearing bodies that would be committed to treat the cases analysed so far as equivalent. Let me proceed in steps. Do the experiences one undergoes hearing the washing machine finishing its cycle versus hearing someone eating a carrot prompt an association with the given episode involving a material body alike? Reflection on these cases suggests that in some cases of auditory perceptual experience we may be in the position to hear bodies interact on the basis of something intrinsic to the auditory experience that we undergo. We may hear the crunchiness of an object based on the experience we undergo when perceiving someone chewing it. By contrast, we may associate a washing machine finishing its cycle to a beeping sound without, however, being in the position to say anything about a washing machine itself or how it is involved in the episode one hears, just from the auditory experience of a beeping sound isolated from its context. So, there are cases in which aspects intrinsic to the auditory experience one undergoes may prompt an association with a material body in contrast to cases in which we may associate a sound to an event or an episode involving a material body without, however, anything intrinsic to experience of the sound saying anything of that event.

Under the indirect theory, any case of hearing bodies is a case in which one may truthfully hear a body by associating with the perceptual experience of a sound.⁶⁵ Notice that, in principle, any association that may result in truthfully hearing is permitted by the indirect theorist. As a matter of fact, I could truthfully hear the ambulance approaching based on perceptual experience of a given sound. At the same time, as I could dare to use the sound of the ambulance's siren as my wake-up alarm, I may truthfully hear the alarm going off based on auditory experience of the same sound. In effect, under the indirect view, so long as what I hear is true – say, as it tracks what is actually taking place in the world – it would be correct to associate a qualitatively similar sound with either an ambulance or with an alarm clock. It is right to allow that at times we do correctly make associations between sounds and objects, which, in themselves, seem to bear nothing to each other – just like in the alarm clock case or

⁶⁵ We need to allow that while it *could* be made, hearing objects may also just consist in an association without making a report on the basis of this association. There are cases in which we act on hearing objects and not just sounds. And we need to concede to the theory to accommodate them. So, the claim cannot be that a report is made anytime we hear a material thing, for we cannot presume that we only act on the basis of making reports. That is why the view needs to be understood as holding that 'a true report *could* be made'.

in the washing machine case above. However, the view cannot distinguish between cases in which aspects intrinsic to the auditory experience one undergoes make a given association intelligible and cases in which such association is not intelligible in experience. For, while the view acknowledges the liberty of truthfully associating the sound of the ambulance with an alarm clock, this very liberty implies that there is nothing in the model that constrains what comes in the association. Again, any association that may result in truthfully hearing what is going on is permitted under the indirect model. Effectively, this means that the indirect theorist cannot truly recognise the intelligibility-conferring role that auditory experience may play in some cases of hearing bodies.

The indirect model cannot recognise that, insofar as the auditory perceptual experience one undergoes may itself strike one as involving a given body or event, there is an intelligible link between given bodies or events and the experience that one undergoes. I may use the sound made by someone eating a crunchy carrot as my wake-up alarm (as obsessed as I am with this crunchy carrot example) and I may be in the position of hearing alarm ringing on the basis of my auditory perceptual experience of that sound. However, this does not explain away that the auditory perceptual experience that I undergo, in itself, may strike me as that which I would undergo when hearing someone crunching a carrot, and that there is nothing intrinsic of my alarm clock in the experience that I undergo. The indirect theory cannot accommodate the difference between cases in which truthfully hearing bodies is made intelligible by auditory perceptual experience and cases in which they may not. Again, whereas the generic beeping sound prompts Ned to hear the washing machine finishing its cycle, the character of a beeping sound exhibits nothing of the washing machine itself nor of it finishing its cycle. Maintaining that hearing bodies always consists in no more than truthfully hearing based on experience of a sound means to treat cases such as hearing the washing machine finishing its cycle and cases such as hearing someone crunching a carrot as tantamount. Essentially, the indirect theorist is unable to tell the difference between cases in which we may truthfully hear something based on an auditory experience and cases in which what we may truthfully hear is made intelligible by the very auditory experience we undergo.

On the one hand, the indirect theorist may protest that the claim is not merely that a sound prompts an association but rather than, in any case in which an association is made, it is the *character* of the sound that prompts it. Yet, how would they then explain the difference from the washing machine case in which there is nothing in the character of the sound to prompt the association? The question, of course, is rhetorical. They could not. They may begin to consider the more nuanced option, namely, that of holding that cases like that of the

washing machine, in which true hearing reports are made on the basis of perceiving a sound, are not strictly speaking cases that count as auditorily perceiving material bodies. However, it is difficult to see how they may use this claim to draw a contrast with cases like hearing someone eating a crunchy carrot – since, by definition, they also do not understand these cases to involve, strictly speaking, auditory perceptual experience of material bodies. In general, they are not allowed to draw the difference based on whether one is presented with material bodies or not. For, after all, at the core of the indirect theorist view is the claim that we are never presented with material bodies in auditory perceptual experience.

On the other hand, the indirect theorist could introduce a difference between auditory experiences in which the character of the sound itself may or may not enable one to hear what is happening. Yet, how far would the introduction of this distinction actually explain it without appealing to a claim that aspects of material bodies appear intrinsic to the experience we undergo? We would be left with the claim that, perhaps as a matter of fact, some sounds have qualities that themselves prompt an association with an object and some sounds do not. However, the reader will have noticed that we have moved away from the simple indirect theorist's claim that hearing material bodies and the events in which they participate consists in simply truthfully hearing what is happening via an associating an occurrence involving a body to experience of a sound. If the indirect theorist would go as far as conceding that there are differences in cases of hearing bodies given by the character of the sounds involved, it is now up to the reader to choose between a view that merely treats these differences as matters of fact and leaves it at that, and a view that promises to further explain why, in some cases, there is an intelligible explanation for hearing bodies on the basis of auditory perceptual experience.

How could we best capture the difference between the washing machine case and the crunchy carrot case? My proposal is to give up on the indirect thesis that all cases of hearing bodies are no more than cases in which experience of a sound prompts an association with a given episode involving a body. I propose that we accept that, in at least some cases, material bodies as they are involved in a given interaction are present in the auditory perceptual experience one undergoes. This is what makes sense of the fact that, on the face of it, in some cases, there is an intelligible link between how we may characterise what we hear and the very auditory perceptual experience we undergo.

Soteriou (2018) challenges the assumption that sounds are one *kind* of thing.⁶⁶ However, it is not my place to discuss the metaphysical commitments that come with my view.⁶⁷ All that I care to establish, at this stage, is that there is a sense in which it may be apparent to us that we are presented with material bodies – insofar as being auditorily presented with material bodies is what best accommodates an intelligible link between some of the auditory experiences we undergo and corresponding characterizations of what we hear involving bodies.

We may thereby account for cases such as hearing someone crunching a veggie as cases in which we are auditorily presented with material bodies involved in this episode. We accommodate the fact that what we hear based on the relevant auditory perceptual experience appear intrinsic to the experience that we undergo, for we are auditorily presented with material bodies involved in this episode. So, we may acknowledge the intelligible role that auditory perceptual experience plays in cases such as hearing someone crunching a veggie.

Let us look at the washing machine case again. Ned and David are both presented with a beeping sound. How is it that Ned is in the position of hearing the washing machine finishing its cycle, while David is not? Given that we would all agree that a beep sound is a generic, artificially produced sound, the character of the perceptual experience that one undergoes when presented with it would not itself strike one, independently of familiarity with one's environment, as a washing machine finishing its cycle. Although there is nothing of this episode intrinsic to the auditory perceptual experience that Ned undergoes, as Ned is familiar with the environment, Ned is able to hear it based on the experience Ned undergoes. Accordingly, it is reasonable to say that it is due to familiarity with the environment and relevant previous beliefs, that Ned may truthfully hear what is happening based on auditory experience, whereas David is not.

For a form of completeness, I also pointed to cases of hearing birds, to pose questions for further research. The bird case suggests that it is only the ornithologist who can hear what birds are singing and the ordinary hearer may just barely hear birds. While this may only count as a difference in what one is able to recognise, some may consider this as a case in which there is nothing in the character of the auditory experience that one undergoes that says

⁶⁶ See discussion in Soteriou's 'Sound and Illusion' and Nudds' 'The Unitary Nature of Sounds' in *Perceptual Ephemera* (2018).

⁶⁷ The reason why it is not my place to discuss further metaphysical commitments is that my inquiry is humane in style – I am interested in what we are able to tell on the basis of what we are presented with in experience. The direct view I defend is, in principle, compatible with a variety of different metaphysics of auditory perceptual experience.

anything about what birds are singing. However, I do not think that is necessarily the case. I eventually moved to London and on a sunny day in Camden Lock you can hear clear and loud lots of birds singing. Since, like Susanna, I know nothing about birds, I could not hear what birds were singing based on my auditory experience. However, in principle, one cannot rule out that a bird specialist could have not only immediately recognised what birds were singing – associating a sound with a bird – but also hear, based on the modulation of their auditory experience, what kind of physical body may be involved in episode taking place, say, a larger rather than a smaller bird.⁶⁸

Notice, also, that it is part of the crunchy carrot scenario that Tyler learns to hear episodes involving people crunching carrots only once Tyler has moved to an environment where such episodes occur, and so only once Tyler has had the opportunity to become familiar with them. This is to say that it is not a requirement of the direct view that one can hear material bodies involved in interactions without *any* previous grasp of what is involved. One needs to be familiar with any given event and the material bodies participating in order to be able to pick up on their audible aspects. The difference of this case, in contrast with others, is that what one truthfully hears does not *fully* depend on previous beliefs or knowledge about the context, for, insofar as one is directly auditorily presented with the given bodies, aspects of the episode heard appear intrinsic to the experience that one undergoes.

To quickly mention a possible worry, one may appeal to the case of registered sounds to reject that any auditory perceptual experience may present us with material bodies. The objection goes that insofar as it is possible to hear a sound as of a dog barking, say, in the absence of a dog barking, a qualitatively identical sound can exist in the absence of the material body with which it may be associated.⁶⁹ Accordingly, it would not ever be right to say that what we are presented with are material bodies. The indirect theorist may appeal to this claim to insist that whether it is right to say that one hears bodies ultimately depends on meeting the relevant truth/success conditions. However, the direct theorist needs not to disagree that whether one successfully perceives a material body involved in a given episode

⁶⁸ As I argue in the course of the next chapters, we are auditorily presented with material bodies for we are auditorily presented with bodies governed by forces. It is in virtue of this that we may be able to tell from auditory experience what the material composition of the bodies involved in the episodes that we hear is.

⁶⁹ If a perceptual experience that is qualitatively the same from the subject's perspective may be determined by a sound alone, then there is a sense in which all we hear are sounds and ordinary events do not determine the perceptual experience that we undergo. See discussion of a similar argument in Nudds (2018) and relatedly Martin (2016).

depends on whether the given truth or success conditions are met or on whether, say, one actually stands in a perceptual relation with the given bodies. *Ceteris paribus*, in some cases of auditory perceptual experience we are presented with material bodies involved in interactions and this is apparent in the auditory perceptual experiences that we undergo.⁷⁰

Let us take stock. I presented the indirect view as a view capable of capturing two claims, namely the sceptical claim that we are not ever auditorily presented with material bodies, and the claim that we may nonetheless commonly, truthfully report hearing bodies. At this stage, I am in the position of making an amendment. Dialectically, the indirect view may be considered to be a consequence of the sceptical claim but not a solution to it. In effect, it turns out that the indirect thesis is still significantly faced with this scepticism. Let me explain. I argued that the indirect theorist does not offer a satisfactory explanation of a difference in the role that auditory perceptual experience plays in different cases of hearing bodies. I pointed out that treating all cases of hearing bodies alike, the indirect view is unable to capture an intelligible link between auditory experience and characterising what we hear in terms of hearing bodies. This means that the indirect theorist is unable to provide a satisfactory account of how based on the very auditory experiences that we undergo we may believe that we are presented with material bodies. Hence, what may have initially seemed to be a motivation for the indirect theorist, is actually equally a problem for it. As I remarked at the outset, the direct alternative that we hear material bodies because we are auditorily presented with them may not seem tenable so long as, as argued in the previous chapter, we are not auditorily presented with three-dimensional bodies. However, it turns out that adopting an indirect theory to explain how we may truthfully hear material bodies, we would not be in a better position to deal with this scepticism. For, the indirect theorist does not explain how it is in virtue of the very auditory experience that we undergo that we may believe that we are presented with material bodies. The solution, then, may only be to attempt to refuse scepticism in the first place.

⁷⁰ When using the case of recordings to raise an objection to the direct view, it is important to specify, for the current purposes, whether it is an objection that is Humean or a Cartesian in spirit. To address Humean scepticism about whether we are ever auditorily presented with material bodies, it suffices to show that there are at least some cases in which we are presented with material bodies. In the next chapters, I fully address this Humean sceptical thesis by making a case for auditory perceptual experience of material bodies. However, the possibility of undergoing illusions of some type does not threaten this solution.

In rejecting the indirect approach to explaining what it means to hear material bodies, I have effectively begun to defuse the initial sceptical claim. I looked at cases of hearing bodies that are best understood as cases in which we are auditorily presented with material bodies, rather than cases in which a body and episode in which it is involved is merely associated to the experience of a sound. What best accommodates the presence of an intelligible link between auditory perceptual experience and truthfully hearing bodies is that in such cases we are directly auditorily presented with material bodies. We now face a challenge as to how to make sense of this claim, in the face of the thesis that we may not ever be auditorily presented with material bodies insofar as we are not auditorily presented with spatially extended matter. In fact, the sceptic may insist that insofar as we are not presented with three-dimensional bodies taking up space, we cannot hold that we are auditorily presented with objects of a material nature. So, the sceptic may somehow urge that we dismiss the apparent difference between some cases of auditory perceptual experience. I leave to the sceptic how this difference may be denied. The only approach I foresee that a sceptic may attempt to pursue, would be to essentially overlook the difference and insist on an indirect account, with the disadvantage of not being capable to offer an intelligible explanation of some cases of hearing bodies.

I pointed to the fact that, on the face of it, in some cases, aspects of ordinary material bodies that we may hear are intrinsic to the auditory perceptual experiences that we undergo.⁷¹ We thus face the challenge of providing an explanation of what such cases consist in exactly. I will meet this challenge in the course of the next two chapters.

To altogether defeat the sceptic, I take the following steps. In chapter five, I argue that our conception of materiality, in which a notion of force features, does, in principle, encompass the objects of auditory perceptual experience. In chapter six, I move on to consider how sensitivity to the presence of this condition for materiality accommodates that in some cases it is apparent to us that we are auditorily presented with material bodies. There, I will return to a set of cases of auditory perceptual experience, tantamount to that of the crunchy carrot, to explain in exactly what sense, in such cases, we are sensitive to the presence of a condition for the materiality of the objects that we hear. Finally, in chapter seven, I consider how auditory perceptual experience of material bodies, so conceived, may

⁷¹ By that, however, I do not intend to defend a rich account of auditory perceptual experience, according to which crunchiness, say, is directly auditorily perceivable. Cf 'Kinds' in Susanna Siegel (2011) *The Contents of Visual Experience*, which, using the method of phenomenal contrast, argues that kind properties are represented in visual experience.

unable to us to legitimately form, in experience, the idea that what we are presented with continues to exist unperceived – thereby addressing scepticism about continued existence unperceived as it concerns the auditory.

Chapter 5

Material Things and the Notion of Force

We commonly report hearing ordinary material bodies and the episodes in which they participate. These include instances of mundane, everyday episodes, such as the door slamming, the kids shouting down the playground, the pen rolling on the table, the person next to me coughing, and so on. As I have argued in the previous chapter, some cases of hearing appear to amount to more than merely cases in which it may be truthfully said to hear ordinary, material bodies. For, aspects of what we hear appear intrinsic to the perceptual experience that we undergo. This is the case, for instance, of hearing someone eating a crunchy veggie, in contrast to cases such as hearing the ambulance's siren approaching. In the face of the thesis that we are not auditorily presented with three-dimensionally extended matter, how, if at all, may we accommodate that those instances, in which aspects of the material bodies that we hear appear intrinsic to our auditory experience, do in fact evidently involve presentation of material bodies? In this chapter, I wish to present a criterion suitable to accommodate the idea that in such cases of hearing bodies we are evidently, immediately presented with material bodies, despite not being evidently presented with three-dimensionally extended matter.

As a reminder, I have argued against a version of the indirect thesis – according to which hearing ordinary material bodies involves no more than hearing bodies by association with a presented sound – that it cannot do justice to an intelligible link between what we hear and the perceptual experience that we undergo. I have argued that the thesis that in such cases we are, in fact, immediately presented with material bodies, is what best accommodates the presence of this intelligible link. While this claim puts pressure on the indirect thesis, it might not fully persuade a sceptic. The sceptic argues that so long as in auditory experience it is not apparent that we are presented with three-dimensionally extended bodies, we may not maintain that in auditory experience it is apparent that we are presented with material bodies. I wish to resist the sceptic in two steps: by first – in the current chapter – providing a criterion for materiality that does not require reference to spatial extension; then defending the thesis – in the chapter that follows this – that in being auditorily sensitive to the presence of this criterion, we are auditorily immediately presented with material bodies.

I argue that our conception of matter features a notion of force, a power causing objects to change their states of motion, suitable to constitute a defining element of matter. Making sense of the overt behaviour of bodies in terms of the operation of force on them, does not require observation of matter as three-dimensionally extended. This means that we do have available, in our grasp of what

is involved in something being material, a notion suited to characterise the objects of auditory perceptual experience, as its ascription does not require being presented with three-dimensional extension. While in the course of this chapter I expand on our conception of matter, in the chapter that follows this, I argue that this does, in fact, characterize what is present in auditory perceptual experience. My argument is to the effect that cases in which aspects of material bodies that we hear appear intrinsic to the auditory perceptual experience that we undergo, are cases of auditory perceptual experience of the power of bodies to exert and be governed by force.

Thus, in the course of the current and the next chapter, I argue that in some cases of auditory perceptual experience we are presented with material bodies, insofar we are presented with the power of bodies to exert and be governed by force. Having done that, I finally move on to begin to evaluate the extent to which the materiality present in auditory perceptual experience, as characterised in the current and the next chapter, provides us with sufficient elements for a solution to humean scepticism about continued existence unperceived as it concerns the auditory.

For now, the scope of this chapter is to explore our conception of the material, pointing to aspects suited to encompass the objects of auditory perceptual experience. I begin by making some introductory remarks about how perceptual experience may be endowed with a conception of matter where a notion of force features.⁷² I then dedicate the remainder of this chapter to look more closely at how the notion of force is integrated in a conception of matter, in its historical development from Newton, via Locke, to Kant. It will emerge that governability by forces is a defining feature of matter; whereby sensitivity to an overt behaviour of matter in terms of its governability by forces does not require reference to its spatial extension.⁷³ In spite of not being evidently presented with three-dimensional spatial extension, we may be still evidently presented with material bodies, so long as what is present is evidently governed by forces. In so long as it does not hinge on presentation of spatial extension, this criterion of materiality results promising for accommodating some cases of auditory perceptual experience.

⁷² For a more thorough discussion of how we may perceive something as material, I refer the reader to the next chapter (chapter 6). The reader is invited to consider the next chapter as the continuation of the current.

⁷³ The view about auditory perceptual experience developed from this chapter is compatible with either representationalist or relational views of conscious perceptual experience. A representationalist may allow that we represent matter as governed by force, without representing it as three-dimensionally extended. A relationalist may allow that we may be presented with objects that are both governed by force and three-dimensionally extended, while we may only be able to tell, from experience, that that they are governed by force.

Grasp of the Material and of an Intuitive Physics

A set of views in the literature sees our grasp of what it is for something to be of a material nature as closely connected to our intuitive or rudimentary grasp of the laws governing matter.⁷⁴ These views foster a connection between perception and thought of an entity as material, on the one hand, and grasp of an intuitive physics, on the other hand.⁷⁵ It is in the realm of these views that I suggest that we find a suitable characterization of the materiality of what is present in at least some cases of auditory perceptual experience.

We treat the objects that we perceive as objects of the physical world insofar as we treat them as governable by the laws of physics. So, it may be an intuitive point that our conception of them as objects of the physical world bears an important link to at least an intuitive grasp of principles from the laws of physics. It may be objected that such principles may only amount to empirical claims exploited in our reasoning about objects, e.g., to my reasoning about what would happen to the level of water in a glass if I were to tilt it. However, according to some they are constitutive of perception and of thought of objects as material.⁷⁶

An example of a formal defence of a constitutive link between the notion of a material thing and principles of intuitive physics is given by Peacocke (1993). Introducing Peacocke's contribution, Eilan (1993) explains that Peacocke holds grip on one particular kind of principle to be constitutive of grasp of the conception of a material thing. Peacocke maintains that part of what is involved in representing an object as material is that the relevant 'perceptual representations serve as input to an intuitive mechanics that employs the notion of force' (1993, p. 169). As Eilan explains, Peacocke makes this claim on two grounds. Firstly, Peacocke provides the following metaphysical account of matter,

What is it for an object to be a material object, for it to be of material composition? I suggest that for something to be a quantity of matter is for changes in its state of

⁷⁴ It is part of this set of views that such grasp is not perfect so that it may describe grasp of any ordinary perceiver and not just that of an expert of physics.

⁷⁵ For examples of these views consider contributions by Campbell, Spelke and Van de Walle, and Peacocke, to *Spatial Representation: Problems in Philosophy and Psychology* (1993). For general remarks regarding the inseparability of grasp of the material and grasp of an intuitive physics consider the General Introduction and Eilan's Introduction to the Intuitive Physics section in the same volume.

⁷⁶ See Eilan's (1993) contribution to *Spatial Representation* for an introduction to several questions concerning intuitive physics and our grasp of matter.

motion to be explicable by the mechanical forces acting on it, and for its changes of motion to exert such forces.

(Eilan, 1993, p. 170)

So, Peacocke provides us with a metaphysical principle stating that something is material if changes in its state of motion are explicable by forces operating on it (and if its changes of motion exert such forces).⁷⁷ ⁷⁸ Peacocke's second ground is a connecting principle that says that if an account of what it is means for an object to be a certain way, e.g., be material, makes reference to a substantial condition to be met by an object, then one's mental representation of that property must be sensitive to the existence of the given substantial condition (1993, p.171). In other words, if for an object to be material it must meet a specified condition, to represent that property we must be suitably sensitive to the satisfaction of that condition.⁷⁹ So if an object's being material is defined in terms of meeting a condition that its changes in state of motion be explicable by forces operating on it, etc., representing an object as material means representing it as meeting this condition, and so requiring that we be sensitive to the obtaining of such condition. In short, this means that representing an object as material does not just hinge on, but it is constitutively dependent on, grasp that an object's changes in its state of motion are explicable in terms of forces acting on it, etc. There is, hence, a constitutive link between our grasp of what it is for something to be material and of the relevant principles of an intuitive physics. Notice, also, that Peacocke's position defines not only a sufficient but a necessary condition for a subject to represent objects as material: 'If a subject is to mentally represent objects as material objects (...) possession of an intuitive mechanics mentioning forces is essential'⁸⁰ (1993, p. 172). Moreover, governability by force is conceived as a primary quality: any object that may count as material ought to be governable by force, in that its changes in its states of motion are explicable by forces operating on it.

In order to begin to motivate the view that governability by force is suited to accommodate material aspects intrinsic to at least some cases of auditory perceptual

⁷⁷ I will explain how we ought to understand the bracketed part of the definition in the next section.

⁷⁸ Peacocke notes that this thesis respects a distinctive property of matter that it has identity over time, for to say that an object's changes in its states of motion are explicable by forces presupposes identity over time of the object (1993, p. 170).

⁷⁹ To strip away a commitment to representationalism, a more neutral version of this second ground may state that, if for an object to be material it ought to meet a specified condition, perceptual experience of a material thing requires sensitivity to the presence of this condition.

⁸⁰ Whereby it is consistent that a subject's grip may be wrong or incomplete on occasions.

experience, I move on to look, in some more detail, at how the notion of force is integrated in a conception of matter. It will emerge that this criterion is satisfied independently of the spatial configuration of matter. In the chapter that will follow this, I will then explore how we may be perceptually sensitive to this criterion of materiality. Legitimate ascription of governability by force requires no more than ascription of a power – in making sense of the overt behaviour of matter in terms of being governed by force – as described by principles from the relevant physics. Insofar as attribution of governability by force requires no reference to the spatial configuration of matter as three-dimensionally extended, the thesis that we are not auditorily presented with three-dimensionally extended things does not undermine the thesis that what we are auditorily presented with is material.

A Short Historical Excursus on the Notion of Force

It is perhaps a stretch to approach a description of how the notion of force has been integrated over time in an understanding of matter, in reference to a singular notion of force. Rather, the approach of what follows is to provide an account of the development of a cluster of closely related notions inherent to an understanding of matter. In line with Newton's *Principia*, however, what follows will centre around contact forces, that is, forces involving impact and pressure.⁸¹ As a further disclaimer, I do not presume to be capable of presenting an accurate and all-encompassing historical account just in the space of a chapter. What follows are considerations from a selection of thinkers, which shall, anyhow, count as more than enough to set the grounds for a case that I most centrally care to establish for auditory perceptual experience.

This short excursus begins with an outline of how the notion of force was first presented in Newton's laws of motion in the *Philosophiæ Naturalis Principia Mathematica*. I then move on to Locke, who, having read Newton's laws of motion, has attempted to accommodate insights from these within his account of matter. To this will follow a criticism put forward, among others, by Leibniz in the *New Essays on Human Understanding*.⁸² According to Locke, we may explain force,

⁸¹ While some of the commentators that I will consider also refer to gravity, Newton's paradigmatic force is an impressed or contact force, rather than non-contact force, like gravity, electrostatics, or magnetism. In *Definition 4* of the *Principia*, Newton distinguishes between impact (or percussion), pressure, and centripetal force, which are all contact forces producing changes in motion.

⁸² Peacocke (1993) wards off this criticism in providing an account that Peacocke describes, for reasons that shall become clearer in the course of this section, as 'more Leibnizian than Leibniz.' Essentially, Peacocke considers explicability of changes in motion by forces a criterion that defines what counts as material in and by itself. As Leibniz (1951) considers matter being governed by force as additional to matter's impenetrability, Peacocke considers impenetrability not to be required.

as a power to change bodies' states in motion, in terms of matter's intrinsic qualities, including its spatial configuration. It has been objected that the power of force could not be possibly explained in terms of the intrinsic qualities of matter: the attempt to explain how matter is endowed with a power to change bodies' states of motion in terms of how it is configured would amount to a miraculous assignment, rather than an intelligible explanation. The criticism brings to light a clash between corpuscularianism mechanism and the Newtonian notion of force. A subsequent, dynamic approach to understanding matter will be presented in comparison, by considering the Kantian notion of repulsive force (Kant, 1781, 1786). I assess whether this alternative approach to an understanding of matter, in light of Newton's notion of force, satisfyingly addresses the criticism that Locke faced. I explain how, by forgoing the mechanistic attempt to explain force in terms of how matter is spatially configured, a dynamic account avoids the criticism that Locke faced. From the perspective of a dynamic approach, while force cannot be understood in terms of the configuration of matter, including its intrinsic spatial configuration, governability by force, as described by the relevant laws of physics, is nonetheless apt for constituting a defining element of matter. It will emerge that governability by force is a defining criterion of materiality that is correctly ascribed based on matter's overt behaviour, rather than on its covert nature or spatial configuration. It follows that our conception of the material is, in principle, suitable to be ascribed to what is present in the auditory case.

In the *Principia* (1687), Newton's laws of motion distinguish between three principles of force and a further principle of inertia.⁸³ In summary, Newton explains that inertia is what enables an object to maintain the same position or the same movement; force is what makes an object change position or movement in accelerating/decelerating. When moved by a force, an object can bring changes in states of motion of another object. Otherwise, by inertia, objects keep their own movement constant. From this it follows that while it can bring changes in another object state of motion, an object is not considered to initiate its own changes in state of motion.⁸⁴

⁸³ In brief, the first law says that a body keeps going in a straight line unless it is acted on by force; the second law says that force equals mass times acceleration; and the third law says that every action has a reaction.

⁸⁴ It is in light of this caveat that we ought to read Peacocke's definition of what counts as material. Peacocke (1993) states that 'for something to be a quantity of matter is for changes in its state of motion to be explicable by the mechanical forces acting on it' *and* 'for its changes of motion to exert such forces' (1993, 170). The second conjunct in Peacocke's definition ought to be understood in light of the fact that while matter's change in motion exert force, motion is never initiated by matter but by forces operating on it.

Change in movement can only be externally initiated by forces causing objects to move. If an object can move another object but it cannot move itself, then, ultimately, what causes an object to move may locally be caused by another object, but it cannot be caused by an object initiating the movement. If an object exerts force on another, causing it to move, it is because the object is itself governed by a force. This is compatible with the possibility of perceptually isolating exerted force by a given object at a given time. Yet, ultimately, anything moves just in case a force externally acts on it. Objects may cause others to move, and, in this sense, they exert force, without, however, initiating movement themselves.

Having read Newton's laws of motions, Locke (1689) has attempted to integrate the notion of force within his account of matter.⁸⁵ Generally speaking, the attempt consists in further explaining the power of force on matter in terms of the intrinsic qualities of matter.⁸⁶ In particular, as the very title of one of the *Essay's* sections reads – 'On solidity depend Impulse, Resistance, and Protrusion' (*Essay*, book II, chap. IV, §.5) – Locke appears to have held that it is in virtue of being intrinsically solid that material bodies are governed by and exert force. In order to be in a better position to illustrate this, allow me to provide it with some context by looking at some of the tenets of Locke's understanding of matter. In particular, two are relevant: the extent of Locke's commitment to corpuscularianism mechanism and Locke's distinction between primary and secondary qualities.

Beginning with the latter, Locke distinguished between primary, mind-independent qualities and secondary, mind-dependent qualities. The distinction between mind-independent and mind-dependent qualities is a distinction between qualities that an object has independently of whether an observer or a mind is present and qualities that an object has dependently on the presence of a mind or an observer. Mind-independent qualities of an object are qualities that it is possible to attribute to an object independently of a mind and, in this sense, they constitute its nature independently of a mind. Mind-dependent qualities are typically understood as powers which may require a mind to be instantiated. Locke, in particular, appears to further include, within secondary qualities, not merely powers that are dispositions to cause given sensations in us, but also powers to affect other objects, such as, the power of fire to liquify or the power of sun to blanch wax (1689, book II, chap. VIII, §§ 10, 23, 26).⁸⁷

⁸⁵ Locke admits that the *Essay* needs amendment in light of Newton's *Principia* in a correspondence with Stillingfleet (1697–1699).

⁸⁶ This ought not to be understood as an eliminative reduction, in as much that Locke (1689) does not thereby dispose of the notion of force.

⁸⁷ Some refer to further powers of matter to causes changes in other entities as tertiary qualities, thereby distinguishing them from secondary qualities causing sensible ideas in us (see for instance Wilson, 1979).²

Locke's views develop in the context of corpuscularianism. Corpuscularianism is a form of atomism as it holds that material substance is composed of minute particles. According to corpuscularianism, all properties of matter are explicable in terms of the mechanical interactions of corpuscles possessing shape, size and motion. Corpuscularianism can be further understood as a form of mechanism.⁸⁸ As Ayers puts this, mechanism can be understood as the thesis that 'the perceptible functioning of machinery supplies an overt illustration of the intelligible principles which covertly govern nature as a whole' (1991, 135) or as the principle that 'knowledge of the actual structure of the machine should enable us to understand why it must operate as it does' (1991, p. 135). Generally speaking, corpuscularianism may be understood as advocating the claim that the configuration of matter and how matter overtly behaves provide an illustration of the principles that govern it.

Relatedly, while Locke partly embraces a corpuscularian approach, Locke also adopts a criticism made by Gassendi in *The Fifth Objections* to Descartes' *Second Meditation* – in particular, Gassendi's thought that while we may abstract away a notion of substance from its accidents, we may not distinctively conceive of substance. While we may know of what mechanisms govern matter based on its sensible qualities and powers, we ought not to claim knowledge of a substance distinct from its accidents. In other words, we ought not to mistake operation with essence.⁸⁹ Even though mechanistic explanations enable us to describe matter intrinsically, we ought to claim no more knowledge of matter than of its perceptible functioning.⁹⁰

The above ought to be understood in light of the fact that, while Locke's conception of matter holds substance to be whatever its accidents, such as extension and solidity, inhere or reside in, Locke is sceptical of knowledge of matter's real essence. Locke is sceptical about knowledge of matter's real essence as opposed to knowledge of its accidents, that is, its sensible qualities and powers to cause and undergo sensible change.⁹¹ Locke holds that our ideas of substances are complex, rather than simple. Since, whenever we think of matter, the idea that we have is that of a collection of simple ideas (1689, book II, chap. XXIII, §. 9). Having said that, while Locke considers substance to be the unknown substratum unifying coexisting qualities and powers, Locke also seems

⁸⁸ A proponent of corpuscularianism mechanism is Boyle (1661, 1666), but forms of mechanism can be further traced down to Descartes and Gassendi. See Ayers (1991), Volume II: Ontology, Part I and II.

⁸⁹ See Ayers (1991), Volume II: Ontology, pp.28-33, and Gassendi's *Fifth Objections*, particularly Objection (8).

⁹⁰ For a further discussion of Locke's own commitments to mechanism, see 'The Form of Locke's Mechanism' in Ayers (1991), Volume II: Ontology 142-153.

⁹¹ See Ayers (1991) Volume II: Ontology.

to consider it to be some general corporeal stuff which is common to all sensible things. Consider the passage below,

For our Senses failing us, in the discovery of Bulk, Texture, and Figure of the minute parts of Bodies, on which their real Constitution and Difference depend, we are fair to make use of secondary Qualities, characteristic Notes and Marks, whereby to form Ideas of them in our Minds, and distinguish them from one another.

Locke, 1689, book II, chap. XXIII, §. 8

In line with corpuscularianism, Locke does point to bulk, texture and figure of the minute parts of matter, ‘on which their real Constitution and Difference depend,’ while claiming that our senses fail us in their discovery. The contingent modifications of matter give rise to observable properties that enable us to distinguish bodies from one another. While Locke thought that the real essence of all species is the same unknown stuff, the referent of the idea of a given object, as we think of it, is the modified matter or body. Positing a substance, which gives unity to its qualities and powers, is not at odds with the thesis that there isn’t a substance knowable in itself beyond its sensible accidents, insofar as our idea of matter is complex and is not reducible to simple ideas of its accidents. While, in line with corpuscularianism, Locke holds the principles governing matter to be explicable in its set of perceptible qualities and powers, Locke rejects the idea that we may claim knowledge of a nature or real essence beyond these very qualities and powers and whatever is explicable in their terms. While I briefly return to Locke’s commitments to mechanism later, a deeper understanding of this cluster of claims – and of what exactly constitutes a Lockean, mechanist view of knowledge of the intrinsic nature of matter in its sensible accidents – would require a more thorough discussion than I have space for. For the current purposes, we move to consider how the notion of force may be integrated within this approach to an understanding of matter characterised so far.

After reading Newton, Locke appears to have held that material things have the power of exerting force in virtue of their solidity. That is, that, the exertion of force can be explained in terms of the solidity of matter. We ought to conceive Locke’s explanatory project as, more broadly, that of explaining an object’s powers – of producing sensations as well as of producing changes in other objects, such as a change in its state of motion – in terms of its primary qualities. Locke’s project is attractive as in this way it promises to explain the operation of an object’s powers not merely by restating that it has a power, but in terms of properties of the object that are not themselves powers. It is within this explanatory project that we ought to locate Locke’s attempt to explain force in terms of

solidity. This explanation does not take the form of an eliminative reduction; rather, the idea is that the intrinsic nature of matter may shed light on its being endowed with a power to move objects. Bearing in mind the preliminary discussion above, according to Locke (1689), an essential element of the corporeal objects with which we interact is solidity. Solidity, along with extension, figure, motion or rest, and number make for an object's primary qualities. However, since an object has extension and figure in virtue of having solidity, solidity is deemed more fundamental than its other primary qualities.

This, of all others, seems the idea most intimately connected with and essential to body, so as nowhere else to be found or imagined, but only in matter; and though our sense take no notice of it, but in masses of matter, of a bulk sufficient to cause a sensation in us; yet the mind, having once got this idea from such grosser sensible bodies, traces it further, and considers it, as well as figure, in the minutest particle of matter that can exist, and finds it inseparably inherent in body, wherever and however modified'.

Locke, 1689, book II, chap. IV, §. I

The fact that we get the idea of solidity from matter's sensible qualities, does not make it merely a sensation provoked in us, and hence more akin to a secondary quality. Solidity is a primary quality of matter, for it belongs to minutest parts of matter and it is inherent in body in spite of any contingent modifications. Let us consider in what sense solidity is deemed to define the intrinsic spatial configuration of matter.

Solidity is understood analogously with impenetrability: a solid object is an object that is impenetrable in the sense that it hinders other objects from occupying its space. Locke asserts, 'That which thus hinders the approach of two bodies, when they are moved one towards another, I call solidity' (1975, Book II, chap. IV, §. I). So, impenetrability is a kind of space-filling property or a property of matter explaining a sense in which it takes up space. In §. II, Locke goes on to explain that the idea of solidity belongs to body conceived as filling space. For it is the idea that matter, being impenetrable, excludes all other solid matter to do so.

While it is a property that explains a sense in which matter fills space, the idea of solidity is distinguished from that of 'pure space, which is capable neither of resistance nor motion' (1689, Book II, chap. IV, §. III). The idea of solidity is not essential to that of space, as we can conceive of a pure space without force. As an example, Locke suggests, 'a man may conceive of two bodies at a distance, so as they may approach one another without touching or displacing any solid thing, till their superficies come to meet; whereby, I think, we have the clear idea of space without solidity'

(1689, Book II, chap. IV, §. III).⁹² Hence, Locke distinguishes the idea of solidity as a space-filling manner, apt to explain force, from that of a pure space, as we may conceive of a space that lacks any exertion of force.

While solidity defines matter's most fundamental primary quality, it is not an issue that the idea of solidity is distinct from that of pure space. For, as Locke suggests we can conceive of pure space distinctive from body. As Locke asserts,

(...) the idea of solidity is the extension of body distinguished from the extension of space – the extension of body being nothing but the cohesion or continuity of solid, separable, movable parts, and the extension of space, the continuity of unsolid, inseparable and immovable parts. Upon the solidity of bodies also depends their mutual impulse, resistance and protrusion.

1689, Book II, chap. IV, §. V

In the extract §. V above, Locke's account of the idea of solidity culminates in the thesis that impulse, resistance and protrusion depend on solidity. In effect, this thesis hinges on the very distinction between pure space and solidity. For, whereas in a pure space we cannot make sense of impulse, resistance and protrusion, we may do so in the presence of solidity. Solid bodies are endowed with a quality by which they hinder the approach of others. This intrinsic quality of matter is what explains how it exerts and undergoes impulse, resistance and protrusion.

Let us return to the Newtonian thesis that a change in state of motion may be brought about by a given object which cannot, however, initiate its own change in state of motion. As explained above, while an object may bring about a change in another object's state of motion, this is never by initiating its own change in state. As a primary quality, solidity is not itself conceived as a power, but as that which effectively explains what enables an object to produce certain effects. In general, the idea behind mechanist explanations is that if we know of matter's primary qualities we can explain and understand its operations. While the criticism from Gassendi, which Locke adopts, commits

⁹² In §. III, Locke states that the idea of pure space is one without resistance or motion. However, as Locke subsequently describes the idea of a pure space as that of things *approaching* one another without exerting or being subject to forces, one may question whether for the idea of a pure space Locke has successfully disposed of any sort of movement. This would be problematic, as it would be unclear how Locke thinks we may explain movement in the first place if not as a product of force. We are meant to identify an intrinsic quality of matter enabling us to explain force. If that quality of matter presupposes an element that requires force in order to be explained, presupposing movement would be problematic for Locke's own explanatory project.

Locke to the view that matter is knowable in no more than its overt behaviour and attributes, Locke does nonetheless hold force to be a power further explained by one of matter's intrinsic qualities – and not just any quality but a quality closest to defining matter's essence, capable of explaining all other qualities of matter, and not itself conceived as a power. This seems to be at odds with the Newtonian thesis that objects bring about changes in other objects' states of motion without initiating their own change in state of motion. For while we may ascribe the power of force to objects governed by it, we ought not to identify the sources of this power within the object.

In a somewhat similar vein, Leibniz criticises Locke for admitting of inexplicable, occult powers or miracles. In *New Essays on Human Understanding*, Leibniz criticises Locke for attaching powers to matter that would be ungrounded: force just cannot be explained in terms of matter's primary qualities.⁹³ Insofar as it cannot be explained in terms of its primary qualities, it is not conceivable how matter would be endowed with this power. Leaving to the side Leibniz's motives for reliance on God for the coherence of nature and its intelligibility, Leibniz points to the fact that so long as we are not able to explain this power of matter mechanically, the attribution of this power would be miraculous.⁹⁴

(...) it must be borne in mind above all that the modifications which can occur to a single subject naturally and without miracles must arise from limitations and variations of a real genus, i.e. of a constant and absolute inherent nature. (...) just as we know that size, shape and motion are obviously limitations and variations of corporeal nature (for it is plain how a limited extension yields shapes, and that changes occurring in it are nothing but motion). Whenever we find some quality in a subject, we ought to believe that if we understood the nature of both the subject and the quality we would conceive how the quality could arise from it. So within the order of nature (miracles apart) it is not at God's arbitrary discretion to attach this or that quality haphazardly to substances. He will never give them any which are not natural to them, that is, which cannot arise from their nature as explicable modifications. So we may take it that matter will not naturally possess the attractive power referred to above, and that it will not of itself move in a curved path, because it is impossible to conceive

⁹³ A similar criticism is advanced by Wilson (1979), who argues that 'Locke does not consistently maintain that all a body's properties stand in comprehensible or conceivable relations to its Boylean "primary qualities"' (p.3) and that Locke would suggest that some properties 'cannot be the natural consequences of the operations of Boylean corpuscles. We must rather regard them as "superadded" or "annexed" to such operations by God'. (p.3)

⁹⁴ For further discussion of the notion of force and related issues by Leibniz see 'Whether the Essence of a Body Consists in Extension' (1691), 'On Nature in Itself' (1698), 'On Substance as Active Force vs Mere Extension' (1703), 'Further Discussion of Vis Viva' (1702) in *Leibniz's Selections* (1951).

how this could happen—that is, to explain it mechanically — whereas what is natural must be such as could become distinctly conceivable by anyone admitted into the secrets of things. This distinction between what is natural and explicable and what is miraculous and inexplicable removes all the difficulties.

Leibniz, 1996, p. 66

We may observe that the objection that force cannot be explained in terms of matter's intrinsic qualities can be interpreted in two different ways: either as the claim that we may not ever explain the exertion of force in terms of a primary quality of matter, or that force may not count as a primary quality as mechanistically conceived. Given that the exertion of force not to be explicable mechanistically, in terms of matter's spatial configuration – as possessing size, shape, and solidity – one reading is that the attempt to explain force in terms of primary qualities would only fail due to a commitment to a corpuscularianism mechanistic conception of matter. In the attempt to explain force in terms of an object's intrinsic qualities, Locke would explain it mechanistically, whereby a mechanistic explanation is one that draws on the spatial configuration of matter to explain its behaviour. This would fail essentially because there is nothing in the spatial configuration of matter that can explain the operations of force. However, while the operation of force is not explicable in terms of a primary quality as mechanistically conceived, it may not be altogether incompatible with a treatment in terms of a primary/secondary quality distinction. Indeed, it might be compatible with it, in itself picking out a defining element of matter. Let me expand on this thought.

Locke's attempt of fitting the notion of force within his understanding of matter coincides historically with a switch from mechanistic to dynamic explanations as introduced by Newton.⁹⁵ It may then be no surprise that Locke's attempt to make sense of a dynamic notion within a mechanistic conception of matter fails. The dynamic turn explains matter's nature not by appealing to its intrinsic configuration, producing explanations drawn from the nature of minute particles and their intrinsic properties, but by describing matter as it overtly behaves, pointing to its powers as its defining features. At this stage, it may be helpful to briefly contrast Locke's mechanistic approach to matter, to the Kantian, dynamic, notion of repulsive force. As Warren (2001) explains, in the *Metaphysical Foundations of Natural Science*, Kant can be understood as bringing about 'a shift in the way we think about primary qualities (...) Instead of conceiving of them as contrasted to causal powers, we are meant to see that the set of primary qualities includes powers as essential and ineliminable members' (2001, p. 96). In contrast to a Lockean project designed to explaining any

⁹⁵ This is a reading that Warren (2001) defends.

power of matter in terms of its intrinsic qualities, which are not themselves powers, a dynamic explanatory project forgoes this attempt and allows powers and relational properties among the qualities essential to defining matter.

On either a mechanistic or a dynamic view, force is understood to be a power producing changes in state of motion. The mechanist distinguishes the power of force from matter's property of filling space, i.e., impenetrability, and considers the latter to be what enables objects to exert force. The Kantian version of impenetrability, or of a property that explains how matter fills space, is repulsive force. On a dynamic conception, an essential aspect of matter is to be endowed with repulsive force. From this perspective, matter having a space-filling property, i.e., impenetrability, just consists in being endowed with repulsive force. Repulsive force is, however, not understood, in turn, in terms of a further property of matter. This counts as an example of a dynamic treatment of primary qualities, or qualities that are essential to matter. Such qualities ought not to be non-relational, as they do not need to explain powers of objects to bring about certain effects in terms of non-relational, intrinsic qualities. From this perspective, the ascription of a power does not depend on anything more than observing the effects that a body may produce in interaction with other bodies, as described by the relevant laws of physics. In line with Peacocke's (1993) account outlined above, the content of the ascription of the power of force to a body is that specified by principles from the relevant laws governing the effects that it can produce. Integrating a set of laws in our conception of matter essentially consists in citing the powers that matter has in the context of such laws. So, we may legitimately attribute a power to exert force to a given body without appeal to a quality intrinsic to that body's configuration.

Let us briefly return to Locke, in light of the contrast with the Kantian notion of repulsive force. While a mechanist explanation of the power of exerting force fails, Lisa Downing (2014) argues that Locke is not committed to corpuscularian mechanism in a way that makes the account fail,

Leibniz supposes that Locke has responded to Newton's success by amending his matter theory in an ad hoc and unacceptable way. He assumes that Locke's matter theory is the corpuscularianism of Robert Boyle, which seems ensconced in Locke's doctrine of primary qualities. (I will refer to this Boylean view as a corpuscularianism, strict mechanism, or sometimes simply a mechanism. It is the view that the nature of bodies is exhausted by size, shape, motion/rest, and solidity, and that as such they can interact only at contact by impact.) Because Newtonian gravity cannot, it seems, arise from corpuscularian real essences, Locke,

on this interpretation, is forced to appeal to God's arbitrarily attaching powers to bodies not otherwise capable of them, but this is perpetual miracle, or, more neutrally, it is in violation of Locke's position that the powers and behaviour of bodies follow deductively from their real essences (plus spatial arrangements among bodies). It's this latter position that I call Locke's essentialism.

Downing, 2014, p.100

Moreover, Downing remarks that,

First, Locke is not as attached to corpuscularian mechanism as is often thought. Second, Lockean superaddition is not the attaching of extrinsic or ungrounded powers, but rather the bestowing of more than merely mechanical real essences.

Downing, 2014, p.101

Again, the claim is that Locke's attachment of the power to exert force is arbitrary just in case one attempts to explain it in mechanist terms. However, Downing suggests that we may read Locke as bestowing further dynamic elements on matter. While it is not my aim here to defend Locke's view per se, we may acknowledge Downing's reading that the fact that it is not possible to explain the power to exert force in mechanist terms would not make Locke's attachment arbitrary, for it would rather show that it counts as the attachment of further, dynamically conceived, properties.

Having considered a shift from mechanistic to dynamic approaches to understanding the nature of matter, we may come to observe how our conception of matter may have been too tied to the spatial. As a reminder, in chapter two, I looked at examples of accounts of the perception of material bodies. These accounts consider perception of material bodies to consist in perception of cohesive, spatio-temporally continuous entities. If we were to apply such criteria to the auditory case, we would be led to a false conclusion that we are not auditorily presented with material bodies. As explored in chapter three, we may be led to reach the conclusion that we are not auditorily presented with material bodies insofar as we are not auditorily presented with matter three-dimensionally extended in space. However, what I have explored in the space of this chapter shows how this conception of material bodies is both mistaken and too restrictive.

Our conception of matter involves a notion of force which cannot be properly understood in terms of the spatial configuration of matter. There is nothing in how matter is configured that may intelligibly explain how it exerts and is governed by force. Consequently, the correct ascription of the power of force consists in no more than explaining how matter behaves by exerting and being governed by force. As governability by force sets a criterion for materiality satisfied just in case the behaviour of bodies in interaction is explicable in accordance with the relevant principles of physics that feature a notion of force, in thinking or perceiving an object as meeting this condition, we, thus, do not pick out an aspect of its configuration, say, its extension or figure. Accordingly, the fact that we are not auditorily presented with matter as three-dimensionally extended does not undermine the thesis that we may be auditorily presented with material bodies. In principle, our conception of materiality is suited to encompass what is present in auditory perceptual experience.

In the chapter that follows this, I consider in what sense we may be perceptually sensitive to the presence of this condition for materiality, that is, governability by force. I argue that we are auditorily sensitive to this criterion of materiality, for we auditorily perceive the power bodies have to exert and be governed by forces. At least some cases of auditory perceptual experience are indeed cases in which we are evidently presented with material bodies: they amount to cases in which we are evidently presented with the power bodies have to exert and be governed by forces.

One final note to complete this short excursus. Fast forward to the nineteenth century, physicists began to talk of fields rather than forces. The force of gravity, for instance, would be understood not fundamentally as a force but in terms of a field theory. According to this model, gravitation is a field that pervades space, whereby the action of a field on a body is what explains a body's acceleration. Moving on to the twenty-first century, Einstein's theory of general relativity put pressure on a former notion of gravity. While space-time geometry is now what explains an apparent force of gravity, quantum theory physics describes other interactions of matter, and thereby other apparent forces.

So long as our conception of matter constitutively depends on grasp of an intuitive physics, there is a question as to whether, as physics progresses, we ought to revise our conception of matter. It is a further research question whether new elaborations of the phenomena concerning matter have put the notion of force to disuse, and the extent to which they may explain away apparent forces. Physicists now consider space-time geometry to be a curved manifold, whereby matter moves as it follows the shortest cut in a curved manifold. Space-time geometry thereby explains how matter moves without appeal to a force of gravity.

In the course of this chapter, I have pointed to a notion of the operation of force that poses a condition for materiality. According to this condition, an object is material if it is governed by forces.

I have explained that we legitimately ascribe the power of force to matter if its overt behaviour is explicable in terms of the relevant laws featuring the notion of force. Thinking of or perceiving bodies as meeting this condition for materiality effectively narrows down to sensitivity to an observable behaviour of matter – that which is explicable by the operation of force. Hence, there is a sense in which, in principle, we may expect that while there will be changes in the theoretical elements making sense of what we observe, we may consistently continue to refer to the same range of observable behaviour in thinking and perceiving bodies as material.

There are further questions as to the domain of an intuitive physics and as to whether it ought to be concerned with principles that govern matter which an ordinary perceiver would be in the position to handle.⁹⁶ This may justify appeal to theories – e.g. those featuring the notion of force – apt to explain the behaviour of matter presented in the form of ordinary objects – such as lemons, apples, and rocks – rather than, say, to field theories dealing with particles.⁹⁷ However, we may deliberately choose to focus our inquiry on what makes ordinary objects – such as rocks and carrots – material, that is, what makes matter, presented in the form of ordinary material bodies, meet a condition for materiality. Given this, we ought not to confuse aspects that matter may have as presented in the form of ordinary material bodies, e.g., spatial extension, with aspects which make matter perceptibly meet a condition for materiality. As that may just be what is responsible for mistakenly upholding criteria for materiality that may only be suitable for presentation of bodies in a particular modality.

⁹⁶ See Hayes (1985) for a version of a naive physics manifesto.

⁹⁷ For a discussion of these themes see *The Nature of Ordinary Objects* (2019), Cumpa and Brewer, eds. In particular, for a discussion of the relation between fundamental physics and ordinary objects see Heil's 'Objects, Ordinary and Otherwise' in this volume.

Chapter 6

The Audibility of Force

In the previous chapter, I have rejected a criterion of materiality based on matter's intrinsic spatial configuration as mistaken and too restrictive. By contrast, I defended a criterion of materiality according to which materiality is experienced in observing matter's overt behaviour as it is governed by forces. I have observed that the latter is suitable to encompass the auditory case. Since the correct ascription of materiality does not depend on matter's intrinsic spatial configuration, not being auditorily presented with spatially extended bodies does not hinder the thesis that we may be auditorily presented with material bodies. The objective of this chapter is to defend the positive claim that we are in fact auditorily presented with matter as it is governed by force and that we may, hence, conclude that we may be auditorily presented with material bodies. In particular, I aim to argue that such criterion of materiality supports a direct view of auditory perceptual experience, according to which we are immediately presented with the exerted power of force. I argue that there is a suitable auditory sensitivity to the operation of force, to the effect that, *ceteris paribus*, a suitably sensitive perceiver may be immediately presented with material bodies in being presented with their power to exert and be governed by forces.

In what follows, I first spell out the thesis that I wish to defend by drawing some contrasts with Peacocke's view (1993). I then return to a contrast between cases of hearing bodies discussed in chapter four to provide further motivation for the thesis that, in some cases, we are directly auditorily presented with material bodies. I finally move on to further defend this thesis by rejecting two objections.

Perceptual Sensitivity to Materiality

As discussed in the previous chapter, Peacocke (1993) provides us with an account of what it means for conditions of materiality to be mentally representable, given a constitutively interdependent link between grasp of what makes an object material and grasp of a set of laws of physics. An object is material if it meets conditions described by the laws of physics. To mentally represent an object as material we ought to be sensitive to the presence of such conditions.

In accordance with a dynamic notion of force, an object is material if its overt behaviour is explicable by the operation of force. As a reminder, I defended a dynamic

version of this principle, according to which understanding matter in terms of its governability by forces means that its overt behaviour is explicable by their operation. Contra a Lockean, mechanistic account, a dynamic principle does not attempt to further explain force in terms of an intrinsic quality of the configuration of matter, i.e., solidity or a quality akin to it. It rather maintains that perception of the overt power of matter to exert and be governed by force suffices for perception of material bodies.

Attributing the power of force means making sense of an object's overt behaviour in terms of its governability by forces. So, if we may describe what we perceive in terms of the operation of force, then what we perceive counts as material. Notice, however, that not every version of this principle may count as a criterion for the very objects of perceptual experience to count as material bodies. On the face of it, this criterion may support either a direct or an indirect view of perceptual experience. To perceive an object as material we ought to be sensitive, in some suitable way, to matter being governed by force. For this to count as a direct view of perceptual experience, being sensitive to the presence of the relevant condition may involve more than an ability to describe what we perceive in terms of the obtaining of this condition. Let me draw an example to further explain this contrast.

Let us begin with a case from vision. As I look at a cyclist at some distance from me, I may describe observed changes in states of motion in terms of the operation of force. So, I may observe that by the force exerted against the pedals, the bike moves forward. This is a sense in which based on what we perceive we may thereby pick out material bodies via their governability by force. As observed changes in states of motion are explicable by forces operating on them, the objects involved in this episode are material: they meet a condition for being material. Given the definition of force, and that it is legitimately attributed to matter on the basis of its overt behaviour, this is a case in which I may legitimately ascribe a primary quality – the power of exerting and being governed by force – to the things participating in this observed interaction. Moreover, as I – the perceiver – am capable of describing this, I exhibit a form of sensitivity to governability by force, thereby, to materiality.

However, it is plausible that I may describe what takes place in terms of the operation of force and, perhaps, legitimately ascribe a primary quality, without thereby immediately perceiving the power to exert and be governed by force. That is, my sensitivity to the presence of this condition, on the face of it, may simply consist in associating an operation of force to what I am presented, without being intrinsically presented, in the experience that I undergo, with that power. I may be able to associate the cycling episode that I see with an operation of force. However, what I see may not itself consist in an experience of that power.

Yet, I may legitimately ascribe force to describe what is going on, thereby attributing a primary quality, the power of force.⁹⁸

We may observe that so long as we may be presented with things whose changes in states of motion are explicable in terms of the operation of force, we may legitimately apply the notion of force regardless of whether we undergo an experience of that power. In light of this, some may be open to the thesis that, so long as we may describe what we hear in terms of the operation of force, we may hear material bodies. However, they may pose resistance to the thesis that we may be immediately presented with the power of force. In other words, some may just read this criterion as a version of indirectly perceiving, i.e., truthfully seeing or hearing bodies based on an association with what we are presented with. By contrast to this view, I argue that not only may we describe what we hear in terms of the operation of force – as when we describe pressure on a bike’s pedals moving a bike forward – but that the power of exerting and being governed by force is itself immediately audible. The objective of this chapter is, in this sense, to show that we may undergo an auditory perceptual experience of the power of bodies to exert and be governed by force.

Peacocke (1993) gives us examples of two bodily experiences of force. One is essentially the sensation of pressure, experienced when, say, a heavy book rests on your lap pressing downwards (1993, p.172). However, this sensation is not necessary for a subject to be capable of mentally representing objects as governed by force. For, Peacocke suggests that, in principle, we may conceive of a subject incapable of experiencing the sensation of pressure whilst still being capable of grasping the relevant intuitive physics and operating accordingly. The other example is that of the conscious state one has in exerting a magnitude of force with one’s own limbs. Peacocke maintains that one may be in this conscious state even when ‘the relevant afferent nerves are not functioning’ (1993, p.172), making it the case that one may not have a sensation of pressure as one is engaged in an interaction in which one exerts force. This essentially makes one’s own bodily exertion of force a conscious state of its own, distinct from the sensation of pressure. However, Peacocke holds that, in principle, neither is this conscious state necessary for being capable of thinking of objects as governed by force.⁹⁹ For a purported subject with no limbs or incapable of force-exerting

⁹⁸ As I reminder, in the previous chapter I defended a dynamic notion of force allowing that an object’s power may count as a primary quality.

⁹⁹ Peacocke (1993) holds that whether a subject whose afferent nerves are damaged so that they may not be capable of the sensation of pressure be capable of grasping the relevant notions from an intuitive physics is an empirical question.

actions, may still be capable of a passive experience of force, as they experience force operating on them.¹⁰⁰

Moreover, Peacocke (1993) thinks that no uninterpreted sensation of force or conscious state may suffice for a subject's grasp of this notion. As Peacocke defends a thesis according to which grasp of the relevant intuitive physics is constitutive of mentally representing an object as meeting a condition for being material. Accordingly, any uninterpreted sensation of force will not suffice for perceptual sensitivity to the presence of this condition for materiality. Peacocke holds,

It is never a sufficient account of possession of a conception of force that the subject is willing to form certain beliefs, or representations, involving it on the basis of his or her sensations, if those sensations are ones he or she could have without already having an intuitive mechanics. The same applies to sensitivity to conscious exertions.
(1993, p.172)

To have the conception of a certain force acting on one, or of oneself as exerting a force, is to have a conception on which it makes sense, and can be true, that an inanimate object is subject to forces of exactly the same kind. A mere sensitivity to sensations enjoyable without possession of an intuitive mechanics would never suffice to meet the requirement.
(1993, p.173)

In other words, sheer sensitivity to our own bodily sensations or relevant conscious states will never make up a conception of force which ought to enable us to make sense of the fact that other inanimate beings are governed by the very same forces. This is just to say that the relevant conscious experiences are experiences infused with grasp of an intuitive physics. Peacocke (1993) allows that undergoing a sensation of pressure, for instance, may give us a distinctive way of conceiving of force, a way someone incapable of it may not enjoy. However, the crucial point is that, 'possession of the distinctive ways of thinking of force made available by certain kinds of conscious experience does not consist in a sensitivity to sensations free of any internal connection with an intuitive physics' (Peacocke, 1993, p. 173).

¹⁰⁰ If our concept of force were acquired, Peacocke (1993) suggests that either sensation or conscious state may explain its acquisition.

This brings to light that the relevant conscious experiences of force are never uninterpreted sensations. So long as grasp of an intuitive physics is constitutive of sensitivity to the presence of a condition for materiality, the relevant conscious experiences bear an internal connection with grasp of an intuitive physics.¹⁰¹

Whilst exploiting Peacocke's connecting strategy for a link between what makes an object material and grasp of an intuitive physics, we ought to bear in mind that the relevant conscious states are those infused with an intrinsic theoretical element, that given by the relevant laws of physics. That is, the relevant theoretical elements are constitutive of the perceptual experience one undergoes when perceiving the presence of a condition for materiality. It follows that it is not true that just in case we undergo the experience of pressure or that of exerting force may we be directly presented with material bodies. Such experiences are neither sufficient nor individually necessary (as either the experience of pressure or that which we undergo when exerting force may do) for sensitivity to a condition for materiality.

Said that, we shall notice that, while neither sufficient nor individually necessary, the relevant conscious experiences that Peacocke (1993) considers, both involve either exertion or pressure. This may constitute a difficulty for the auditory case, which I will explore in some detail in the section that follows the next. So long as any experience of this power requires some form of engagement or interaction, we may not perceive the power of a body to exert and be governed by force when perceiving a distal object of the senses. Insofar as the objects of auditory perceptual experience are distal, we may face the objection that we may not auditorily perceive their power – even if it were the case that they possessed it – to exert and be governed by force. While we may be capable of describing what we hear in terms of the operation of force, insofar as direct presentation in experience of this power requires a form of contact, we cannot auditorily undergo an experience of this power so long as the objects of auditory perceptual experience are distal. In the section that follows the next, after exploring the reasoning supporting this 'contact thesis', I present an argument from

¹⁰¹ This raises a side question as to whether the notion of force may ever be legitimately acquired from experience. For, uninterpreted sensations are held to be never sufficient for the relevant notion of force and what are deemed to be the relevant conscious states are constituted by the very theoretical element whose acquisition one may wish to explain. This further poses a question as to whether Peacocke's account, and, in turn, a strategy for the auditory which one may draw from it, may not be immune to Humean scepticism as discussed in the second chapter. Having flagged these questions, I bracket them for now as I return to them in the next, final chapter.

intentional action designed to show that we may distally perceive the power to exert and be governed by force.

Let us take stock. As suggested above, grasp of the relevant conditions enabling us to describe what we perceive in terms of the operation of force may not suffice for the claim that we are directly presented with material bodies. By contrast, in what will follow, I argue that the power of a body to exert and be governed by force is immediately audible. At the same time, we ought not to be on the lookout for auditory sensations corresponding to a sensation of pressure, say, which is not already infused with the relevant theoretical element. So, we ought to factor in that sensitivity to the presence of this condition for materiality requires a grasp of what it is for the relevant condition to be present. This chapter will be devoted to taking steps towards a development of what a suitable direct, auditory sensitivity of the sort consists in.

In the section that follows, I argue that, in at least some cases of hearing bodies, attributing the power to exert and be governed by force to what we hear consists in the auditory experience of this very power. As I possess an intuitive grasp of the relevant physics and, in particular, I have a grasp of the notion of force, when I hear drilling off my street, I am auditorily sensitive to the presence of a condition for materiality in being auditorily presented with the power of material bodies to exert and be governed by force.

The Objects of Auditory Perceptual Experience

In the previous section, I warned the reader about the differences in how the power of force may be interpreted as a criterion of materiality supporting either a direct or an indirect account of auditory perceptual experience. According to a direct account, the power of force is directly audible. In this section, I retrieve a contrast between cases of hearing bodies that I discussed in chapter four. I argue that the thesis that the power of force is directly audible brings further light upon the apparent differences between cases of hearing bodies. This contrast, hence, itself lends support to the thesis that the power of force is directly audible.

In chapter four, I put forward a contrast between cases of hearing bodies. I argued that considering any case of hearing bodies to be a case of indirectly hearing – that is, a case in which we may truthfully hear a body based on experience of a sound – neglects a difference in the experiences that we undergo. On the face of it, while in some cases of hearing bodies, such as hearing crunching a carrot, what we hear appears intrinsic to the experience that we undergo, in some other cases, such as hearing the ambulance approaching, it does not. Insofar as aspects of the bodies that we hear appear to be intrinsic to at least some of the auditory experiences that we undergo in contrast to others, I argued that what best accommodates this difference is that in some cases of hearing we are in fact directly presented with material bodies.¹⁰²

In the previous chapter, I argued that material bodies essentially exert and are governed by force. Equipped with a dynamic criterion of materiality, we are now in the position to make better sense of the apparent difference between cases of hearing bodies. Aspects of the bodies that we hear appear intrinsic to the auditory experience that we undergo because in such cases, in contrast to others, we are directly presented with the power of force. Since the power of force is a defining element of material bodies, we shall conclude that in such cases of hearing we are indeed directly presented with material bodies. Let us consider some examples coming under the two sets of cases to which I have referred.

In the first set, we may mention,

Hearing the ambulance's siren approaching

Hearing the alarm going off

Hearing someone buzzing the door

¹⁰² For a more thorough discussion of these points I refer the reader to chapter four.

In the second set, we may mention,

Hearing crunching a carrot

Hearing slapping a cheek

Hearing a stone crashing into a window

All sets of cases above are cases of hearing bodies. I previously argued that aspects of the bodies that we hear appear intrinsic only to the second set of cases. I now turn to argue that in such cases we are, in fact, presented with the overt behaviour of bodies in interactions, that is, with the exerted power of force.

In chapter four, I used a contrast between these sets of cases of hearing bodies to argue against an indirect view of auditory perception, according to which hearing bodies consists in no more than truthfully hearing bodies based on perceptual experience of sound. This provided us with an opportunity to bring to light that in some cases of auditory perceptual experience aspects of the material bodies that we hear appear intrinsic to the perceptual experience that we undergo. It seems right to hold that I may hear the ambulance approaching by association with the experience of the sound of its siren. By contrast, it does not seem right to hold that, by the same token, hearing the crunching of a carrot consists in no more than truthfully hearing this by association with a sound. The difference that an indirect account seems to leave out or not do justice to, is that in such cases something in the very perceptual experience that we undergo makes it apparent to one that what they hear is, say, the crunching of a carrot. In other words, in some cases of hearing bodies, there is an intelligible link between the perceptual experience that we undergo and what we hear that may be best accommodated by the view that in such cases we are directly, auditorily presented with material bodies. Equipped with a dynamic notion of materiality, we may now make better sense of the thesis that in such cases we are auditorily presented with material bodies.

As I hear knocking on a wooden door, in contrast to buzzing the door, aspects of the episode taking place appear intrinsic to the experience that I undergo. I am in fact auditorily presented with an interaction among the bodies involved in this episode. When hearing the ambulance's siren approaching or the alarm going off, aspects of bodies involved in these episodes do not appear intrinsic to the experiences that I undergo, because my perceptual experiences do not present me with interactions among the bodies involved. Some cases of

hearing, such as hearing eating a crunchy carrot or slapping a cheek, consist in auditory perceptual experiences of interactions among bodies, that is, of the exerted power of force.

We may begin to notice that we would not be capable of describing the very experience of the sound made by an ambulance's siren in terms of the power of force. By contrast, when hearing someone throw a stone through a glass window, I am capable of describing the very experience that I undergo in terms of the operation of force because I am auditorily presented with an interaction among the bodies involved. We would not be capable of describing the experience of the sound of the ambulance's siren in terms of the operation of force, for, the experience of that sound does not present us with an interaction. By contrast, the experience we undergo when hearing someone throw a stone through a glass window is describable in terms of the operation of force, for we may experience the interaction between the bodies involved. Consider, also, hearing a pen rolling on the table and clashing against a pile of books. I may auditorily attend to this episode each step of the way only insofar as the interaction between the bodies involved is apparent in the perceptual experience that I undergo. Hence, the possibility of describing what we perceive in terms of the operation of force further supports the thesis that there is an apparent difference in the perceptual experiences that we undergo on which bases we may report hearing bodies.

I argued that what best accommodates a difference between cases of hearing bodies is that in some cases we are directly presented with material bodies. In such cases we may describe the very perceptual experience we undergo in terms of the operation of force. Given that this amounts to a criterion of materiality, we may indeed conclude that we ought to count such cases as cases in which we are auditorily presented with material bodies. Given what the legitimate ascription of the operation of force consists in, we may legitimately describe what we hear in terms of a force making a stone travel through a window breaking it into pieces. Not only may we describe what we hear in terms of the operation of force. Given what it means to observe the power of force, as previously argued – to observe the overt behaviour of bodies in interaction – these count as cases in which the power of force is directly audible.

As you sit in a busy café, you may hear all sort of background noises in your surroundings. Among these, you may hear chairs moving, steps, things being shifted around, cutlery being reshuffled, banging of dishes, the counter opening and shutting, coins collapsing, the sizzling, crackling noises of the espresso machine, and so no. While, just by auditorily attending to your surroundings, you may not be capable of identifying all that is taking place around you as, say, a banging of dishes, rather than a shifting of chairs, it is apparent that you are presented with mechanical interactions among things. Not considering

these to be cases of presentation of material bodies means neglecting a manner material bodies present themselves in experience. Moreover, this is not merely any manner bodies have to present themselves in experience. As argued in the previous chapter, this observable aspect of material bodies is a defining element of materiality. We may conclude that auditory experience of dynamic bodily interactions, that is, of the power to exert and be governed by force, is auditory perceptual experience of material bodies.

Having an intuitive grasp of the relevant physics I am sensitive to the obtaining of a condition for materiality, governability by force. We may auditorily undergo the experience of the operation of force so long as we undergo auditory experiences of the dynamic interactions of bodies. As the operation of force is immediately auditorily present, in some cases of auditory perceptual experience we are directly presented with material bodies. As I hear someone crunching a carrot, not only am I capable of describing what takes place at a distance from me in terms of the operation of force, but we are auditorily immediately presented with operations of force.

Perhaps as an indication of how much people love working in cafés, you can find entire tracks on YouTube with background café noises. Surprisingly, you can also find entire tracks of crunching carrots. It is a further question for research whether and in what sense such cases may count as illusory. However, they would not pose a challenge to my response to the scepticism that I addressed, threatening that we may *ever* be auditorily presented with material bodies.

Some may be tempted to consider the following a more pertinent counterexample, however. Peacocke (1993) describes a situation in which one is surrounded by holograms that come to a seeming contact to one another and whose movements and interactions may be predicted by means of an intuitive kinematics. Peacocke points out that a subject would not be surprised if these exerted no force when they came to ‘touch’ him. (1993, p.176) I hope that I have done enough to show that auditory presentation of the operation of forces is not analogue to this situation. Again, in this situation we describe visual experience of holograms in terms of the operation of force and come under no surprise that they do not exert force as we attempt contact with them. Similarly, someone may be tempted to describe the auditory case as a case in which we describe what we hear in terms of forces and come under no surprise when, in attempting a contact with sounds, we discover no exertion of force. However, as we auditorily experience the operation of force, when we come to contact with the objects of our auditory experiences, we come to contact with material bodies, not with sounds. The audibility of the dynamic interaction of bodies shows that, at least in some cases,

the objects of auditory perceptual experience are material bodies. In the two sections that follow I will further defend this thesis by addressing two possible objections.

Action, Perception, and Force

As outlined in the first section, providing examples of the experience of force, Peacocke (1993) points to the sensation of pressure and to the conscious state that we may be in when exerting force – while also holding that the relevant conscious experiences of force are interpreted experiences or experiences that bear a constitutive theoretical element. As pointed out in the first section of this chapter, this may point to an alleged assumption that we may undergo the experience of the power of bodies to exert and be governed by force just in case we are at some form of contact with a material body. Following this line of thought, some may reject the thesis that auditorily perceiving bodies interact may literally count as an experience of the power of force. They may object that, inasmuch as the experience of the power of force requires the perceiver to be in some form of contact with another body, any sensory experience whose objects are distal is not apt to produce, or consist in, a direct experience of this power. Since the objects of auditory perceptual experience are arguably distal, they may object that they are not suitable for a direct experience of the power of bodies to exert and be governed by force.¹⁰³

In the first part of what follows, I explore what may be the grounds for the assumption that the experience of the power of force requires that the perceiver is in some form of contact. In particular, I consider a thought that, if the idea of force were to emerge from the senses, it would be from touch.¹⁰⁴ I then move on to put this assumption to question. I exploit a reasoning concerning our ability to act or intentionally bring about a certain outcome, which suggests that we ought to accept that the power of force is perceivable at a distance from one. I observe that what makes for an important part of our ability to be prepared to bring about a certain result in the world is that we may be prepared to calibrate or exert an

¹⁰³ I do not assume that all the objects of auditory perceptual experience are distal. However, the objects of auditory perceptual experience that are suitable to meet a condition for materiality, i.e. governability by force, are distal objects for, as I will explain later in this chapter, they involve audible impacts. While vibration of the tympanic membrane is a proximal event and may also count as a type of collision, I do not consider it to be an audible object of auditory perceptual experience.

¹⁰⁴ While the thesis that the idea of force may only emerge from touch may only be a thesis about the genesis of the idea, I extract from this a thesis about what sensory experience may enable an experience of force.

adequate amount of force. To accommodate this element of our ability to act or bring about a certain result, we ought to accept that it is possible to perceive the power of force at a distance from us.¹⁰⁵ Accordingly, the objection that the objects of auditory perceptual experience are not suitable for the experience of the power of force is unsound.

Locke appears sympathetic to the thesis that experience of the power of force requires some form of contact with another body. Locke (1689) remarks that, ‘If any one asks me, what this solidity is, I send him to his senses to inform him. Let him put a flint or a football between his hands, and then endeavour to join them, and he will know’ (1689, book II, chap. IV, §.6). Moreover, Locke (1689) explicitly tells us that we get the idea of solidity (via which Locke attempts to explain force) from touch; as the very title of the first section of the chapter on the Idea of Solidity in the *Essay* is ‘We receive this Idea from Touch’ (1689, book II, chap. IV, §.1). Let us consider the following passage again,

There is no idea which we receive more constantly from sensation than solidity. Whether we move or rest, in what posture soever we are, we always feel something under us that supports us, and hinders our further sinking downwards; and the bodies which we daily handle make us perceive that, whilst they remain between them, they do, by an insurmountable force, hinder the approach of the parts of our hands that press them. That which thus hinders the approach of two bodies, when they are moved one towards another, I call solidity. I will not dispute whether this acceptance of the word solid be nearer its original signification than that which mathematicians use it in. It suffices that I think the common notion of solidity will allow, if not justify, this use of it; but if anyone think it better to call it impenetrability, he has my consent. Only I have thought the term solidity the more proper to express this idea, not only because of its vulgar use in that sense, but also because it carries something more positive in it than impenetrability; which is negative, and is perhaps more a consequence of solidity, than solidity itself. This, of all other, seems

¹⁰⁵ I ask the reader to bear in mind that the function of what follows is solely that of rejecting the objection that perceiving the power of force requires that one is at contact with another body – and not that of concluding that we may auditorily perceive the power of force. A positive defence of the thesis that we are directly auditorily presented with material bodies in being presented with their power to exert and be governed by force has been conducted in the course of chapters four to the first part of the current chapter.

the idea most intimately connected with, and essential to body; so as nowhere else to be found or imagined by only in matter. And though our senses take no notice of it, but in masses of matter, of a bulk sufficient to cause a sensation in us: yet the mind, having once got this idea from such grosser sensible bodies, traces it further, and considers it, as well as figure, in the minutest particle of matter that can exist; and finds it inseparably inherent in body, wherever or however modified.

Locke, 1689, Book II, chapter IV, §.1

We may begin by noticing that Locke (1689) acknowledges possible differences in terms of, respectively, the mathematician's and the vulgar conception of solidity, and focuses on the latter. While holding that we receive that idea from touch, in the passage above Locke provides a variety of examples of what may be a sensory experience of force. In particular, Locke remarks that our senses only take notice of solidity in masses of matter 'of a bulk sufficient to cause a sensation in us' on in 'grosser sensible bodies' (1689, Book II chapter IV, §.1).¹⁰⁶ We may infer from this that Locke holds that we receive the idea from touch as it is via touch that we are presented with bulky, gross bodies. Moreover, Locke also distinguishes the idea of solidity from that of hardness, 'in that solidity consists in repletion, and so an utter exclusion of other bodies out of the space it possesses: but hardness, in a firm cohesion of the parts of matter, making up masses of sensible bulk, so that the whole does not easily change figure'. (1689, Book II, chapter IV, §.4) For Locke, hardness consists in a cohesion of parts making up bulks that we may sense. It is this very bulks that produce the sensation of solidity. However, the idea of solidity we get from bulky bodies is that consisting in repletion, that which hinders the approach of other bodies.¹⁰⁷ We may derive from the above a thesis according to which the relevant idea we get from touch is not to do with tactile sensations of, say, a rough or a smooth surface, but to do with what it is for an object to exert a force on us. In some sense, this is in line with the sensation of pressure and the conscious state we may undergo when exerting force ourselves that Peacocke (1993) mentions, for the relevant experiences are not sheer tactile sensations. Rather than tactile sensations, we may identify a broad commitment that the only sensory experiences of the power

¹⁰⁶ Locke also points to a sensation that we have regardless of whether we move or are at rest and whichever is our posture: a feeling of 'something under us that supports us, and hinders our further sinking downwards'. This description of a sensory experience of solidity, as that by which we may further explain force seems to refer to gravity, rather than to a contact force, such as impulse, resistance and protrusion, to which Locke refers later in the *Essay*.

¹⁰⁷ Moreover, in §.4, distinguishing solidity from hardness, Locke holds that whereas bodies may be more or less soft or more or less hard, Locke understands solidity as an absolute quality of matter that does not come in degrees.

of force are experiences we undergo as we are involved in an interaction with other material bodies.

Given so, we may formulate the following simple argument against a case for auditory direct experience of the power of bodies to exert and be governed by force,

1. For a perceiver to experience force, they must be in contact with a material body.

To be clear, (1) subsumes experiences that we may have as we, as material bodies, exert force upon other bodies as well as experiences that we may have as other bodies exert forces on us. Some may infer from (1) that,

2. A perceiver may not undergo an experience of force in being presented with distal objects of perceptual experience.

As consequence of (2), any sensory experience whose objects are distal is excluded from being an experience of the power of bodies to exert and be governed by force. Insofar as the objects of auditory perceptual experience are distal, we may not undergo an auditory experience of the power of bodies to exert and be governed by force.

We find in the literature examples of views that have moved away from a contact requirement. In particular, if the conscious state I am in when exerting force is a suitable sensory experience of force, my awareness of myself as a body exerting force may suffice, without a requirement to be in contact with another material body to experience the force it exerts on me.¹⁰⁸ In what follows I further move away from a contact requirement, by exploring the role that perception of the power of force may play in action.

Any material body is subject to forces. As bodies, we are also governed by forces and exert them in bodily movement and action. An exertion of force with our own limbs is what, among other things, enables us to accomplish everyday activities, such as walking or raising an arm. Not only is exertion of force essential for bodily movement, but also for action. I do not have the space to explore the differences between action and bodily movement to any satisfying extent. In what follows, I assume action to consist in intentionally bringing about an outcome or a result in the

¹⁰⁸ Cassam (2001, 2002) holds that only embodied beings may have sensations of force and that awareness of one's own body is necessary for the acquisition, as well as the possession, of the concept of force.

world. I also assume that an essential ingredient for intentionally bringing about an outcome in the world is that we are prepared to appropriately perform the relevant movements in order to bring about a certain result. That is, that an element of bringing about the intended outcomes is being prepared to do so. As I move to reach out my hand to pick up a glass of water, for instance, I am prepared to perform the appropriate bodily movements. It seems reasonable to assume that, as adults whose limbs, and other bodily parts, are in use, and with no relevant sensorimotor conditions, we would not normally, say, reach out a hand and attempt to pick up a glass in a series of trials and errors. We would normally come to pick up a glass prepared. Just so that most of the times that we reach out for a glass, we may be successful in what we do. We may say that, so long as things go well in the world, we are generally capable of successfully carrying out the actions that we intend to carry out, partly because we are prepared to act appropriately.

To stress this point, we may tentatively observe that being prepared to act in scaling one's own force appropriately may be one element that sets an action aside from a mere occurrence. If too many people enter an elevator beyond its safe maximum capacity exerting more force than the elevator may sustain, the elevator inevitably breaks. As agents we do not merely exert force, but we are capable of scaling the amount of force we exert to bring about a certain result. The fact that we are prepared to act, that in some sense we know – at least sub-personally – what it takes to bring about a certain result, makes up for the fact that we may intentionally try to perform a certain action as opposed to being at the mercy, so to say, of whatever forces may be exerted on us.

In some related sense, Anscombe (1957) distinguishes between two types of mistakes. As things may go wrong in the world, one mistake is in performance, which does not make for a mistake in one's own intention. Say, I reach out for a candy but as you stand nearby and want to prank me you go there faster and reach the candy before me. I think that Anscombe (1975) would say being unsuccessful in this way does not change the fact that the correct description of my intentional action is to reach out for a candy. The fact that things went wrong and I did not in fact reach out my candy would not prevent me from describing what I was doing in terms of reaching out for a candy. We may expand on this and say that, despite not reaching my target, I was prepared to act appropriately: among other things, as I was going to reach out for the candy before you pranked me, my limbs were moving appropriately. In this case, the fact that things went wrong, as you got there first, is not an evidence that I was not prepared to perform appropriately. It is in this sense that I consider being prepared to act to be an ingredient of acting intentionally. While a complete defence of this point requires further discussion, in what follows I assume that being prepared to act, including being prepared to exert force appropriately, is an

essential ingredient of intentional action. I argue that accommodating this essential ingredient of intentional action requires that we may at times perceive the power of bodies to exert and be governed by force whilst at distance.

Perceptual capacities enabling us to successfully bring about results in the world, include the ability to locate things in one's environment, to keep track of them as they shift location, and, relatedly, to have a sense of one's own position in relation to things in one's environment. In order to successfully act we need to locate the given target in the environment and keep track of it as we manoeuvre to reach it or otherwise act upon it. Arguably, more comes into the ability to perform ordinary actions, such as that of picking up a book, than locating a target in one's environment and keeping track of it over time. The fact that, say, a book is picked up, as a result of certain bodily movements, depends on creating a series of conditions in one's environment. Among these conditions, one is that of exerting the appropriate amount of force. For instance, the way we ought to act to pick up something will differ according to whether we are presented with a copy of *Anna Karenina* or a token of the Oxford Very Short Introduction series. A difference to successfully act according to whether we are presented with either of these, is a difference in the force we ought to exert in relation with the force that the object that we wish to act upon exerts. We cannot successfully pick up an object unless we appropriately calibrate force. In general, a necessary condition on bringing a certain result in the world as a consequence of one's own bodily movements, is to appropriately scale one's own force according to the force exerted by the objects that one encounters. As long as I assume that action depends partly on being prepared to perform appropriately, exerting the appropriate amount of force comes along with the things one must be prepared to do. One is normally prepared to exert the appropriate amount of force in picking up a glass of water. If I was going to exert enough force to smash it rather than pick it up, I would not be prepared to act appropriately. It is reasonable to say that we would not normally undergo a series of trials and errors until we have reached the right amount of force.

Insofar as bringing about a certain result requires appropriate calibration of one's own force, a question arises as to what enables an agent to be prepared to scale their force in relation to their target to appropriately act on it. The question as to what enables agents to be prepared to scale their force ought not to be conflated with a question about the origin of an individual's capacity to exert force. Nor should it be conflated with a Lockean mechanistic attempt to explain what it is about us, as bodies, that enables us to exert force. The capacity to exert force may be innate in this sense: we are the kind of beings governed by forces and capable of coping in a

world governed by forces insofar as we are material bodies among others.¹⁰⁹ By contrast, the question is what enables an agent to appropriately scale their force in such a way that they may be prepared to act.

The contact thesis above states that we may have an experience of the power of bodies to exert and be governed by force just in case we are at contact or engaged in an interaction. Note that if it were the case that we could only experience a body's power to exert and be governed by force whilst in contact with it, we would not be able to accommodate the fact that, at times, we are prepared to act appropriately. For, scaling one's own force would only occur at contact. Our capacity for scaling would be merely reactionary. This seems very implausible. As a matter of fact, it is simply untrue that we only figure out how much force we ought to exert by experiencing the force the objects exert. Moreover, even if we got to adapt and react to a given body in action, we surely come to that with some formed expectation. There is only an extent to which it seems correct to claim that one adapts to the given body one grabs, say, and, hence, only a certain extent to which scaling exertion of force is reactive. The scaling that may occur in action is made on the basis of a given expectation: if we went to pick up a plastic cup exerting too much force, there is no much re-scaling in the middle of acting that one could do if the exertion of too much force has already caused the cup to break, say. In order to accommodate the fact that we are capable of coming to an action adequately prepared, we need to open up to the possibility that scaling may occur at a distance from the target, and not just by reacting to whatever force is exerted on us. My proposal is that in order to accommodate the fact that scaling one's own force is a condition on being prepared to bring about an intended outcome, we ought to allow that we may, at times, perceive force at a distance from us. In seeing or hearing bodies behave, not only may we be capable of describing their interactions in terms of the operation of force, but we may also acquire information relevant to appropriately scale our own force.

Committed as they are to the thesis that experience of force only comes in contact with another body, they would hold that, if I was ever able to scale my own force at distance from my target, it would not be by virtue of what I experience but by virtue of an estimate (while it is consistent that this only occurs sub-personally). However, this only pushes the question further as to how an estimate is made. If the proposal were that estimates are based on past experience, we may doubt it on the same grounds as above. For, this suggests that at some point in time, we only

¹⁰⁹ I have considered the power of force to be what explains an overt behaviour of bodies in interactions to the extent that a body whose behaviour is governed by the power of force is material. I bracket a question as to whether the exertion of force ought to be understood differently when it comes to explaining the behaviour of animate beings capable of agency.

scaled our force by reacting and without being prepared to act.¹¹⁰ As adults, we must be capable of making estimates or scaling our force at a distance without only relying on past experience. This is also because the force exerted by an object is, arguably, not a fixed feature of a body.¹¹¹ It depends not only on its mass but also on further environmental conditions and on its acceleration: if you throw an apple at me I would probably need to exert more force to catch it (along with other sensorimotor skills) than I would if you gently passed it to me.

Being prepared to act means, among other things, scaling our own force at a distance from the target body. What seems to best accommodate that scaling occurs at a distance from the target body is that it may be possible to perceive force – if only sub-personally – at a distance from the target body. We may, hence, forgo the objection that we may only perceive the power of force at contact with another body.

As we observe objects at a distance, we may be able to estimate required force based on other features of the object, say its size. Say, for instance, as I look at a pile of books on the desk I may estimate how heavy they are if I was going to pick them up based on the quantity of books and on having previously carried books of similar sizes. We may allow that, at times, we may only scale force based on other features of the object or on past experience, and not on direct experience of the power of force exerted by other bodies. However, there are also cases in which we may perceive the power of bodies to exert and be governed by force at a distance, enabling an agent to scale their action adequately.

Consider watching people in a spin class and comparing the scenes that one observes when a person is riding a bike with low resistance and when they are riding a bike with high resistance. This is a case in which a bike is visibly heavier than another, independently of size, other features of the objects, or past experience. It is experience of the very forceful interaction between the bodies involved enabling one to estimate that a bike is heavier to ride than another. Not only may you characterise patterns of the scenery in terms of exerted force, the way the pedals move, shows that a person is exerting more or less force. The distinctive look of the scene suggests that someone is riding a bike with higher resistance than someone else. This is not merely an inference that you are make based on the spatial configuration of the scene or on size of the objects involved.

The distinctive look things have is a look they have in virtue of exerting force, which is not reducible to other visual aspects. In cases involving movement, a spatial and temporal

¹¹⁰ This poses a question as to the development of scaling capacities in babies, whether the first time a baby learns to grab a spoon to feed themselves they merely react to the force it exerts.

¹¹¹ According to Peacocke (1993), force is best understood as unit free.

description of what is taking place would not suffice for a characterization of one's phenomenal experience. Take, for instance, a case in which you look at someone sideways as they walk down the hall. You may describe what is going on in terms of a succession of points in space and time. However, that would not suffice for a characterization of what is going on in terms of the force of each footstep, along with the whole body's movements, exerts against the floor and that exerted by the floor resisting against the pull. Hence, force is distinctively visible in the way things at a distance from us appear in experience.

Take the following further case. Someone asks us you to pick up a small suitcase. By looking at the suitcase you form the expectation that the suitcase is light perhaps because you relate weight to size. Compare this to a situation in which someone asks you to pick up the same sized luggage following having seen them lift it with fatigue and quickly dropped it on to the ground as if they could not handle its weight. Arguably, you can tell that from the experience that you undergo that the suitcase is heavy. How are you able to tell? From the look of this interaction occurring at a distance from you. What you have observed, however, is not merely a pattern of events describable in terms of force. You have observed changes in acceleration and exerted force.

Since scaling ought to be considered a precondition to act and since it determines whether one is prepared to act, what enables one to scale one's force appropriately cannot be experience that requires contact. It ought to occur at a distance from the target object. The view that we may experience force at contact cannot make sense of the fact that we are prepared to act. This means that we ought to allow that, contra the 'contact thesis', the power of bodies to exert and be governed by force is perceivable at a distance in the distinctive way bodies interact.

Force versus Space

The general thesis that I defend is that our conception of matter, featuring a dynamic notion of force, is suited to characterise at least some of the objects of auditory perceptual experience. This provided us with an opportunity to broaden our conception of materiality and appreciate the dynamic way material bodies may present themselves in experience. We may be auditorily presented with material bodies, for we may be auditorily presented with the power of bodies to exert and be governed by force. In the previous chapter, via looking at some historical considerations concerning how a cluster of notions related to force have been integrated in an understanding of matter, I pointed to the development of a dynamic notion of force. According to this, we would not correctly understand the power of force by reducing it

to a quality of the configuration of matter. The power of force picks out a defining element of matter in its overt behaviour, describing it in terms of the laws of physics. In light of a correct understanding of the power of force and how it features in our conception of matter, we do not need to be presented with three-dimensional extension in order to legitimately ascribe force. This is why I argued that, despite not being auditorily presented with three-dimensionally extended stuff, our conception of matter, in principle, may encompass the objects of auditory perceptual experience.¹¹² By addressing potential concerns of an opponent, I now turn, more straightforwardly, to the claim that we may perceive the power of force, and, hence, material bodies, in spite of not being presented, at least not apparently so, with matter extended in space.

An opponent may object that our conception of matter, in which a notion of force features, may be suited to encompass the objects of auditory experience suggesting that the power of force is what explains a space-filling quality of matter.¹¹³ Accordingly, this opponent may doubt that, via a dynamic turn, we have successfully mended our own conception of matter so that it may encompass the objects of auditory perceptual experience. In this sense, the opponent attempts to take us back to square one (or at least to chapter 3), insisting that so long as we are not auditorily presented with extension, or with matter taking up space, we may not be auditorily presented with objects to which the power of force is ascribable.^{114 115}

I would hope that the discussion of the previous chapter would suffice to defuse these concerns. As, dialectically speaking, my defence of a dynamic notion of force is designed to overcome scepticism that we may not be apparently auditorily presented with material bodies so long as we are not apparently auditorily presented with three-dimensionally extended bodies. However, I take the opportunity to further illustrate why it does. We may in fact resist the opponent in two different ways, which, in some sense, consist in throwing the dialectic of the previous discussion back at them. First and foremost, I shall remind the reader that, having rejected a Lockean mechanist approach, the power of force is not understood in terms of a quality of the configuration of matter. A dynamic approach to an understanding of the

¹¹² For further discussion I refer the reader to the previous chapter.

¹¹³ Warren (2001) puts the contrast between Locke's solidity and Kant's repulsive force in terms of a contrast between a mechanistic and a dynamic approach to an understanding of a space-filling quality of matter.

¹¹⁴ For a discussion of extension and for the thesis that we do not auditorily experience bodies taking up space, I refer the reader to chapter 3.

¹¹⁵ Notice that this claim refers to what is apparent in auditory perceptual experience. We may in fact accept that we stand in perceptual relations with material bodies despite the fact that this is not apparent in auditory perceptual experience – that thesis is not at issue.

power of force rejects Locke's attempt to understand it in terms of solidity. This means that if solidity were correctly understood as a space-filling quality of matter, so long as force is not reducible to solidity, there is no commitment to understanding force as a space-filling quality of matter. In this sense, the objection would be null.¹¹⁶

The move from a mechanistic to a dynamic approach leaves behind the attempt to understand matter in terms of its internal configuration and embraces describing an essential aspect of matter in terms of its governability by force, ascribable in perception of matter's overt behaviour. In doing so, the legitimacy of this ascription does not hinge on matter's three-dimensional extension, but on behaviour that is explicable by the relevant laws of physics. I consider it to be a further empirical question whether we may be capable of describing matter's overt behaviour in terms of the operation of force without reliance on spatial notions. The point is that this difficulty would not arise from the definition of force itself, for, as just pointed out above, it is not itself defined in terms of a quality of matter of filling space. It shall be, moreover, noted that if it were the case that in describing matter's overt behaviour in interaction, we would have to necessarily deploy spatial notions, it would be relevant for the current discussion to specify just which spatial notions. As I argued in chapter three, we may accept that we may be auditorily presented with distance and direction. However, what threatens the idea that we are auditorily presented with material bodies is that we lack presentation of three-dimensional extension. As argued in some detail in chapter three, while we may be auditorily presented with distance and direction we do not appear to be auditorily presented with three-dimensionally extended matter. So, in principle, we may consistently deploy spatial notions of distance and direction in describing matter's overt behaviour in terms of the operation of force.

As I mentioned above, there are in fact two ways in which we may resist an opponent to the thesis that our conception of matter featuring a notion of force may encompass the objects of auditory perceptual experience. One is, as I have just done, to point to the fact that

¹¹⁶ Someone may point out that the Kantian dynamic notion of repulsive force is also a manner matter fills space. For, in effect, the Kantian notion of repulsive force may be understood as a dynamic alternative to Locke's impenetrability (see Warren 2001). According to Locke, matter is impenetrable, in preventing other matter to fill its space, in virtue of being solid. By contrast, repulsive force is a dynamic approach to understanding impenetrability, also a manner for matter to fill in space. Locke and Kant would, hence, both provide ways of understanding matter's space-filling property, so, neither may provide us with conditions for being material that may be met by the objects of auditory perceptual experience. However, in drawing a contrast between Locke's solidity and Kant's repulsive force, I only pointed to the development of a dynamic approach to integrating force in an understanding of matter. I did not defend the Kantian notion of repulsive force per se and I do not understand the definition of force that I have provided to be reducible to the Kantian notion of repulsive force either.

the power of force is not understandable reductively in terms of solidity (or repulsive force), which may, in turn, be understood as a quality explaining matter's filling space. The other is to point to a distinction that Locke draws between pure space and solidity in order to argue that solidity, as a space-filling quality, is not quite the same as extension. So, even someone defending a Lockean view, understanding solidity as a space-filling quality, may find that a conception of matter featuring a notion of force is suited to encompass the objects of auditory perceptual experience, even in case we lack presentation of extension.

To reiterate, in the *Essay*, Locke distinguishes between solidity and pure space. Understanding solidity as a space-filling quality, conceived closely to movement, Locke distinguishes it from the notion of a pure space, empty of movement. It is precisely by drawing a distinction between the two that Locke motivates the claim that solidity is the quality of matter that explains the operation of force, as in a pure space without movement we could not conceive of the operation of force. Locke suggests that, 'a man may conceive of two bodies at a distance, so as they may approach one another without touching or displacing any solid thing, till their superficies come to meet; whereby, I think, we have the clear idea of space without solidity' (1689, book II, chap. IV, §. III). In this sense, we may conceive of a notion of extension in pure space, distinct from solidity.¹¹⁷ As Locke asserts,

By this, the idea of solidity is the extension of body distinguished from the extension of space – the extension of body being nothing but the cohesion or continuity of solid, separable, movable parts, and the extension of space, the continuity of unsolid, inseparable and immovable parts. Upon the solidity of bodies also depends their mutual impulse, resistance and protrusion.

1689, Book II, chap. IV, §. V

More generally, it is not obvious that any ways in which matter may be understood to be taking up space is really akin to spatial extension. If force may be understood as a way for matter to fill in space, so be it. That will not threaten the view that we are auditorily presented with material bodies, for matter's space-filling quality, when understood in terms of force, is not akin to spatial extension, which we do appear to lack in the auditory case.¹¹⁸ Ultimately,

¹¹⁷ A question may be posed as to the extent to which this distinction may parallel a distinction between geometry and physical space as discussed in the General Introduction of *Spatial Representation* (1993).

¹¹⁸ This reading takes inspiration from Crowther's contribution to *Perceptual Ephemera* (2018), who, starting from a Lockean notion of solidity, defends a look of solidity as that of looking space-filling for touch and bodily action.

thus, the power of force is perceivable independently of spatial extension. Material bodies may well amount to three-dimensional bodies extended into space. However, their defining element, i.e., the power to exert and be governed by force is independent and independently perceivable of whether they are.

Conclusions

Being presented with the power of bodies to exert and be governed by force in the way they interact at a distance from us enables us to make sense of an apparent difference between cases of hearing. I am auditorily presented with the crunching of a carrot because I am directly presented with a forceful interaction of the bodies involved. I have addressed two reasons why one may think that we may not auditorily undergo an experience of the power of bodies to exert and be governed by force. One reason stemming from the thought that experience of bodies exerting this power requires space, and one stemming from the thought that it requires some form of contact. Defeating these two reasons, I have argued, in turn, that direct perception of the power of bodies to exert and be governed by force does not require being presented with extension in space, and that this power may be perceived at a distance, that is, by perceiving distal objects of perceptual experience.

Humean scepticism about auditory perceptual experience, as introduced in the first chapter, threatens that we may ever be auditorily presented with material bodies. Insofar as governability by force is a condition for materiality and insofar as we are directly auditorily presented with operations of force, we have here a case against Humean scepticism as it concerns auditory experience. I argued that we are auditorily, directly presented with material bodies in being directly presented with their power to exert and be governed by force. In the next chapter I turn to assess whether we have the elements for addressing Humean scepticism about existence unperceived as it concerns the auditory case.

Chapter 7

Mind-Independence in Auditory Perceptual Experience

In the second chapter, I looked at Hume's (1739) scepticism about whether sensory experience provides support for the belief that what we perceive exists mind-independently. In the space of that chapter, I observed that a set of solutions to Hume's scepticism exploits a link between mind-independence and materiality. As such solutions rely on spatial aspects of material bodies as visually perceived, which do not appear to characterise auditory perceptual experience, I turned to explore in what ways material bodies may be considered to be present in auditory perceptual experience. I have concluded, positively, that auditory perceptual experience may indeed present us with material bodies in presenting us with the power of bodies to exert and be governed by force in interaction with other bodies. Given so, in this conclusory chapter, we may now turn to consider the extent to which, in the auditory case, we may also exploit a link between mind-independence and materiality in order to address Hume's scepticism. Weighing up conclusions drawn in the previous chapters up to this stage, I will begin to explore, in particular, in what way auditory perceptual experience of episodes involving the operation of force may consist in experience that may legitimately give rise to the idea that what we perceive exists mind-independently. However, the aim of this chapter is not that of providing a full-grown account of how the mind-independence of what we auditorily perceive may be evident in auditory experience. Rather, taking stock of the progress made in the course of the previous chapters, I point to possible directions for future inquiry.

In what follows, I briefly consider in what ways, in the absence of material bodies, some suggest that in a purely auditory world a perceiver may lack the resources to make sense of the fact that what they perceive exist independently of their minds and perceptions. I will, then, look at a suggestion from the literature that the presence of obstacles for action may provide a candidate experience for the idea of materiality and, connectedly, of mind-independence. Following this suggestion, I draw conclusions for what concerns auditory perceptual experience of forceful interactions and I point to a future, possible line of inquiry.

Materiality and Mind-Independence

Hume (1739) is sceptical that sensory experience may legitimately provide support for the belief that what we perceive exists mind-independently. As explored in chapter two, Hume holds that we fall prey to the illusion or fallacy that what we perceive continues to exist unperceived and, hence, that it exists independently of our minds and experiences. The constancy and coherence of our impressions of ordinary bodies, such as books or mountains, may feed into the belief that such objects exist independently of our minds and experiences of them. However, Hume holds that sensory experience cannot legitimately give rise to idea of continued existence unperceived, which is, rather, a product of the imagination. Hume essentially maintains that since we cannot perceive things while unperceived, it cannot be sensory experience to give rise to the idea of continued existence unperceived. Hence, if this is how things strike us in experience, it is by some kind of fallacy or illusion.

In chapter two, I observed that Brewer (2020, 2021) offers a tenable solution to Hume's scepticism about the idea of continued existence unperceived. For, it purports to show that a single perception, or whatever is currently present in sensory experience, may legitimately give rise to the idea of continued existence unperceived. This strategy appears promising insofar as it provides a strategy to avoid Hume's contradictory requirement of perceiving the unperceived to find support, in experience, for the idea of continued existence unperceived. Adopting a perceptualist stance, Brewer maintains that the formal conditions on perceptual experience, provided by a simple theory of perception, are a constitutive and evident aspect of perceptual experience. In being currently presented with conditions on the obtaining of perception, my current experience can legitimately give rise to the idea that what I perceive exists independently of me and my experience.¹¹⁹

As I have previously observed, these conditions include spatial and perspectival conditions on perception of bodies that take up space. Since, as argued in chapter three, we may not be auditorily presented with matter taking up space, it is not obvious that spatial and perspectival conditions may characterise what is present in auditory perceptual experience. Consequently, the obtaining of conditions on perception, so characterised, may not be evident in what is currently present in auditory perceptual experience. As some may worry that in auditory perceptual experience we lack pertinent perceptual aspects, it is unclear that Brewer's solution may apply to the auditory case, providing an account of how auditory

¹¹⁹ I refer the reader to chapter 2 for a discussion of these points.

perceptual experience may legitimately give rise to the idea that what we perceive exists mind-independently. In spite of this, insofar as, in chapters four to six, I have argued that we may indeed be auditorily presented with material bodies, as we take stock of the progress made up to this stage, we may now begin to see this issue in a different light.

As explored in the second chapter, Brewer (2020,2021) follows a suggestion from Evans (1985), according to which it is only in the context of a simple theory of perception that one may make sense of the idea of existence ‘now perceived, now unperceived’. To reiterate, as theoretical elements are a constitutive and evident aspect of perceptual experience, Brewer is then in the position to explain how experience may provide support for the idea of mind-independence. In *Things Without a Mind*, Evans (1985) takes up Strawson’s experiment, conceiving of a purely auditory, no-space world. Evans essentially concludes that it is due to the absence of conditions for perception of material bodies that, in a purely auditory no-space world, one cannot make sense of the mind-independence of what one perceives.¹²⁰ According to Evans, there are generally two types of conditions for perception: one type has to do with the subject, such as their perspective or orientation, one type with the environment, such as lighting condition, or with aspects in the world that are causally necessary for perception. (1985, p. 272) Evans remarks that we can make sense of a material body existing in the absence of conditions causally necessary for its perception, but we cannot do the same for sensory objects: whereas a rainbow does not exist in the dark, in sunlight it would be visible. (1985, p.263) Lightness is a condition for the visibility of a sensory object, such as a rainbow. However, we cannot make sense of its existence in the absence of this condition on its perception: we would not believe that a rainbow exists in lack of lightness. This is how we may set perception of material bodies aside from that of sensory objects. For, in case of perception of material bodies we may indeed make sense of their existence in the absence of conditions for their perception. Hence, the presence of conditions on perception of material bodies can enable a perceiver to make sense of the idea that what they perceive exists mind-independently.

According to Evans, a non-spatial world would be inhabited by sensory objects like sounds, smells, rainbows, etc. As Evans provides a dispositional account of sensory properties, conditions on their obtaining are understood as merely dispositions to cause in us certain experiences, falling short of mind-independence. Evans holds that an inhabitant of a

¹²⁰ Some may read Evans’s (1985) response to Strawson (1959) as suggesting that, in a purely auditory world, it may be possible to re-create an analogue of space via means of a master sound that mimics our own spatial framework.

purely auditory world cannot make sense of the idea of existence unperceived because they do not have the resources that we do have, as we possess the concept of substance, with its primary properties. (p.275). According to Evans, grasp of primary properties involves mastering a set of interconnected principles that make up an elementary theory of primary mechanics within which these properties fit, and which gives them sense (p.269). Yet, in a purely auditory world, according to Evans, one may not rely on conditions given by primary properties. For an analogue to the idea of matter in an auditory world, Evans remarks that,

(...) Sounds would have to occupy space, and not merely be located in it, so that the notions of force and impenetrability would somehow have to have a place, and we may well wonder whether we can make sense of this without providing Hero with an impenetrable body and allowing him to be an agent in, and manipulator of, his world.

Evans, 1985, p. 280.

While I do not have the space for a more thorough reading of Evans (1985), it suffices to notice that, broadly speaking, according to Evans, in lack of conditions for perception of material bodies, a purely auditory world would be deficient of resources that may feed into the idea of mind-independence.

However, Evan's conclusion is based on an assumption that I have rejected. The assumption is that, since spatial extension is required to make sense of materiality, things cannot appear material in non-spatial experience.¹²¹ As in the course of chapters four to six, I have corrected this view and drawn consequences for the auditory case, we can now appreciate that it may not be right to reach Evan's conclusion. Primary properties, according to Evans, include properties immediately consequential upon space-occupation – position, shape, size and motion, but also properties applicable to a body in virtue of the primary properties of its spatial parts; and properties definable when these properties are combined with the idea of force (e.g. mass, weight, hardness). In chapter five, I have defended a dynamic notion of the power of force suited to encompass the auditory case in identifying an essential quality of matter, which is independent – both ontologically and perceptually – of matter's intrinsic spatial configuration. In being auditorily presented with the power of bodies

¹²¹ Note – however – that I have not fully engaged in the inquiry as of what *purely* auditory experience may yield. Yet, since the dynamic notion of force that have defended is independent of matter's intrinsic spatial configuration, it would not be the lack of space that would make a purely auditory world empty of material bodies.

to exert and be governed by force, we are auditorily presented with material bodies. In principle, we may, hence, entertain the possibility that auditory perceptual experience, as it enables perception of material bodies, may furnish us with sufficient resources for making sense of their existence unperceived. Future research may assess to what extent – in light of the characterization of auditory perceptual experience which I have defended – we may exploit a link between the materiality of the objects of auditory perceptual experience and the belief that what we perceive exists mind-independently. In the next section, I begin to speculate on a possible orientation of an inquiry into how what I have argued that is present in auditory perceptual experience may give rise to the idea that what we perceive exists mind-independently.

Agency and Mind-Independence

As I have argued in the course of the previous chapters, auditory perceptual experience of forceful interactions involves auditory perceptual experience of material bodies. A perceiver familiar with a rudimentary physics, including the dynamic notion of force, can be presented with material bodies in being presented with their power to exert and be governed by force, whereby the power of exerting and be governed by force is an essential quality of material bodies. Future research could examine auditory presentation of matter exerting and being governed by force along with the idea of the mind-independence of what we perceive. We find a suggestion in the literature that might set off the orientation of this inquiry.

In *Thought and Action*, Stuart Hampshire remarks, ‘I find my power of movement limited by the resistance of objects around me. This felt resistance to my will defines for me, in conjunction with my perceptions, my own situation as an object among other objects’ (1959, p.47). According to Hampshire, our awareness of being bodies among other bodies is verified not only via the senses but also whenever we move and act. Examining the nature of intentional agency, Hampshire (1959) defends the view that there is an essential link between mind-independence and the will. Hampshire distinguishes between animate and inanimate powers, whereby the former depends upon the will and desire of agents. According to Hampshire, the external world is a system of independently existing objects acting and reacting upon one another. We perceive objects existing outside of us both as spatially discontinuous with our bodies and as independent of our will. We can act upon objects around us both to move at will and bring about changes in other bodies.

Hampshire remarks that ‘we are in the world as bodies among bodies, not only as observers but as active experimenters’ (1959, p.53). Against a Hume-influenced, empiricist heritage according to which experience consists in a succession of impressions and ideas, Hampshire assigns primacy to agency and maintains that, ‘we could not ever be observers unless we were sometimes active experimenters, and we could not ever be experimenters unless we were sometimes observers’ (1959, p.53). According to Hampshire, we would lack a conception of ‘being in the world’ unless we could move intentionally and all that could inform our conception of ourselves in the world were a succession of impressions and ideas. Hampshire reminds us that it is both in perception and in movement or action that we are aware of ourselves as one object among others.

In a similar vein, in the absence of spatial conditions for perception of material bodies, in a review of Evans (1985), Baldwin (1987) recommends introducing the thought that the subject is an agent, capable of voluntary motion within the sound space.

Perhaps there is here a significant role for the will; for if we integrate tactile experience into a broader bodily experience which includes kinaesthetic experience and our strange proprioceptive ability to feel "without observation" where our limbs are, we can interpret tactile experiences as the encountering of resistance to bodily movement. (...) I suspect that if one could somehow build into the primitive sound world in which voluntary change of "location" is possible further features which were sufficiently similar to the encountering of material obstacles to physical movement one would be well on the way to developing the auditory world into one rich enough to support a full- blooded conception of objectivity.

(Baldwin, 1987, p.215)

As Baldwin (1987) suggests, to pursue a possible link between agency and mind-independence in the auditory domain, one must show that the idea of voluntary movement can be applied within the auditory world. Baldwin maintains that the auditory would furnish a too impoverished analogue of voluntary movement, as in an auditory world, there would be no obstacle to movement, nor any obvious way to build this into the subject’s auditory experience. Baldwin suggests that we may attempt to assign a central role to the sense of touch, on the assumption that in tactile experience we do seem to have experience of ourselves as bodies interacting with other material bodies. Moreover, Baldwin puts forward

the thought that in feeling our own bodily dimensions we seem to experience a simultaneous space outside of us that may suffice for mind-independence.

The claim that we might not be able to make sense of movement and action based only on the auditory and the consequent appeal to touch, are, once again, based on a misguided characterization of the auditory. In chapter six, I have refuted the thesis that just in case a perceiver is engaged in an interaction may they perceive the power of bodies to exert and be governed by force. By contrast, I argued that the power of bodies to exert and be governed by force is perceivable at a distance from one, in distally perceiving bodies engaged in interactions. Hence – returning to Baldwin’s suggestion – it may not be necessary to introduce tactile experience for the notion of obstacles to movement. Auditory perceptual experience presents us with material bodies in presenting us with their power to exert and be governed by force. The power of force is perceivable at a distance from one in perceiving bodies interact or engaged in forceful interactions. Auditory perceptual experience of the power of bodies to exert and be governed by force may, thus, serve us with a candidate experience for the notion of obstacles to movement and action.

This conception of auditory perceptual experience appears suited for a link that could be pursued between agency and mind-independence. Perceiving the power of bodies to exert and be governed by force, may feed into the idea that things occur beyond my control: if what I perceive resists me and I can act against it, it is because I cannot fully control it. What we perceive may appear independent of us insofar as it involves forces against which we can act, precisely because they cannot be fully controlled. Hearing forceful interactions, as they resist our control, might count as a way of being evidently presented with the mind-independence of bodies. In this way, provided a thesis about the audibility of the power of bodies to exert and be governed by force, we have possible groundwork for an account of how auditory perceptual experience may give rise to the idea that what we perceive exists mind-independently.

Some may be sceptical of a range of criteria of mind-independence that assign a role to control or to the will, as they are known to be liable to a phenomenalist reduction. Hume himself, contra Descartes and Locke, complained that there is no role for the will to play in making any difference to the mind-independence of the objects of experience. For, a putative difference between any voluntary change and any non-voluntary change in the world amounts to no more than a distinction between aspects of experience which are subject to voluntary control and which are not. However, a phenomenalist reduction could be avoided and changes in auditory experience may possibly suffice for the idea of mind-independence, if the idea of resistance to one’s control is embedded in a view according to which the power one resists is

an essential quality of material bodies. I leave it to future research to fully explore in what ways the thesis that the power of bodies to exert and be governed by force is an essential quality of material bodies may suffice to dissolve these worries. However, let me try and delineate a trajectory. Auditory experience of bodies exerting and being governed by force can be considered to be experience of bodies I can act against and, so, resisting my control – on the assumption that I could not act against something that I can change at will. That is, bodies pose resistance to my bodily movement and action for their power is not subject to my will. For this reason, material bodies pose obstacles that I can *act against* and not merely change at will. In this way, auditory experience of forceful interaction may feed into the idea that what I perceive is independent of me. The power to exert and be governed by force is essential to material bodies that exist independently of me and my experience. Perception of such power is, hence, perception of an essential quality of material bodies. In perceiving the presence of this condition for materiality, auditory perceptual experience may, hence, give rise to the idea that what I perceive exists independently of me and my experience.

A Solution to Humean Scepticism as it Concerns the Auditory

As reiterated above, Hume is sceptical that sensory experience may legitimately give rise to the idea of continued existence unperceived. In a nutshell, since it is not possible to experience things while they are unperceived, the idea cannot legitimately arise from experience. Along with Brewer (2020, 2021), we found a pathway to dispose of the contradictory requirement of an experience of the unexperienced in order to find experiential support for the idea of continued existence unperceived. Suitable experiences may suffice at any given moment to legitimately give rise to the idea of continued existence unperceived, for formal conditions on the obtaining of perception of material bodies are a constitutive and evident aspect of the perceptual experiences that we undergo.

Brewer's solution to Hume's sceptical challenge stems from a suggestion from Evans (1985), according to which we may make sense that what we perceive exists unperceived, if equipped with a simple theory of perception. Brewer offers an account according to which the obtaining of formal conditions on perception, drawn from a simple theory of perception, are constitutive of perceptual experience and evidently so. Accordingly, undergoing any suitable perceptual experience a subject may legitimately find support for the idea that what they perceive exists independently of their minds and experiences.

Taking into account Brewer's solution and similarly oriented solutions, has provided us with an opportunity to look into our conception of material bodies more broadly. As previously explained, for these views, formal conditions on perception of material bodies substantially consist in spatial conditions on perception. In light of this, I raised a question as to whether we may be auditorily presented with bodies so characterised. In chapter three, I argued that we may not in fact be auditorily presented with three-dimensionally extended matter that take up space. Motivated by the claim, which I have explored in chapter four, that there are cases of auditory perceptual experience that seems to be best accommodated by the thesis that we are in fact immediately presented with material bodies, I moved on to consider, in chapter five, how else we may accommodate the materiality of the objects of auditory perceptual experience. I, thus, defended a dynamic notion of force, suited to encompass the auditory case, according to which the power of force is best conceived as independent of the intrinsic, spatial configuration of matter. In chapter six, I moved on to argue that this dynamic conception of the material is not only better suited to characterise the auditory, but it also makes sense of cases of auditory perceptual experience in which we do appear to be presented with material bodies. I concluded that in at least some cases of auditory perceptual experience, such as hearing the crunching of a carrot, we are presented with material bodies in being presented with their power to exert and be governed by force.

Presuming familiarity with a rudimentary physics which includes the dynamic notion of force, a perceiver may be evidently presented with material bodies in undergoing auditory experiences of the power of bodies to exert and be governed by force. The power of bodies to exert and be governed by force is an essential quality of material bodies. A perceiver is sensitive to a condition of materiality, provided that they are familiar with a rudimentary physics that includes the dynamic notion of force, in perceiving the power of bodies to exert and be governed by force as engaged in forceful interactions. Hence, it can be evident to one in experience that one is presented with material bodies in being presented with their power to exert and be governed by force.

Given a grasp of a rudimentary physics including the dynamic notion of force, in presenting us with an essential quality of material bodies, auditory perceptual experience of forceful interactions may, further, provide support for the idea that what we perceive exists mind-independently. For some, conditions on perception of material bodies take the form, among other things, of spatial and perspectival conditions. Yet, I rejected spatial extension as a requirement for the appearance of material bodies. The power of bodies to exert and be governed by force is a condition of materiality, which is independent of bodies' intrinsic

spatial configuration. Auditory perception of the power of bodies to exert and be governed by force is perception of the obtaining of a condition of materiality. I began to explore a possible connection between the notions of materiality, mind-independence, and agency. Auditory perceptual experience of forceful interaction can be considered to involve experience of bodies that pose obstacles and resistance to my movement and bodily action. In being aware of being capable of acting against what is present, I am, thus, aware of the presence of a condition for presentation of material bodies that exist independently of me.

Criteria for the materiality of objects that we visually encounter ought not to carry over other sensory modalities. The auditory is a sensory modality that is best conceived dynamically. A dynamic notion of force is best suited to characterise the materiality of what is present in auditory perceptual experience. A future inquiry may more thoroughly assess the extent to which such experiences may serve us with experiences sufficient for the idea that what we perceive exists mind-independently.

Bibliography

- Anscombe, G. (1957) *Intention*. Cambridge, Mass.: Harvard University Press.
- Ayers, M. (1975) 'The Ideas of Power and Substance in Locke's Philosophy', *Philosophical Quarterly*, 25:1-27.
- Ayers, M. (1991) *Locke. Volume I: Epistemology*. London: Routledge.
- Ayers, M. (1991) *Locke. Volume II: Ontology*. London: Routledge.
- Baldwin, T. (1987) 'Gareth Evans: Collected Papers', *The Philosophical Quarterly*, 37 (147), pp. 209–215.
- Bayne, T (2009) 'Perception and the Reach of Phenomenal Content', *The Philosophical Quarterly*, 59(236), pp. 385–404.
- Berkeley, G. (1776) *Three Dialogues Between Hylas and Philonous*. Cosimo.
- Bizley, J.K. and Cohen, Y.E. (2013) 'The What, Where and How of Auditory-Object Perception', *Nature Reviews Neuroscience*, 14, pp. 693–707.
- Blauert, J. (1997) *Spatial Hearing: The Psychophysics of Human Sound Localization*. Cambridge, MA: MIT Press.
- Boyle, R. (2013) *The Sceptical Chymist*. Courier Corporation.
- Boyle, R. (2017) *The Origine of Formes and Qualities*. Hansebooks.
- Bregman, A. S. (1990) *Auditory Scene Analysis: The Perceptual Organization of Sound*. Cambridge, MA: MIT Press.

Brewer, B. (1994) 'Thoughts about Objects, Places and Times', in C. Peacocke, (ed.) *Objectivity, Simulation and the Unity of Consciousness*. Oxford University Press: Proceedings of the British Academy 83, pp-21-34.

Brewer, B. (2011) *Perception and Its Objects*. Oxford, GB: Oxford University Press.

Brewer, B. (2011) 'Realism and Explanation in Perception', in J. Roessler, H. Lerman, N. Eilan, (eds.) *Perception, Causation, and Objectivity*. Oxford: Oxford University Press, pp-68-81.

Brewer, B. (2013) *Perception and its Objects*. Oxford: Oxford University Press.

Brewer, B. (2017) 'The Object View of Perception', *Topoi*, 36(2), pp. 215-227.

Brewer, B. (2018) 'Perceptual Experience and Empirical Reason', *Analytic Philosophy*, 59(1), pp.1-18.

Brewer, B. (2020) 'Perception of continued existence unperceived', *Philosophical Issues*, 30 (1), pp. 24-38.

Brewer, B. (2021) 'I—The Presidential Address: The Objectivity of Perception', *Proceedings of the Aristotelian Society*, 121(1), pp. 1-20.

Briscoe, R. (2009) 'Egocentric Spatial Representation in Action and Perception', *Philosophy and Phenomenological Research*, 79(2), pp. 423–60.

Broad, C. D. (1952) 'Some Elementary Reflexions on Sense-Perception', *Philosophy*, 27(100), pp. 3–17.

Brogaard, B. (2013) 'Do We Perceive Natural Kind Properties?', *Philosophical Studies*, 162 (1), pp. 35 - 42.

Budek, T and Farkas, K. (2014) 'Which Causes of an Experience are also Objects of the Experience?', in B. Brogaard, (ed.) *Does Perception Have Content?*. Oxford University Press, pp. 351-370.

Burge, T. (2009) 'Perceptual Objectivity', *Philosophical Review*, 118(3), pp. 285–324.

Burge, T. (2010) *Origins of Objectivity*. Oxford: Oxford University Press.

Butts, R. E. (1959) 'Hume's Scepticism', *Journal of the History of Ideas*, 20(3), pp. 413–19.

Byrne, A. (2005) 'Perception and Conceptual Content', in E. Sosa and M. Steup, (eds.) *Contemporary Debates in Epistemology*. Blackwell, pp. 231--250.

Byrne, A. (2019). 'Perception and Ordinary Objects', in J. Cumpa & B. Brewer, (eds.) *The Nature of Ordinary Objects*. Cambridge, UK: Cambridge University Press, pp. 6-26.

Campbell, J. (1985) 'Possession of concepts', *Proceedings of the Aristotelian Society*, 85, pp. 149-170.

Campbell, J (1993) 'The Role of Physical Objects in Spatial Thinking', in N. Eilan, B. Brewer, and R. McCarthy, (eds.) *Spatial Representation: Problems in Philosophy and Psychology*. Oxford: Oxford University Press, pp. 65-96.

Campbell, J. (1994) *Past, Space, and Self*. MIT Press.

Campbell, J. (1994) 'Objects and Objectivity', in C. Peacocke, (ed.) *Objectivity, Simulation and the Unity of Consciousness*. Oxford University Press: Proceedings of the British Academy 83, pp. 3-20.

Campbell, J. and Martin, M. (1997) 'Sense, Reference and Selective Attention', *Proceedings of the Aristotelian Society, Supplementary Volumes*, 71, pp. 55–98.

Campbell, J. (2002) *Reference and Consciousness*. Oxford, GB: Oxford University Press.

Campbell, J. (2004) 'Reference and Consciousness', *Philosophical Quarterly*, 54(214), pp.191-194.

Campbell, J. (2006) 'Reference and Consciousness', *Philosophy and Phenomenological Research*, 72(2), pp. 490-494.

Campbell, J. (2009) 'Information Processing, Phenomenal Consciousness, and Molyneux's Question', in J. L. Bermúdez, (ed.) *Thought, Reference, and Experience: Themes from the Philosophy of Gareth Evans*, Oxford: Oxford University Press, pp. 195-219.

Campbell, J. (2011) 'Origins of Objectivity by Tyler Burge', *The Journal of Philosophy*, pp. 269-285.

Campbell, J. and Cassam, Q. (2014). *Berkeley's Puzzle: What Does Experience Teach Us?*. New York, NY: Oxford University Press.

Campbell, J. (2016) 'The Problem of Spatiality for a Relational View of Experience', *Philosophical Topics*, 44(2), pp. 105–20.

Casati, R., Di Bona, E., and Dokic, J. (2013) 'The Ockhamization of the event sources of sound', *Analysis*, 73 (3), pp. 462–466.

Casati, R. and Dokic, J. (1994) *La philosophie du son*. Nîmes: Éditions Jacqueline Chambon.

Casati, R. and Dokic, J. (2005) 'Sounds', in *The Stanford Encyclopedia of Philosophy*. Available at, <http://plato.stanford.edu/archives/win2012/entries/sounds>.

Casati, R., and Dokic, J. (2009) 'Some varieties of spatial hearing', in M. Nudds and C. O'Callaghan (eds.) *Sounds and Perception: New Philosophical Essays*. Oxford: Oxford University Press, pp. 97-110.

Cassam, Q. (1997) *Self and the World*. Oxford: Oxford Clarendon Press.

Cassam, Q. (2002) 'Representing Bodies', *Ratio*, 15 (4), pp. 315-334.

Cassam, Q. (2007) *The Possibility of Knowledge*. Oxford: Oxford University Press.

Cassam, Q. (2003) 'Representing Bodies, 1' in M. Proudfoot, (ed.) *The Philosophy of Body*. Oxford: Blackwell Publishers, pp. 1-20.

Cheng, T., Deroy, O. and Spence, C. (2019) *Spatial Senses*. Milton: Routledge.

Cohen, I. B. (2016) 'Newton's concepts of force and mass, with notes on the laws of motion', in R. Iliffe and G. E. Smith, (eds.) *The Cambridge Companion to Newton*. Cambridge: Cambridge University Press (Cambridge Companions to Philosophy), pp. 61–92.

Cohen, J. (2010) 'Sounds and Temporality', *Oxford Studies in Metaphysics*, 5, pp. 303–320.

Cooper, L.A. and Munger, M.P. (1993) 'Extrapolating and Remembering Positions Along Cognitive Trajectories', in N. Eilan, B. Brewer, and R. McCarthy, (eds.) *Spatial Representation: Problems in Philosophy and Psychology*. Oxford: Oxford University Press, pp. 112-131.

Copenhaver, R. (2013) 'Origins of Objectivity by Tyler Burge', *Mind*, 122(488), pp. 1065–1068.

Crowther, T. (2009) 'Perceptual activity and the will', in L. O'Brien and M. Soteriou, (eds.) *Mental Actions*. Oxford: Oxford University Press, pp. 173-191.

Crowther, T. (2009) 'Watching, sight, and the temporal shape of perceptual activity', *Philosophical Review*, 118(1), pp.1-27.

Crowther, T. (2011) 'The Matter of Events', *Review of Metaphysics*, 65(1), pp. 3- 39.

Crowther, T. (2014) 'The Perception of Activity', *Ratio*, 27(4), pp. 439-461.

Crowther, T. and Mac Cumhaill, C. (2018) *Perceptual Ephemera*. New York, NY: Oxford University Press.

Crowther, T. (2018) 'In Touch with the Look of Solidity' in T. Crowther and C. Mac Cumhaill, (eds.) *Perceptual Ephemera*. New York, NY: Oxford University Press, pp. 260-288.

Cumpa, J. and Brewer, B. (2019) *The Nature of Ordinary Objects*. Cambridge: Cambridge University Press.

Davidson, D. (1969) 'The Individuation of Events', in N. Rescher, (ed.) *Essays in Honor of Carl G. Hempel*, pp. 216–34.

Di Bona, E. (2013) 'Some Considerations on Pitch', *Phenomenology and Mind*, 4, pp. 244-54.

Di Bona, E. (2017) 'Towards a Rich View of Auditory Experience', *Philos Stud*, 174, pp. 2626-2643.

Di Bona, E. (2018) 'The Spatial Experience of Musical Sources: Two Case Studies', *Phenomenology and Mind*, (14), pp. 180–187.

Di Bona, E. (2019) 'Why Space Matters to an Understanding of Sound', in T. Cheng, O. Deroy, and C. Spence, (eds.) *Spatial Senses: Philosophy of Perception in an Age of Science*. New York: Taylor and Francis, pp. 107-124.

Dickie, I. (2010) 'We are acquainted with ordinary things', in R. Jeshion, (ed.) *New Essays on Singular Thought*. Oxford: Oxford University Press, pp. 213-245.

Dickie, I. (2015) *Fixing Reference*. Oxford: Oxford University Press.

Don, L. (1961) 'Strawson's Auditory Universe', *The Philosophical Review*, 70(4), pp. 518–32.

Downing, L. (1998) 'The Status of Mechanism in Locke's Essay', *The Philosophical Review*, 107(3), pp. 381-414.

Downing, L. (2014) 'Locke's Metaphysics and Newtonian Metaphysics', in Z. Biener and E. Schliesser (eds.) *Newton and Empiricism*. Oxford: Oxford University Press, pp. 97-118.

Dretske, F. (1969) *Seeing and Knowing*. London: Routledge & Kegan Paul.

Dretske, F. (2000) *Perception, Knowledge and Belief*. Cambridge: Cambridge University Press.

Eilan, N., Brewer, B., and McCarthy, R., (1993) *Spatial Representation: Problems in Philosophy and Psychology*. Oxford: Oxford University Press.

Eilan, N. (1993) 'Molyneux's Question and the Idea of an External World', in N, Brewer, B, and R, McCarthy (eds.) *Spatial Representation: Problems in Philosophy and Psychology*. Oxford: Oxford University Press, pp. 236-256.

Eilan, N. (1993) 'Intuitive Physics', in N, Brewer, B, and R, McCarthy (eds.) *Spatial Representation: Problems in Philosophy and Psychology*. Oxford: Oxford University Press, pp. 99-112.

Eilan, N. (1993) 'Spatial Representation in the Sensory Modalities', in N. Eilan, B. Brewer, and R. McCarthy, (eds.) *Spatial Representation: Problems in Philosophy and Psychology*. Oxford: Oxford University Press, pp. 179-191

Eilan, N. (1995) 'Consciousness and the Self', in J.L.B. Bermudez, A. Marcel and N. Eilan (eds.) *The Body and the Self*. MIT Press, pp. 337-358.

Eilan, N. (1997) 'Objectivity and the Perspective of Consciousness', *European Journal of Philosophy*, 5 (3), pp. 235-250.

Eilan, N. (2000) 'Consciousness, Acquaintance and Demonstrative Thought', *Philosophy and Phenomenological Research*, LXIII, pp. 433-440.

Eilan, N. (2001) 'On the Metaphysical Reality of Colours', *Philosophical Books*, 42, pp. 243-52.

Eilan, N. (2006) 'On the Role of Perceptual Consciousness in Explaining the Goals and Mechanisms of Vision: A Convergence on Attention?' *Supplement to the Proceedings of the Aristotelian Society*, 80, pp. 67-88.

Eilan, N. and Roessler, J., (2008) *Agency and Self-Awareness*. Oxford: Clarendon Press.

Eilan, N. (2010) 'The Explanatory Role of Consciousness', in T. O'Connor and C. Sandis, *A Companion to the Philosophy of Action*. Wiley-Blackwell, pp.182-190.

Eilan, N. (2011) 'Experiential Objectivity', in J. Roessler, H. Lerman, N. Eilan, (eds.) *Perception, Causation, and Objectivity*. Oxford: Oxford University Press, pp- 51-67.

Eilan, N. (2017) 'Perceptual Objectivity and Consciousness: A Relational Response to Burge's Challenge', *Topoi*. 36, pp. 287-298.

Eilan, N. (2019) 'Objectivity and Unity Across the Modalities: Molyneaux's Question Revisited', in T. Cheng, O. Deroy, and C. Spence, (eds.) *Spatial Senses: Philosophy of Perception in an Age of Science*. New York: Taylor and Francis, pp. 251-273.

Evans, G. (1982) *The Varieties of Reference*. Oxford: Oxford University Press.

Evans, G. (1985) 'Things without the mind', in G. Evans, *Collected papers*, Oxford: Oxford University Press, pp. 249–290.

Friedman, M. (2001) 'Matter and Motion in the Metaphysical Foundations and the First Critique: The Empirical Concept of Matter and the Categories', in E. Watkins, (ed.) *Kant and the Sciences*. Oxford: Oxford University Press, pp. 53-69.

Gaukroger, S. (1982) 'The Metaphysics of Impenetrability: Euler's Conception of Force', *The British Journal for the History of Science*, 15(2), pp. 132–54.

Gaver, W. (1993) 'What in the world do we hear? An ecological approach to auditory source perception', *Ecological Psychology*, 5(1), pp. 1-29.

- Gendler, T. and Hawthorne, J. (2010) *Perceptual experience*. Oxford: Clarendon.
- Hacker, P. M. S. (2005) 'Thought and Action: A Tribute to Stuart Hampshire', *Philosophy*, 80 (312), pp. 175–197.
- Hampshire, S. (1983) *Thought and Action*. Notre Dame, Ind.: University of Notre Dame Press.
- Hayes, P. J. (1985) 'The Second Naive Physics Manifesto', in J. R. Hobbs and R. C. Moore (eds.), *Formal Theories of the Common-Sense World*. Norwood, pp. 1-36.
- Hartmann, W. A. and Wittenberg, A. (1996) 'On the externalization of sound images', *Journal of the Acoustical Society of America*, 99(6), pp. 3678-88.
- Heil, J. (2019) 'Objects, Ordinary and Otherwise', in J. Cumpa and B. Brewer, *The Nature of Ordinary Objects*. Cambridge: Cambridge University Press, pp. 63-81.
- Hoffman, J. and Rosenkrantz, G. (1996) *Substance: Its Nature and Existence*. Routledge.
- Hofweber, T. (2019) 'Empirical Evidence and the Metaphysics of Ordinary Objects', in J. Cumpa and B. Brewer, *The Nature of Ordinary Objects*. Cambridge: Cambridge University Press, pp. 27-47.
- Hume, D. (1739) *A Treatise of Human Nature*. Clarendon Press.
- Hume, D. (1748) *Enquiry Concerning Human Understanding*. Oxford University Press.
- Iliffe, R. and Smith, G. E. (eds) (2016) *The Cambridge Companion to Newton*. 2nd edn. Cambridge: Cambridge University Press (Cambridge Companions to Philosophy).
- Jackson, F. (1977) *Perception: A Representative Theory*. Cambridge: Cambridge University Press.

Janiak, A. and Schliesser, E. (2012) *Interpreting Newton: Critical Essays*. Cambridge, UK: Cambridge University Press.

Jones, A. (1981) *Pierre Gassendi's Institutio Logica 1658: a critical edition with translation and introduction*. The Netherlands: Van Gorcum.

Joske, W.D. (1967) *Material Objects*. MacMillan.

Joske, W.D. (1968) 'Material Objects', in *Philosophy*, 43(164), pp. 168-169.

Kalderon, M. E. (2017) *Sympathy in Perception*. Cambridge: Cambridge University Press.

Kalderon, M. E. (2018) 'Aristotle on Transparency', in T. Crowther and C. Mac Cumhaill, (eds.) *Perceptual Ephemera*. Oxford University Press, pp. 219-237.

Kalderon, M. E. (2019) 'Sound and Image', in C. Limbeck-Lilienau and F. Stadler, *The Philosophy of Perception: Proceedings of the 40th International Ludwig Wittgenstein Symposium*, Berlin, Boston: De Gruyter, pp. 189-196.

Kalderon, M.E. 'The Event of Rarefaction: A Defence and Development of The Wave Theory of Sound'. Available at:

https://www.researchgate.net/publication/324588120_The_Event_of_Rarefaction_A_Defence_and_Development_of_The_Wave_Theory_of_Sound

Kant, I. (1786) *Metaphysical Foundations of Natural Science*. Cambridge University Press.

Kawato, M. (1999) 'Internal models for motor control and trajectory planning', in *Current Opinion in Neurobiology*, 9(6), pp.718-727.

Keller, A. (2016) *Philosophy of Olfactory Perception*. MacMillan.

Krantz, D.H. (1973) 'Fundamental Measurement of Force and Newton's First and Second Laws of Motion', *Philosophy of Science*, 40(4), pp. 481-495.

- Kulvicki, J. (2008) 'The Nature of Noise', *Philosophers' Imprint*, 8(11), pp. 1–16.
- Kulvicki, J. (2015) 'Sound stimulants: defending the stable disposition view', in D. Stokes, S. Biggs and M. Matthen, (eds.) *Perception and Its Modalities*. New York: Oxford University Press, pp. 205-221.
- Leddington, J. (2014) 'What We Hear', in R. Brown, (ed.) *Consciousness Inside and Out: Phenomenology, Neuroscience, and the Nature of Experience*. Springer Studies in Brain and Mind, pp. 321-334.
- Leibniz, G.F. (1951) 'On Nature in Itself', in P. Wiener (tr & ed.), *Leibniz Selections*. Scribners: New York, 137-56.
- Leibniz, G.F. (1996) *New Essays on the Human Understanding*. Ed. by P. Remnant and J. Bennett. Cambridge, UK: Cambridge University Press.
- Locke, J. (1689) *An Essay Concerning Human Understanding*. Ed. by Peter H. Nidditch. Oxford: Oxford University Press.
- Malpas, R. M. P. (1965) 'The Location of Sound', in R. J. Butler, (ed.) *Analytical Philosophy*. Oxford: Basil Blackwell, pp. 131–144.
- Martin, M. G. F. (1992) 'Sight and Touch', in T. Crane, (ed.) *The Contents of Experience*. Cambridge: Cambridge University Press, pp. 196-215.
- Martin, M. G. F. (1993) 'Sense Modalities and Spatial Properties', in N. Eilan, R. McCarthy, and B. Brewer, (eds.) *Spatial Representation: Problems in Philosophy and Psychology*. Oxford: Blackwell, pp. 206-218.
- Martin, M. G. F. (1997) 'The Reality of Appearances', in M. Sainsbury, (ed.) *Thought and Ontology*. Franco Angeli.
- Martin, M. G. F. (1998) 'Setting things before the mind', in A. O'Hear, (ed.) *Current Issues in Philosophy of Mind*. Cambridge University Press, pp. 157-179.

Martin, M. G. F. (2002) 'The transparency of experience', *Mind and Language*, 17(4), pp.376-425.

Martin, M. G. F. (2003) 'Sensible appearances', in T. Baldwin, (ed.) *The Cambridge History of Philosophy*. Cambridge University Press, pp. 521-532.

Martin, M.G.F. (2006) 'On Being Alienated', in T.S. Gendler and J. Hawthorne, (eds.) *Perceptual Experience*. Oxford: Oxford University Press, pp. 354-410.

Martin, M.G.F. (2010) 'What's in a Look?', in B. Nanay, (ed.) *Perceiving the World*. Oxford: Oxford University Press, pp. 160–225.

Martin, M.G.F. (2012) 'Sound and Images', *British Journal of Aesthetics*, 52(4), pp. 331-351.

Martin, M. G. F. (2017) 'Elusive Objects', *Topoi* 36, pp. 247–271.

Massin, O. (2017) 'The Composition of Forces', *British Journal for the Philosophy of Science*, 68 (3), pp. 805-846.

Matthen, M. (2009) 'On the Diversity of Auditory Objects', *Review of Philosophy and Psychology*, 1(1), pp.63-89.

Matthen, M. (2014) 'Active Perception and the Representation of Space', in D. Stokes, M. Matthen and S. Biggs, (eds.) *Perception and Its Modalities*. Oxford University Press, pp.

Matthen, M. (2018) 'Ephemeral Vision', in T. Crowther and C. Mac Cumhaill, (eds.) *Perceptual Ephemera*. Oxford University Press, pp. 312-336.

McCloskey, M. (1983) 'Intuitive Physics', *Scientific American*, 248(4), pp. 122–31.

McDowell, J. (1994) *Mind and World*. Harvard University Press.

- McNulty, M. B. (2022) *Kant's Metaphysical Foundations of Natural Science: A Critical Guide*. Cambridge: Cambridge University Press (Cambridge Critical Guides).
- Millar, A. (2008) 'Perceptual-recognitional abilities and perceptual knowledge', in A. Haddock and F. Macpherson, (eds.) *Disjunctivism: Perception, Action, Knowledge*. Oxford University Press, pp. 330-347.
- Mills, A. W. (1972) 'Auditory localization', in Tobias, J. V., (ed.) *Foundations of Modern Auditory Theory*. New York: Academic Press, pp. 303-348.
- Moore, G.E. (1959) *Philosophical Papers*. New York: Routledge.
- Montague, M. (2016) 'Cognitive phenomenology and conscious thought', *Phenomenology and the Cognitive Sciences*, 15(2), pp. 167-181.
- Montague, M. (2011) 'The Phenomenology of Particularity', in T. Bayne and M. Montague, (eds.) *Cognitive Phenomenology*. Oxford: Oxford University Press.
- Nudds, M. (2001) 'Experiencing the Production of Sounds', *European Journal of Philosophy*, 9(2), pp. 210–229.
- Nudds, M. (2004) 'II-The Significance of the Senses', *Proceedings of the Aristotelian Society*, 104(1), pp.31-51.
- Nudds, M. (2009) 'Recent Work in Perception: Naive Realism and its Opponents', *Analysis*, 69(2), pp.334-346.
- Nudds, M. and O'Callaghan, C. (2009) *Sounds and Perception: New Philosophical Essays*. Oxford: Oxford University Press.
- Nudds, M. (2009) 'Sounds and space', in M. Nudds and C. O'Callaghan, *Sounds and Perception: New Philosophical Essays*. Oxford: Oxford University Press, pp. 69-96.

- Nudds, M. (2010) 'What Sounds Are', in D. Zimmerman, (ed.), *Oxford Studies in Metaphysics*. Oxford University Press.
- Nudds, M. (2012) 'Origins of Objectivity: Critical Note', *Analysis*, 72(1), pp. 157-174.
- Nudds, M. (2014) 'Auditory Appearances', in *Ratio*, 27 (4), pp. 462-482
- Nudds, M. (2010) 'What Sounds Are', In D. Zimmerman, (ed.) *Oxford Studies in Metaphysics*, 5. Oxford University Press.
- Nudds, M. (2010b) 'What Are Auditory Objects?', *Review of Philosophy and Psychology*, 1(1), pp. 105–122.
- Nudds, M. (2018) 'The unitary nature of sounds', in T. Crowther and C. Mac Cumhaill, (eds.) *Perceptual Ephemera*. Oxford University Press, pp. 50-67.
- O'Callaghan, C. (2007) 'Echoes', *The Monist*, 90(3), pp. 403-414.
- O'Callaghan, C. (2007b) *Sounds: a Philosophical Theory*. New York: Oxford University Press.
- O'Callaghan, C. (2009) 'Perceiving the Locations of Sounds', *Review of Philosophy and Psychology*, 1(1), pp. 123-140.
- O'Callaghan, C. (2009) 'Sounds and Events', in M. Nudds and C. O'Callaghan (eds.) *Sounds and Perception: New Philosophical Essays*. Oxford University Press, pp. 26-49.
- O'Callaghan, C. (2009) 'The World of Sounds', *The Philosophers' Magazine*, 45(45), pp. 63-69.
- O'Callaghan, C. (2010) 'Constructing a Theory of Sounds', in D. Zimmerman, (ed.) *Oxford Studies in Metaphysics*, 5, pp. 247–270.

O'Callaghan, C. (2011) 'XIII—Hearing Properties, Effects or Parts?', *Proceedings of the Aristotelian Society*, 111(3pt3), pp. 375-405.

O'Callaghan, C. (2011b) 'Lessons from Beyond Vision (Sounds and Audition)', in *Philosophical Studies*, 153(1), pp. 143-160.

O'Callaghan, C. (2017) *Beyond Vision: Philosophical Essays*. Oxford: Oxford University Press.

O'Shaughnessy, B. (1956) 'An Impossible Auditory Experience', *Proceedings of the Aristotelian Society*, 57, pp. 53–82.

O'Shaughnessy, B. (2000) *Consciousness and the World*. Oxford: Oxford University Press.

O'Shaughnessy, B. (2009) 'The Location of a Perceived Sound', in M. Nudds and C. O'Callaghan (eds.) *Sounds and Perception: New Philosophical Essays*. Oxford University Press, pp. 111-125.

O'Shaughnessy, B. (1957) 'The Location of Sound', *Mind*, 66(264), pp. 471-490.

Papineau, D. (2021) *The Metaphysics of Sensory Experience*. Oxford: Oxford University Press.

Pasnau, R. (1999) 'What is Sound?', *Philosophical Quarterly*, 49, pp. 309–324.

Pasnau, R. (2000) 'Sensible Qualities: The Case of Sound', *Journal of the History of Philosophy*, 38, pp. 27–40.

Peacocke, C. (1993) 'Intuitive Mechanisms, Psychological Reality, and the Idea of a Material Object', in N. Eilan, B. Brewer, and R. McCarthy, (eds.) *Spatial Representation: Problems in Philosophy and Psychology*. Oxford: Oxford University Press, pp. 162-176.

Peacocke, C. (1994) *Objectivity, Simulation and The Unity of Consciousness: Current Issues in the Philosophy of Mind*. The British Academy 83.

Peacocke, C. (1995) *A Study of Concepts*. Cambridge, Mass.: MIT Press.

Peacocke, C. (1983) *Sense and Content: Experience, Thought and Their Relations*. Oxford University Press.

Peacocke, C. (2019) 'Spatial Perception, Magnitudes, and Analogue Representation', in T. Cheng, O. Deroy, and C. Spence, (eds.) *Spatial Senses: Philosophy of Perception in an Age of Science*. New York: Taylor and Francis, pp. 49-69.

Phillips, I. (2013) 'Hearing and Hallucinating Sounds', in F. Macpherson and D. Platchias, (eds.) *Hallucination: Philosophy and Psychology*. London, UK: MIT Press, pp. 333-360.

Pourciau, B. (2016) 'Instantaneous impulse and continuous force: the foundations of Newton's Principia', in R. Iliffe and G.E. Smith, (eds.) *The Cambridge Companion to Newton*. Cambridge: Cambridge University Press (Cambridge Companions to Philosophy), pp. 93–186.

Prichard, H.A. (1950a) *Knowledge and Perception*. Clarendon Press, Oxford.

Roessler, J. (2009) 'Perceptual Experience and Perceptual Knowledge', *Mind*, 118(472), pp. 1013-1041.

Roessler, J., Lerman, H. and Eilan, N. (2011) *Perception, Causation, And Objectivity: Issues in Philosophy and Psychology*. Oxford: Oxford University Press.

Richardson, L. (2018) 'Odours as Olfactibilia', in T. Crowther and C. Mac Cumhaill, (eds.) *Perceptual Ephemera*. Oxford University Press, pp. 93-115.

Rickless, S. C. (2021) *The Oxford Handbook of Berkeley*. New York: Oxford University Press.

Rickless, S. C. (2013) *Berkeley's Argument for Idealism*. Oxford: Oxford University Press.

Russell, B. (1910) 'Knowledge by Acquaintance and Knowledge by Description', *Proceedings of the Aristotelian Society*, 11, pp. 108–28.

Schnupp, J., Nelken, I. and King, A. (2012) *Auditory neuroscience*. Cambridge, Mass.: MIT Press.

Scruton, R. (2009) 'Sounds as Secondary Objects and Pure Events', in M. Nudds and C. O'Callaghan (eds.) *Sounds and Perception: New Philosophical Essays*. Oxford University Press, pp. 50-68.

Schellenberg, S. (2010) 'The Particularity and Phenomenology of Perceptual Experience', *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition*, 149(1), pp. 19-48.

Schnupp, J., Nelken, I. and King, A. (2011) *Auditory Neuroscience: Making Sense of Sound*. London: MIT Press.

Shinn-Cunningham, B. (2001a) 'Creating three dimensions in virtual auditory displays', in M. J. Smith, G. Salvendy, D. Harris, and R. J. Koubek, (eds.) *Usability Evaluation and Interface Design: Cognitive Engineering, Intelligent Agents and Virtual Reality*, New Jersey: Lawrence Erlbaum, pp. 604-608.

Shinn-Cunningham, B. (2001b) 'Localizing sound in rooms', in *Acoustic Rendering for Virtual Environments*. ACM SIGGRAPH, pp. 17-22.

Siegel, S. (2006) 'Which Properties are Represented in Perception?', in T.S. Gendler and J. Hawthorne, (eds.) *Perceptual Experience*. Oxford: Oxford University Press, pp. 481-503.

Siegel, S. (2011) *The Contents of Visual Experience*. Oxford University Press USA.

Siegel, S. and Byrne, A. (2017) 'Rich or thin?', in B. Nanay, (ed.) *Current Controversies in Philosophy of Perception*. New York, USA: Routledge. pp. 59-80.

Smith, B. C. (2019) 'Spatial Awareness and the Chemical Senses', in T. Cheng, O. Deroy, and C. Spence, (eds.) *Spatial Senses: Philosophy of Perception in an Age of Science*. New York: Taylor and Francis, pp. 170-180.

- Smith, J. (2015) 'The Phenomenology of Face-to-Face Mindreading', *Philosophy and Phenomenological Research*, 90(2), pp. 274–93.
- Snowdon, P. (1992) 'How to Interpret 'Direct Perception'', in T. Crane, (ed.) *The Contents of Experience*. Cambridge: Cambridge University Press, pp. 48-78.
- Snowdon, P. (2019) 'Strawson and Evans on Objectivity and Space', in T. Cheng, O. Deroy, and C. Spence, (eds.) *Spatial Senses: Philosophy of Perception in an Age of Science*. New York: Taylor and Francis, pp. 9-30.
- Sorensen, R. (2009) 'Hearing Silence: The Perception and Introspection of Absences', in M. Nudds and C. O'Callaghan (eds.) *Sounds and Perception: New Philosophical Essays*. Oxford University Press, pp. 126-145.
- Soteriou, M. (2010) 'Perceiving events', *Philosophical Explorations*, 13(3), pp. 223-241.
- Soteriou, M. (2015) *The Mind's Construction*. Oxford: Oxford University Press.
- Soteriou, M. (2016). *Disjunctivism*. New York: Routledge.
- Soteriou, M. (2018) 'Sound and Illusion', in T. Crowther and C. Mac Cumhaill, (eds.) *Perceptual Ephemera*. Oxford University Press, pp. 31-49.
- Spelke, E.S. (1990) 'Principles of Object Perception', *Cognitive Science*, 14, pp. 29-56.
- Spelke, E.S. and Van De Walle, G.A. (1993) 'Perceiving and Reasoning about Objects: Insights from Infants', in N. Eilan, B. Brewer, and R. McCarthy, (eds.) *Spatial Representation: Problems in Philosophy and Psychology*. Oxford: Oxford University Press, pp. 132-161.
- Strawson, P. (1959) *Individuals*. Routledge
- Stroud, B. (1977) *Hume*. Routledge.

Travis, C. (2013) *Perception*. Oxford: Oxford University Press.

Tye, M. (2009) 'The Admissible Contents of Visual Experience', *The Philosophical Quarterly*, 59(236), pp. 541–62.

Van Inwagen, P. (1990) *Material Beings*. Cornell University Press.

Warren, D. (2001) 'Kant's Dynamics', in E. Watkins, (ed.) *Kant and the Sciences*. Oxford: Oxford University Press, pp. 93-116.

Warren, R. (2008) *Auditory perception*. Cambridge, UK: Cambridge University Press.

Westfall, R. S. (1971) *Force in Newton's physics: The science of dynamics in the seventeenth century*. History of Science Library.

Wiener, P. P. (1951) *Leibniz Selections*. New York: Charles Scribner's Sons.

Williams, M. (2008) 'Hume's Skepticism', in J. Greco, (ed.) *The Oxford Handbook of Skepticism*. Oxford University Press. Available at:
<https://doi.org/10.1093/oxfordhb/9780195183214.003.0005>.

Wilson, M. (1979) 'Superadded Properties: The Limits of Mechanism in Locke', *American Philosophical Quarterly*, 16, pp. 143-150.

Yost, W.A., Richard, R.F. and Popper, A.N. (2008) *Auditory Perception and Sound Sources*. Springer Handbook of Auditory Research, 29.

Young, N. (2017) 'Hearing Spaces', *Australasian Journal of Philosophy*, 95(2), pp. 242–255.

Young, N. (2018) 'Hearing Objects and Events', *Philos Stud*, 175, pp. 2931–2950.

Young, N. (2021) 'Sounds as Properties', *Thought: A Journal of Philosophy*, 10(2), pp. 109-117.

Young, N. and Nanay, B. (2022) 'Audition and Composite Sensory Individuals', in R. Grush, (ed.) *Sensory individuals, Properties, and Perceptual Objects*. New York: Oxford University Press.

Zvi, B. and Schliesser, E. (2014) *Newton and Empiricism*. New York: Oxford Academic.