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Berkeley's Idealism: A New Interpretation

DISSERTATION

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by

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DEDICATION

To Lisa, Malcolm, Ptolemy, and my Dad.

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ABSTRACT OF THE DISSERTATION

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Doctor of Philosophy in Philosophy

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Distinguished Professor Emeritus Penelope Maddy, Co-Chair

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This dissertation defends a new interpretation of George Berkeley's idealism. Berkeley criticizes his opponents for their commitment to the "twofold existence of the objects of sense, the one… in the mind, the other… without the mind" (PHK 86). He believes this doctrine requires implausible departures from common sense and invites skeptical doubts. According to a familiar story, Berkeley avoids these problems by embracing a brand of idealism that collapses his opponents' "twofold existence" into a single level of existence where the ideas in our minds are identical with physical reality. By investigating an underexplored set of connections between Berkeley's theory of vision and his idealism, this dissertation shows the familiar story to be mistaken: rather than effecting any such collapse, Berkeley's idealism (in virtue of the way it is shaped by his theory of vision) commits him to a novel and philosophically interesting doctrine of the twofold existence of the objects of sense that is not plagued by any of the same problems as his opponents' version, and yet still implies a meaningful distinction between physical objects as they are in themselves and physical objects as we experience them.

INTRODUCTION

According to a broadly Cartesian view dominant in the 17th and 18th centuries, perceptual appearances are mind-dependent *ideas* that we immediately perceive when the physical world impinges on our sense organs; these ideas represent mind-independent material objects; intrinsically, these objects have only primary qualities like shape, size, and motion, and not secondary qualities like color, smell, and sound. Berkeley famously worries that this picture of the "twofold existence of the objects of sense, the one… in the mind, the other… without the mind" (PHK 86)[1] requires implausible departures from common sense—implying, for example, that tomatoes aren't really red—and also leads to skepticism, giving us no way to know if the ideas we immediately perceive accurately represent physical objects outside the mind. According to a familiar story, the idealism Berkeley embraces to avoid these problems collapses his opponents' "twofold existence" into a single level of existence where the ideas in our minds are identical with physical reality. On this picture, Berkeley thinks there is no gap between the red and bulgy appearance of the tomato we enjoy in experience and the physical reality of the tomato, as it truly is in itself.[2]

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[1] I use the following abbreviations for primary texts:
Philosophical Commentaries = PC
An Essay Towards a New Theory of Vision = NTV
A Treatise Concerning the Principles of Human Knowledge = PHK
Three Dialogues Between Hylas and Philonous = TD. I refer to TD by Luce-Jessop page numberings (e.g., TD 221), which are standardly reproduced in later editions of the work.
De Motu = DM
Alciphron = Alc.
Theory of Vision Vindicated and Explained = TVV
Siris = S
An Essay Concerning Human Understanding (Locke) = EHU
The Search After Truth (Malebranche) = ST

[2] There are different routes to acceptance of the familiar story. One is the view that Berkeley endorses a direct theory of perception akin to what is often called naïve realism or direct realism (albeit, accommodated to his

Though Berkeley is most well-known nowadays for his metaphysical works (especially PHK and TD), he also authored an empirical theory of vision (NTV, TVV) that exerted tremendous influence on the development of empirical psychology in the 18th and 19th centuries. While his works on vision and his metaphysical works have historically been treated in relative isolation from one another, there is emerging consensus (Lennon 2011, cf. PHK 42-3; Hight 2013, Letter 12) that Berkeley intended these works to be read together and to jointly comprise a single philosophical system. There is therefore a need for a study of Berkeley's philosophy that carefully weaves the theory of vision and metaphysics together. This dissertation is intended as such a study.

The chief philosophical result of the dissertation is that the familiar story about Berkeley described in the paragraph before last is all wrong: by investigating an underexplored set of connections between Berkeley's metaphysics and theory of vision, I show that he endorses a proprietary doctrine of the "twofold existence of the objects of sense" which, while quite different from his opponents', still implies a significant distinction between physical objects as they are in themselves and physical objects as we experience them. This novel doctrine of twofold existence shapes Berkeley's idealism in

idealism). For examples see Dancy (1987, pp. 86-7), Pappas (2000, p. 174) and McCracken (2007, pp. 25, 42). A second route is the view that Berkeley takes all perceived ideas, hence all perceptual appearances, to be physically real. For examples see Wilson (1999, p. 295) and Atherton (2008, pp. 88, 90). A third route is the view that Berkeley takes perceptual appearances to be non-representational (for example, Winkler, 1989, p. 157, Pearce 2017, p. 1) or to have no accuracy conditions (for example, Schwartz 2019, p. 145; 2022a, pp. 292-3). I cannot see how this third view leaves him any option besides the familiar story. Finally, a fourth route is the view that the process Berkeley terms 'suggestion' does not change perceptual appearances. For examples, see Armstrong (1960), Pitcher (1976), Cummins (1987), Atherton (2008), Dicker (2011), Fields (2022), and Schwartz (2022b). If my interpretation is correct, then all the readings of Berkeley referenced in this note are mistaken.

ways not heretofore appreciated. At the same time, it incurs neither the departures from common sense nor the skeptical problems he took to plague his opponents.

The dissertation is also the beginning of a larger research project into Berkeley's views of the human mind. The processes he describes in the writings on vision are only one part of a larger picture. Scattered throughout his writings are many passages on the different mental faculties (sense, memory, imagination, attention, and reason) and on the nature of different kinds of mental entities (ideas of sense, ideas of imagination, notions). The dissertation begins the work of charting the relations and interactions among these faculties and entities by focusing on the way *sense* and *imagination* (as well as ideas of sense and ideas of imagination) work together in the perception of physical objects. This exercise leads us into a larger arena of questions that would have taken me too far afield to address in the dissertation, but which I hope to address in future work: how do the relevant faculties and entities work together in the cognition of linguistic meaning, of lawful relations in nature, of the microworld, and of number, among other things? In an additional, appended essay, intended to further this larger project but written independently of the dissertation, I explore Berkeley's view of the way *sense*, *imagination*, and *reason* (as well as ideas of sense, ideas of imagination, and notions) all work together in the visual perception of spatial qualities, like distance.[3]

Let me now provide a brief overview of the chapters to follow. The first chapter focuses on Berkeley's account of the ideas of sense. These are real physical qualities made

[3] This appendix offers an interpretation of Berkeley's theory of vision that builds on the results of the dissertation. However, because the appended essay was written as a standalone article, it differs in certain details of presentation and emphasis. I note these superficial differences at the beginning of the appendix in order to avoid confusion.

by God and organized by the laws of nature. At the same time, they are subjective, mind-dependent appearances that only exist in virtue of being perceived. This chapter contextualizes Berkeley's view of the physical world as a response to Locke's hypothesized mechanical corpuscularianism (according to which the natural world is composed of mechanically interacting, material atoms). The chapter emphasizes the way ideas of sense are ordered by laws of nature and briefly discusses Berkeley's and Locke's contrasting visions of natural philosophy. It ends with a discussion of Berkeley's view of immediate perception, a process in which events at our sensory organs occasion lawfully related experiences of ideas of sense.

The second chapter focuses on Berkeley's view of the ideas of imagination. Ideas of imagination, for Berkeley, are much more similar to the ideas invoked by other early modern philosophers like Locke and Descartes: they are mental representations of real physical qualities. Hence, for Berkeley, they are mental representations of other ideas. He describes them as 'copies' or 'images' of the ideas of sense. Shifting attention to Berkeley's theory of vision, this chapter focuses on the oft-neglected fact that Berkeley takes ideas of imagination to play a central role in the visual process. Through a simple form of associative learning, immediate perception of visible ideas of sense comes to trigger the automatic production of ideas of imagination that represent other ideas of sense. Because Berkeley thinks this process pervades ordinary visual perception, he thinks that visual experience is a seamless mixture of ideas of sense and representational ideas of imagination. This point, overlooked by commentators until now, is spelled out in detail throughout this chapter.

The third and final chapter explores the ramifications of chapters one and two for Berkeley's idealism by focusing on his views of ordinary physical objects. Berkeley is normally taken to identify physical objects with collections of ideas, and his idealism is normally taken to imply that there is no distinction between the physical world and the ideas that appear in our minds. This chapter argues that Berkeley takes physical objects to be collections of divinely made ideas of sense ordered by laws of nature. This is his metaphysical theory of the way objects are in themselves. However, his theory of perception implies that when I perceive an object, I experience a combination of immediately perceived ideas of sense actually in the object and ideas of imagination that merely represent (or misrepresent) other qualities of the object. Thus, objects as we experience them are quite different from objects as they are in themselves. Contrary to the familiar story, Berkeley is committed to his own proprietary doctrine of the twofold existence of the objects of sense.

CHAPTER 1: Ideas of Sense

Introduction

In this chapter I provide an account of Berkeley's view of the ideas of sense. I focus particular attention on Berkeley's idealist vision of the natural world as a vast collection of such ideas, and I contrast this vision with its materialist counterpart in Locke. It is of course important to ask what an idea of sense *is* for Berkeley. Commentators have spilled much ink trying to answer this ontological question,[1] so, while I do offer a superficial answer to it, I am more concerned with questions of function and process: what role do Berkeley's ideas of sense play in the natural world? And what role do they play in human perception? Answering these questions will require joint attention to two aspects of Berkeley's thought that are not usually considered in conjunction: his philosophy of science (or better: his views of natural-philosophical practice and method), and his account of the perceptual process.

In the first part of the chapter, in an effort to establish historical context, I discuss Locke. I summarize his theory of ideas, focusing on simple ideas of sensation, and I summarize his (hypothetical) mechanical vision of the natural world and its attendant philosophy of science. In the second part of the chapter, I shift focus to Berkeley's theory of the ideas of sense. I summarize the theory, and then explicate Berkeley's idealist picture of the natural world, setting it in opposition to Locke's mechanical corpuscularianism. In the third part of the chapter, I focus on Berkeley's view of *immediate perception*. Berkeley thinks that immediate perception is the first and most basic stage in the perceptual

[1] See, for example, Hight (2012) and the essays collected in Muehlmann (1995, pt. 1).

process, and the means by which ideas of sense initially enter the human mind. Much has also been written about Berkeley's view of immediate perception,[2] but the topic is not usually approached from a vantage adequately informed by his views of the natural world (and of the practice of natural philosophy).

1 Locke

1.1 Locke's Ideas of Sense

I begin with a brief presentation of Locke's theory of ideas, focusing on his view of simple ideas of sense.[3] In doing so I aim to provide some historical context for Berkeley's theory of ideas and, at the same time, to establish a foil against which Berkeley's theory can be more perspicuously understood.

Ideas are representational for Locke.[4] He tells us that, "all our ideas take their beginnings" from "Originals" that they represent (EHU II.i.4, cf. IV.iv.3). At the beginning of Book II of EHU (*Of Ideas*) Locke distinguishes between ideas of sense and ideas of reflection.[5] Ideas of reflection represent the "Operations of our own minds within" (II.i.4). Since Lockean ideas of reflection have no correlate within Berkeley's theory of ideas, I leave

[2] See, for example, Pitcher (1976), Pappas (1987, 2000), Winkler (1989), Atherton (1990), Schwartz (1994), Dicker (2006, 2011), Rickless (2013).
[3] In fact, Locke uses the term 'idea of sensation'—to avoid terminological complications, I abbreviate this to 'idea of sense', which is the same term Berkeley uses.
[4] Despite Locke's wording in the quotation in the next sentence ("all our ideas…") there may be some exceptions—ideas of pain and sickness may not be representational, see Jacovides (2017, p. 169, incl. n. 16).
[5] He later considers a third class of ideas, abstract general ideas. Locke takes these ideas to be annexed to words as (the words') general meanings. These ideas include, for example, the idea of a triangle in general, the idea of justice, the idea of virtue, and so on (cf. Jacovides (2017, pp. 161-6)). As is well-known, Berkeley heavily criticizes Locke's theory of abstract ideas. The issue of generality is not unrelated to perception, for Berkeley. He likely thinks some perceptions have generality built in (e.g., a geometer's perception of a proof diagram). Nevertheless, I must leave the issue of generality aside in this dissertation since discussing it would take me too far afield.

them aside.[6] Locke's ideas of sense represent "the Objects of *Sensation*": "External, Material things" or "[material] sensible qualities" (II.i.4-5). Locke thinks we have simple ideas of sense, which represent individual sensible qualities like whiteness, coldness, or roundness, and complex ideas that represent combinations of these qualities (II.xii.1). For simplicity's sake, I also leave complex ideas aside. When, in the context of discussing Locke, I use the term 'idea of sense', I mean to denote a simple idea of sense.

In the following passage, Locke offers definitions of 'idea' and 'quality', and contrasts ideas of sense with the material, sensible qualities they represent:

> Whatsoever the Mind perceives in it self, or is the immediate object of Perception, Thought, or Understanding, that I call *Idea*; and the Power to produce any *Idea* in our mind, I call *Quality* of the Subject wherein that power is. Thus a Snow-ball having the power to produce in us the *Ideas* of *White, Cold,* and *Round*, the Powers to produce those *Ideas* in us, as they are in the Snow-ball, I call *Qualities*; and as they are Sensations, or Perceptions, in our Understandings, I call them *Ideas*. (EHU II.viii.8; cf. I.i.8)

Lockean ideas of sense are the immediate objects of perception. They exist only in the mind. Material qualities, by contrast, exist external to the mind and cannot be immediately perceived but must rather be represented by the ideas of sense we immediately perceive. As Locke puts this point, "The Mind knows not Things immediately, but only by the intervention of the Ideas it has of them" (ibid. IV.iv.3).

Locke thinks that an idea of sense represents a material quality if the two are related by causal correspondence: Ideas of sense "must necessarily be the product of

[6] When Berkeley refers to ideas of our own passions and mental operations at PHK 1, he seems to have Lockean ideas of reflection in mind. Various entries from his notebooks (PC) also suggest this. However, it is clear that he ultimately rejects Lockean ideas of reflection in favor of his own doctrine of notions, holding that we can have notions, but not ideas, of our own mental operations (cf. PHK 27, 142, TD 232-3).

Things operating on the Mind in a natural way, and producing therein those Perceptions which by the Wisdom and Will of our Maker they are ordained and adapted to" so that,

> Ideas [of sense] *are not fictions* of our Fancies, but the natural and regular productions of Things without us, really operating upon us; and so carry with them all the conformity [to their representata] which is intended; or which our state requires: For they represent to us Things under those appearance which they are fitted to produce in us. (EHU IV.iv.4)

Because a certain sort of idea is "natural[ly] and regular[ly]" caused by a certain sort of material thing, this sort of idea represents this sort of material thing. But Locke also thinks that ideas of primary qualities (e.g., shapes, sizes, motions) resemble the primary qualities that are actually in external bodies (e.g., EHU II.viii.15). Thus, where our ideas of sense of primary qualities are concerned, Locke sometimes identifies a second representing relation: resemblance. For example, he argues that external, material things obey the theorems of geometry because they resemble our ideas of geometrical figures, and these ideas are the proper objects of geometry (EHU IV.iv.6).[7] That is, it is because the geometer's ideas of sense of such-and-such geometrical figures resemble spatial features of the external, material world that she can use these ideas (paired with the methods of geometry) to attain knowledge of those real spatial features. In this context representation depends on resemblance. However, Locke is also clear that secondary qualities (such as colors and smells) resemble nothing actually present in bodies (EHU II.viii). Because he

[7] Here is the text of EHU IV.iv.6 Where Locke makes this point: "The mathematician considers the Truth and Properties belonging to a Rectangle, or Circle, only as they are in *Ideas* in his own Mind… But yet the knowledge he has of any Truths or Properties belonging to a Circle, or any other mathematical Figure, are nevertheless true and certain, even of real Things existing: because real Things are no farther concerned, nor intended to be meant by any such Propositions, than as Things really agree [=resemble] those *Archetypes* in his Mind. Is it true of the *Idea of a Triangle*, that its three Angles are equal to two right ones? It is true also of a *Triangle*, where-ever it really exists. Whatever other Figure exists, that is not exactly answerable to [=an exact resemblance of] that *Idea of a Triangle* in his Mind, is not at all concerned in that Proposition" (ibid. IV.iv.6).

thinks we can perceive secondary qualities by having ideas of them, he must allow that many ideas of sense represent material qualities through causal correspondence alone (cf. EHU II.viii.13; Jacovides 2017, p. 163, 169-72).[8]

The presence of two different kinds of representing relation in Locke's thought no doubt raises some subtle issues. However, what matters for present purposes is just the general point that—whichever kind of representation happens to be involved—the simplest case of perception involves a *triadic relation* between *mind*, *idea,* and *world* for Locke (cf. Uzgalis 2020, 2.2, Dicker 2011, p. 28).[9] As we will soon see, this marks an important point of contrast with Berkeley.

Finally, Locke emphasizes that ideas of sense are produced independently of human will; the material world impinges on our sense organs and ideas of sense stream into our mind, whether we will it or not (EHU IV.xi.5). If, for example, I look at a snowball, an idea of sense of its roundness will involuntarily pop into my mind. This idea—whether in virtue of causal correspondence, resemblance, or both—will represent the snowball's roundness to me, so that I perceive the snowball's roundness by having the idea.

[8] Also compare Dicker (2011 p. 29), and Uzgalis (2020). Regarding Locke's representing relation, Dicker identifies only resemblance and Uzgalis identifies only causal correspondence. Jacovides (2017) takes Locke to utilize both kinds of relations and I think this is right. For interesting discussion of this matter, see Jacovides (2017, p. 172 and surrounding discussion).

[9] Note that John Yolton (1956) argues that ideas are not *entities* for Locke, but are rather acts, or manners, of perceiving, and Dicker (2011) takes this to imply that, for Yolton (as well as E.J. Lowe, more recently), Locke holds a dyadic, rather than a triadic theory of perception. I think this is implausible as a reading of Locke, but let us set that issue aside. What matters for our purposes is that Berkeley clearly reads Locke as presupposing a triadic perceptual relation (for instance, consider the sort of skepticism Berkeley takes to follow from Locke's theory of perception, e.g., at TD 246 (quoted below in the body text)). See also Tipton (1974, ch. 6) and Chapelle (1994) for arguments against Yolton's reading. For a more recent reading that agrees broadly with Yolton, see Hatfield (2021).

1.2 Locke's Ideas of Sense and the Natural World

It is important also to acknowledge Locke's view of the place of ideas of sense in the natural world. Locke is deeply invested in the natural philosophy of his day.[10] He advocates for a version of the mechanical and corpuscularian view of the natural world defended by his famous predecessors Robert Boyle and Rene Descartes (although, as we'll see, Locke advocates for this view only as a hypothesis). Boyle articulates the gist of the view where he writes, "almost all sorts of Qualities… *may* be produced Mechanically—I mean by such Corporeal Agents as do not appear, either to Work otherwise than by virtue of the Motion, Size, Figure, and Contrivance of their own Parts" (1666, 5.302; and see Jacovides 2017, p. 4). Lisa Downing provides a more recent, cogent, and complete description of this mechanical corpuscularianism. According to Downing, it is the view

> that all macroscopic bodily phenomena should be explained in terms of the motions and impacts of submicroscopic particles, or corpuscles, each of which can be fully characterized in terms of a strictly limited range of (primary) properties: size, shape [=figure], motion (or mobility), and, perhaps, solidity or impenetrability. (1998, p. 381)

Locke finds this view of the natural world appealing at least partly because he is impressed by the intelligibility of the workings of artificial mechanisms such as watches and locks (see, e.g., IV.iii.25, III.iv.3). The functioning of a watch can readily be explained in terms of various small internal parts inside the watch (such as gears) that move and touch each other in certain characteristic ways, are possessed of certain characteristic sizes and shapes, and are characteristically solid and impenetrable. Locke generalizes this sort of mechanical, explanatory story to the whole natural world. According to the resultant view,

[10] He famously describes the great natural philosophers of the 17th century as "master builders", and portrays himself as an "underlaborer" relative to them (see EHU epistle).

nature is like a great clockwork or a vast complex of machinery in which all observable bodily phenomena result from the mechanical interactions that occur among very small particles of matter in virtue of these particles having certain sizes, shapes, patterns of movement, and so on.

Locke adopts this view only as a hypothesis, however. Unlike the gears in a watch, the ultimate particles of matter on which all observable bodily phenomena supposedly depend are not readily observable.[11] As Locke puts the point at EHU IV.iii.25, "we are destitute of Senses acute enough, to discover the minute Particles of Bodies, and to give us *Ideas* of their mechanical Affections [=primary qualities]" (and cf. IV.iii.16). (A tiny gear in a watch would, ex hypothesi, be composed of a multitude of much smaller, submicroscopic particles). We therefore cannot confirm the truth of the mechanical corpuscularian vision of nature. But being that as it may, Locke thinks, this vision promises to render nature more intelligible than any conceivable[12] alternative paradigm for the explanation of natural phenomena:

> I have here instanced in the corpuscularian Hypothesis, as that which is thought to go farthest in an intelligible Explication of the Qualities of Bodies; and I fear the Weakness of humane Understanding is scarce able to substitute another, which will afford us a fuller and clearer discovery of the necessary Connexion, and *Co-existence*, of the Powers [i.e., qualities], which are to be observed united in several sorts of them [bodies]. (EHU IV.iii.16)

Notice that the epistemic goal Locke has in mind is the "discovery of… necessary Connexion". According to his version of the mechanical corpuscularian hypothesis, the macroscopic qualities we observe flow necessarily from corpuscular microstructures just

[11] For more on this matter, see Downing (1992).
[12] For more on why Locke thinks alternative frameworks are inconceivable, see Jacovides (2017, ch. 3).

as certain properties of a geometrical figure flow necessarily from its definition (IV.iii.25, cf. II.xxxi.6, III.iii.17, III.vi.8, III.xi.23, and IV.vi.11; Jacovides 2017, pp 17-8, Downing 1998).[13] Locke identifies (*ex hypothesi*) the corpuscular microstructure of a thing as its "real essence" (III.iii.15). To grasp these necessary connections between inner (micro) essences and observable (macro) properties would be to achieve certain knowledge, or *scientia* (cf. Downing 1998). If only we could perceive Lockean real essences, then we would be able to achieve this lofty epistemic ideal; but alas, our senses are not up to the task.[14]

Locke considers the application of the mechanical corpuscularian framework to a wide range of phenomena throughout his writings. Let us consider some examples. In an early draft of EHU, he considers how the framework might, in principle, explain the freezing of water.

> [If we had] senses that could discover to us the particles of water their figure site motion &c when it is fluid. And also the different postures of those very particles, or the addition or separation of some particles &c when the water was frozen… we should as know the very modus or way whereby cold produces hardness & consistency in water, as we doe the way how a joyner puts several pieces of wood togeather to make a box or table which by tenants nails & pins we well enough perceive how it hangs together. (*EHU Draft A* 15.31, see Jacovides p. 15)

When water is sufficiently cooled, the organization of the submicroscopic particles that compose it changes in some way (the "posture" of the particles changes; or something is added to or taken away from their organization). In virtue of this change in organization at the micro scale, the water freezes. And, Locke thinks, if we could perceive this change in

[13] For more on the view (which is not unique to Locke) that such physical relations are necessary (in a way that is comparable to logical or mathematical necessity) see Jacovides (2017, ch. 2, esp. 2.3).
[14] As Lisa Downing (1998) has pointed out, the general idea that *scientia* may be achieved as a function of grasping necessary connections between the real essences of things and their observable properties goes back to Aristotle and his Scholastic followers. Attacking the Scholastic tradition, Locke updates this old scheme in dramatic fashion by casting corpuscular microstructures, rather than substantial forms, in the role of real essence.

micro-scale organization, then we could understand how coldness freezes water just as intuitively and clearly as we can understand how a carpenter's nail holds two boards together (such is the intelligibility of nature promised by the mechanical corpuscularian hypothesis).[15]

Several of the aforementioned threads of Locke's philosophy of science come together in the following well-known passage from Book IV of EHU, in which he considers the properties of various chemicals as examples:

> I doubt not but if we could discover the Figure, Size, Texture, and Motion of the minute Constituent parts of any two Bodies, we should know without Trial several of their Operations one upon another, as we do now the Properties of a Square, or a Triangle. Did we know the Mechanical affections [=primary qualities] of the Particles of *Rhubarb, Hemlock, Opium,* and a *Man*, as a Watchmaker does those of a Watch, whereby it performs its Operations, and of a File which by rubbing on them will alter the Figure of any of the Wheels, we should be able to tell before Hand, that *Rhubarb* will purge, *Hemlock* kill, and *Opium* make a Man sleep; as well as a Watch-maker can, that a little piece of Paper laid on the Balance will keep the Watch from going, till it be removed; or that some small part of it, being rubb'd by a File, the Machin would quite lose its Motion, and the Watch go no more. The dissolving of Silver in *aqua fortis* [=nitric acid], and Gold in *aqua Regia* [=a mixture of nitric and hydrochloric acids], and not *vice versa*, would be then, perhaps, no more difficult to know, than it is to a Smith to understand, why the turning of one Key will open a Lock, and not the turning of another. But whilst we are destitute of Senses acute enough, to discover the minute Particles of Bodies, and to give us *Ideas* of their mechanical Affections, we must be content to be ignorant off their properties and ways of Operation… (EHU IV.iii.25)

If we could perceive the corpuscular microstructures (=Lockean real essences) of various chemical compounds, we could come to understand why these compounds affect bodies in the various highly specific ways they do, just as well as a locksmith can understand why a

[15] As Margaret Wilson has observed (1979), Locke later becomes more skeptical about the prospects of a mechanical corpuscular explanation of cohesion; the discussion of freezing water is dropped from later, published versions of EHU. However, Locke remains a staunch partisan of the mechanical corpuscular style of explanation represented by this early discussion of freezing water.

certain key will open one lock but not another. Without any empirical test, we could deduce, for example, that opium will put a human to sleep, or that nitric acid will dissolve a bar of silver (and these consequences will follow with the same degree of necessity with which certain properties of a triangle follow from its definition). But, alas, these considerations are fated to be merely hypothetical because (to reiterate) our sense are not acute enough to perceive corpuscular microstructures.

According to Locke's philosophy of science, then, explanations of natural phenomena depend on at least three kinds of metaphysical relation. Such explanations depend, first, on *efficient-causal* relations: one gear turning is the efficient cause of a second gear turning; cooling is the efficient cause of freezing; heating is the efficient cause of melting; exposure to acid is the efficient cause of dissolving; imbibing hemlock is the efficient cause of dying, and so on. Moreover, the cognition of any feature of the natural world whatsoever requires that that feature, or something suitably connected to it, serve as the efficient cause of such-and-such ideas. Second, explanations of natural phenomena depend on a class of explanatory relations that Daniel Garber (1982) calls *vertical*.[16] This is the sort of relation that obtains between a thing's corpuscular microstructure and the observable properties that flow from it. Ex hypothesi, the freezing of a lake is related to the re-organization of its submicroscopic particles in this manner; the same goes for the whiteness and coldness of snow and snow's corpuscular microstructure, or the lethality of

[16] These vertical relations are comparable to what have, in present-day philosophy, been called relations of *grounding*, *supervenience*, or *constitution*. These relations are not efficient-causal relations, but would likely have been regarded by Locke as a different sort of causal relation, perhaps one of formal causation. Berkeley may have this in mind when he characterizes these Lockean vertical relations as causal relations at PHK 102; Downing (1998) also characterizes these relations as causal at various points. Additionally, the relations of essence to property that figure in Aristotelian accounts of the acquisiton of *scientia* are often characterized in causal terms, albeit not efficient-causal terms (cf. Pasnau 2017).

hemlock in man and the mechanical interactions between the respective corpuscular microstructures of hemlock and man, and so on. Third and finally, as we have seen, explanations of natural phenomena depend on relations of *necessitation*. That is just to say that both the aforesaid efficient-causal relations and vertical relations obtain necessarily, for Locke. This is why he says that if we knew the corpuscular microstructure of man and of hemlock, for example, we could deduce a priori (i.e., without empirical trial) that imbibing hemlock will cause death in man.

So, what role do the ideas of sense play, against the backdrop of Locke's hypothesized mechanical, corpuscularian world? For Locke, ideas of sense are representational instruments employed by the mind in its attempts to cognize various features of this world. And as we have seen, ideas of sense may be connected to certain bits and pieces of this world, whether through resemblance, causal correspondence, or both. However, ideas themselves (all ideas, not just the ideas of sense) comprise no part of Locke's material, mechanically actuated world. They are of cognitive use to the Lockean natural philosopher but, ultimately, she seeks to explain material things in terms of other material things, and ideas, being immaterial, have no role to play in such explanations (for example, in an explanation of freezing in terms of a micro-scale reorganization of particles).[17] The negative point I have just made, that ideas of sense are external to the natural world for Locke, will mark a central point of contrast with Berkeley.

[17] Of course, Locke's ontology of ideas is famously unclear, and it is not impossible that he viewed them as *material* rather than immaterial. In that case, ideas would participate in certain special mechanical explanations—in particular, explanations of the mechanisms that generate ideas, and perhaps of the mechanisms through which ideas cause action—but would still have no role to play in most physical explanations. As a result, the important point of contrast with Berkeley holds.

2 Berkeley

2.1 Berkeley's Ideas of Sense

Berkeley can seem, on the face of it, to accept more or less the same orthodox conception of ideas of sense found in Locke.[18] First, Berkeley also regards ideas of sense as the immediate objects of perception and holds that they exist only in minds. At NTV 45 he writes, "I take the word 'idea' for any immediate object of sense, or understanding—in which large signification it is commonly used by the moderns". And, summarizing his views near the end of TD, he has his spokesperson, Philonous, express agreement with "the philosophers" inasmuch as they assert that "the things immediately perceived, are ideas which exist only in the mind" (TD 262).[19] Second, Berkeley would also agree with Locke that ideas of sense are ideas of basic sensible qualities, like whiteness, roundness, or coldness.[20] And third, he would agree with Locke that ideas of sense occur independently of human will (PHK 29, cf. PHK 33, TD 242, S 289).

[18] This is unsurprising. Berkeley's early notebooks (PC, written 1707-8) record ample engagement with Locke's philosophy. In his published works, this engagement comes to a head in TD, where—through the fictive voices of Hylas and Philonous—Berkeley stages a dramatic confrontation between his own novel philosophical system (championed by Philonous) and Lockean empiricism (championed by Hylas). Of course, this is not to say that Hylas represents *only* Locke's views. Versions of views found in Descartes, Malebranche, Bayle, and others are also considered in the course of TD. And indeed, much of the orthodox conception of ideas of sense referenced in this body paragraph is also found in Descartes and Malebranche, among others.
[19] On this first point, see also PC 775, 781, 808. Note also that when Berkeley invokes "the moderns" and "the philosophers" he is no doubt talking about Descartes, Malebranche, and perhaps others, in addition to Locke. For example, in the *Sixth Meditation* Descartes says, "ideas were, strictly speaking, the only immediate objects of my sensory awareness" *Phil Writings* vol. 2, p. 52. I focus narrowly on the Locke-Berkeley dialectic in the body text to keep things relatively simple.
[20] In his notebooks (PC 115, 660) Berkeley worries that using the term 'idea of' is a mistake. To my knowledge, he does not express this worry in his published writings. And in his notebooks and published writings alike he uses the 'idea of' locution too many times to count. Cf Bolton (2008).

However, at least the first two points of agreement just scouted are merely nominal, for Berkeley's ideas of sense are not representational at all.[21] They therefore differ profoundly from Lockean ideas of sense. Where Locke takes ideas of sense to be mental representations of the real qualities that exist in the natural world, Berkeley *equates* ideas of sense with these real physical qualities. As he puts the point at PHK 33, "The ideas imprinted on the senses by the Author of Nature are called *real things*" (cf. PHK 34-39, PC 823). In the third dialogue, he has Philonous elaborate on this point in response to the protests of Hylas: "I am not for changing things into ideas [of sense], but rather ideas [of sense] into things; since those immediate objects of perception, which according to you, are only appearances of things, I take to be the real things themselves" (TD 244, cf. TD 262). This means that for Berkeley, quite unlike Locke, the simplest case of perception involves only a *dyadic relation* between *mind* and *ideas* (=*world*) (or, equivalently, between *mind* and *world* (=*ideas*)). A little earlier in the dialogue he has Philonous stress this point:

> I own the word *idea*, not being commonly used for *thing*, sounds something out of the way. My reason for using it was, because a necessary relation to the mind is understood to be implied by that term; and it is now commonly used by philosophers, to denote the immediate objects of the understanding. But however oddly the proposition [that ideas of sense are the real things themselves] may sound in words, yet it includes nothing so very strange or shocking in its sense, which in effect amounts to no more than this, to wit, that there are only things perceiving, and things perceived. (TD 236)

So, even though Berkeley would agree with Locke that ideas of sense are the immediate objects of perception and exist only in minds, this claim has a vastly different significance for Berkeley because of his transformation of mind-dependent ideas of sense into "the real

[21] This is a standard interpretation; see Winkler (1989), Bolton (2008), Pappas (2000), and Pearce (2014). Intentionalist readings of Berkeley such as Hatfield (2021) might disagree. Additionally, readings that take seriously Berkeley's talk of divine archetypes might disagree (but not necessarily—cf. Flage (2001)).

things themselves". This transformation is the wellspring of Berkeley's idealism: of those real things, he famously says, "Their *esse* is *percipi*" (PHK 3)—they exist only in virtue of being perceived by a mind.[22] And even though Berkeley very frequently makes use of the 'idea of…' locution, he does not mean it literally (at least, not in the same way Locke does) where ideas of sense are concerned. An idea of sense of red just *is* an instance of redness, according to Berkeley, i.e. the real thing itself, and this real thing itself can be immediately perceived by us without the need for a representational intermediary. As we will see, representation does play an important role in Berkeley's thought. It is just not a function he assigns to the ideas of sense.[23]

Berkeley takes his shift away from Locke's representational conception of ideas of sense to confer several benefits. First, he thinks that the representational conception gives rise to a skeptical problem. He has Philonous remark,

> It is your opinion, the ideas we perceive by our senses are not real things, but images, or copies of them. Our knowledge therefore is not farther real, than as our ideas are the true representations of those originals. But as these supposed originals are in themselves unknown, it is impossible to know how far our ideas resemble them; or whether they resemble them at all. We cannot therefore be sure we have any real knowledge. (TD 246, cf. PHK 18, 86-7)

[22] For more on the equation of ideas of sense with real physical qualities as the foundation for Berkeley's idealism, see Rickless (2013).

[23] More might be said about the metaphysical details of Berkeley's conception of ideas of sense as real physical things. In his impressive study of substance-mode metaphysics in the early modern era (2012) Mark Hight argues that Berkeley takes ideas of sense to be *quasi-substances* (as opposed to both modes (of mind) and substance in the traditional (fully mind-independent) sense). This proposal seems plausible and attractive to me by its own merits. And on the face of it, the proposal seems compatible with the reading of Berkeley's theory of perception I defend in this dissertation. It is unclear to me, though, whether the two are truly compatible once all details are taken into account. For instance, Hight's metaphysical reading would have to be extended to give an account of ideas of imagination (which I discuss in chapter two). Perhaps he could argue that ideas of imagination are (unlike ideas of sense) modes of the mind (the ramifications of such a position are not fully clear to me, but it seems worth exploring).

Notice that Berkeley (via the voice of Philonous) construes the Lockean representationalist position he opposes as making resemblance, rather than causal correspondence, the representing relation.[24] The skeptical threat looms because we have no reason to believe that our ideas are true images or copies of their supposed originals. However, Berkeley's transformation of ideas of sense into the real things themselves allows him to neutralize the threat, for it allows him to hold that the real things themselves can be immediately perceived. Just how this commitment allows Berkeley to neutralize the relevant skeptical threat is a topic I return to in more detail at the end of chapter three.

Berkeley also reads Locke's distinction between primary and secondary qualities as entailing that the secondary qualities (e.g., colors, smells) are not real parts of the physical world (PHK 15, TD 187-8). (Locke, for his part, would almost certainly resist this; he says that secondary qualities are "Powers" in bodies, and says nothing to suggest that these powers are not real parts of the world (cf. Jacovides 2017, p. 163)). Berkeley's rejection of Locke's representational conception of ideas of sense also allows him to reject his version of the Lockean stance on the secondary qualities: because all sensible qualities alike are ideas of sense, for Berkeley, all sensible qualities are metaphysically on a par with each other as real parts of the physical world. He has Philonous summarize his pro-commonsense position on this matter at TD 229-30:

> I am of a vulgar cast, simple enough to believe my senses, and leave things as I find them. To be plain, it is my opinion, that the real things are those very things I see and feel, and perceive by my senses. These I know, and finding they answer all the necessities and purposes of life, have no reason to be solicitous about any other unknown beings. A piece of sensible bread, for instance, would stay my stomach

[24] For more on Berkeley's view that Locke's theory of perception incurs skeptical problems, see the fascinating Popkin (1951). Popkin shows that Berkeley is reading Locke, at least to some extent, through the lens of Bayle's *Dictionary*, and for this reason sees Locke as a kind of inadvertent Pyrrhonian skeptic.

> better than ten thousand times as much of that insensible unintelligible, real [i.e. material, mind-independent] bread you speak of. It is likewise my opinion, that colours and other sensible qualities are on the objects. I cannot for my life help thinking that snow is white, and fire hot… Away then with all that skepticism, all those ridiculous philosophical doubts. What a jest is it for a philosopher to question the existence of sensible things… (TD 229-30)

Where Berkeley's Locke would have said that only the snowball's roundness, as opposed to its whiteness or coldness, is a real part of the world, Berkeley sides with common sense and holds that all these qualities are equally real.

2.2 Berkeley's Ideas of Sense and the Natural World

2.2.1 Abandoning the Lockean Picture

Berkeley and Locke also have importantly different views of the place of ideas of sense in the natural world. Like Locke, Berkeley is deeply invested in the natural philosophy of his day, and like Locke he thinks natural philosophy aims to explain physical phenomena. But, once again, these points of agreement are merely nominal.

For one thing, the character of Berkeley's engagement with the natural philosophy of his day is quite different from that of Locke's. Where Locke develops a speculative metaphysical framework in order to clarify corpuscular mechanism and emphasize its intrinsic virtues and advantages (e.g., in making the natural world intelligible), Berkeley engages with corpuscular mechanism, and other natural philosophical theories, with the aim of converting (or deflating) them into doctrines that can be easily harmonized with religion and (in some respects) common sense. In a letter to his friend Percival of March 1st, 1710, the young Berkeley declares that part of his goal in PHK is "showing the emptiness and falseness of several parts of the speculative sciences, to reduce men to the study of religion and things useful" (and cf. PHK 60-66, esp. 65, and 101-2). Along somewhat similar

lines, we find Berkeley in DM engaging with Newton's theory of motion in order to show that it can be interpreted through an instrumentalist lens and thereby rendered compatible with the view that minds (as opposed to physical forces) are the only genuine causal agents. (I say more about this view of Berkeley's in a moment. Here, in connection with the issue of Berkeley's underlying motives, note that this position turns out to be requisite for arguments for God's existence and nature that Berkeley offers in other writings).[25] And in *The Analyst* Berkeley engages critically with Newton's theory of fluxions and Leibniz's theory of infinitesimal change in order to show that these natural-philosophical posits are not any less mysterious than the Christian mysteries.

I hasten to add, however, that despite the fact that Berkeley's motivations for engaging with the natural philosophy of his day are very different from Locke's, Berkeley's engagement is just as deep and rigorous as Locke's is (if not more so), for he takes such depth and rigor to be required in service of his spiritual and practical aims. For example, Berkeley develops an original theory of vision, in direct conversation with the optical and physiological writings of Descartes (among others), whereas Locke does nothing of the sort (he is not the author of any original empirical theory, as far as I am aware). And Berkeley's writings on mathematics include a level of formal rigor found nowhere in Locke's writings. While I certainly would not go as far as to call Berkeley a natural philosopher proper (in the same sense as Descartes, Boyle, or Newton)[26] I submit that natural-philosophical inquiry is

[25] See the argument for God's existence and nature in *Alciphron* IV, and see also TD 231-3.
[26] While Berkeley thinks the natural philosopher has the job of explaining physical phenomena, he also applies a version of the explanatory norms he associates with natural philosophy to the task of explaining certain psychological phenomena, namely the visual process. The patterns of visible and tangible ideas Berkeley spends the bulk of his writings on vision describing are precisely the sort of patterns of ideas he takes to result from laws of nature. Compare NTV 45 and PHK 30, and NTV 147-8 and PHK 31, for textual support. Laws of nature, as I go on to explain below, are central to Berkeley's conception of natural

no less important to Berkeley's philosophical endeavor than it is to Locke's (even if, as I've acknowledged, it is important for different reasons).

But now let us return to the ideas of sense. Of central importance for my purposes is the fact that within the natural-philosophical context, Berkeley ascribes a much greater importance to ideas of sense than Locke does. This has to do, first of all, with Berkeley's immaterialism. For reasons I do not discuss here (because they have been so much discussed elsewhere),[27] Berkeley is critical of Locke's materialism (and materialism, in general). He thinks the notion of mind-independent material existence is incoherent, and hence that material substance cannot exist. So, the natural world is composed of ideas of sense, for Berkeley, rather than matter (he would still say that the natural world, and the real things in it, are *physical*, though).[28]

Berkeley's metaphysics of ideas of sense also leads him to reject the Lockean view that natural-philosophical explanation is *causal*. Berkeley thinks that minds (=spirits) are the only genuine sources of causal power in the universe. As he has Philonous put the point: "I have no notion of any action distinct from volition, neither can I conceive volition to be anywhere but in a spirit" (TD 239). Confining causal power to minds, Berkeley takes ideas (both of sense and imagination) to be entirely passive and devoid of causal power

philosophy. Ultimately, however, I think Berkeley takes the natural philosopher to be concerned with *general* laws of nature primarily, and the laws he describes in his theory of vision are relatively low in generality; given that, furthermore, authors in the late 17th century tend to define natural philosophy as the study of the properties of bodies (see, e.g., the preface to Molyneux (1692) which Berkeley is known to have read), I suspect Berkeley would not have been willing to call his theory of vision a piece of natural philosophy proper. But I think he attempted to model the theory on what he took natural philosophy to be, so perhaps it could rightly be called proto- or quasi-natural philosophy.

[27] See, e.g., Tipton (1976), Stroud (1980), Pappas (2000), Fields (2011), Downing (2021).

[28] Cf. Downing (2021): "Thus, although there is no material world for Berkeley, there is a physical world" (from section 3.1.1).

(PHK 25). Such a claim might be relatively insignificant coming from Locke (though I am unsure if he makes such a claim). But because Berkeley equates ideas of sense with the physical world around us, the claim has dramatic consequences for him: it amounts to the claim that the physical world is devoid of causal powers. Where Locke thinks that real physical things in the world can causally interact with each other and with our sense organs, Berkeley denies this. He thinks that all ideas of sense that compose phenomena in the natural world[29] are caused directly by God's will (he reasons that they must be caused by *some* mind, and that they are clearly not caused by any human mind (e.g., PHK 29-36, TD 230-1)). Because he thinks the physical world is devoid of causal powers, he thinks that genuine explanations of physical phenomena cannot be causal explanations. Notably, he does allow that some natural-philosophical attempts at causal explanation—for example, Newtonian explanations of motion in terms of forces—are instrumentally valuable because they allow us to make accurate predictions. But he insists that such explanations are not actually true (cf. DM, S 152-5).

Berkeley also denies that natural philosophy gives genuinely *vertical* explanations in Locke's sense. He glosses Locke's view of vertical explanation as the view that "there is in each object an inward essence, which is the source whence its discernible qualities flow, and whereon they depend" (PHK 102). But just as Berkeley thinks that no idea of sense is more real than any other, he also thinks that no idea of sense is more essential to a given phenomenon than any other. "Hence," he writes, "to endeavor to explain the production of colors or sounds [i.e. observable macro properties], by figure, motion, magnitude and the

[29] Whether or not these are all the ideas of sense there are is an issue I consider later in this chapter, in section 2.3.

like [i.e. supposedly essential primary qualities], must needs be labor in vain" (PHK 102). Note that this confers an additional anti-skeptical benefit: Berkeley can reject Lockean skepticism about knowledge of essences (cf. PHK 101-2).

Berkeley also denies that the explanatory connections that matter for natural philosophy are *necessary* in the sense Locke takes them to be. Considering the case of gravitation, he writes,

> There is nothing necessary or essential in the case, but it depends entirely on the will of the *governing spirit*, who causes certain bodies to cleave together, or tend towards each other, according to various laws, whilst he keeps others at a fixed distance; and to some he gives a quite contrary tendency to fly asunder, just as he sees convenient. (PHK 106)

Since there are no causes or essences within the natural world, all natural events are radically contingent on God's will. Thus, one event, object, or property in nature can never necessitate another. All we know of nature, we know "not by discovering any necessary connection between our ideas, but only by the observation of the settled laws of nature" (PHK 31) (more on the laws of nature in a moment). "A connection established by the Author of nature in the ordinary course of things," Berkeley says, "may surely be called natural, as that made by men will be named artificial. And yet this does not hinder but the one may be as arbitrary as the other" so that "there is no… necessity to infer" one idea from another that is connected to it by a law of nature (TVV 40). The Berkeleian natural philosopher is not out to discover universal or necessary connections in the natural world;

unlike her Lockean counterpart, she is not out to deductively infer physical properties from physical essences in a way reminiscent of mathematical derivation.[30]

Finally, there is nothing to indicate that Berkeley takes his vision of the natural world to be a mere hypothesis, as Locke does. Having set down the crushing cognitive burden of the search for essences and necessary connections, Berkeley presents his picture of nature as straightforward metaphysical fact. This non-hypothetical realist stance is evident in a number of the passages I consider in what follows (e.g., PHK 30, quoted in the next paragraph).

2.2.2 Laws of Nature and Informative Signs

Berkeley takes the natural world to be structured by *laws of nature* instituted via divine will. His conception of the laws of nature is closely connected to his view of the ideas of sense. He introduces the former at PHK 30:

> The ideas of sense are… strong, lively, and distinct… they have likewise a steadiness, order, and coherence, and are not excited at random… but in a regular train or series, the admirable connection whereof sufficiently testifies the wisdom and benevolence of its author [=God]. Now the set rules or established methods, wherein the mind we depend on excites in us the ideas of sense, are called the *laws of nature*: and these we learn by experience, which teaches us that such and such ideas are attended with such and such other ideas, in the ordinary course of things. (PHK 30)

A law of nature is a rule that prescribes certain regular patterns in our ideas of sense.[31] As a simple example, Berkeley cites the rule that fire warms (PHK 31). This simple law

[30] For a different reading of this dialectical connection between Locke and Berkeley (on which their views end up convergent rather than opposed), see Atherton (1991).
[31] According to Downing (2005) Berkeley has a simplistic view of the laws of nature which he later revises in DM where he adopts a more complicated view. Ott (2019) persuasively argues that the more complex DM view is already present in PHK, and I agree with Ott (and generally take inspiration from his account). However, the distinction I draw between simple and general laws of nature is my own. Berkeley describes simple laws of nature as 'laws of nature' *simpliciter* and general laws as 'general rules or laws of nature'. He

prescribes that ideas of fire are constantly conjoined with ideas of warmth in human experience. He also cites more complex examples, such as Newton's law of universal gravitation (PHK 104-5), and the sort of mechanical[32] laws hypothesized to exist (but never actually described) by Locke (PHK 60-66). He characterizes these more complex laws as "general laws that run through the whole chain of natural effects" (PHK 62, cf. PHK 105, 151). These general laws also prescribe patterns in our ideas of sense, but the patterns are more complex, range over a wider array of phenomena, and may need to be deduced from a given regularity (or group of regularities) by several intermediate steps of reasoning. For example, from Newton's law of universal gravitation we can deduce that ideas of the downward motion of a stone will tend to follow after the stone is dropped *and* that ideas of the upward motion of water (=rising tides) will tend to occur when a sufficiently massive body (like the moon) is sufficiently close to the water. So, not only does God directly cause our ideas of sense to come into existence, He causes them to come into existence in certain lawful, regular *patterns* by following certain *rules*—the laws of nature—in producing them.

Berkeley argues that those things which Locke (or Boyle or Descartes) construe "under the notion of a cause cooperating or concurring to the production of effects" should instead be construed "only as marks or signs for our information" (PHK 66). He thinks the laws of nature (both simple and general) function to organize nature into *a system of informative signs*, rather than of causes and effects: "[T]he [lawful] connection of ideas does not imply the relation of *cause* and *effect,* but only of a mark or *sign* with the thing *signified*

consistently talks of general laws when he is discussing natural philosophy (e.g., at PHK 62, 104-5). I take general laws to be the same as the more complex laws that Downing (2005) finds in DM.

[32] For Berkeley, of course, these laws are not literally mechanical as they are for Locke, i.e., they do not involve any actual physical causation. I discuss Berkeley's re-interpretation of these laws in more detail in subsection 2.2.3 of this chapter, below.

[so that]… The fire which I see is not the cause of the pain I suffer upon my approaching it, but the mark that forewarns me of it…" (PHK 65). Generalizing, wherever the laws of nature in fact make an idea of sense *b* predictable from another idea of sense *a*, *a signifies b* (PHK 60-66).

Berkeley sometimes encapsulates this semiotic view of nature by suggesting that the natural world is a divine language, expressed to us by God.[33] Ideas of sense are connected via signification relations because of the manner in which they are organized into patterns by the laws of nature. Because fire ideas are constantly conjoined with warmth ideas, for example, when I see fire, I can reasonably predict warmth (if I move my hand in the appropriate ways, and so on).

Berkeley thinks that God organizes the natural world into a lawful system of ideas of sense interconnected via signification relations because He wishes to benefit humans. This lawful system "gives us a sort of foresight, which enables us to regulate our actions for the benefit of life. And without this we should be eternally at a loss: we could not know how to act anything that might procure us the least pleasure, or remove the least pain of sense" (PHK 31). Berkeley reiterates the point in *Siris*: "without a regular course, nature could never be understood; mankind must always be at a loss, not knowing what to expect, or how to govern themselves, or direct their actions for the obtaining of any end" (S 160). In his theory of vision Berkeley describes a class of relatively simple laws of nature that prescribe patterns of visible and tangible ideas; he explicitly argues that these patterns comprise a "universal language of the author of nature [=a system of signs]" deployed by

[33] See Atherton (1995), Turbayne (1970), and Pearce (2014, 2017) for more on Berkeley's language of nature idea.

God to benefit us, and that humans must learn this language in order to survive by, e.g., not walking off cliffs, etc. (NTV 147-8).[34]

2.2.3 Berkeleian Mechanism

At PHK 60-66 Berkeley considers the objection that, on his view, ordinary mechanisms of the sort that had inspired Locke's universalization of mechanical corpuscularianism must be superfluous because God could cause the outputs of such mechanisms directly without going to the trouble of setting up the mechanisms themselves—God could cause my watch-hands to turn without the need for any of the machinery inside the watch, for example.

Berkeley retorts that nature includes mechanisms not because they are causally necessary, but because "abundance of information is conveyed unto us" by them (PHK 65).

[34] In a useful passage by Edwin Burtt (1932, p. 116—quoted by Catherine Wilson (1995, p. 17)) the intellectual shift accompanying the so-called scientific revolution in Europe is described as follows: "The Scholastic scientist looked out upon the world of nature and it appeared to him a quite sociable and human world. It was finite in extent. It was made to serve his needs. It was clearly and fully intelligible, being immediately present to the rational powers of his mind; it was composed fundamentally of, and was intelligible through, those qualities which were most vivid and intense in his own immediate experience—color, sound, beauty, joy, heat, cold, fragrance, and its plasticity to purpose and ideal. Now the world is an infinite and monotonous mathematical machine. Not only is his higher place in a cosmic teleology lost, but all those things which were the very substance of the physical world to the scholastics—the things that made it alive and lovely and spiritual—are lumped together and crowded into the small fluctuating and temporary positions of extensions which we call the human nervous and circulatory systems." Wilson (1995, pp. 17-8) describes the shift rather vividly, as well (speaking from the posterior point of view): "The world is not there to delight us; the scientist is one who unmasks the delusions of self-indulgent human consciousness and replaces them with the hard facts: nature in itself is morally and aesthetically neutral, neither benevolent nor cruel, neither beautiful nor ugly. In place of a sympathetic cosmos, whose members are bound together by analogies, harmonies, and sympathies and kept distinct by metaphysical individuality and antipathy, we have only one kind of matter forming one pattern, and, in place of love and strife, little structures and machined producing all the illusions of subjectivity." Against the background of these considerations, part of what is unique about Berkeley's scientific world-view becomes more clear: his view effectively reenchants and respiritualizes the natural world in a way reminiscent of the scholastic world-view (we even find Berkeley occasionally characterizing laws of nature in terms of natural "analogies and harmonies" (e.g., PHK 104-5, TVV 53)); and yet Berkeley's derision for abstract general ideas (which he also associates with the scholastic tradition (PHK Intro)) in combination with his conception of the laws of nature gives him the resources to develop a philosophy of science capable of competing with Locke's (that is, inter alia, a philosophy of science on which natural philosophy is much more rigorous and explanatorily powerful than it was for the Scholastics).

God does not cause the hands of the watch to exist without simultaneously causing the watch's internal machinery to exist because He wants to give us a richer and more informative system of signification relations than we would have if the watch turned out to be empty inside. There is a whole host of predictions and expectations available to us because of the existence of the inner machinery of the watch (e.g., that if gear A breaks, then gear B won't turn, and the minute hand will stop moving). This information would not be available to us if the watch's hands turned miraculously.

Recall that part of the appeal of mechanical corpuscularianism, both to Boyle and Locke, is that it allows us to explain (ex hypothesi, anyway) numerous natural phenomena in terms of combinations of just a small number of primary qualities interacting with each other in a well-understood mechanical manner. Boyle emphasizes this by comparing the primary qualities to letters in an alphabet which, though few in number, can be variously combined to spell an enormous number of different words (1674, cf. Downing 2002). The importance of this point is not lost on Berkeley, but its philosophical significance is drastically different for him. In the midst of making his case for the informational necessity of ordinary mechanisms like watches (PHK 60-66), he explains:

> [T]he reason why ideas are formed into machines, that is, artificial and regular combinations, is the same with that for combining letters into words. That a few original ideas may be made to signify a great number of effects and actions, it is necessary they be variously combined together: and to the end their use be permanent and universal, these combinations must be made by *rule*, and wise *contrivance*. By this means, abundance of information is conveyed unto us, concerning what we are to expect from such and such actions, and what methods are proper to be taken, for the exciting of such and such ideas; which in effect is all that I conceive to be distinctly meant, when it is said that by discerning the figure, texture, and mechanism of the inward parts of bodies, whether natural or artificial, we may attain to know the several uses and properties depending thereon, or the nature of the thing. (PHK 65, cf. S 266)

We can have ideas of sense of the inward parts of some bodies (e.g., ideas of the gears inside a watch). These ideas will include ideas of primary qualities (e.g., the shape and size a gear). Berkeley's point is that these ideas are *especially* informative signs: when combined in various ways in accord with various general laws of nature they tell us to predict or expect an *especially* wide range of observable phenomena. In this way, Berkeley retains an idealist and epistemic (rather than metaphysical) version of the distinction between primary and secondary qualities so integral to classical corpuscular mechanism (cf. Winkler 1989, pp. 255-62).[35,36]

[35] However, notice that general laws of nature are required to make any of our ideas this highly informative: there must exist rules that prescribe that when ideas of primary qualities of inward parts are combined in one way, we should predict or expect one sort of experience; when they are combined some other way, we should predict or expect a different sort of experience; and so on. The sort of rules that do this must be more complex and general than a simple law like *fire warms*, and must prescribe roles to qualities that are more basic and universal in the natural world—like shape, or size—than something as specific and complex as fire. Thus, while all Berkeleian laws of nature make the ideas of sense they organize informative, general laws of nature make the ideas of sense they govern relatively more informative than simple laws make the ideas they govern, because they (the general laws) assign relatively more universal roles to relatively more basic and universal physical qualities—the primary qualities—and thus install relatively more wide-ranging networks of signification relations among our ideas of sense. In fact, on several occasions in DM, Berkeley refers to Newtonian laws of motion—paradigm examples of general laws of nature—as "primary laws" of nature (36, 51), suggesting a conversion of the Lockean distinction between primary and secondary *qualities* to a Berkeleian distinction between primary and secondary *laws*. As Maddy (2022) points out, one of the respects in which primary qualities are distinguished from secondary qualities for Locke is explanatory fundamentality (the primary qualities are explanatorily basic). Berkeley might say that the primary laws of nature are explanatorily basic.

[36] By *Siris*, Berkeley shifts away from a remotely Lockean/Cartesian attitude toward the importance of the primary qualities in nature, and moves toward a more Newtonian view, writing, "Nature seems better known and explained by attractions and repulsions, than by those other mechanical principles of size, figure, and the like; that is, by Sir Isaac, Newton, than Descartes. And natural philosophers excel, as they are more or less acquainted with the laws and methods observed by the Author of nature" (S 243). The view of primary qualities I have attributed to him in the body text can ultimately be taken to be a reflection, not of an allegiance to the Boylean/Lockean primary qualities, as such, but of allegiance to Newton's first and third rules of natural philosophy, which tell us, roughly, to explain the phenomena in terms of maximally universal qualities (rule iii) and to posit as few of these universal qualities as possible to satisfactorily explain the phenomena (rule i). Of course, per the moral of the previous note, we might also read Berkeley as shifting the emphases of these two Newtonian rules to *laws*, rather than *qualities*: explain the phenomena in terms of maximally general laws (rule iii*) and to posit as few of these general laws as possible to satisfactorily explain the phenomena (rule i*). (Cf. PHK 151, where Berkeley says God sets up the natural world according to the most simple and general laws possible). The picture developed in this, and the previous note deserves to be explored further, but doing so would take me too far afield here.

One might object at this point that in virtue of his *esse* is *percipi* doctrine, Berkeley cannot seriously believe the mechanism inside my watch exists if no human being occurrently perceives it. The same worry[37] would apply to any (supposedly) real part of the natural world not perceived by a human being right now, because such parts can be none other than ideas of sense, for Berkeley, and ideas exist only in minds. Commentators agree that Berkeley has at least two ways to explain the existence of real things (=ideas of sense) not now perceived by any human being. He can argue (i) that such things exist because the laws of nature dictate conditions under which they *would* be perceived by human beings, or (ii) that such things exist as ideas in God's mind. I won't adjudicate between these options here. The point is just that Berkeley has the conceptual resources to seriously claim that many parts of the natural world exist even though they are not now perceived by any human being.[38]

The precise extent of such things, both with respect to their variety and scale, is a further question. Berkeley is clear that the considerations just rehearsed apply not only to artificial mechanisms like watches, but also to their natural counterparts: "that curious organization of plants, and the admirable mechanism in the parts of animals" (PHK 60). What goes for the gears in my watch also goes for the nerves and tendons etc. in my body, and the xylem and phloem etc. inside my houseplant. (This point will be important in the later parts of this chapter, in connection with Berkeley's views of sensory physiology).

Scale is a more difficult issue to assess. Berkeley is well-aware of the powers of the microscope (e.g., TD 245, NTV 85-6; cf. Winkler 1989, ch. 8), and so would presumably also

[37] This worry is standardly called the problem of unperceived existence.
[38] Winkler (1989) endorses a version of (i); Hight (2012) endorses a version of (ii).

countenance the existence of things not visible to the naked eye but visible via early-18th-century microscopy, like certain bacteria. The more difficult question is whether he thinks ultimate corpuscles comparable to the particles comprising a Lockean real essence exist. Such particles would be far smaller than bacteria and would be far more difficult, if not impossible, for human beings to sensorily perceive. I remain agnostic on the issue of ultimate corpuscles in this dissertation.[39]

2.2.4 The Berkeleian Natural Philosopher

Ultimately, Berkeley thinks that the job of the natural philosopher is twofold. First, she must discover and describe general laws of nature by means of "the observation and study of nature" (PHK 62) and "experiments" (PHK 107). In DM Berkeley elaborates on this statement of method: general laws of nature (here, Newton's laws of motion) are "proven by experiments, elaborated by reason, and rendered universal" (DM 36). Second, the Berkeleian natural philosopher must explain phenomena by appeal to the general laws of nature. According to Berkeley, a phenomenon is explained when it is subsumed under a general law of nature, i.e., identified as an instance in which a general law holds.[40] As he puts this point at PHK 62, "explaining the various phenomena… consists only in showing the conformity any particular phenomenon hath to the general Laws of Nature". He goes into a little more detail later, at PHK 105:

> [A]nalogies, harmonies, and agreements are discovered in the works of nature, and the particular effects explained, that is, reduced to general rules, see *Sect*. 62, which rules [are] grounded on the analogy, and uniformness observed in the production of natural effects, [and] are most agreeable, and sought after by the mind. (PHK 105)

[39] For more, see Garber (1982), Wilson (1985), Winkler (1989), and Downing (1995).
[40] For interesting discussion of Berkeley's ability to explain phenomena in terms of the composition of multiple forces, see Ott (2019).

So, he thinks that explaining a natural phenomenon is a matter of grasping general, lawful relations among the ideas of sense involved in the phenomenon, where the relevant relations are prescribed by God, are significatory rather than causal, are contingent rather than necessary, and where no idea of sense is more essential to the phenomenon to be explained than any other. Fundamentally, the Berkeleian natural philosopher seeks "only to know what ideas are connected together;… [for] the more a man knows of the connexion of ideas, the more he is said to know of the nature of things" (TD 245). Daniel Garber (1982) suggests that, accordingly, natural-philosophical explanation is *horizontal*, rather than vertical (in Locke's sense), for Berkeley.

To explain why my watch ceases to function when a certain gear is filed down, for example, the Berkeleian natural philosopher identifies this event as a particular instance in which certain general laws of nature hold. I won't try to state, even approximately, all the laws that would be involved in this case. Presumably, though, one of the more important general laws involved would pertain to the shape and rotational movement of gears. Let us dub the shape of a round gear with regularly spaced, intact teeth G. The law in question might have roughly this form: when one has an idea of multiple entities with shape G where the entities are contiguous (so that their teeth interlock), then an idea of sense of one of the entities rotating at a constant speed s will signify ideas of sense of the other entities rotating at constant speeds proportional to s, as well (where the rotational speed of each of these other entities proportional to that of *s* is a function of the number of teeth each entity

has relative to *s*).[41] This general law prescribes some of the particular patterns of ideas of sense we experience when we observe gears mechanically interacting in any context.

When a certain gear C inside my watch is filed down, it ceases to have shape G (it no longer has evenly spaced, intact teeth, and may also have ceased to be round if the filing is severe enough). Under this condition, when looking inside the watch, an idea of sense of C rotating at speed s will not signify ideas of sense of the other gears in the watch rotating at constant speeds proportional to s. The other gears will rotate only intermittently (when the remaining teeth on C periodically come into contact with the teeth of the gear(s) contiguous with C) if they rotate at all. Prior to filing C down, its rotation in conjunction with the rotation of the other gears in the watch signified ideas of sense of the watch's hands turning in normal, functional fashion. But now that C has been filed down, if one looks at the watch as a whole, from the outside, while C is rotating, one will have ideas of a watch whose hands turn only intermittently (and hence dysfunctionally), if they turn at all. It is because God has instituted certain laws of nature (such as the one described in the previous paragraph in terms of G and s) that the cessation of the hands' turning is intelligible to us in this way (in terms of a change in the shape of C). In roughly this manner, the Berkeleian natural philosopher explains the phenomena in terms of divinely instituted laws of nature that prescribe general patterns of signification relations among our ideas of sense, rather than in terms of mechanical, efficient-causal interactions among bits and pieces of matter.

[41] Jacovides (2017, pp. 19-20) considers a similar example, involving gears, in order to illustrate Locke's thinking about mechanism.

2.3 All Ideas of Sense, or Just Most of Them?

There is reason to wonder whether the picture I've painted applies to *all* ideas of sense, for Berkeley, or just to most of them. To see how this question arises, we first need to see, in a bit more detail, what makes something count as physically real, for Berkeley.[42] He identifies two relevant criteria. First, something is real if it is constrained by the laws of nature. Berkeley has Philonous exhort us to

> place the reality of things in ideas [of sense], fleeting indeed, and changeable; however not changed at random, but according to the fixed order of Nature. For herein consists that constancy and truth of things, which secures all the concerns of life, and distinguishes that which is *real* from the irregular visions of the fancy. (TD 258, original emphasis)

Second, something is real if it is caused by God's will. Where he explains what differentiates real physical things from mere fantasies or "chimeras" in PHK—a discussion I consider in detail in the next chapter—he explains, "[the ideas of sense] are also less dependent on the spirit, or thinking substance which perceives them, in that they are excited by the will of

[42] There is also a pesky terminological worry that might arise in this area. Berkeley famously claims that ordinary objects like apples, stones, houses, etc. are comprised of *collections* of ideas (PHK 1, cf. PHK 4, 60-66, TD 245, 249). This has led some commentators to read Berkeley as placing an important fault-line between individual ideas and objects (e.g., Flage (1987, pp. 69-74)). On the resultant reading, terms like 'object' and 'real thing' are reserved for collections of ideas, and individual ideas are not themselves genuine objects or real things, being only constituent parts thereof. A proponent of this reading would presumably object to the reading I have been defending, on which ideas of sense are themselves real things (or, though I haven't been talking this way explicitly, objects). Let me first acknowledge that Berkeley has other terminological means available to distinguish idea-collections from individual ideas. On some occasions, for instance, he marks out the distinction by denoting idea-collections as "complex ideas" (NTV 110) or "compound ideas" (PHK Intro 7, 22), as opposed to individual ideas, which would not be complex or compound. So, he does not need to reserve 'object' and 'real thing' exclusively for idea-collections for lack of a different vocabulary equally capable of capturing the relevant distinction. And in fact—more to the point—there is much textual evidence that he does *not* reserve 'object' or 'real thing' exclusively for idea-collections. He frequently denotes individual ideas with the terms "object" (NTV 50, TVV 9, 20, PHK 1) and (as we have seen) "real thing" (TD 235-6, 244, 262, PHK 33). He thinks that the mind can regard "either an idea by itself or any combination of ideas" as a "unit", i.e., an individual thing or object (NTV 109). (This latter point is closely related to the fact that we assign *names* to individual ideas and idea-collections alike, for Berkeley. Examples of the former are 'redness' and 'warmth'; example of the latter are 'house' and 'book'. Berkeley takes there to be a very close connection between being an individual thing or object and having a name assigned (cf. NTV 109-110, for example)).

another and more powerful spirit" (PHK 33) and that "[they] speak themselves the effects of a mind more powerful and wise than human spirits" (PHK 36). So, Berkeley thinks an idea of sense counts as a real thing insofar as (a) it is constrained by the laws of nature, and (b) it is caused by God's will. Let us call (a) the *nomological criterion* and (b) the *volitional criterion.* (We will revisit these two criteria in more detail in the next chapter).[43]

Now, here is the worry: Berkeley sometimes seems to hold that some ideas of sense fail to satisfy these two criteria. This would entail that some ideas of sense are not real things, after all. Such ideas would be counterexamples to my claim that Berkeley equates ideas of sense with real things. For example, at PHK 145 Berkeley explains that we know other human minds in virtue of the ideas of sense they excite in us:

> [W]e cannot know the existence of other spirits, otherwise than by their operations, or the ideas [of sense] by them excited in us. I perceive several motions, changes, and combinations of ideas, that inform me there are certain particular agents like myself, which accompany them, and concur in their production. (PHK 145)

If I raise my arm and you are looking at me with a functioning visual system, you have visible ideas of sense of a moving arm; if John says 'good morning' and I am standing sufficiently close to him and have a functioning auditory system, I have auditory ideas of sense of the sounds of his words.[44] These movements and sounds must be ideas of sense—there is nothing else in Berkeley's ontology that could plausibly accommodate them. Yet

[43] There is some sense in which the volitional criterion—being caused by divine will—is the more fundamental of the two, but this point requires qualification. Berkeley says that an effect of divine will "has more reality in it" than an effect of human will (PHK 33, 36) and he also thinks that miracles, which are effects of divine will not constrained by the laws of nature, are real. However, he thinks that the laws of nature are "constituted" by God's will (PHK 31). So, being constrained and organized by the laws of nature is not something different from being constrained and organized by God's will. I distinguish these as two separate criteria in the body text because Berkeley tends to treat them as such. In fact, though, I think he views constraint by the laws of nature as a characteristic aspect of being a product of divine will.

[44] This example is due to Daniel Flage (1987, pp. 69-74).

they seem, *prima facie,* like obvious counterexamples to both the nomological and volitional criteria. Since I could have easily moved my leg instead of my arm, it is hard to see how ideas of sense of my arm-movement are constrained by laws of nature; and for the same reason, it is hard to see how these ideas are caused by God's will rather than my own.[45]

At other points, Berkeley seems to straightforwardly deny that ideas of sense of the movements of our own limbs satisfy the volitional criterion. In his early notebooks he writes "We move our legs ourselves. 'Tis we that will their movement. Herein I differ from Malbranch [sic]" (PC 548).[46] Much later, in *Siris,* Berkeley writes, "In the human body the [human][47] mind orders and moves the limbs" (S 161, cf. 171). As I said earlier, these physical movements must be ideas of sense—Berkeley's ontology admits of no other

[45] At PHK 147 Berkeley offers the following explanation of what he means (at PHK 145) by the qualification that "particular agents like myself… *concur* in" the production of the relevant, intersubjectively available ideas of sense: "There is not any one mark [=idea] that denotes a man, or effect produced by him, which does not more strongly evince the being of that spirit who is the *Author of Nature*. For it is evident that in affecting other persons, the will of man has no other object, than barely the motions of the limbs of his body; but that such a motion should be attended by, or excite any idea in the mind of another, depends wholly on the will of the Creator. He alone it is who *upholding all things by the word of his power*, maintains that intercourse between spirits, whereby they are able to perceive the existence of each other" (PHK 147). It is only in virtue of God's will that we are able to perceive each other's movements and sounds and so forth—we concur with God in exciting these ideas in one another's minds. So, our ideas of sense—even those connected to other humans' wills—are generally more causally dependent on God's will than PHK 145 might at first lead us to expect. But however PHK 147 is interpreted, it cannot make *all* ideas of sense satisfy the volitional and nomological criteria. At best, it indicates that other peoples' ideas of sense of my actions and words will satisfy the volitional criterion. However, when I move my arm, *I* have ideas of sense of my *own* arm moving; when I speak, I have ideas of sense of the sounds of my own words. The sort of intersubjective discourse at issue in PHK 147 does not come into play at all, with respect to my ideas of sense of my own movements and sounds, and so it remains mysterious how these ideas could satisfy the volitional criterion. Additionally, it remains difficult to see how the relevant ideas of sense could satisfy the nomological criterion, given that humans may produce them more or less at random. See Pearce (2017, pp. 199-200).

[46] The Malebranchian view in question is occasionalism: the view that (as one commentator puts it) "it is God who brings it about that our sensations and volitions are correlated with motions in our body" (Schmaltz, 2017 pt. 4). I very briefly touch on occasionalism in the body text later in this subsection.

[47] In the next sentence Berkeley goes on to oppose the mind that moves the limbs of the body to the mind that governs the whole mundane system, i.e., God's mind. Hence, the word 'mind' in the quoted sentence clearly denotes human minds.

option. So, these passages would seem to suggest that Berkeley thinks some ideas of sense are caused by humans rather than by God.[48] These ideas of sense would also have a hard time satisfying the nomological criterion for this reason: if I will my arm's movement whenever and however I want to, it is hard to see how its movement can be constrained by the laws of nature (cf. PHK 30).

On many other occasions, however—some of which we have seen already—Berkeley seems to hold that ideas of sense are by definition equivalent to real things (implying that *all* ideas of sense are real things and thus satisfy both criteria). First, there are his frequent identifications of ideas of sense with real things. Here are two that we have already seen:

> The ideas imprinted on the senses by the Author of Nature are called *real things* (PHK 33, original emphasis)
>
> those immediate objects of perception, which according to you, are only appearances of things, I take to be the real things themselves. (TD 244, cf. TD 236)

Here are two more that we have not yet seen:

> But the ideas perceived by sense, that is, real things, are… (TD 235)
>
> I do not pretend to be a setter-up of *new notions*. My endeavors tend only to unite and place in a clearer light that truth, which was before shared between the vulgar and the philosophers: the former being of opinion, that *those things they immediately perceive are the real things*; and the latter, that *the things immediately perceived are ideas which exist only in the mind*. Which two notions put together, do in effect constitute the substance of what I advance. (TD 262)

[48] See DM 25 and 33 for additional examples of such passages.

Such identifications pervade Berkeley's texts. And such identifications imply that ideas of sense are by definition real physical things, and so satisfy both the nomological and volitional criteria.

We find evidence concerning the satisfaction of each, respective criterion, as well. At PHK 30 where he introduces his conception of the laws of nature, Berkeley writes,

> The ideas of sense are… strong, lively, and distinct… they have likewise a steadiness, order, and coherence, and are not excited at random… but in a regular train or series, the admirable connection whereof sufficiently testifies the wisdom and benevolence of its author [=God]. Now the set rules or established methods, wherein the mind we depend on excites in us the ideas of sense, are called the *laws of nature*.

Berkeley says here that "The" ideas of sense are constrained by the laws of nature, implying that all ideas of sense satisfy the nomological criterion.[49] At TD 215 he has Philonous emphatically conclude that "*there is a mind which affects me every moment with all the sensible impressions I perceive*" (TD 215, original emphasis). Philonous is talking about God's mind; no human mind could affect me with all the sensible impressions (=ideas of sense) that I have. Thus, here Berkeley seems to be saying that all ideas of sense satisfy the volitional criterion.[50]

Ultimately, I do not think consistency can be achieved here—Berkeley claims both that all ideas of sense are caused by God, and that not all ideas of sense are caused by God (some being caused, instead, by us). The underlying issue is that there are major ambiguities in his views of human action.[51] According to one interpretation, sometimes

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[49] He goes on to tell us that the laws of nature are "constituted" by God's will (PHK 32), implying a very close connection between the nomological and volitional criteria.

[50] See DM 34 for another example of a passage where Berkeley seems to say as much.

[51] The underlying reason for this is, as is well-known, that Berkeley lost his manuscript of Book II of PHK while he was travelling and never rewrote it; and Book II had been intended to divulge Berkeley's views of action, volition, freedom, and other allied topics. So, we lack any significant textual basis on which to attribute

called *realism*, Berkeley thinks the motions of our limbs and sounds of our words are caused by us. According to another, called *occasionalism*, he thinks they are caused by God. I agree, for the most part, with Tom Stoneham (2018, p. 42) that "Berkeley was torn between two possible accounts of action, occasionalism and realism… and… each can be made consistent with his immaterialism, though each has its own costs."[52] Stoneham continues on the following page: "The real mistake is… to think that Berkeley's extant works will provide a determinate answer" concerning his view of action. Because this is the situation, I worry that determinate interpretations of Berkeley's view of action are, in principle, fated to be uncomfortably speculative. In any case, my goal is (thankfully) not to give such an interpretation. Going forward, I skirt the issues of action and volition as much as possible. And—this is the most important point, for present purposes—I leave it open whether the reading of Berkeleian ideas of sense I defend here captures Berkeley's view of *all* the ideas of sense, or only of those that do not consist in movements of human limbs and sounds of human words. In other words, if the reader wishes to embrace a realist reading of Berkeley on action, then they can safely take my account of Berkeleian ideas to apply to all but the relevant ideas of limb-motions and word-sounds.[53] As Berkeley himself acknowledges, "those things which are called the works of nature, that is, the far greater part of the ideas or sensations perceived by us, are not produced by, or dependent on the wills of men" (PHK 146). And, of course, if one wishes to embrace an occasionalist reading

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to Berkeley views of these topics (though of course he says some things about said topics in his extant texts, and many commentators have attributed to him views of the relevant topics on the basis of these scattered remarks).

[52] However, PHK 147 (discussed in note 45 above) inclines me to believe that Berkeley also saw concurrentism as a viable option. So, in fact, I think he was torn between three options. But this point can be left aside, given my purposes here.

[53] The same goes for readers who wish to embrace concurrentist readings of Berkeley on action. See notes 52 and 45, above.

of Berkeley on action, then one can safely take my reading to apply to all the ideas of sense, full stop.

3 Immediate Perception

Now it is time to consider the role of ideas of sense in the perceptual process. Berkeley thinks that ideas of sense initially enter the mind through a process called *immediate perception.* Immediate perception is the first, and most basic stage in the perceptual process, for Berkeley. His view of immediate perception is a topic that has received considerable attention from a wide range of commentators. Unfortunately, though, many of these present-day discussions are disconnected from the considerations that in fact informed Berkeley's view of immediate perception.

I therefore begin by momentarily stepping back from the primary texts to consider and criticize present-day approaches to Berkeleian immediate perception. After clearing the ground, I briefly consider Locke's, Malebranche's, and Descartes' respective views of the process of immediate perception in order to bring into view the set of considerations that actually informed Berkeley's view of this process. I then turn to Berkeley's texts and to the task of explicating said view.

3.1 Dominant Approaches to Immediate Perception

3.1.1 The Contrastive Approach

By far the most dominant approach to Berkeley's view of immediate perception is what I term the *contrastive approach*. Berkeley distinguishes immediate perception from another perceptual process called *mediate perception*. I note at the outset that the characterizations of mediate perception I offer in this chapter will be cursory, intended only to support

characterizations of immediate perception, and of various commentators' readings of immediate perception. I offer a much more substantial account of Berkeley's views on mediate perception in chapter two.

In the first dialogue, Berkeley has Philonous invoke the distinction between immediate and mediate perception on several occasions, asking, for instance: "Are those things only perceived by the senses which are perceived immediately? Or may those things properly be said to be *sensible*, which are perceived mediately, or not without the intervention of others?" (TD 174) Near the beginning of NTV he illustrates the distinction with an example:

> It is evident that, when the mind perceives any idea not immediately and of itself, it must be by the means of some other idea. Thus, for instance, the passions which are in the mind of another are of themselves to me invisible. I may nevertheless perceive them by sight; though not immediately, yet by means of the colors they produce in the countenance. We often see shame or fear in the looks of a man by perceiving the changes of his countenance to red or pale. (NTV 9)

I immediately see the redness of a man's face.[54] In virtue of this I can also mediately see that the man is ashamed. The man's shame is not something I can see except through the intervention (i.e., mediation) of the visible redness of his face. The contrastive approach seeks to characterize immediate perception primarily in terms of its contrast with mediate perception (and vice versa).

[54] We will soon see that immediate perception lacks any doxastic element. So, in this example, Berkeley must mean that we immediately see the shape and color of the man's face, not that we immediately see it *as* a face. Its being a face—just like its being an ashamed face—can only be mediately seen. However, I think that Berkeley can be forgiven for not having deployed the example more carefully: his point is simply that from something immediately perceived by sense *s* (like color, for sight) we can mediately perceive things that cannot be immediately perceived through *s* (like emotions).

The *locus classicus* for the contrastive approach is George Pitcher's seminal book on Berkeley (1976, pp 9-12). Central to the contrastive strategy is the identification of the factors in virtue of which the mind transitions from immediate to mediate perception (so that immediate perception is perception without such-and-such factor(s), *x*, and mediate perception is perception with *x*). Pitcher attributes two different versions of the immediate/mediate distinction to Berkeley, each one depending on a different kind of transitional factor: "The first distinction hinges on whether or not some 'intellectual' process is involved in the perception; the second distinction hinges on whether or not an intermediary is involved in the perception" (p. 9). Pitcher tells us, "Immediate perception of something in the first distinction is a sensuous awareness of it that is devoid of any 'intellectual' element, such as an interpretation of the object or a belief about it… [or] inference or… what Berkeley will call 'suggestion'" (pp. 9-10). I discuss Berkeley's notion of suggestion in more detail in the next two chapters. Here it suffices just to note that it is a mental process by which the mind non-inferentially transitions from one mental state to another. "In the second distinction", Pitcher continues, "immediate perception of something is the perception of it without the perception of any… intermediary" that is, without any "third thing between [perceiver and item perceived] that he [the perceiver] must first perceive in order to perceive the [item perceived]" (p. 10).

Kenneth Winkler (1989, pp. 149-51) argues that, contra Pitcher, these two versions of the distinction collapse into one: that to perceive something by means of an intermediary just is to perceive it by means of a mental process like inference or suggestion. George Pappas (2000, pp. 151-8) agrees that Berkeley only has one immediate/mediate distinction but finds the inclusion of inference in the distinction's

characterization problematic and argues that inference is not involved in perception at all for Berkeley. The result, for Pappas, is that immediate perception is perception without suggestion and intermediary (and mediate perception is perception with suggestion and intermediary). Samuel Rickless (2013, pp. 42-50) agrees that the decisive factors for the distinction are suggestion and intermediary, but argues that perception with inference is a subtype of perception with suggestion for Berkeley, so that immediate perception is perception without intermediary, suggestion, or, *a fortiori*, inference (and mediate perception is perception with intermediary and suggestion and, in some cases, inference).

The problem with the contrastive approach is that it risks yielding only a negative characterization of Berkeleian immediate perception, or a characterization overly dependent on our present-day intuitions about what 'perception' (or 'seeing', 'hearing', etc.) are. Pitcher interprets immediate perception, positively, as "sensuous awareness". While this is not implausible, it is an interpretive gambit that makes no reference at all to Berkeley's actual texts—we are left to conclude that it is Pitcher's own intuition. Pappas, focusing on immediate seeing as a representative case, offers an analysis that begins "O is seen by S at *t*…" (Pappas, 1987, p. 196). He then hastens to add that, "The term 'seen' is used in the definiens. There is nothing illegitimate about this. Mediate and immediate seeing are types of seeing, and in defining each we rely on an undefined term, 'seen', the understanding of which is left at an intuitive level" (ibid.). But, again, Pappas's own 21st century intuition is filling in the positive content of immediate seeing here, and there is no reason we should accept this result if we can glean a positive account of what immediate perception is from Berkeley's own texts, as I believe we can.

Rickless does marginally better by connecting immediate seeing and retinal physiology. He claims that the reason Berkeley thinks we cannot immediately see distance is because a point projected onto the retina has no extension, and we can only immediately see things that make an extensive impression on the retina (2013, pp. 13-5). This implies that immediate seeing is, positively, a kind of seeing that depends directly on the receptive capacities of the retina. I do think Rickless is on the right track here. However, he is content to leave the positive point just glossed implicit in his commentary. Worse, his interpretation of Berkeley's rationale for denying that we immediately see distance rests on a serious mischaracterization of the relevant problem in the history of vision science to which Berkeley is responding (the issue has to do with the spatial dimensionality of retinal projections, not with whether they are extensionless).[55] And—worse yet—Berkeley does not believe that extensionless points can exist, in the first place (PHK 123-32), and thus would never speak of one being projected onto the retina.

Winkler, to his credit, amends several positive claims about immediate perception to his initial, contrastive presentation (1989, pp. 152-4). He correctly points out that immediate perception is passive, is due to the senses alone, and is always the conscious perception of a real thing (i.e., an idea of sense).[56] These points are helpful but leave much to be desired. While they identify some important features of immediate perception, they do not explain what immediate perception *is* or how it works. Winkler also claims that immediate perception is infallible and is a form of perceptual knowledge. I believe the first

[55] I comment on this problem in more detail in chapter two (see chapter 2, section 2.1 and associated notes).
[56] Although, pending one's response to the larger objection discussed in section 2.3, above, Winkler might have to concede that it also includes perception of people's voluntary movements and sounds even if these are not 'real things' for Berkeley.

point (infallibility) is misleading and the second (knowledge) is plain wrong. But I return to these matters in a moment when I consider a different, epistemic approach to Berkeley's view of immediate perception.

In sum, the contrastive approach is not adequate. At worst, it yields only a negative characterization of immediate perception and leaves us entirely reliant on anachronistic intuition to fill in the positive content of the notion. At best, it points out various positive features of immediate perception but still fails to offer a sufficiently full and general account of what it is and how it works. All this being said, advocates of the contrastive approach are not wrong, in principle, to focus on Berkeley's immediate/mediate contrast. This contrast is certainly a necessary component of any adequate account of Berkeleian immediate perception. However, it is just a start and, as such, requires a great deal of augmentation.

3.1.2 The Phenomenological Approach

The second approach to immediate perception I consider can be dubbed the *phenomenological approach*. This approach characterizes immediate perception in terms of its manifest phenomenology, so that the distinction between immediate and mediate perception is approximately equivalent to what Gary Hatfield has described as the difference between phenomenal perception and cognitive perception. Considering the case of lightness constancy as an example, Hatfield explains,

> Walls that are painted white do not, in a normal room, look exactly the same everywhere; variations in illumination produce areas that appear phenomenally darker than others. Yet we do not believe that the painter has made an error; we immediately realize that uniformly painted white walls normally show such variation, and we say that, in some sense, the wall looks to be uniformly white. This 'looking to be white' is… an immediately available cognitive aspect of our overall perceptual experience. (*Visual Experience* p. 58n)

We phenomenally see the wall as looking darker in some places than others; but simultaneously, due to certain lightness constancy systems, we cognitively see the wall as being of a uniform lightness. Cognitive seeing is, roughly, a kind of perceptual belief or judgment automatically overlaid on our manifest experience of phenomenal seeing.

That David Armstrong (1960) takes the phenomenological approach becomes clear where he raises an objection to (his reading of) Berkeley's account of visual distance perception. According to Armstrong, Berkeley thinks that we immediately see only a two-dimensional manifold of light and color (1960, pp. 2-9, cf. Armstrong 1991). But, Armstrong objects,

> What is immediately seen is an arrangement of 'light and colors'; and, speaking off-hand, it would seem that this is a three-dimensional spatial arrangement. If I consider two immediately seen coloured shapes, it seems that I can sometimes *immediately* see, not only that one is to the left of, or above, the other, but also that it is more distant along the line of vision. (1960, p. 5)

Armstrong is objecting that we sometimes phenomenally see distance.[57] That he takes this to be an objection against Berkeley shows that he (Armstrong) thinks that in denying we can immediately see distance Berkeley is denying we can phenomenally see distance. It thus indicates that Armstrong takes Berkeleian immediate perception to be phenomenal perception. And Armstrong later makes clear that he takes mediate perception to consist in "thinking" or "judging" (1960, pp. 16-18) on the basis of immediate perception.[58] I believe

[57] Armstrong treats distance as equivalent to depth. Many commentators do so. Atherton (1990) and Schwartz (1994), however, have suggested that the two may not be equivalent (distinguishing between perceptions of metric distance, and perceptions of phenomenal depth relations). It would take me too far afield to explore this interesting issue here, so I generally assume the standard view that the two are equivalent, i.e., that in talking of seeing distance, Berkeley is talking about visual depth perception.

[58] Here are some additional passages from Armstrong (1960) that further illustrate his reading of Berkeley's theory of perception: "Suppose somebody thinks he hears a sound of a certain sort. Now, if he is wrong about this, of there is no sound to be heard, then he must have been subject to sensory illusion. But, on the other hand, if he thinks he hears a coach, and he turns out to be wrong about this, he *need* not have been subject to

Pitcher (1976) also takes the phenomenological approach (in combination with the contrastive approach). As we have seen, he describes immediate perception as "a sensuous awareness… that is devoid of any 'intellectual' element" (pp. 9). I take this to be roughly equivalent to phenomenal perception. He continues, "Mediate perception of the first sort, by contrast, essentially involves both an 'intellectual' process and a resultant belief" (ibid.). This sounds a whole lot like cognitive perception. Finally, Cummins (1987, p. 344) writes, "'immediate seeing' is seeing, strictly so called, and 'mediate seeing' is really judging on the basis of what is truly seen." I think that by "seeing, strictly so called" Cummins can only mean phenomenal seeing. And like Armstrong and Pitcher, Cummins contrasts immediate perception *qua* phenomenal perception with mediate perception *qua* intellection (in this case, judgment).

There are serious problems with the phenomenological approach of Armstrong, Pitcher, and Cummins. First, Berkeley emphasizes that intellectual processes such as judgment and inference are not involved in the visual process at all, including in mediate seeing (he contrasts the process of suggestion, which is involved in vision, with these intellectual processes, and attributes it to sense rather than understanding) (TVV 42).[59]

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sensory illusion at all. For instance, it might be that other objects beside coaches made that noise, and really hearing the noise, he was then misled into thinking there was a coach in the street" (p. 4). "It is only with respect to these qualities [the qualities we immediately see] that visual illusion is possible. I can immediately see that the tomato is red, that it has a certain contour, that one part of its surface is darker than the other, but this is all that is immediately seen. If, after visual examination alone, I take what is immediately seen to be a tomato, but am wrong, visual illusion need not have occurred" (1960, p. 4). Contra Armstrong, see TD 238, where Berkeley says immediate perception is not subject to illusion—I discuss this issue in chapter 2 (section 3.4).

[59] At TVV 42, Berkeley writes, "To perceive is one thing; to judge is another. So likewise to be suggested is one thing; and to be inferred is another. Things are suggested and perceived by sense. We make judgments and inferences by the understanding." Some of the above-mentioned advocates of the contrastive approach (Pitcher, Winkler, e.g.) seem to ignore this passage. For others, it is the basis for excluding inference from mediate perception. Rickless (2013) acknowledges this passage but finds a somewhat plausible workaround in making the case that some mediate perception is inferential for Berkeley.

Second, he cites the moon illusion as a product of mediate seeing. For his account of this famous illusion (NTV 67-78) to retain any empirical plausibility at all, he must think that mediate seeing can sometimes consist in phenomenal seeing, for the moon illusion is something we phenomenally see. And third, as Margaret Atherton has compellingly argued (Atherton 1990, cf. Copenhaver 2014, 2021), Berkeley thinks we phenomenally see distance and three-dimensionality, too—that is, he avoids Armstrong's objection altogether. But, like the moon illusion, this must be a case of phenomenal mediate perception, for Berkeley thinks that distance is mediately seen. Ultimately, then, the phenomenological approach fails: mediate perception can be just as phenomenally manifest as immediate perception, for Berkeley; and mediate perception—as it figures in the visual process, anyway[60]—need not be intellectual at all.[61]

3.1.3 The Epistemic Approach

The third approach to immediate perception I consider can be termed the *epistemic approach*. Georges Dicker (2006, 2011, esp. pp. 36-7, 85-90, 119-138, 194-200) has argued that several of Berkeley's important arguments for idealism and against materialism rely on an epistemic notion of immediate perception, according to which immediate perception is sufficient for knowledge. And as we saw above, Winkler (1989, p. 153) claims that

[60] Armstrong, Pitcher, and Cummins all mean their intellectual readings of mediate perception to apply to the sort of mediate perception Berkeley thinks is involved in vision. As I explain in more detail in chapter two, I think that Berkeley is committed to multiple sub-types of mediate perception, and that one of the main sub-types involved in vision, which Berkeley calls *mediate perception by sense*, is not intellectual. This is strongly supported by TVV 42, and flies in the face of the phenomenological approach. This is not to say that Berkeley does not allow for other types of mediate perception which are intellectual—indeed, I believe he does. For more on this, see the appendix.

[61] I think the phenomenological reading also makes Berkeley's immediate/mediate distinction seem implausibly similar to Kant's distinction between intuition and concept.

Berkeley takes immediate perception to be infallible and to be a source of perceptual knowledge.

Indeed, it can seem that Berkeley thinks of immediate perception in these terms. At TVV 20, for example, he says "The real objects of sight [=visible ideas] we see, and what we see we know". At PHK 87 he writes, "Color, figure, motion, extension, and the like, considered only as so many *sensations* in the mind, are perfectly known, there being nothing in them which is not perceived". Relatedly, Berkeley sometimes emphasizes that we cannot err with respect to what we immediately perceive. Considering ordinary perceptual errors (such as a submerged oar appearing bent), Berkeley has Philonous remark at TD 238: "his mistake lies not in what he perceived immediately and at present (it being a manifest contradiction to suppose he should err in respect of that)". Finally, at PHK I 22, Berkeley writes,

> [S]o long as I confine my thoughts to my own ideas divested of words, I do not see how I can easily be mistaken. The objects I consider, I clearly and adequately know. I cannot be deceived into thinking I have an idea which I have not. It is not possible for me to imagine, that any of my own ideas are alike or unlike, that are not truly so. To discern the agreements or disagreements there are between my ideas, to see what ideas are included in any compound idea, and what not, there is nothing more requisite than an attentive perception of what passes in my own understanding. (PHK I 22)

All these texts seem to indicate a close relationship between immediate perception and knowledge.

But notice that in all four passages Berkeley is not talking about immediate perception itself, but about *what* is immediately perceived. That which we immediately perceive—the ideas of sense—we have knowledge of. It is a further question whether that knowledge is attained by means of immediate perception alone. PHK I 22 strongly suggests

otherwise, for here Berkeley says it is by 'consideration' and 'attentive perception' that we come to know our ideas, and both of these are more psychologically sophisticated operations than immediate perception.[62] So, while Berkeley thinks immediate perception provides us with objects of knowledge (PHK 1), he does not think that it is sufficient to provide us with knowledge of these objects.

Furthermore, as Winkler rightly points out (and as we will see in more detail later in this section of the chapter) Berkeley takes immediate perception to be due to the senses alone. In a pair of passages in *Siris* he makes it abundantly clear that he thinks the senses alone provide us no knowledge:

> We know a thing when we understand it: and we understand it, when we can interpret or tell what it signifies. Strictly the sense knows nothing. We perceive indeed sounds by hearing, and characters by sight: but we are not therefore said to understand them. (S 253, cf. S 254).
>
> As understanding perceiveth not, that is, doth not hear or see or feel, so sense knoweth not: And although the mind may use both sense and fancy, as means whereby to arrive at knowledge yet sense or soul, so far forth as sensitive, knoweth nothing. (S 305)

Berkeley thinks that additional post-sensory mental activity is needed for the attainment of knowledge. This is implied also where he tells us that knowledge and *notions* always go together: "What I know, that I have some notion of" (PHK 142); "mind, knowledge, and notions, either in habit or act, always go together" (S 309). Berkeley's account of notions is infamously spotty, but it is fairly clear that the senses alone are not sufficient for the having of notions. If knowledge requires notions, and the senses alone cannot supply us with notions, then the senses alone cannot supply us with knowledge.

[62] Pappas (1987) makes this point, with respect to attention.

In light of all these considerations, I take immediate perception to be a non-epistemic process, for Berkeley.[63] Alone it is not sufficient for any sort of knowledge and includes no doxastic element. Where Berkeley says that it is a manifest error to suppose that immediate perception can err, he simply means to express another of Winkler's agreeable points: that immediate perception is always of something real. If this is what one means by 'infallible', then immediate perception is infallible only in this weak sense. If 'infallible' means that automatically-true belief or judgment is involved, then immediate perception cannot be infallible because all belief, judgment, and knowledge about what is immediately perceived are due to processes downstream from immediate perception.

We can now see that immediate perception is (i) not a distinctively phenomenal kind of perception (mediate perception may be equally phenomenal); (ii) not a distinctively epistemic kind of perception (it includes no doxastic element); and (iii) a kind of perception that does not involve either inference or suggestion, and does not depend on an intermediary.[64] While useful, these are all *negative* points, about what immediate perception is not. We still do not have an adequate positive account of what Berkeleian immediate perception is, and of how it works.

3.2 Descartes, Malebranche, and Locke

It will help to consider the views of some of Berkeley's contemporaries. Early modern philosophy is rife with talk of immediate perception, and briefly focusing on some of these historical discussions will allow us to pick up a trail that has mostly gone cold in present-

[63] Atherton (1990) and Pappas (2000) would agree.
[64] Note that all advocates of the contrastive approach would agree that immediate perception involves no inference; their disagreement pertains, among other things, to whether *mediate* perception involves inference.

day discussion and which, when followed to its end, reveals Berkeley's true view of immediate perception.

Let us begin with Descartes. Descartes identifies ideas as the immediate objects of perception: "ideas were, strictly speaking, the only immediate objects of my sensory awareness" (1641, p. 52). He provides insight into his view of the process of immediate perception (and the perceptual process, in general) in the Sixth Replies, where he distinguishes between three different "grades" of sensation:

> The first is limited to the immediate stimulation of the bodily organs by external objects; this can consist in nothing but the motion of the particles of the organs, and any change of shape and position resulting from this motion. The second grade comprises all the immediate effects produced in the mind as a result of its being united with a bodily organ which is affected in this way. Such effects include the perceptions of pain, pleasure, thirst, hunger, colours, sound, taste, smell, heat, cold and the like, which arise from the union and as it were intermingling of mind and body… The third grade includes all the judgments about things outside us which we have been accustomed to make from our earliest years—judgments occasioned by the movements of these bodily organs. (Sixth Replies, sect. 9, pp. 294-5)

As Descartes makes clear in other writings (1633, pp. 77-100) he conceives of the nervous system as a mechanical system of interconnected nerve fibers, or tubules, that can be tightened, slackened, dilated, and constricted depending on the specific way animal spirits flow into them from the pineal gland located near the center of the brain. A certain sort of sensory stimulation will cause a corresponding set of motions in the nervous system and these motions will in turn cause a certain sort of outflow (of animal spirits) from the pineal gland. These motions in the nervous system—at the sense organs, in the nerve fibers, and in the ventricles of the brain surrounding the pineal—comprise the first grade of sensation, for Descartes. This level is entirely mechanical and material in nature, involving nothing psychological.

Descartes explains that,

> among these figures [i.e., the patterns of motion occurring at the sense organs, and in the nervous system/brain], it is not those imprinted on the organs of external sense, or on the internal surface of the brain, but only those traced in spirits on the surface of the [pineal] gland… *where the seat of imagination and common sense is* that should be taken to be ideas, that is to say, to be the forms or images that the rational soul will consider directly when, being united to this machine [the material, mechanical apparatus at work at the first grade, i.e., the physical body], it will imagine or will sense any object. (Treatise, p. 86, original emphasis)

Here, Descartes is describing the second grade of sensation. As we go from the first to the second grade, we move from a purely material/mechanical level of description up to a psychophysiological level—that is, a level involving both mental and material entities. The second grade is comprised by the ideas that appear in our mind in virtue of the various mechanical motions that happen in our body at the first grade. As Descartes puts it, it is comprised by the "immediate effects produced in the mind as a result of its being united with a bodily organ which is affected [by the various motions of the first grade]". It is thus at the second grade of sensation that ideas are immediately perceived by the mind. If I look at a red patch of color, for example, certain motions will occur at my retina, along my optic nerve, and in my brain (first grade) and I will concurrently visually experience an idea of a red patch of color (second grade). (At the third grade of sensation, far less important for my purposes than the first two grades, the mind issues in habitual judgments and inferences in response to the ideas experienced at the second grade).[65] The moral, for my purposes, is this: Descartes thinks that the human being is, by nature, set up in such a way that certain

[65] The third grade is needed to explain various aspects of visual processing—how, for example, I might judge the red patch of color to be a surface with a certain shape and location in physical space, and so on. It also gives Descartes room to argue that our perceptions of the primary qualities of physical bodies are due primarily to the intellect, and this helps him defend his rationalist views in the Sixth Replies.

ideas are immediately perceived by the mind only when certain naturally corresponding motions occur in the nervous system.

Let us turn next to Malebranche, a follower of Descartes and a major inspiration for Berkeley's philosophical thought. Discussing our visual perceptions of the stars in the sky, Malebranche notes that "it is not in the soul's power to see them [the stars] at will, for it can perceive them only when the motion to which the ideas of these objects are joined in nature occurs in the brain" (ST I.14.ii, p. 68). He goes on to specify that the sort of visual perception we enjoy in virtue of these movements in the brain is *immediate perception* (here, immediate seeing):

> It should be noted that there are two kinds of beings, those our soul sees immediately, and those it knows only by means of the former. For example, when I see the sun rise, I first perceive what I see immediately, and… I perceive this only because there is something outside me that produces certain motions in my eyes and brain… (ST I.14.ii, p. 69)

Malebranche explicitly connects the immediate perception of ideas with sensory physiology: I immediately see ideas "only because there is something outside me that produces certain motions in my eyes and brain" and these ideas and these motions are "joined in nature". Malebranche takes there to be a connection in nature between motions at the sense organs, motions in the brain, and immediate perception of ideas in the mind, so that immediate perception of an idea occurs only if the corresponding physiological motions occur.[66]

[66] These events are not connected to one another causally but are rather occasioned directly by God's will. This aspect of Malebranche's philosophy seems to have been particularly influential on Berkeley.

We find a similar view in Locke. Recall that Locke characterizes ideas of sense as immediate objects of perception (EHU I.i.8, II.viii.8). He thus thinks that we immediately perceive such ideas. Thus, even though he does not explicitly use the term 'immediate perception' or any cognate in the following passage, it seems clear that he is describing the immediate perception of ideas of sense (he explicitly says he is discussing the conditions under which "*a Man begins to have any Ideas*" and he implies at the end of the passage that these initial ideas are not ideas of reflection, for they precede the mental operations that ideas of reflection represent):

> If it shall be demanded then, *When a Man begins to have any Ideas?* I think, the true Answer is, When he first has any *Sensation*. For since there appear not to be any *Ideas* in the Mind, before the Senses have conveyed any in, I conceive that *Ideas* in the Understanding, are coeval with *Sensation*; which is such an Impression or Motion, made in some part of the Body, as produces some Perception in the Understanding. 'Tis about these Impressions made on our Senses by outward Objects, that the Mind seems first to employ it self in such Operations as we call *Perception, Remembering, Consideration, Reasoning,* etc. (EHU II.i.23)

While in some passages Locke treats 'sensation' as a synonym for 'idea of sense' (e.g., II.viii.8, quoted above) here he seems to take 'sensation' to function, a bit more complicatedly, as a *psychophysiological success term*: sensation "is" a physical impression or motion involved in proximal stimulations of the sense organs that successfully leads to the excitation of ideas in the mind.

He extends his mechanical hypothesis to the human body, comparing its inner workings to the inner workings of the clock at Strasburg (EHU III.vi.3, 9). He makes it clear that the nerves and brain intervene between sense organs and mind to form (together with the sense organs) a mechanically actuated causal chain. Defects at any stage along the chain

can prevent ideas of sense from being produced in the mind. For example, Locke says of "Ideas, *which have admittance* [to the mind] *only through one Sense*" that,

> If these [sensory] Organs, or the Nerves which are the Conduits, to convey them [the ideas] from without to their Audience in the Brain, the mind's Presence-room (as I may so call it) are any of them so disordered, as not to perform their Functions, they [the ideas] have no Postern to be admitted by; no other way to bring themselves into view, and be perceived by the Understanding. (Ibid., II.iii.1. cf. II.viii.12)

If something is wrong with my optic nerve, for example, then stimulations of my retina won't produce ideas in my mind. Such psychologically ineffective impressions or motions do not count as sensation, by the definition Locke gives at EHU II.i.23, since they produce no perceptions in the mind. One first immediately perceives ideas of sense only when this psychophysiological process of sensation occurs. Hence, Locke takes there to be a natural causal connection between motions or impressions at the sense organs, motions in the nerves and brain, and immediate perception of ideas in the mind, so that immediate perception of an idea of sense—at least, when one first begins to have any such ideas—occurs only if the corresponding physiological motions occur in the body.[67]

Descartes, Malebranche, and Locke exhibit a remarkable degree of convergence in the way they think about immediate perception of ideas (even if their views diverge dramatically in many other ways). For each of them, immediate perception is a kind of perception that occurs because (a) certain motions *m* occur in the nervous system (broadly conceived to include the sense organs), and (b) there is a natural, law-like relationship

[67] It may be that Locke thinks imagining a previously had idea of sense counts as immediately perceiving it, in a broad sense of 'perceive' (cf. EHU IV.xi.5). I thus avoid claiming that this psychophysiological causal chain is involved in *all* cases of immediate perception for him. Berkeley distinguishes more carefully between ideas of sense and ideas of imagination (as I discuss in much detail in chapter two). He would not say that ideas of imagination can be immediately perceived because he thinks that (even if it is always accompanied by volitions) immediate perception is itself passive (TD 196-7, cf. Winkler p. 152) whereas ideas of imagination are produced by the will (PHK 28-30, 33, TD 215, 235).

correlating *m* with certain ideas in the mind, *i*, so that (c) *i* are immediately perceived (in virtue of *m*). We will see next that Berkeley, too, thinks of immediate perception in this way.

3.3 Berkeley's View of Immediate Perception

Near the end of the first dialogue, Berkeley has Philonous claim that "Whatever we perceive, is perceived either immediately or mediately" (TD 205). Later on, in the third dialogue, Philonous describes the process by means of which we have sensations, i.e., ideas of sense:[68]

> We who are limited and dependent spirits, are liable to impressions of sense, the effects of an external agent, which being produced against our wills, are sometimes painful and uneasy… We are chained to a body, that is to say, our perceptions are connected with corporeal motions. By the Law of our Nature we are affected upon every alteration in the nervous parts of our sensible body: which sensible body rightly considered, is nothing but a complexion of such qualities or ideas as have no existence distinct from being perceived by a mind: so that this connexion of sensations with corporeal motions, means no more than a correspondence in the order of Nature between sets of ideas, or things immediately perceivable. (TD 241)

We have seen that mediate perception, for Berkeley, involves some combination (or subset) of inference, suggestion, and mediation. These factors are entirely absent from the process Berkeley has Philonous describe in the long passage just quoted: according to that process, the laws of nature correlate the sensations we perceive with motions in our nervous system, so that we are, by law, affected by a given sort of sensation whenever a corresponding sort of motion occurs in the nervous system. There is no role for an intermediary of the relevant sort to play in this process; there is no room for such psychological processes as inference or suggestion. Since all perception is either mediate or

[68] Berkeley frequently uses the term 'sensation' as a synonym for 'idea of sense' throughout PHK and TD.

immediate, and the perception described in this passage is not mediate perception, we must conclude that in this passage Philonous is describing the process of immediate perception as Berkeley conceives of it.

On the face of it, Berkeley's conception is approximately the same as Descartes', Malebranche's, and Locke's. He thinks that ideas of sense are immediately perceived by the mind only when certain lawfully connected motions occur in the nervous system. That is, he thinks that immediate perception is a type of perception that occurs when there are (a) certain motions *m* occurring in the nervous system, and (b) certain laws of nature correlating *m* with certain, corresponding ideas of sense, *i* in the mind, such that (c) *i* are immediately perceived.

However, Berkeley's conception of immediate perception also differs in important ways from the older philosophers': for Berkeley, the relevant motions in the nervous system are themselves ideas of sense that only exist in virtue of being perceived (rather than motions of material bodies that can exist mind-independently). They have the same metaphysical status as "those inward parts of plants and animals" discussed in connection with Berkeley's philosophy of science, above (section 2.2 of this chapter). Another important difference between Berkeley's conception of the process and Locke's and Descartes' is that for Berkeley the process (like all else in nature) is acausal, its constituent parts being connected instead by signification relations that exist to inform us. The laws of nature dictate that God's generation of a certain set of motions in my nervous system signify God's concurrent generation of the immediate perception of some corresponding idea in my mind; but those motions do not cause this perception. (Here, Malebranche, as an

occasionalist, would be closer to Berkeley than to the other two philosophers). Where Locke and Descartes conceive of the physiological mechanisms partly constitutive immediate perception in mechanical and material terms, Berkeley conceives of them as lawfully organized systems of natural, mind-dependent signs (packets of information, if you like) caused directly by divine will for our benefit.

The reading of Berkeleian immediate perception I am recommending is supported by Berkeley's argument, at the beginning of NTV, that distance cannot be immediately seen:

> It is, I think, agreed by all that distance, of itself and immediately, cannot be seen. For, distance being a line directed endwise to the eye, it projects only one point in the fund of the eye, which point remains invariably the same, whether the distance be longer or shorter. (NTV 2, cf. TD 202, Alc. 4.8)

Berkeley says that this point is agreed by all because he knows it reflects a well-established orthodoxy in medieval and early modern vision theory: namely, that because the retinal image (or its pre-Keplerian antecedents in the Middle Ages and Renaissance) is a two-dimensional surface, it cannot register three-dimensional spatial differences (e.g., distances away from the perceiver along the line of sight, which is what Berkeley means by the term 'distance').[69] Therefore, some sort of post-retinal psychological processing must be posited to explain the visual perception of distance—Berkeley is far from the first to recognize this foundational problem, or to offer up a candidate account of the relevant psychological processing in an effort to solve it. The point I wish to emphasize here is that Berkeley takes these well-understood limitations on the retina to place corresponding limitations on what we can immediately perceive by sight: what is projected onto the retina is correlated, by laws of nature, with what we immediately see; but differences in the distance from which

[69] I discuss this issue in more detail in chapter 2 (section 2.1 and associated notes).

light is projected onto the retina don't make any difference for the resultant projection; therefore, such differences in distance don't make any difference for what we immediately see.[70]

I am not the first to interpret Berkeley's argument that distance cannot be immediately seen in this way. Margaret Atherton and Robert Schwartz offer very similar interpretations. In her landmark study of Berkeley's theory of vision (1990) Atherton writes,

> [T]he discussion of distance shows that we decide whether or not a perception is immediate not by whether it feels immediate but by examining what we know about the physiology of the senses. Immediate visual perception is determined by the workings of the visual system. It will include whatever can be represented by that system, in this case, whatever is represented on the retina. Anything we perceive by sight which cannot be represented on the retina is a case of mediate perception. Thus for each sensory system, we immediately perceive the proper objects of each sense. Berkeley, in fact, frequently describes what we immediately perceive by listing the proper objects of each sense. Questions about whether something can be correctly described as being immediately perceived will be entirely a function of the details of whatever psychological [better: psychophysiological] theory of perception is considered to be correct. (p. 69)[71]

And in his (1994) Schwartz draws the distinction between immediate and mediate perception in the following way:

> For Berkeley, as for other vision theorists, the claim that some idea we have is 'not immediate' is an empirical claim about the kind of process that leads to our having that idea. Ideas are not immediate when they are the result of mental activity, of processes that have a mental or psychological component. By contrast, immediate ideas are ideas that are brought to the mind by purely non-mental goings-on. The processes that underlie immediate ideas are, on this score, like those that underlie

[70] I think Berkeley's discussions of seeing situation and magnitude make his view of the correspondence between retinal events and immediate visual perceptions especially clear. See NTV 67-78, 88-119, esp. 88; and TVV 48-57, esp. 54 and 57. For classic discussions of the matter, see Pitcher (1976) and Atherton (1990).
[71] She appends the following helpful and interesting note to the last sentence: "Thus on some accounts of color perception, color would not be immediately perceived" (p. 69 n. 15). I take the point to be that if (for example) we think of the retina as registering only luminance values and we think of color as something that has to be reconstructed downstream by the visual system, then only light, and not color, would be immediately perceived.

> the output of our kidneys and livers or are responsible for our blinking when air is puffed in our eyes. Such processes may be simple, or they may be complex; but they are entirely organic or physiological in nature. They do not involve anything that would be called a 'mental operation'. With non-immediate ideas the situation is different. Not only is the end state, the idea, mental [which is also the case in immediate perception], but one or more of the intermediary stages leading to our having the idea itself has ideational or mental content. (p. 10)

I think that the Atherton-Schwartz approach to immediate perception (and to the distinction between immediate and mediate perception) is essentially correct.[72]

I would only add that the relationship between physiological events and immediate perceptions should be thought of in terms of Berkeley's doctrine of the laws of nature, since he takes laws of nature to be rules prescribing orderings to our ideas of sense, and both the physiological events and the immediate perceptions are ideas of sense (the difference between them being that the latter is, by definition, occurrently perceived by a human being whereas the former, like the inward parts of plants and animals, need not be).

To summarize: Berkeley thinks that immediate perception consists in occurrently becoming aware of an idea of sense where (i) there is a law of nature correlating (the immediate perception of) that idea of sense with a particular sort of motion in the nervous system, and (ii) an instance of that sort of motion has occurred in the nervous system (so that, in upholding the laws of nature, God has caused the lawfully connected immediate perception to occur in the mind). Immediate perception does not include suggestion, inference, or any other post-sensory mental process. It is due to the senses alone. It is a

[72] Sadly, it has been underappreciated in subsequent secondary literature. For example, Samuel Rickless, in his careful study of Berkeley's immediate-mediate distinction (2013, pp. 10-58) attributes to Atherton the view that immediate perception is perception without suggestion or inference (while mediate perception is perception with suggestion or inference). Atherton spends all of one sentence pointing this out, and then goes on to focus on the crucial role of sensory physiology, yet Rickless neglects this part of her discussion. He does not acknowledge Schwartz's excellent and thought-provoking (1994) at all.

kind of phenomenal perception (but not the only kind). It does not include any belief, judgment, or knowledge (i.e., it is non-epistemic).

Conclusion

Against the backdrop of Lockean philosophy, I have explicated Berkeley's theory of the ideas of sense and his idealist view of the natural world. According to this view, the natural world is composed of ideas of sense ordered and organized by the laws of nature so as to be interconnected by signification relations and to be informative to human beings. This ordering and organization extends into our own (human) bodies, and includes the ordering and organization of our nervous systems. I have argued that, against this background, Berkeleian immediate perception can be understood as a sort of perception that is connected by laws of nature to motions in the nervous system, so that whenever God causes ideas of sense of certain motions in my nervous system (which I myself need not perceive at the moment), God concurrently causes the immediate perception of certain lawfully connected ideas of sense in my mind.

CHAPTER 2: Ideas of Imagination

Introduction

In the previous chapter I explicated Berkeley's views of the ideas of sense, emphasizing the close connection he sees between the ideas of sense and physical reality. We saw that Berkeley identifies ideas of sense with real physical qualities and takes them to be ordered by laws of nature. I defended a reading of his notion of immediate perception as a form of perception that is connected by laws of nature to motions at the sense organs. In this chapter we turn from Berkeley's view of the workings of the physical world to his view of the workings of the mind, and I explicate his conception of the ideas of imagination. Like the ideas of sense, the ideas of imagination exist only in virtue of being perceived by minds (their *esse* is *percipi*). Beyond this shared, general mind-dependence, however, the two classes of ideas are fundamentally different in nature.

While passing comments on the imagination are littered throughout Berkeley's writings, he rarely offers extended discussion of the topic.[1] His two most informative and extended discussions of the imagination occur, respectively, in PHK and the late work on vision, TVV. The discussion in PHK (PHK 28-36) emphasizes the imagination's role in producing "chimeras" like dreams, fantasies, and hallucinations. The discussion in TVV (TVV 9, 10, 39) emphasizes the imagination's role in generating ordinary, veridical visual perceptions.[2] I begin by reconstructing these two discussions and placing them in (limited)

[1] In general, commentators have had little to say about Berkeley's view of the imagination (see notes 2, 6, 7, 9, 12, 13, 14, and 16 for more on this sector of the secondary literature). Some commentators fail to properly acknowledge that Berkeley posits ideas of imagination at all. For example, Hight (2012, p. 146) assimilates ideas of imagination to a version of Lockean ideas of reflection. More frequently, though, Berkeley's distinction between ideas of sense and ideas of imagination is acknowledged but neither fully explicated nor taken as seriously as it deserves to be.

[2] This second discussion is more often neglected by commentators than the first. However, two partial exceptions deserve to be noted. First, Samuel Rickless (2013, pp. 42-58) does effectively notice the second

historical context in parts one and two of the chapter. Taking these summary reconstructions as a foundation, I defend an interpretation of Berkeley's general theory of the imagination and its ideas in part three. Finally, in part four I trace out some of this theory's important philosophical implications concerning the issues of skepticism and perceptual representation.

1 The First Discussion

1.1 Locke's "Fancies" in the Mind

As noted in the previous chapter, Berkeley engages extensively with Lockean empiricism in his early writings. It should not be too surprising, then, that Berkeley's earliest extended discussion of the imagination, found at PHK 28-36, bears a striking resemblance to material in Locke's EHU. In particular, this first discussion resembles the brief account Locke gives, at EHU IV.xi.5, of the difference between having an idea of an external object by means of

discussion, and correctly argues that imagination plays an important role in the perceptual process, for Berkeley (the topic emphasized in the second discussion). However, Rickless's discussion does not make contact with Berkeley's ontological distinction between ideas of sense and ideas of imagination (which is central to the earlier PHK discussion of imagination)—that is, Rickless does not acknowledge the implications of the fact that the ideas generated by imagination during the perceptual process are a very different sort of thing from the ideas of sense we immediately perceive. Second, Richard Glauser (2007, pp. 57-75) both notices the TVV discussion *and* draws some conclusions loosely similar to mine from the conjunction of the two discussions. In some ways, I think Glauser comes closest to appreciating the full importance of Berkeley's distinction between sense and imagination. However, his thought-provoking (2007) focuses narrowly on Berkeley's views of the individuation of objects (like tables and cars and apples, construed as idea-collections) and, unlike the present chapter, is not concerned with Berkeley's view of the imagination's role in perception more generally. Moreover, Glauser lumps the substance of both discussions together, and does not stop to discuss the subtle but important issues raised by questioning their mutual compatibility. I spend a great deal of time exploring these issues later in this chapter (sections 3.1-4). Additionally, I am skeptical of the reading Glauser defends on independent grounds: (a) Glauser claims (2007, p. 57) that ideas of sense are fleeting and unstable whereas ideas of imagination have a kind of stability that the mind exploits in the perception of objects (yet Berkeley tends to emphasize just the opposite point: that ideas of sense are more orderly and stable than ideas of imagination (PHK 30, 33)); (b) Glauser claims (2007, 57-8) that because ideas of sense are so unstable, the objects we perceive are collections *exclusively* of ideas of imagination. This brings Glauser's Berkeley implausibly close to Hume, unjustly neglecting the fact that Berkeley thinks we enjoy direct, stable perceptual access to ideas of sense.

sensation[3] and conjuring up a remembered idea of an object at will. It will be useful to begin by sketching the outlines of this brief Lockean account.

At EHU IV.xi.5, Locke is defending the epistemic reliability of the senses. He claims that "there is a manifest difference, between the *Ideas* laid up in my Memory… and those which force themselves upon me, and I cannot avoid having." He considers the sun as example: "if I turn my Eyes at noon towards the Sun, I cannot avoid the *Ideas*, which the Light, or Sun, then produces in me" whereas "I can at Pleasure re-call to my Mind the *Ideas* of *Light*, or the *Sun*, which former Sensations had lodg'd in my Memory". Locke concludes that "therefore it must needs be some exterior cause, and the brisk acting of some Objects without me, whose efficacy I cannot resist, that produces those *Ideas* in my Mind [via sensation], whether I will, or no"; that is, the unavoidableness of the ideas we have via sensation is a symptom of the fact that these ideas are lawfully caused by external objects. And, Locke thinks, we can easily tell the recollected ideas we will into existence in our minds apart from the ideas we have by means of sensation. For example, "there is no body who doth not perceive the difference in himself, between contemplating the Sun, as he hath the *Idea* of it in his Memory, and actually looking upon it: Of which two, his perception is so distinct, that few of his *Ideas* are more distinguishable one from another". So, sensation lawfully connects us to external objects and is phenomenologically distinguishable from merely recollecting at will. Thus, comparing a recollection of the sun with a sensation of the sun, one "hath certain knowledge that they are not both Memory, or the Actions of his Mind, and Fancies only within him; but that actual seeing hath a Cause without". Locke

[3] I gave a brief overview of Locke's account of sensation in the previous chapter (see chapter 1, sections 1.1 and 3.2).

thinks that this capacity to discriminate recollection from sensation helps to underwrite the epistemic reliability of the senses. What matters for my purposes, however, is the role Locke confers on the mind in generating those "Fancies" he compares unfavorably with the ideas we have via sensation.

In Scholastic and early modern philosophy the imagination, or fancy, is often construed as a mental faculty that co-operates with memory to generate and entertain mental images (often called *phantasms* or *ideas* in Scholastic philosophy). EHU IV.xi.5 suggests that Locke holds a version of this orthodox view and thinks we use the imagination to call up remembered ideas, or "Fancies", at will.[4] Assuming this is right, we may draw several conclusions about Locke's view of the contrast between sensation and imagination: (i) imagination depends on human will in a way sensation does not, (ii) sensation is constrained by laws of nature in a way that imagination is not, and (iii) imagination and sensation are phenomenologically distinguishable from one another. As we will see next, Berkeley's PHK discussion of imagination takes over (and adapts to

[4] Both Descartes and, following him, Malebranche regard the imagination in corporeal terms, as a brain structure physiologically linked into the bodily network of nerves and animal spirits and capable of interacting in various ways with both the senses and the pure intellect (Schmitter 2021 sect. 7; Foti 1986, pp. 635-6; cf. Ayers, 1991, p. 39). Locke occasionally speaks in a way that suggests conformity to this orthodox Cartesian view, mentioning the "ungrounded Fancies of a Man's own Brain" (EHU IV.xix.3) and the "Imaginations of Men's Brains" (IV.iv.1). But even if Locke holds this orthodox view of the imagination, it is difficult to identify the exact roles he ascribes to the imagination. This is because he ultimately remains agnostic concerning the question of whether thought is conducted by a corporeal imagination alone, or by some combination of imagination and immaterial, pure intellect (see Ayers 1991, pp. 39-41; Wilson 1979). This agnosticism often leads him to ascribe psychological operations, generically, to "the Mind" *simpliciter*, rather than to any particular faculty within the mind. He tells us, for instance, that "the Mind" can combine, compare, abstract, and enlarge its ideas (EHU II.i.22, II.xii.1-3), but he does not specify whether these operations are due to imagination or intellect. The same trend is reflected, to some extent, in the passage just discussed in the body text (EHU IV.xi.5), for there Locke says that "the Mind" *simpliciter* is responsible for calling up ideas from memory. However, his use of the term 'Fancies' in the passage strongly suggests that he does see the imagination as playing this particular role.

idealism) these three points from the brief Lockean account of sensation and memory just outlined.

1.2 Imagination in Berkeley's Appearance/Reality Distinction (PHK 28-36)

In the PHK discussion of the imagination (PHK 28-36), Berkeley's intent is to characterize the ideas of imagination in contrast to the ideas of sense in order to persuade his reader that even though he (Berkeley) sees all of reality as mind-dependent, he can still draw a meaningful distinction between reality and mere appearances, or "chimeras". Reality, Berkeley thinks, is comprised of ideas of sense, while chimeras are comprised of ideas of imagination.[5] In developing this account of the appearance/realty distinction, Berkeley appears to commit himself to at least four important differences between ideas of sense and ideas of imagination. I begin by canvassing these four points of contrast.[6]

As I explained in the previous chapter, Berkeley takes ideas to be devoid of all causal powers and confines causal power to minds. Because minds alone are causally potent, Berkeley reasons, only a mind can be the cause of an idea: "when we talk of… exciting ideas

[5] While I've chosen to present Berkeley's PHK discussion of imagination against the historical backdrop of Locke's philosophy, it should be noted that Descartes and Malebranche are also important influences, for they, too, hold that the imagination causes chimerical states of the relevant sort. I briefly return to this issue in connection with Descartes in section 2.1, below.

[6] Each of these four points has been acknowledged and discussed by commentators, but commentators usually do not acknowledge and discuss all four points in conjunction. I name and number the four point as follows in the ensuing discussion in this section of the chapter: (i) *volitional contrast,* (ii) *nomological contrast*, (iii) *phenomenological contrast*, and (iv) *representational contrast*. Going by this numbering scheme: Flage (1987, pp. 69-74) acknowledges and discusses (i), (ii), and (iii), but dismisses (iii) as philosophically unimportant and (in my view) misinterprets (ii) as a distinction between objects (as *opposed* to ideas) and ideas (cf. note 7, below); Winkler (1988, pp 10-11, 2005, pp. 132-6) discusses (iv) and acknowledges (iii) in passing; Bolton (2008, pp. 77-84) discusses (iv) and acknowledges (i) in passing; Rickless (2013, p. 45) discusses (i) (but without acknowledging its implications for the ontological status of the relevant ideas) and acknowledges (iii) in passing; Atherton (2008, pp. 92-3) discusses (i) and (ii), but (in my view) misinterprets (ii) in the same way Flage does; Atherton (2019, pp. 60-1, 68) seems implicitly to read (ii) in the same way I do, and also acknowledges and briefly discusses (i); Glauser (2007, pp. 57-75) primarily discusses (iii) and (iv) but also acknowledges (i) and (ii) in passing (though, cf. note 2, above). In the remainder of the chapter, I attempt to thoroughly discuss, and explore the implications of, all four points of contrast. I believe that all four are important to Berkeley.

exclusive of volition, we only amuse ourselves with words" (PHK 29). With these considerations in view (cf. PHK 25, 27) Berkeley observes that human minds can cause their own ideas by means of imagination (=fancy): "I find I can excite ideas in my mind at pleasure, and vary and shift the scene as oft as I think fit. It is no more than willing, and straightaway this or that idea arises in my fancy: and by the same power it is obliterated, and makes way for another" (PHK 28). By contrast, the human mind does not cause its own ideas of sense:

> But whatever power I may have over my own thoughts, I find the ideas actually perceived by sense have not a like dependence on my will. When in broad daylight I open my eyes, it is not in my power to choose whether I shall see or no, or to determine what particular objects shall present themselves to my view; and so likewise as to the hearing and other senses, the ideas imprinted on them are not creatures of my will. There is therefore some other will or spirit that produces them. (PHK 29)

As we saw in the previous chapter, this "other will or spirit" that causes our ideas of sense is none other than God. Berkeley goes on to specify this in some of the passages that follow, writing that, "[the ideas of sense] are also less dependent on the spirit, or thinking substance which perceives them, in that they are excited by the will of another and more powerful spirit" (PHK 33) and that "[they] speak themselves the effects of a mind more powerful and wise than human spirits" (PHK 36). Hence, our first point of contrast:

(i) **Volitional Contrast**: ideas of sense are caused by divine will, while ideas of imagination are caused by human will.[7]

[7] Flage (1987, pp. 69-74) and Atherton (2008, pp. 92-93, cf. 2019, p. 60, 68), following him, identify something close to this as the "volitional criterion". The difference is that according to their 'volitional criterion', ideas of sense are caused by other spirits (not necessarily God) and ideas of imagination are caused by one's own spirit. Flage takes Berkeley to allow that some ideas of sense, such as the sounds of words and the bodily movements involved in actions, are caused by other humans rather than God, and so needs to understand the volitional criterion/contrast in this way. He does not defend this reading against its alternatives, though (cf. Stoneham, 2018, e.g.), and does not discuss the problems in assessing Berkeley's views of action and volition

I pointed out above that Locke thinks imagination depends on human will in a way sensation does not. We can now see that Berkeley would agree wholeheartedly with this statement (he and Locke, of course, would disagree about the external cause of sensations).[8]

Berkeley can seem to face a dilemma here: if he takes "chimeras" to include seemingly involuntary psychological states like dreams and hallucinations, then the dependence of chimeras upon the will can seem intuitively implausible; but if he limits the scope of "chimeras" so that they include only obviously voluntary phenomena (like deliberate fantasizing or daydreaming) then his appearance/reality distinction seems incapable of explaining a majority of the phenomena one would like it to explain. Later (section 3.1) we will that Berkeley can solve this problem by drawing on resources from his theory of vision.

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that I discussed in the previous chapter (1.2.3). As I showed there, it is prohibitively difficult to determine on textual grounds whether Berkeley thinks that all ideas of sense are caused by God, or that a minority of ideas of sense—ideas of word-sounds and body-movements—are caused by humans. Thus, as I said there, I leave it open whether my claims about ideas of sense apply to all ideas of sense, or, if we assume a minority of ideas of sense are caused by humans, just to those caused directly by God (which would be far more numerous than their humanly caused counterparts, anyway, cf. PHK 146). And cf. Note 9, below.

[8] In saying that the ideas of sense are caused by God's will, I do not mean to totally discount the role of human volition in ordinary sensory perception. At TD 196-7 Hylas and Philonous have the following exchange:
Philonous: Then as to seeing, is it not in your power to open your eyes, or keep them shut; to turn them this or that way?
Hylas: Without doubt.
Philonous: But doth it in like manner depend on your will, that in looking on this flower, you perceive *white* rather than any other colour?...
Hylas: No certainly. (TD 196-7)
So, human volition governs the positioning of the sense organs (as these are parts of the body), and we can therefore inhibit ideas of sense by closing our eyes or covering our ears etc. (I take this to be the point Berkeley is making at PC 841 when he comments that ideas and volitions are inseparable). But when we do position our sense organs so as to have ideas of sense, these ideas of sense are caused by God (pending the previously discussed possibility—see note 7 and 1.2.3, above—that a minority of our ideas of sense may be caused not by God but by other humans).

Our second point of contrast pertains to the laws of nature, which I introduced in the previous chapter. This second point flows naturally from the first, given that Berkeley takes the laws of nature to be "constituted" by God's will (PHK 32). Berkeley claims that the ideas of sense are more "regular", "stead[y]", "order[ly]", and "coheren[t]" than the ideas of imagination because God causes the ideas of sense in a "regular train or series" by following the laws of nature, whereas human beings can (and often do, according to Berkeley) produce ideas of imagination in any random order they please (PHK 30, cf. 33). Hence, our second point of contrast:

(ii) **Nomological Contrast**: ideas of sense are constrained by the laws of nature, while ideas of imagination are not.[9]

Hinting at this point of contrast in his early notebooks Berkeley describes ideas of sense as effected by "Constant laws of nature": "The distinction between idea & *Ideatum*[10] I cannot otherwise conceive than by making one the effect or consequence of dream, reverie, Imagination, the other of sense & Constant laws of nature" (PC 843, cf. PHK 36, TD 258). I observed above that Locke thinks sensation is constrained by laws of nature in a way that

[9] Atherton, in a generally excellent article on Berkeley's view of the perception of objects (=idea-collections) (Atherton, 2008), argues that some ideas of sense are not constrained by the laws of nature, citing dreams as ideas of sense. But I assume that dreams are among the states Berkeley describes as "chimeras" in PHK (see PHK 34-6, e.g.). This is borne out in the early notebooks (PC 823, 843) where Berkeley opposes dreams to ideas of sense, and again at TD 235 where Philonous says that we can easily tell dreams apart from the ideas of sense, because dreams are not constrained by the laws of nature and thus stand out from the everyday transactions of life that take place during the long periods in between episodes of sleep when we are awake. In more recent writings, Atherton (2019, p. 68) seems to view Berkeley as committed to the nomological contrast in more or less the way I describe it. Flage (1987, pp. 69-74) cites cases of human speech (sounds) and action (motions) as examples of ideas of sense not constrained by the laws of nature. As noted above (note 7, and 1.2.3, above), we should be skeptical of this discussion of Flage's, given that he does not consider the various interpretive possibilities concerning Berkeley's view of bodily motions/sounds (cf. Stoneham 2018). But moreover (as also noted in the same places above), I leave it open that a minority of ideas of sense do escape the laws of nature and that my claims simply do not apply to this small subset of ideas of sense.

[10] 'Ideatum' is a traditional Scholastic term for the reality represented by, or corresponding to, an idea (where 'idea' in this context means, roughly, image formed by imagination).

imagination is not. We can now see that Berkeley would agree with this claim, as well (though, of course, Berkeley conceives of the laws of nature quite differently from Locke).

Berkeley also claims in the PHK discussion of imagination that the ideas of sense and the ideas of imagination are phenomenologically different. The ideas of sense, he tells us, are more "strong, lively,… distinct" and "vivid" than the ideas of imagination (PHK 30, 33).[11] He elsewhere corroborates that the ideas of imagination are more weak, faint, and indistinct than ideas of sense (PHK 36, TD 235). Hence, our third point of contrast:

(iii) **Phenomenological Contrast**: ideas of sense are experienced as being stronger, more distinct, and more vivid than ideas of imagination.[12]

We saw above that Locke, too, thinks the ideas we have in sensory perception are phenomenologically distinguishable from the "Fancies" we call to mind via imagination. Berkeley, in his PHK discussion of imagination at least, would fully agree with this claim. (Although notice that, unlike Locke, Berkeley attempts to identify the specific phenomenological criteria we can supposedly use to distinguish between sense and imagination).[13]

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[11] One cannot help but notice how this point of contrast anticipates Hume's distinction, in the *Treatise*, between ideas and impressions in terms of their "force and vivacity".

[12] The phenomenological contrast is acknowledged by Flage (1987, pp. 69-74), Winkler (2005, p. 131), and Rickless (2013, p. 45). Flage argues that it is a mistake on Berkeley's part, and Winkler and Rickless devote only a couple of sentences to discussing it. As I argue below, the phenomenological contrast raises some big questions for Berkeley (see section 3.2, below).

[13] PHK 30 and 33 comprise the heart of the PHK discussion of imagination. Here they are in full: "The ideas of sense are more strong, lively, and distinct than those of the imagination; they have likewise a steadiness, order, and coherence, and are not excited at random, as those which are the effects of human wills often are, but in a regular train or series, the admirable connection whereof sufficiently testifies the wisdom and benevolence of its author [=God]. Now the set rules or established methods, wherein the mind we depend on excites in us the ideas of sense, are called the *laws of nature*…" (PHK 30). "The ideas imprinted on the senses by the Author of Nature are called *real things*; and those excited in the imagination being less regular, vivid, and constant, are more properly termed *ideas*, or *images of things*, which they copy and represent. But then our sensations, be they never so vivid and distinct, are nevertheless *ideas*, that is, they exist in the mind, or are perceived by it, as truly as the ideas of its own framing. The ideas of sense are allowed to have more

Finally, our fourth point of contrast concerns representation. As we saw in the previous chapter, Berkeley rejects the Lockean view that the ideas of sense "are not real things, but images, or copies of them" because he thinks it engenders a serious skeptical problem (TD 246—see also part four of this chapter). But Berkeley applies *exactly* this characterization to ideas of imagination. He expresses this view in his early notebooks, where he writes, "Ideas of sense are real things, or archetypes; ideas of imagination, dreams, &c. are copies, images of them" (PC 823, cf. 843). And he expresses it again at PHK 33, writing, "The ideas imprinted on the senses by the Author of Nature are called *real things:* and those excited in the imagination… are more properly termed *ideas*, or *images of things*, which they copy and represent" (PHK 33). Hence,

(iv) **Representational Contrast**: ideas of sense are real things, while ideas of imagination are representations of real things.[14]

Notice that here Berkeley's PHK discussion of imagination diverges dramatically from Locke's account of the difference between sensation and memory. This is because (as discussed in chapter one) Berkeley identifies the ideas of sense with real physical things whereas Locke conceives of them as representations. Thus, where Locke thinks sensations and memories are comprised of the same sort of representational entities, Berkeley thinks that the two have very different ontological statuses (archetype vs representation).[15]

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reality in them, that is, to be more strong, orderly, and coherent than the creatures of the mind; but this is no argument that they exist without the mind. They are also less dependent on the spirit, or thinking substance which perceives them, in that they are excited by the will of another and more powerful spirit: yet still they are *ideas*, and certainly no *idea*, whether faint or strong, can exist otherwise than in a mind perceiving it" (PHK 33).

[14] Winkler (1988, pp. 10-11, 2005, pp. 132-6) and Bolton (2008, pp. 77-84) discuss the representational contrast.

[15] In note 4 above I mentioned the physiological conception of imagination found in Descartes, Malebranche, and (on some occasions) Locke. As I discussed in the previous chapter, Berkeley often thinks of the senses in

Berkeley also touches on the representing function of the imagination in TD, having Philonous remark in the first dialogue that, "sensible things are only to be perceived by sense, or represented by the imagination" (TD 194). In DM he explains that "the imagination is nothing else than the faculty which represents sensible things" (DM 53). He elaborates on this representing function in both PHK and (much later in his life) *Siris*. In the latter text, he explains that "Sense supplies images to memory. These become subjects for fancy to work upon" (S 303). Imagination 'works on' material supplied to memory by the senses. In the first sentence of PHK 1 Berkeley clarifies the nature of this work:

> It is evident to any one who takes a survey of the objects of human knowledge, that they are either ideas actually imprinted on the senses;… or lastly, ideas formed by help of memory and imagination, either compounding, dividing, or barely representing those originally perceived in the aforesaid ways. (PHK 1)

The imagination can compound various remembered copies of ideas of sense together. Having seen men and horses, I can imagine a centaur. The imagination can also divide remembered copies of ideas of sense. I can imagine half of a man, or half of a horse; in the limiting case, I can imagine just a single visible or tangible point. Finally, the imagination can 'barely represent' ideas of sense. To do so is simply to bring to mind a remembered copy of an idea of sense—that is, to consciously remember a thing—without either compounding or dividing it.[16] For example, one might use the imagination to barely

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physiological terms, and he sometimes associates imagination (and memory) closely with the senses (cf. PHK 1, S 305). This may indicate that he is committed to the orthodox physiological conception of imagination. However, I think it is hard to tell with any certainty. I therefore leave this issue off to the side in this chapter. Note, however, that Berkeley decidedly does not share Locke's agnosticism about the psychological roles of the imagination (cf. note 4 above). As discussed in the body text, the younger philosopher is fairly clear on his view of these roles.

[16] Cf. Rickless, (2013, p. 45), Winkler, (2005, p. 134). Cf. Glauser (2007) for an alternative reading of 'bare representation'.

represent a visible idea of the sun against the night sky. Berkeley adapts[17] this standard example at PHK 36: "The sun I see by day is the real sun, and that which I imagine by night is the idea [in the sense of image or copy] of the former".

In sum, Berkeley says in his PHK discussion of the imagination (PHK 28-36) that ideas of imagination are characterized by causal dependence on human, rather than divine, will; by a lack of constraint from the laws of nature; by a relatively weak and indistinct phenomenology; and by being representational in nature. By contrast, (as we largely saw in the last chapter) Berkeley thinks that ideas of sense are characterized by causal dependence on divine will; by being constrained by the laws of nature; by a relatively more strong, vivid, and distinct phenomenology; and by being non-representational in nature.

With this quadripartite distinction between ideas of sense and ideas of imagination in view, Berkeley claims he has "shown what is meant by *real things* in opposition to *chimeras*, or ideas of our own framing" and concludes: "we are not deprived of any one thing in nature. Whatever we see, feel, hear, or any wise conceive or understand, remains as secure as ever, and is as real as ever. There is a *rerum natura*, and the distinction between realities and chimeras retains its full force" (PHK 34, cf. 36). Let's say, for example, that I visually hallucinate a spider crawling up the wall beside me. Berkeley would say that this spider is comprised of ideas of imagination caused by my own mind; he would point out that the hallucinated spider is unconstrained by the laws of nature (it vanishes on closer scrutiny in a way a real spider never would; it does not give me tangible spider-ideas if I reach out to touch it in the way a real spider would; and so on); he would say that the

[17] We saw Locke use the same example (EHU IV.xi.5); we also find Descartes and Malebranche using this example of the sun to discuss related issues on various occasions.

hallucinated spider is less phenomenologically vivid and distinct than a real spider; and he would say that the hallucinated spider is in fact comprised of representations (memories) of a spider, or spiders, I had ideas of sense of in the past. By contrast, a real spider crawling up the wall would be willed into existence by God, according to Berkeley; it would be constrained by the laws of nature (so it would not vanish when I turned my head, and it would give me the tangible ideas I expect on touching it, and so on); it would have a relatively more robust and vivid phenomenology; and it would not be a representation stored in memory and called to mind by imagination, but rather a non-representational thing detected immediately by the senses.

2 The Second Discussion

2.1 Descartes' Cognitive Imagination

We also find an informative and somewhat extended discussion of the imagination in Berkeley's late work on vision, TVV (TVV 9-10, 39). In this context, Berkeley emphasizes the imagination's role in producing ordinary, veridical visual perceptions. In his writings on vision, Berkeley is heavily engaged with Cartesian visual theory. And Descartes, too, sees the imagination as positively supporting veridical perception (in at least some cases).[18] Here I present a very brief sketch of Descartes' view of how the imagination does this within the visual process.[19] This sketch should provide a foil against which we can more fully understand Berkeley's TVV discussion of the imagination.

[18] Though, as observed in note 5 above and below in the body text, Descartes also sees imagination as generating chimeras.

[19] The imagination supports cognition in other ways, too, for Descartes. It can support the understanding of a mathematical proof (Descartes 1684, VII, XI; Foti, 1986, p. 634), for example. In the *Meditations*, Descartes ascribes a broad cognitive role to imagination, writing: "if I give more attentive consideration to what

A classical problem for vision science is to explain how the visual system enriches the relatively impoverished information[20] registered by the retina in order to arrive at full-fledged visual perception.[21] Descartes, writing only decades after Kepler's discovery of the

imagination is, it seems to be nothing else than an application of the cognitive faculty to a body which is intimately present to it" (1641, p. 51).

[20] Talk of 'retinal information' may sound anachronistic, as this is the way today's vision scientists tend to talk. However, I prefer to use the term for two reasons: (1) I think that talk of the retinal image is too concrete, and risks giving the impression that the theorists under consideration (namely, Descartes and Berkeley) take the retinal image itself to be available to psychological processing. Certainly, some have read both Descartes and Berkeley in this way (cf., Ott 2015, Thrane 1976). But the matter is quite controversial. Talking of 'retinal information' instead seems to me to leave it open whether the information is the concrete retinal image itself, or something less concrete like a mental correlate of the contents of the physical retinal image (I take the latter option to be the correct reading, in Berkeley's case). And (2), as I explained in the previous chapter, Berkeley takes what we normally regard as causal relations to be, instead, signification relations. He thinks natural phenomena exist not because they are causally necessitated, but rather because God deploys them as signs "for our *information*" (PHK 66, my emphasis). So, even though it sounds anachronistic, talk of 'information' is actually fully Berkeleian. For Berkeley (and, so far as the present subsection is concerned, Descartes), I take retinal information to be the collection of corporeal motions that occur at the retinal surface when light is projected onto it.

[21] The retina is a two-dimensional surface that registers the light and color reflected onto it from a three-dimensional physical scene. Because of the loss of one spatial dimension, the configuration of light and color reflected onto the retina could have been reflected by a wide array of different physical scenes—that is, the causal etiology of the retinal image is underdetermined. For example, a small nearby object can project the same image as a large distant object, a circle normal to the line sight can project the same image as an ellipse slanted away from the line of sight, and so on. The first figure who is well-known to have recognized and addressed this problem is Ibn al-Haytham in his *Book of Optics* (*Kitab al-Manazir)* of (aprox.) 1030 C.E. Not knowing about the retinal image, al-Haytham theorized that (what we call) the lens, or (what he called) the anterior surface of the crystalline humor, was the sensitive surface in the eye. One important difference is that for him, unlike post-Keplerian theorists, the proximal stimulation that drives vision is not spatially inverted (as the retinal image is). Otherwise, however, al-Haytham recognized all the essential components of the retinal underdetermination problem that was central to early modern vision theory, and remains central to present-day vision theory (cf. Palmer 1999, Burge 2005, 2010). Following al-Kindi, al-Haytham analyzed physical surfaces as collections of points, and theorized that colored light reflects rectilinearly in every non-obstructed direction from each surface-point. A consequence is that a two-dimensional array of points of colored light is reflected from the environment onto the lens in the eye. Al-Haytham argued that only the rays intersecting the lens perpendicularly are sensed by the visual system. Thus, while the overall array of points on the lens is chaotic (because each point on the lens receives rays from many points in the environment), the subset of it that is visually sensed is a two-dimensional mosaic that resembles the environment in much the same way a perspective projection or (setting aside spatial inversion) the retinal image would (because each point on the lens receives and senses only one point via perpendicular ray-intersection) (see Book I, esp. ch. 6 and 7 of the *Book of Optics* in Smith (2001) or Sabra (1989)). Al-Haytham goes on to give a psychological theory (see Book II of the *Book of Optics* in Smith (2001) or Sabra (1989)) of how this two-dimensional mosaic-image of the environment gets processed to produce full-fledged visual perception. He explains the visual perception of the usual candidates—size, shape, distance, situation, convexity/concavity—but also of things like beauty and ugliness. His theory posits early incarnations of such things as unconscious inference (cf. Hatfield 2001, Afterword to this dissertation) and the size-distance invariance hypothesis (cf. Hatfield 2020) and should be of interest to anyone interested in perception or the history of science. Needless to say, when Kepler discovered the retinal image several centuries later, this revitalized interest in solving the relevant underdetermination problem. The sensitive two-dimensional surface involved was no longer the

retinal image, has much to say about this problem. An exhaustive summary of all that he says would take me too far afield, so a hasty summary will have to do. In some writings, Descartes argues that retinal information is enriched by mechanical processes that occur deeper in the brain.[22] In other writings, he argues that retinal information is enriched by judgments made by the intellect in response to conscious experience of a mental correlate of the retinal image.[23] And in still other writings, he argues that retinal information is enriched by imagination. It is this third kind of case that is of interest to me here.[24]

In a discussion of the visual perception of distance from the Sixth Discourse of the *Optics*, Descartes explains:

> Finally, when moreover we already imagine the size of an object, or its position, or the distinctness of its shape and of its colors, or merely the strength of the light which comes from it, this enables us, not actually to see, but to imagine its distance. Thus, looking from afar at some body which we are used to seeing close at hand, we judge its distance much better than we would if its size were not so well known to us. (Optics, p. 107)

The size of an object's retinal projection covaries with the object's distance from the retina. A more distant object has a smaller projection and vice versa. Therefore, if my visual system has information about the size of an object's retinal projection (whether we think of this information as registered by the mind, or as registered by the brain, or both), and

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lens (which it had remained, due to al-Haytham's influence, from the 11th to the 16th centuries) but was, rather, the spatially inverted retinal image. Psychological processes of various sorts (some of which are discussed in this chapter) were posited to explain how the information contained in this image is converted into visual perception of a three-dimensional environment. For more on al-Haytham see Lindberg (1976, ch. 4), Sabra (1978, 1989), Hatfield and Epstein (1979), Smith (2001, 2005). For more on the continuities between al-Haytham's theory and early modern vision theory see especially Hatfield and Epstein (1979).

[22] See the *Treatise of Man* and Hatfield (1992, 2015, and 2015a).

[23] See the "Sixth Replies", namely the account of three grades of sensation (I discussed this in the previous chapter (1.3.2), and see Hatfield and Epstein (1979).

[24] I discuss this third case in the next paragraph in the body text. Due to the presence of all three of these accounts—especially the first two—there is controversy over Descartes' official theory of vision. For more on this, see Hatfield (1992, 2015, 2015a).

about the object's physical size, it can compute its distance away from me in the third dimension. Descartes' point in this passage is that in the process of computing distance in this manner, an object's physical size may be represented by imagination rather than immediately perceived by the senses. Let's say my visual system has information—from past experience, stored in memory—about how big apples are. As I view a scene, my visual system registers that a distant object (say, because of its color and round retinal shape) is probably an apple. Imagination therefore represents the object as being the size I take apples to normally be. My visual system (understood as part of the brain, mind, or both) can then compute the object's distance from its retinal size along with its imagined physical size.[25]

I presume that Descartes would say, of the overall experience I have of viewing the apple, that at least some aspects of the experience—the apple's color, for example—are provided by immediate perception by the senses (i.e., the "second grade" of sensation discussed in the previous chapter, see 1.3.2, above). But this overall experience also includes an experience of the apple as having a certain physical size, and *this* aspect of the overall experience is provided by imagination. So, Descartes would say that the overall experience of viewing the apple includes a combination of sensation and imagination.

Importantly, Descartes also thinks the imagination is the cause of dreams and illusions, and is thus the source of many of the deceptive states that matter for the radical doubt of the *Meditations*. In this context, Descartes thinks there is no reliable criterion we can use to phenomenologically distinguish the products imagination from the products of

[25] Such computation—however it works—is supposed to happen rapidly and automatically (see the "Sixth Replies" for example).

ordinary sensory perception. It thus stands to reason that Descartes would also say that there is no reliable criterion we can use to phenomenologically distinguish the apple's physical size *qua* product of imagination from its color (or whatever else) *qua* product of sense. That is, it stands to reason that Descartes thinks sensation and imagination are not only combined in our experience of the apple, but that they are phenomenologically blended together to the point of indistinguishability.[26]

Berkeley's theory of vision is different from Descartes' in a number of important ways that have been well-documented in the secondary literature.[27] I suggest, however, that the role of imagination as enricher of retinal information and, more broadly, as contributor to veridical perception, constitutes a common thread between both theories.[28]

2.2 Imagination in Berkeley's Theory of Vision (TVV 9, 10, 39)

It is now time to consider Berkeley's TVV discussion of imagination. In the previous chapter I offered some cursory characterizations of the process Berkeley calls *mediate perception* in the course of explicating the process he calls *immediate perception*. Here, I begin to consider mediate perception in its own right. Importantly, I take Berkeley to be committed to several different variants, or sub-types, of mediate perception.[29] In this chapter I focus

[26] I mean indistinguishable relative to whether they are sensed or imagined, not relative to various other intrinsic characteristics. That is, I don't suggest that Descartes thinks we cannot tell the apple's color apart from its size, but rather than we cannot tell whether its size is sensed—like its color is—or imagined (and vice versa for its color).

[27] Atherton (1990) presents a classic account of the contrasts. See also Turbayne (1963) and Rickless (2013).

[28] For more on these common threads, see the appendix.

[29] If one tries to weld all Berkeley's texts together so they yield a single conception of mediate perception, it can seem impossible to do so consistently (as attested to, for example, by Rickless (2013, pp. 42-3). This is largely because Berkeley describes mediate perception as inferential in some texts (TD 174-5, 205, 221) and as non-inferential in others (TVV 42, cf. S 305). These difficulties are avoided by taking Berkeley to countenance several different varieties of mediate perception. In the same text in which he several times characterizes mediate perception in inferential terms—TD—he also describes the sort of non-inferential mediate perception that in NTV and TVV he claims is involved in vision. And when he does so, he describes this as *mediate perception by sense* (see TD 204). And in NTV and TVV he is concerned with mediate *seeing*,

on just one of these variants, which Berkeley describes as *mediate perception by sense* (TD 204, cf. NTV 1). Mediate perception by sense is of central importance to his theory of vision, for it is the process by means of which retinal information gets enriched. It is, more generally, the process by which we arrive at many of our ordinary, veridical perceptions of the world. Berkeley takes mediate perception by sense to rely on a further psychological process called *suggestion*. And he takes suggestion to rely on the imagination.

In addition to sensory perception, Berkeley thinks that suggestion plays a role in linguistic cognition and in the cognition of God.[30] At TVV 9, in the course of introducing his reader to the basic terms and concepts of his theory of vision, Berkeley introduces suggestion at this generic level, focusing on the example of linguistic cognition:

> Besides things properly and immediately perceived by any sense, there may be also other things suggested to the mind by means of those proper and immediate objects. Which things so suggested are not objects of that sense, being in truth only objects of the imagination, and originally belonging to some other sense or faculty. Thus sounds are the proper objects of hearing, being properly and immediately perceived by that, and by no other sense. But, by the mediation of sounds or words all other things may be suggested to the mind, and yet things so suggested are not thought the object of hearing. (TVV 9)

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the visual sub-type of mediate perception by sense. This type of mediate perception is due to sense, memory, and imagination alone and does not engage reason or intellect (TVV 42, cf. S 305). But Berkeley also thinks that we might perceive something mediately by using reason to infer from the content of some immediate perception to some appropriately related conclusion (he describes this as "ratiocination from the senses" at TD 255). One might mediately perceive the external cause of an immediate perception in this way (whether this be God or a human), for example. Or, if matter existed, one might mediately perceive it in this way (cf., TD 174-5, 205, 221). Because I take Berkeley to be committed to multiple species or variants of mediate perception (mediate perception by sense, mediate perception by reason) I disagree with Rickless (2013) and Winkler (1989) who take Berkeley to be committed to a single unified kind of mediate perception.

[30] For suggestion's role in vision, see NTV 16, 51, TVV 10, 39, 42, *Alciphron* 4.9; for its role in linguistic cognition see TD 174-5, TVV 9, NTV 51, and cf. *Alciphron* dialogues IV and VII; for its role in the cognition of God, see PHK 147-8.

If I hear the word 'cat' (an auditory idea of sense), and I am a competent speaker of English, then an idea of a cat will be suggested to my imagination[31] (and I will thus become conscious of this idea). If I see the word 'virtue' written down (a visible idea of sense), and I am a competent reader of English, then the notion of virtue will be suggested (and I will thus become conscious of this notion—Berkeley considers this latter case briefly at TD 174-5).[32] The idea of the cat may be visible or tangible, i.e., original to a sense other than hearing; the notion of virtue may be original to "some other faculty" (probably reason). Note that suggestion is a kind of non-inferential mental state transition; Berkeley is emphatic that it does not involve reason, or understanding, the faculty he takes to be responsible for making inferences (TVV 42, cf. TVV 16, TD 255).

While Berkeley does not address the issue in TVV 9, mental association is also crucial to suggestion. One thing only comes to suggest another if the two things are associated in the mind. And Berkeley thinks that things become associated in the requisite way through constant conjunction in experience.[33] He expresses this view—noting that it applies both to linguistic cognition and vision—at *Alciphron* 4.11: "there must be time and experience, by repeated acts, to acquire a habit of knowing the connexion between sign and

[31] In fact, Berkeley more frequently uses the phrases 'suggested to the mind' or 'suggested to the understanding'. However, I think his discussion of suggestion at TVV 9-10 makes it clear that he does think the imagination plays a central role in the process. And he occasionally uses the phrase 'suggested to the imagination' (e.g., TVV 10, TD 204). So, I follow him in this latter usage. Thanks to Robert Schwartz for pointing out this textual idiosyncrasy to me.

[32] For more on suggestion of notions, see the appendix.

[33] I use the term 'constant conjunction' because I presume it will be familiar to readers. It is not Berkeley's term. Most often, he somewhat ambiguously describes the relevant relation between ideas as obtaining when they are "often perceived with" each other (TVV 68) or "frequently joined" in our perceptual experience (TVV 39) or have a "frequently perceived connection" (TD 204). At TD 245 Berkeley explains, a little more explicitly, that ideas become associated in the mind when they are connected in experience via "co-existence or succession". The view that the associative connections that drive suggestion are established through constant conjunction is widely ascribed to Berkeley by commentators (e.g., Pitcher (1976, e.g., p. 43), Pearce (2017, p. 72)). But not everyone agrees with it. For alternative interpretations, see Rickless (2013, ch. 1), Dunlop (2011), and Copenhaver (2014, 2021).

things signified; that is to say, of understanding the language, whether of the eyes or of the ears" (Alc. 4.11). In sum, if an idea of sense *a,* and some other entity *b*, are constantly conjoined in experience, then they become associated in the mind so that experiencing *a* by itself will trigger the reproduction of a version of *b*. If *b* is an idea, then this reproduced version will be in the imagination.[34] This triggering is called 'suggestion'—as Berkeley would put it, entity *a* suggests entity *b*.

In the context of the visual process, entity *b* is always an idea of sense. Hence, immediately after TVV 9, Berkeley goes on to narrow the scope of the sort of suggestion that, in the context of the theory of vision, he is interested in:

> The peculiar objects of each sense, although they are truly or strictly perceived by that sense alone, may yet be suggested to the imagination by some other sense. The objects, therefore, of all the senses may become objects of imagination, which faculty represents all sensible things. A color, therefore, which is truly perceived by sight alone may nevertheless upon hearing the words 'blue' or 'red' be apprehended by the imagination. It is in a primary and peculiar manner the object of sight; in a secondary manner it is the object of imagination, but cannot properly be supposed the object of hearing. (TVV 10)

Berkeley reiterates this basic picture at TVV 39:

> Ideas, which are observed to be connected with other ideas, come to be considered as signs by means whereof things not actually perceived by sense are signified or suggested to the imagination, whose objects they are, and which alone perceives them. And as sounds suggest other things, so characters suggest those sounds; and, in general, all signs suggest the things signified, there being no idea which may not offer to the mind another idea, which has been frequently joined with it. (TVV 39)

In the paradigm cases Berkeley discusses in his theory of vision, certain tangible, spatial ideas—like an idea of a tangible distance of ten meters—come to be suggested to the imagination by visible ideas of configured light and color that correspond to the retinal

[34] Notions are not suggested to the imagination, as I explain the appendix.

image.[35] Put another way, visible ideas that we immediately perceive when such-and-such corporeal movements occur at the retina *mediate* the suggestion of other, suitably associated ideas of sense to the imagination. This is the general mechanism by means of which impoverished retinal information gets enriched in the visual process, according to Berkeley. When an idea of sense is suggested in this manner, Berkeley says that that idea is *mediately perceived by sense*.

In other texts Berkeley makes it clear that mediate perception by sense is not restricted to vision;[36] it can occur within, and across, any sensory modalities.[37] In the following, well-known passage from TD Berkeley once again explains the process and gives some helpfully concrete examples, including an example of mediate *hearing*:

> I grant we may in one acceptation be said to perceive sensible things mediately by sense: that is, when from a frequently perceived connexion, the immediate perception of ideas by one sense suggests to the mind others perhaps belonging to another sense, which are wont to be 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 [immediately] *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 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. In short, those things alone are actually and strictly [immediately] perceived by any sense, which would have been perceived, in case that same sense had then been first conferred on us. As for other things, it is plain they are only suggested to the mind by experience grounded on former perceptions. (TD 204)

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[35] See Schwartz (2019) and Hatfield and Epstein (1979) for more on this correspondence.
[36] In fact, we have already seen him imply this at TVV 9-10.
[37] Most often, mediate perception by sense is portrayed as a mechanism whereby information proper to one sense-modality can be (as it were) injected into another—spatial information proper to touch, for example, can be injected into our visual perceptions. But Berkeley specifies at TVV 66 that immediate perception of a sensation of eye strain is a kind of immediate tangible perception, and (as he also argues in NTV) triggers the mediate perception by sense of other tangible ideas (ideas of distance). So, his considered view is that mediate perception by sense can occur bother inter- and intra-modally.

The audible ideas of coach-sounds I immediately perceive by hearing suggest various other non-audible coach-ideas (the size and heaviness of the coach, perhaps, or its smell, etc.) to my imagination because the coach-sounds and these various other ideas have become associated with each other through constant conjunction ("frequently perceived connection"). I thereby hear the coach coming down the street. The visible ideas of glowing red I immediately perceive by sight suggest tangible ideas of heat to my imagination because the red-ideas and the heat-ideas have become associated with each other through constant conjunction. I thereby mediately see the iron bar's heat when I look at it.[38]

According to Berkeley, mediate perception by sense pervades our ordinary (non-illusory, non-hallucinatory, non-dreamt) experience of the world. When we open our eyes and visually experience the spatial world around us, we are mediately seeing (hence, perceiving by sense) a variety of tangible spatial ideas. When we hear a coach coming down

[38] In the first dialogue between Hylas and Philonous, Berkeley repeatedly makes Philonous emphasize that "*sensible things are those only which are immediately perceived by sense*" (TD 175). This refrain can give the impression that anything mediately perceived is not *really* perceived by sense. But this impression is confused. First, Berkeley cannot literally mean that the only sensible things that exist are the things that humans *do* in fact immediately perceive. For then, if there were (say) a color that no human had ever immediately perceived, that color could not be an existent sensible thing. This may at first sound consonant with Berkeley's *esse* is *percipi* doctrine; however, it strips far too much agency from God to plausibly be Berkeley's view. For on this view, even if God wanted that color to exist as a sensible thing, it would not until some human happened to look at it. Hence, what Philonous really means to be saying in the relevant passages is that *sensible things are those only which [can be] immediately perceived by sense.* And as it turns out, he *does* say this on other occasions in TD: he characterizes sensible things as those that "*can be* perceived immediately by sense" (TD 174, my emphasis) or as "things immediately perceiv*able*" (TD 241, my emphasis). I take these modal formulations to more accurately capture Berkeley's view. On that view, we can mediately perceive sensible things by sense; when we do so, we can only mediately perceive sensible things that *can be* (in other circumstances) immediately perceived. Second, as others have pointed out (e.g., Atherton (1990), Rickless (2013)) there is independent textual evidence that Berkeley regards mediate perception by sense as genuinely sensory perception. At NTV 1 he says that he will explain how we "perceive by sight" distance, magnitude, and situation. His account of this turns out to be an account of how we mediately see tangible qualities (distance, tangible magnitude, and tangible situation) via suggestion. At TVV 42 he says that "things are suggested and perceived by sense". And, as we've seen, at TD 204 he has Philonous grant that "we may in one acceptation be said to perceive sensible things mediately by sense" (and cf. TD 194). Thus, (to reiterate) Berkeley thinks mediate perception by sense is genuinely a kind of sensory perception, and that we perceive sensible things by means of it.

the street, we mediately hear (for example) that it is large and heavy. The TVV discussion of imagination (TVV 9, 10, 39) shows that imagination is integral to this process, for when we mediately perceive something by sense, that thing is suggested to the imagination.

Hence, like Descartes, Berkeley thinks the imagination can enrich retinal information so as to achieve full-fledged visual perception. And, like Descartes, Berkeley thinks that veridical perceptual experience can include a combination of the products of sense and imagination. Unlike Descartes, however, Berkeley thinks that the enriching of sense by imagination, and the combining of sense with imagination, is pervasive in human perception: it runs through *all* normal perceptual experience (not just special cases like far-distance viewing etc.). It remains a further question whether, like Descartes, Berkeley also thinks that these products of sense and imagination can blend together in our phenomenology to the point of indistinguishability. I address this question in the following section of the chapter.

3 The Imagination and its Ideas

The PHK discussion of imagination focuses on the nature of *ideas*: the ideas of imagination, as contrasted with the ideas of sense. It says little about psychology. The TVV discussion of imagination focuses, instead, on *psychological process* (and the roles of different psychological faculties therein). It says little about the nature of the ideas involved. In this part of the chapter, I defend a reading of Berkeley's general theory of the imagination and its ideas. The theory I attribute to Berkeley puts together the major results from both the PHK and TVV discussions of imagination—that is, it is a theory that makes claims both

about the psychology of the perceptual process, and about the (metaphysical and phenomenological) natures of the ideas involved in it.

I proceed by revisiting the four points of contrast between ideas of sense and ideas of imagination from the PHK discussion. I show that each point of contrast is consistent with Berkeley's theory of vision and the account of mediate perception by sense therein. Along the way, I explore the various philosophical dimensions along which our understanding of Berkeley's account of mediate perception by sense becomes enriched and deepened when the account is read as presupposing these four points of contrast.

3.1 The Representational Contrast Revisited

The representational contrast, as drawn in Berkeley's PHK discussion of imagination, says that ideas of sense are real things, while ideas of imagination are representations of real things. Berkeley evidently remains committed to the representational contrast in the theory of vision. In demonstrating this, I will rely primarily on a fine-grained dissection of the three passages that comprise the heart of the TVV discussion of imagination (TVV 9, 10, and 39).

First, the ideas we have as a result of mediate perception by sense are not ideas of sense for Berkeley. At TVV 9 he tells us that "things so suggested [by the proper/immediate objects of a given sense] are not objects of that sense, being in truth only objects of the imagination". At TVV 39 he explains that when we mediately perceive by sense, "things not actually perceived by sense are signified or suggested to the imagination, whose objects they are, and which alone perceives them". So, the ideas we have as a result of mediate perception by sense are not perceived by any sense, but are rather perceived by the

imagination alone. As we saw in the previous chapter, Berkeley sees a very close connection between the ideas of sense and the physical sense organs. He repeatedly describes the ideas of sense as "the ideas actually perceived by sense (PHK 29; cf. 36), or as "the ideas imprinted on the senses" (PHK 1, 33, 90; and cf. S 254). Thus, the ideas we have as a result of mediate perception by sense cannot be ideas of sense. They must be ideas of imagination.

In TVV 9, 10, and 39 Berkeley repeatedly uses the term 'object of imagination'. He sometimes refers to ideas of sense as 'sensible objects' (TVV 9, 20, NTV 50). It is thus natural to assume that by 'object of imagination' he means idea of imagination. Let us consider how our three passages would work on this assumption. At TVV 9 Berkeley says that "objects of the imagination… originally belong… to some other sense or faculty". It is quite unclear, though, how an idea of imagination could originally belong to some sense or faculty other than the imagination. At TVV 10 Berkeley says that "The peculiar objects of each sense… may become objects of imagination". It is also quite unclear how to make sense of the notion that an idea of sense—that is, the peculiar object of some sense—could transform into an idea of imagination. Berkeley never hints at an explanation of how such a transformation would work. Finally, At TVV 39 Berkeley says that in mediate perception by sense "things not actually perceived by sense are signified or suggested to the imagination, whose objects they are, and which alone perceives them". And then he goes on to say that in mediate perception by sense, one idea "offer[s] to the mind another idea, which has been frequently joined with it". The context makes it clear that this latter remark refers to ideas of sense constantly conjoined in experience. However, in the former remark, Berkeley refers to the very same idea of sense (that is "offer[ed] to the mind" per the latter remark)

as an object of imagination that is "not actually perceived by sense" and is perceived by the imagination alone. Once again, if an object of imagination is an idea of imagination, the text implies a mysterious transformation of idea of sense into idea of imagination. In all three cases, if 'object of imagination' is taken to mean *idea of imagination*, we come away with the confusing impression that Berkeley regards ideas of sense and ideas of imagination as numerically identical. That is, he seems to want to say that 'objects of imagination' *are* ideas of sense, and yet that they are perceived by the imagination and not by sense.

I think that TVV 10 includes a crucial hint as to the correct way to read our three passages. There, as we have seen, Berkeley says that the imagination "represents all sensible things". In keeping with this hint, I believe that by 'object of imagination' Berkeley means to denote the *representational content* of ideas of imagination, rather than ideas of imagination themselves. I take Berkeley to have a pictorial understanding of representation according to which the content of a representation is whatever it depicts.[39] Since ideas of imagination copy or image ideas of sense, the representational contents of ideas of imagination are none other than ideas of sense.

It is not hard to see that this reading fares much better than the alternative I just considered.[40] When, at TVV 9, Berkeley says that "objects of the imagination… originally

[39] Pending additional factors, discussion of which would take me too far afield, a representation can depict a single particular, or a whole range of particulars of a given sort (cf. PHK Introduction, NTV 149-59). In principle, depiction requires some degree of resemblance, but the degree may vary (cf. PHK 137-8 on Berkeley's apparent commitment to the possibility of resemblance coming in degrees).

[40] To my knowledge, neither of these readings are explicitly considered in the secondary literature (though TVV 39 is frequently discussed for its bearing on Berkeley's doctrine of signs—see, e.g., Rickless (2013), Winkler (2005)). This is most likely because adequate attention has not been paid to these important passages from TVV, especially as regards their bearing on Berkeley's view of the imagination's role in perception. The first reading—the one I reject—is one that initially appealed to me before a useful discussion with Pen Maddy helped me to see its flaws.

belong… to some other sense or faculty", he means that in mediate perception by sense, the imagination represents ideas of sense that were originally immediately perceived (and thus originally accompanied by appropriate motions at the sense organs). When, at TVV 10, Berkeley says that "The peculiar objects of each sense… may become objects of imagination", he means that the ideas of sense we immediately perceive may come to be represented by the imagination (recall that Berkeley makes just this point at PHK 1, claiming that the imagination can "barely represent" ideas originally perceived by sense). And when, at TVV 39, Berkeley says (i) that in mediate perception by sense "things not actually perceived by sense are signified or suggested to the imagination, whose objects they are, and which alone perceives them", and then (ii) that in mediate perception by sense, one idea of sense "offer[s] to the mind another idea [of sense], which has been frequently joined with it", he means that in mediate perception by sense the imagination represents ideas of sense that are suitably associated with other ideas of sense. I believe this is the correct reading of the three passages.

Notice how this reading conditions Berkeley's 'perception' talk: it allows him to say that in both immediate perception *and* mediate perception by sense, the entities we perceive are ideas of sense. It is just that the verb 'perceive' picks out importantly different processes in each case: in immediate perception, to perceive is to be in immediate cognitive contact with ideas of sense, i.e. real things; in mediate perception by sense, to perceive is to be in immediate cognitive contact only with a mental representation of ideas of sense, i.e. a representation of real things. This helps to explain why we don't usually find Berkeley talking about *perceiving* ideas of imagination, and also why it is so easy to miss the imagination's role in the theory of vision when one focuses primarily on NTV and does not

attend to the three crucial passages in TVV that I have been focusing on, or to their connection with Berkeley's PHK discussion of the imagination and its ideas.

To keep things somewhat clear, I will distinguish between '*having'* ideas and '*perceiving'* ideas, where what one 'has' is a function of the kind of mental state one is actually in, and what one 'perceives' is a function, roughly, of the epistemic upshot of one's being in that state. Accordingly, the only way to *have* an idea of sense is to immediately perceive it. But one can also mediately perceive an idea of sense by *having* an idea of imagination that represents that idea of sense. When I mediately see the glowing iron bar's heat, I do not actually have a tangible idea of sense of heat—I do not touch, or bring my skin near to, the hot iron bar. However, I still perceive said tangible idea of sense by having an idea of imagination that represents it.[41]

In addition to the textual grounds I've just reviewed, there are some independent philosophical grounds for the reading I am recommending. First, as I explain in greater detail below (section 3.4), Berkeley thinks that we can make perceptual errors at the level of mediate perception by sense. In such a case, a perceiver has an idea of imagination that represents an idea of sense in a way that fails to match the lawful order of nature prescribed by God. To accommodate this possibility, Berkeley needs mediate perception by sense to be capable of misrepresentation, and hence, to be in the business of representing, in general. Second, as I just observed in the last paragraph, Berkeley thinks that I can mediately perceive by sense a certain idea of sense even without any of the corporeal motions or impressions that are lawfully required to accompany the actual *having* of that

[41] For consistency, I have already been talking this way, though without explaining why, through this and the last chapter.

idea of sense (e.g., I can perceive an idea of heat without touching anything hot). This indicates that mediately perceiving by sense such-and-such ideas of sense cannot be a matter of actually having those ideas of sense, since the lawful order of nature requires that certain corresponding corporeal motions occur whenever we have ideas of sense (cf. TD 241). Thus, mediately perceiving by sense an idea of sense must be a matter of having an idea of imagination that represents that idea of sense. In light of both these and the aforementioned textual considerations, I take Berkeley to remain firmly committed to the representational contrast in his theory of vision. And, furthermore, we can now see that the representational contrast has important implications for Berkeley's view of the nature of the visual process, and of mediate perception by sense, more broadly.

3.2 The Volitional Contrast Revisited

The volitional contrast, as drawn in Berkeley's PHK discussion of the imagination, says that ideas of sense are caused by God's will and ideas of imagination are caused by human will.

Unsurprisingly, Berkeley thinks that mediate perception by sense seems involuntary. Discussing the sort of suggestion that occurs in vision he says, "so closely are they [the suggesting idea and the thing suggested] united that it is not in our power to keep out the one except we exclude the other also" (NTV 51). And later, Berkeley writes that, "We cannot open our eyes but the ideas of distance, bodies, and tangible figures are suggested by them [by the visible ideas we immediately perceive]… [S]wift, and sudden, and unperceived is the transition from visible to tangible ideas…" (NTV 145). So, the transition from immediate perception to mediate perception by sense occurs swiftly and

suddenly, and the only way we can avoid it is by stopping ourselves from immediately perceiving in the first place.

The apparent involuntariness of this process can seem difficult to reconcile with its being a product of human will. However, a standard move in the visual theory of Berkeley's day—a move he himself makes in his account of suggestion—is to argue that the mental processes that supplement impoverished retinal information—whether conceived as judgment, inference, suggestion, etc.—occur too *quickly* for us to notice. It is thus open to Berkeley to argue that in mediate perception by sense we will ideas of imagination into existence so quickly that we *do not notice* the characteristic phenomenology of exerting the will. An independent philosophical reason that requires Berkeley to view mediate perception by sense as a product of human will is that (as mentioned a moment ago, and as we shall see in more detail below (section 3.4)) mediate perception by sense can err—it can misrepresent reality—and since God is incapable of imperfection according to Berkeley (S 289, cf. TD 241), such error must be due to human will.[42]

3.3 The Phenomenological Contrast Revisited

The phenomenological contrast, as drawn in Berkeley's PHK discussion of the imagination, says that ideas of sense are experienced as being stronger, more distinct, and more vivid than ideas of imagination. Where the previous two points of contrast have been relatively easy to square with Berkeley's theory of vision, this one presents more difficulty.

[42] Cf. Migely (2007) for an independent line of argument that Berkeley takes mediate perception by sense to depend on human will.

The problem is that Berkeley repeatedly emphasizes in the writings on vision that the tangible ideas we mediately see and the visible ideas we immediately see tend to be phenomenologically blended together to the point of indistinguishability. At NTV 51 he explains that the ideas "which are only suggested by sight, do often more strongly affect us, and are more regarded, than the proper objects of that sense". The two classes of ideas "are, as it were, most closely twisted, blended, and incorporated together" (ibid.) so that "we find it so difficult to discriminate between the immediate and mediate objects of sight, and are so prone to attribute to the former what belongs only to the latter" (ibid.). At NTV 79 he explains that "the very different and distinct ideas of those two senses [sight and touch] are so blended and confounded together as to be mistaken for one and the same thing". At NTV 145 (in a passage we've already seen part of) he reiterates the point:

> We cannot open our eyes but the ideas of distance, bodies, and tangible figures are suggested by them. So swift and sudden, and unperceived is the transition from visible to tangible ideas that we can scarce forbear thinking them equally the immediate object of vision. (NTV 145)

In most situations, Berkeley thinks, an ordinary perceiver will find it impossible to distinguish between the immediately seen visible ideas and the mediately seen tangible ideas that figure in her experience. Both will seem equally like immediately perceived (specifically, seen) ideas of sense.

This point about phenomenological blending and indistinguishability is important to Berkeley's theory of vision. One of his central claims in the theory is that much normal visual perception actually consists in the perception of tangible ideas; another central claim is that visible and tangible ideas are utterly heterogeneous and do not resemble each other in any way. But when we open our eyes and see the world around us, we don't *seem*, on the

face of it, to be seeing tangible ideas; nor do we seem to be having two fundamentally heterogeneous kinds of experience. To accommodate these powerful intuitions, which threaten to contradict some of the central claims of his theory, Berkeley must appeal to the phenomenological blending and indistinguishability of the relevant visible and tangible ideas.[43] He must hold that the representations of tangible ideas of sense evoked by the imagination when we mediately perceive those tangible ideas by the sense of sight tend to be phenomenologically blended with the visible ideas of sense we immediately perceive when such-and-such motions occur at our retinas, so that the two classes of idea tend to be phenomenologically indistinguishable from each other.

It is worth recalling that in the PHK discussion of imagination Berkeley's topic is, by contrast, chimeras: a broad class of mental states including not only erroneous mediate perceptions by sense, but also dreams, fantasies, hallucinations, etc. Hence, for reasons proprietary to this topic, and thus proprietary to the PHK discussion, it might make sense to invoke the phenomenological contrast: at least some chimerical states are plausibly more faint or indistinct than ordinary sensory perceptions (I cannot form a voluntary mental image of the sun that is as bright as the real sun, to use Locke's example). But such reasons are not relevant to Berkeley's concerns in the theory of vision. There, he aims only to explain how we see various features of the world around us in ordinary visual experience, features which do not normally stand out to us as being any less vivid, strong, and distinct than the features Berkeley identifies as immediately seen ideas of sense (e.g., color and light).

[43] Classic discussions of this aspect of Berkeley's theory of vision are found in Armstrong (1960), Pitcher (1976), and Atherton (1990). For an excellent recent discussion, see Schwartz (2019).

Ultimately, Berkeley is able to explain the phenomenological blending and indistinguishability of sense and imagination that figures so prominently in the theory of vision in a way that mitigates its prima facie inconsistency with the phenomenological contrast. His explanation relies on two factors. The first is the frequency with which the relevant visible and tangible ideas are conjoined in experience. At *Alciphron* 4.12 he argues (in the voice of Euphranor) that while all ideas of sense function as signs, only our visible ideas function, collectively, as a language.[44] He has Euphranor explain,

> It is the articulation, combination, variety, copiousness, extensive and general use and easy application of signs (all which are commonly found in vision) that constitute the true nature of language. Other senses may indeed furnish signs; and yet those signs have no more right than inarticulate sounds to be thought a language. (Alc. 4.12)

Because visible ideas of sense are more copious and have a more extensive and general use (as signs) than any other class of ideas of sense, they must be experienced in conjunction with their respective significata more frequently than any other class of ideas. Berkeley also explains (NTV 51) that the relevant visible and tangible ideas "have a far more strict connection than ideas have with words". So, the relevant visible and tangible ideas are better correlated with each other in experience than either other groups of ideas of sense, or ideas and words. At NTV 145 Berkeley says that "nothing, certainly, does more contribute to blend and confound them [visible and tangible ideas] together than the strict and close connection they have with each other" (NTV 145).

The second factor is attention. At NTV 59 Berkeley argues that we attend to objects "in proportion as they are adapted to benefit or injure our own bodies, and thereby

[44] Berkeley's conception of ideas as signs, and visual perception as a language or system of signs, were introduced in the previous chapter (see chapter 1 section 2.2 above).

produce in our minds the sensations of pleasure or pain". Thus, we attend to tangible ideas far more than visible ideas because "bodies operating on our organs by an immediate application, and the hurt or advantage arising therefrom depend[s]… altogether on the tangible, and not at all on the visible, qualities of any object". Berkeley draws a general conclusion here concerning the function of vision:

> [T]he visive sense seems to have been bestowed on animals, to wit, that, by the perception of visible ideas (which in themselves are not capable of affecting or anywise altering the frame of their bodies), they may be able to foresee (from the experience they have had what tangible ideas are connected with such and such visible ideas) the damage or benefit which is like to ensue upon the application of their own bodies to this or that [tangible] body which is at a distance. (NTV 59)

Thus, concerning the qualities of extension/magnitude and figure, for example, Berkeley writes,

> Hence it is that, when we look at an object, the tangible figure and extension thereof are principally attended to; while there is small heed taken of the visible figure and magnitude, which, though more immediately perceived, do less concern us, and are not fitted to produce any alteration in our bodies. (NTV 59)

Even though, in the context of vision, tangible ideas are only perceived mediately, they are more important to our survival and well-being than the visible ideas we immediately see, and so we attend to them (the tangible ideas) more.

Because the relevant visible and tangible ideas are conjoined in experience with unusually high frequency, and because each time we experience them together, the pragmatic functionality of vision inclines us to attend to the tangible, rather than the visible, our minds (very early in life) develop what Berkeley terms a "prejudice" in virtue of which the relevant visible and tangible ideas seem "so blended and confounded together as to be mistaken for one and the same thing" (NTV 51, 79, cf. 145-6). This "prejudice…

[comes to be] so familiar to our minds, so confirmed and inveterate, as… will hardly give way to the clearest demonstration" (NTV 146).

This story is consistent with the phenomenological contrast from Berkeley's PHK discussion of imagination. He can say that the ideas of imagination we have when we mediately see tangible ideas are, in fact, less phenomenologically strong, vivid, and distinct than immediately perceived ideas of sense (including immediately seen ideas), *but* that we attend to these ideas of imagination relatively more closely so that they *seem* to us to be just as strong, vivid, and distinct as their immediately perceived counterparts. It is intuitively and empirically plausible that fainter, weaker parts of experience can dominate attention. Engaged in boisterous conversation, my attention can drift away from my interlocuters' words to a faint humming sound in the background whose cause interests me more than the conversation—this can happen to the extent that I cease to know what my interlocutors are saying because I am so highly focused on the specific character of the background hum. It is also intuitively and empirically plausible that inattention can prevent us from knowing what goes on in our own experience, as is attested by the well-documented phenomena of inattentional blindness.[45]

It is a further question whether Berkeley can allow for this sort of thing, given his other philosophical commitments. Many read Berkeley as committed to the *transparency of the mental*. As George Pitcher puts it, Berkeley is committed to a "view of the mind as a sort

[45] Admittedly, this is only true on certain interpretations of 'experience'. On some views (e.g., higher-order theories of consciousness) one is not conscious of something if one is attentionally blind to it. In general, when I talk of experience or consciousness, I have in mind something like a first-order theory of phenomenal consciousness on which we can enjoy phenomenal consciousness of x, y, and z, and it remains a further question whether we can attend to, or report on, or know anything about, x, y, or z. This is the way I take Berkeley to think about experience/consciousness. See the following two notes.

of transparent medium, so to speak: there are no dark or hidden regions in it—everything that goes on in it is fully and clearly known to the person whose mind it is" (1976, p. 21). If this is really Berkeley's view, then he cannot say that any of our ideas seem otherwise than they truly are. One factor that can seem to suggest this is Berkeley's view is that he often appeals to introspection to argue against the existence of certain mental entities. Descartes and Malebranche, for example, had argued that the angle of convergence of the optic axes is a datum used by the mind in generating visual perceptions of distance. Berkeley retorts: "But that this is not true I am convinced by my own experience; since I am not conscious that I make any such use of the perception I have by the turn of my eyes" (NTV 19). In order for something to be the sort of datum that the mind can utilize in visual processing, Berkeley thinks, it needs to be perceived: "it is evident that no idea which is not itself perceived can be the means of perceiving any other idea" (NTV 10). Berkeley concludes that the angle of optic convergence must fail this test (i.e., must not be perceived) because he cannot find it anywhere in his conscious experience when he introspects. Likewise, an inability to find abstract ideas anywhere in his conscious experience forms a crucial part of his argument against the existence of such ideas (PHK 5-6). It might seem that such appeals to introspection only carry philosophical weight if the transparency of the mental is assumed.

However, we have already seen why Berkeley cannot endorse the transparency of the mental (as it is characterized by Pitcher, anyway): in the previous chapter (1.3.1) I showed that Berkeley takes immediate perception to be insufficient for knowledge (cf. S 253, 305). He must therefore think that I can immediately perceive an idea with feature *f* without knowing that I am perceiving anything with *f*. Pitcher's assessment cannot be

correct. But all the same, I assume (with essentially all Berkeley commentators, including Pitcher) that immediate perceptions are *conscious*. (If immediate perception did not make one conscious of an idea, it is entirely unclear how it would work). I therefore take Berkeley to observe a distinction between *what we are conscious of*, and *what we know we are conscious of*.[46] Compared to present-day theorists who are committed to the possibility of fully unconscious perception, Berkeley does indeed endorse a qualified kind of mental transparency—he does think, as Pitcher subsequently puts it, that "There is no such thing as an unconscious mental act, state, event, process, or whatever: everything that exists, or takes place, in the mind is completely conscious (1976, pp. 21-2).[47] But it does not follow, for Berkeley, that everything that exists or takes place in the mind is *known* by the person whose mind it is. To the contrary, Berkeley thinks that we can be conscious of something without knowing it—"all that is perceived" he tells us, "is not considered [=attended]" (PHK I 16). Thus, he can consistently say that some of the ideas we are conscious of possess features—like weakness or faintness—that we do not notice, and hence don't know about, because of the aforementioned "prejudice" of attention.[48]

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[46] By 'what we are conscious of' I mean what we are phenomenally conscious of, on a first-order understanding of consciousness. I think that Berkeley takes immediate perception to make us conscious, in this sense, of ideas of sense. Whether we become conscious of our being conscious of certain of these ideas of sense (or certain of their features), whether we attend to any of the ideas or their features, or recognize, or (come to) know anything about them are all further questions. As I argued in the previous chapter (see 1.3.1), Berkeley thinks that immediate perception includes no doxastic element at all (cf. S 253, 305).

[47] I therefore find Rick Grush's formulation of the transparency thesis (2007, p. 435) more acceptable as an interpretation of Berkeley: "the entities appealed to in a psychological explanation of some phenomenon must be *capable of* being known, or consciously reflected upon, by the subject" (my emphasis).

[48] It might be objected that Berkeley must be committed to the transparency of the mental because of his *esse* is *percipi* doctrine. If I have an idea with feature *f* but do not know I am perceiving anything with *f*, the argument would go, then *f* cannot exist; so, my idea cannot have *f*. But it is very unlikely that Berkeley thinks the sort of perception required for existence must involve knowledge of what is perceived (he treats 'perceive' and 'know' as distinct concepts, as we've just seen, and see 1.3.1 above).

Importantly, though, Berkeley thinks this prejudice can in principle be unlearned: "The prejudice… sticks so fast that it is impossible, *without obstinate striving and labor of the mind*, to get entirely clear of it" (NTV 146, my emphasis). Through sufficient mental effort, we can overcome the prejudice and know our ideas as they truly are. This, I take it, is what Berkeley believes himself to have done in reaching the central conclusions of his theory of vision. In the introduction to PHK he provides further insight into what this mental effort involves. He claims that "so long as I confine my thoughts to my own ideas divested of words, I do not see how I can easily be mistaken. The objects I consider, I clearly and adequately know." (PHK I 22). And (as we saw in the previous chapter) he goes on to add the qualification that such "clear and adequate" knowledge results only from "an *attentive* perception of what passes in my own understanding" (PHK I 22, my emphasis). If I clearly and adequately know the ideas involved in visual perception, then I know the tangible ideas to be tangible and the visible ideas to be visible—in other words, I don't succumb to the relevant prejudice and "think… them equally the immediate object of vision" (NTV 145). And by the same token, I also know the tangible ideas to be objects of imagination (TVV 9, 10, 39), and to be weaker, fainter, and less distinct than immediately seen visible ideas and other ideas of sense. Such knowledge, Berkeley tells us, results from attentive perception—that is, from using attention in a certain way. Hence, Berkeley thinks that while habits of attention can—and, for most of us most of the time, do—prevent us from noticing and knowing important aspects of our ideas, attention can also reveal those aspects to us when it is directed in the right way and with enough effort. His appeals to introspection do not require the transparency of the mind (in Pitcher's sense) so long as

Berkeley takes himself to have introspected under the condition of "attentive perception" just characterized.

Like Descartes, Berkeley thinks that the products of ordinary sensory perception and imagination can be blended together within our experience to the point of phenomenological indistinguishability. However, for Descartes this possibility follows from the fact that the imagination is capable of producing simulacra of sensory perceptions that are in principle impossible to tell apart from the originals. Descartes seems to arrive at this in-principle possibility *a priori* (through philosophical meditation). For Berkeley, by contrast, the possibility of the relevant sort of indistinguishability arises because it is possible, on Berkeley's view, for us to be conditioned so that we use attention in a way that effectively makes us attentionally blind to the relevant phenomenological differences between ideas of sense and ideas of imagination. In visual perception, Berkeley thinks, almost all of us are conditioned to use attention in such a way, and so almost all of us habitually find mediately seen ideas to be indistinguishable from immediately seen ideas. But this is a merely empirical, *de facto* sort of indistinguishability that we can, in principle, overcome (even if it is prohibitively difficult to do so in practice, for most of us).

3.4 The Nomological Contrast Revisited

The nomological contrast, as drawn in Berkeley's PHK discussion of imagination, says that ideas of sense are constrained by the laws of nature, while ideas of imagination are not. This can seem to be inconsistent with Berkeley's theory of vision because, for reasons to be explained, learning to mediately perceive by sense is effectively a process by which the

mind soaks up, or internalizes, some of the simple laws of nature that structure its environment.[49]

Recall that a law of nature is a rule that God follows in producing ideas of sense (PHK 30). Laws of nature create signification relations between ideas of sense. A simple law of nature prescribes a particular pattern of signification relations among our ideas of sense, and in at least some cases, this is a pattern of constant conjunction. For example, consider the law that *fire warms* (this is Berkeley's own example, see PHK 31). This law prescribes that ideas of fire and ideas of warmth are constantly conjoined in human experience, so that fire-ideas signify warmth-ideas. The distinction between signification, as natural metaphysical relation, and suggestion, as representation-involving psychological relation, will turn out to be of paramount philosophical importance, for Berkeley.

Patterns of constant conjunction among our ideas of sense lead to the mental associations that drive mediate perception by sense. Because fire-ideas signify warmth-ideas, we come to associate fire and warmth. In virtue of this association, we mediately see warmth when we look at fire (just as, in Philonous's example from TD 204, we mediately see that a glowing iron bar is hot). Thus, the ordering of ideas in the mind comes to track the lawful ordering of ideas instituted by God in nature: my mind progresses, via *suggestion*, from having a visible idea of sense (of flames) to having an idea of imagination with tangible content (warmth), and this tracks the lawful progression that occurs via

[49] See chapter one, section 2.2.2 for more on laws of nature, including the distinction between simple and general laws. Note also that relations constant conjunction of the sort that drive suggestion are prescribed by simple laws.

signification in nature (without the need for any representations), from visible ideas of sense (of flames) to tangible ideas of sense (of warmth).

That the possibility of this sort of tracking is implicit in the theory of vision is not surprising, since one of the main notions emphasized in the theory is that learning to see is a matter of learning a divinely instituted visual language, i.e., internalizing a system of visible-to-tangible signification relations deployed by God. That our visible and tangible ideas of sense comprise such a system of signs is just part and parcel of Berkeley's broader, semiotic view of the natural world, which I discussed in the previous chapter (chapter 1, section 2.2). For my imagination to come to generate ideas in an order that tracks the natural ordering of these visible and tangible signs is none other than for me to successfully learn the divine visual language.

But (as we have seen) Berkeley's goal in his PHK discussion of imagination is to characterize ideas of imagination in a way that will permit him to explain chimerical perceptions. And one of the essential characteristics he attributes to ideas of imagination in this context is that they are unconstrained by the laws of nature (and, indeed, this is what we should expect of chimerical perceptions that deviate from reality). This lack of constraint by the laws of nature can seem to conflict with the possibility of the sort of tracking I have been describing, the sort of tracking so central to the theory of vision.

However, just because many ideas of imagination are ordered in a way that tracks the lawful ordering of ideas of sense, it does not follow that these ideas of imagination are *constrained by* the laws of nature. We can see this by returning to the issue of illusory or "chimerical" perception. Berkeley thinks that the process of mediate perception by sense

can generate perceptual illusions.[50] He has Philonous consider the classic example of illusorily seeing "an oar, with one end in the water" as bent. Philonous explains:

> in the case of the oar, what he [a perceiver] immediately perceives by sight is certainly crooked; and so far he is in the right… his mistake lies not in what he perceives immediately and at present (it being a manifest contradiction to suppose that he should err in respect of that) but in… the ideas that, from what he perceives at present, he imagines would be perceived in other circumstances. (TD 238)

When one illusorily sees the oar in water as bent it is not because anything has gone wrong at the level of immediate perception. Rather, it is because mediate perception by sense has gone wrong.[51] In reality, the laws of nature order the ideas of sense so that if one were to touch the submerged oar, one would have tangible ideas of sense of a straight piece of wood. But when one illusorily sees the oar as bent, immediate visual perception of the oar suggests to one's imagination a tangible idea that "would affect his touch, as crooked things are wont to do" (TD 238), i.e., a tangible idea of a bent or crooked piece of wood etc. Thus, one illusorily sees the oar as bent because the ordering of ideas created in one's mind via suggestion *fails* to track the lawful ordering of signification relations among ideas of sense actually instituted by God in nature.

It is hardly surprising that Berkeley thinks suggestion can come apart from signification so as to generate perceptual error in this way. Signification is a metaphysical relation instituted by God, whereas suggestion is a merely psychological relation that arises in finite human minds because of their contingent histories of experience.[52] Even if the

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[50] Berkeley also thinks that the Barrow illusion (NTV 29-34) and the moon illusion (NTV 67-78) are due to mediate perception by sense.

[51] More accurately, at TD 238 Berkeley is arguing that such errors are due to mediate perception in general, including mediate perception by sense, but also including forms of mediate perception other than mediate perception by sense. See note 29 above on different forms of mediate perception.

[52] It should be noted that commentators tend to conflate signification with suggestion. One exception is Glauser (2007, 2017, pp. 358-9). It is true that Berkeley uses 'signification' and 'suggestion' interchangeably

mind effectively 'soaks up' or internalizes certain simple laws of nature in the way I've described, the store of associations internalized in this fashion is minimal in comparison to the full range of lawful signification connections among ideas of sense instituted by God in nature.

For example, Berkeley thinks the "inward parts" of natural mechanisms are connected by signification relations, but since we don't typically interact with many of these inward parts, we are unlikely to form mental associations that track many of these signification relations. Relatedly, Berkeley tells us that the mechanisms discoverable in nature are infinite in number and "inexhaustible" (S 283), implying that there are always in principle more signification relations available to be discovered than suggestion relations that have been learned by finite minds to date. Thus, the mind's limited store of associations cannot possibly prepare it for every situation it might get into. In sufficiently novel situations, the usual associations are bound to make suggestion represent ideas of sense in a way that does not match the ordering of signification relations among ideas of sense actually created by God.

In principle, any token process of mediate perception by sense can err in this way. Thus, any of the ideas of imagination produced in mediate perception by sense can, in principle, deviate from the ordering prescribed by the laws of nature. The ideas of imagination produced via mediate perception by sense therefore cannot be constrained by the laws of nature, even if their ordering tends to resemble the ordering of ideas that are so

in some texts (TVV 39, NTV 64). But in others, (PHK 60-6, NTV 140, and cf. S 283, as discussed in the next body paragraph) he clearly uses 'signification' to mean something quite different from suggestion and this, I think, is enough evidence to credit him with the distinction.

constrained (i.e., of the ideas of sense). Berkeley's theory of vision is therefore compatible with the nomological contrast he draws in his PHK discussion of imagination. Additionally, his account of mediate perception by sense can help us understand more concretely how the imagination contributes to chimerical perceptions.

We can now see that Berkeley's PHK discussion of imagination is consistent with his theory of vision, and with his TVV discussion of imagination, therein. And we have seen several respects (e.g., the role of representation, the role of attention, perceptual error) in which putting together the results of the two discussions of imagination enriches our understanding of the process of mediate perception by sense, and of Berkeley's theory of perception more generally.

Conclusion

We can also now see how the results of the PHK discussion and the TVV discussion can be put together to yield a characterization of Berkeley's general theory of the imagination and its ideas. According to this theory, the imagination causes such "chimeras" as dreams and hallucinations as well as commonplace perceptual errors and illusions (like the oar in water). However, it also causes a large proportion of the ideas we have in ordinary, veridical perception. Whether the imagination produces a chimera or error, or it produces part of a veridical perceptual experience, the ideas it produces are representations. These ideas are caused by human will (as opposed to divine will) and so are in principle fallible. They are phenomenologically weaker, less vivid, and less distinct than ideas of sense. But in many ordinary contexts, prejudicial habits of attention conceal this difference so that the ideas of imagination seem to us to be indistinguishable from the ideas of sense (this occurs

pervasively in vision). And while in many cases ideas of imagination are ordered (alongside the ideas of sense) in a way that tracks various signification relations structuring the physical environment, they can also deviate from this ordering for a variety of reasons (dreams, hallucinations, perceptual illusions and errors, deliberately fantasizing or daydreaming, etc.). Hence, they are in principle unconstrained by the laws of nature that structure the physical world. Berkeley's ideas of imagination are fallible psychological representations of physical things, which representations are caused by the human mind (rather than a divine mind), and which differ phenomenologically from ideas of sense in subtle ways that usually escape our notice.

CHAPTER 3: Physical Objects

Introduction

We can now see that Berkeley is committed to the existence of two very different kinds of ideas and thinks that each kind plays an important role in perception of the world around us. In this third and final chapter of the dissertation, I consider the ramifications of this bifurcated ontology of ideas for Berkeley's idealism. I do so by focusing on his view of *physical objects*.

Berkeley famously holds that physical objects are constituted by *collections of ideas*: "[A] certain color, taste, smell, figure and consistence having been observed to go together, are accounted one distinct thing, signified by the name *apple*. Other collections of ideas constitute a stone, a tree, a book, and the like sensible things" (PHK 1). "[I]f at a table all who were present should see, and smell, and taste, and drink wine, and find the effects of it, with me there could be no doubt of its reality" (PHK 84). The existence of a glove amounts to "that I see it, and feel it, and wear it" (TD 224). A cherry consists in "the sensations of softness, moisture, redness, [and] tartness" (TD 249). In the case of the human body, "one combination of a certain tangible figure, bulk, and consistency of parts is called the head; another the hand; a third the foot, and so on of the rest" (NTV 96). In view of Berkeley's bifurcated ontology of ideas, the identification of objects with idea-collections raises an important question: just what kind of ideas are included in these collections? Articulating the answer to this question will place us face-to-face with a new and powerful version of Berkeleian idealism.

As was the case above (see chapter 1, 2.2) I set aside the issue of unperceived existence here—I leave it open whether, when members of one of these idea-collections go unperceived by human beings, they exist actually in God's mind, or exist only potentially in virtue of the laws of nature. The issues I focus on are, broadly, the *constitution* and *individuation* of physical objects and the *perception* of physical objects. The manner in which these issues are connected in Berkeley's thought has not been adequately appreciated by commentators.

I begin by explicating Berkeley's view of what an object *is,* metaphysically speaking. I then briefly consider the issue of whether Berkeley thinks objects are immediately or mediately perceived by sense. Finally, I show that Berkeley is committed to a novel version of the classic philosophical distinction between objects *as they are in themselves* and objects *as experienced by us*. As a result, the familiar story about Berkeley—whereon he identifies the physical world with the ideas in our minds—is shown to be seriously mistaken, and Berkeley is shown to embrace his own proprietary doctrine of "twofold existence" (PHK 86, cf. Introduction, above). I end by briefly examining the consequences of these results for Berkeley's relationship with skepticism.

1 Objects as They Are in Themselves

One way to gain insight into Berkeley's metaphysics of objects is to consider the role it plays in his epistemology. In cases of referential perceptual illusion, objects appear to possess properties that they don't actually have—the oar appears bent when really it is straight. For Berkeley, making an error like this is a matter of being mistaken about the

ideas contained in a collection that constitutes an object—imagining the oar as including an idea of tangible bentness when in reality it includes no such idea. This raises a metaphysical question: what (or who) determines which ideas really are and are not in a given physical object, such as the oar?

Two kinds of answer are possible: first, maybe *human minds* somehow determine which ideas go into objects; second, maybe it is *God's divine mind* that makes this determination. Primary texts can seem to support both answers equally well.[1] In the following subsection, I introduce and criticize two versions of the made-by-humans answer and one version of the made-by-God answer. In doing so, I sneak up on the reading of Berkeley's metaphysics of objects I believe to be correct, which I present in the subsequent subsection.

1.1 How Not to Think About Objects

According to Pearce (2014, 2017), the combinations of ideas that make objects are encoded in human *linguistic conventions* that tell us to speak of certain groups of ideas, but not others, as individual objects. On this reading, Berkeley takes objects to have the same status he famously confers on Newtonian forces: they are "quasi-entities" (2017, p. 103, cf. 2014). A problem with this approach is that Berkeley thinks ideas become psychologically

[1] Primary texts that support divinely-made objects include PHK 64 and 65 where Berkeley says ideas are "formed into machines" by God and that objects are "like so many instruments in the hand of nature"; NTV 110 where he describes ideas of sense as 'constituting' or 'composing' a human body; Alc. 4.10-11 where he argues that objects "such… as trees, houses, men, rivers, and the like" are signified by visible ideas of sense (see discussion of signification later in this section). Texts that support human-made objects include TD 245-6 and TD 249—the famous cherry passage—where Berkeley talks of ideas "united into one thing by the mind", and PHK 1 where he talks of groups of ideas that come to be "marked by one name, and so to be reputed as one thing". I show in section 3, including in note 23, that these texts are equally consistent with divinely-made objects.

connected through mediate perception by sense extremely early in development ("in… earliest infancy"), well before we acquire any linguistic abilities (Alc. 4.11, cf. NTV 144). And because not all ideas are constantly conjoined with all other ideas, mediate perception by sense naturally groups ideas of sense together in some ways and not others, generating actual (not quasi-) collections of ideas independently of linguistic convention.

Furthermore, it is hard to see how linguistic conventions can be learned in the first place if there are not already objects in view with which to coordinate said conventions: for example, how can you ostensively teach a child what an object-name refers to if there are not *already* objects that can be perceived and pointed out? A natural response is to say that the teacher could point to the various ideas included in an object and teach the child to refer, collectively, to these with the name *f*. But Berkeley endorses a form of sensory atomism (cf. Schwartz 2019, 1.2 below), holding that visible and tangible extension are ultimately comprised of very small punctiform ideas or *minima*, and it is extremely implausible that we teach children to apply names by explaining to the children exactly which groups of sensible points should be grouped under which names. It is far more plausible—and more in keeping with Berkeley's view that we learn to mediately see in earliest infancy—that points are *already* grouped through mediate perception by sense when children begin to learn language, and that these groups[2] comprise the experienced units to which we teach the children to attach names.

[2] I have in mind both groups of points in a single sense-modality—e.g., visible points grouped into a visible circle—and groups of points across sense-modalities—e.g., a grouping of a tangible extension, comprised of tangible points, and various constantly conjoined visible extensions, each comprised of visible points. This picture is elaborated in the following subsection (1.2).

According to Atherton (2008) and Fields (2020) human minds make objects by grouping ideas through mediate perception by sense. This approach faces a different problem: as we have seen (and as Atherton and Fields both agree) mediate perception by sense is fallible. Sometimes, suggested ideas fail to correspond to the ordering of signification relations in fact prescribed by the laws of nature—the bent visible appearance of the half-submerged oar suggests a tangibly bent shape, but this is an error since the laws of nature in fact dictate that the stick would feel tangibly straight if you touched it.

Mediate perception by sense cannot both *constitute* objects and be capable of *misrepresenting* objects. For example, Atherton (2008), reading suggestion as a kind of expectation or prediction, claims that an object is an immediately perceived idea (or ideas) plus "a set of expectations or predictions [=suggestion]" (p. 95). She then claims that mediate perception by sense can misrepresent in the manner I just described. When this occurs, our expectations or predictions are disconfirmed by the ideas of sense that God in fact produces (or is disposed to produce) in accord with the laws of nature, and when this happens, Atherton argues, we have not perceived a real object: "We have perceived a real cherry when those expectations are confirmed, but we have misperceived when they are not" (ibid.). The problem is that in misperceiving we are *still* perceiving a group of ideas combined through mediate perception by sense, so combining ideas through mediate perception by sense cannot be sufficient for the formation of a real physical object.

Additionally, because mediate perception by sense depends on constant conjunction, it must be learned through "time and experience, by repeated acts" (Alc. 4.11), and at the beginning of this learning process certain groups of ideas of sense, but not

others, must *already* be connected via signification relations so that we experience their members, but not members of other possible groups, in constant conjunction. Indeed, as we saw in the previous chapter (section 3.4) Berkeley clearly thinks that most cases of suggestion track signification relations actually present in the natural world. It is not as if experience leads us to mentally associate random groupings of ideas (that would be antithetical to Berkeley's language of nature idea).

These considerations point toward the fact that our practices of grouping ideas in perception via suggestion, and in speech or thought via linguistic convention, must be *accountable* to some independent standard, both so that we can understand what makes it correct (or incorrect) to take an object to include a certain idea, and so that we can understand how it is possible for us to learn to perceive and think about objects on the basis of experience, in the first place.

Glauser (2007) satisfies this desideratum by arguing that *God* groups ideas into objects using *signification* relations. Such groups (when they involve constant conjunction, anyway) provide a basis for the bundles of ideas our finite minds form through mediate perception by sense, which in turn can provide a basis for many of our linguistic practices.[3] Prima facie, this reading seems to provide a metaphysics of objects to which our perceptual and linguistic practices can be accountable for their correctness or incorrectness.

But Glauser's broad appeal to signification raises yet another problem: without further qualification, signification is far too permissive to plausibly *individuate* objects.[4]

[3] I agree with the related point, emphasized by Fields (2022), that the laws of nature are epistemically normative, setting veridicality conditions for perception.
[4] Pearce (2017, pp. 184-5) raises the same objection against Glauser (2007).

General laws of nature group distinct objects together via signification, objects that ought to be individuated: the tennis racket and the tennis ball it hits are connected via signification but the ball and racket are not one object. It does not help to add the requirement that the ideas be constantly conjoined, since a perceiver can easily experience different objects in constant conjunction—the tennis pro might experience the ball and racket in constant conjunction so that viewing or feeling the ball suggests the racket, and yet the two still are not one object.[5] In the following subsection I offer a new solution to this problem.

1.2 How to Think About Objects

I believe the solution to the problem just noted is that God uses *specific* signification relations—not just any old signification relations—to group ideas of sense into objects. This is not an ad hoc solution because, first, it is much more intuitively plausible that objects are formed by certain *specific*, object-related signification relations than that they are formed by *any* and *all* signification relations (as Glauser's view implies), and second, there is textual evidence that Berkeley recognized the object-forming role of certain specific, signification relations.

In the most general terms, these privileged signification relations stand out because they constantly conjoin ideas of sense in an *especially* strong manner in ordinary perceptual experience so that the resultant groups of ideas have an *especially* strong

[5] For this reason, defenders of the view that objects are formed via mediate perception by sense face the same problem with individuation.

predictive utility for ordinary perceivers. The members of one of these groups tend to predict each other more strongly than they predict ideas of sense outside the group, and more strongly than these outside ideas predict them.[6] As a result, these groups are islands of unusually high predictive stability in the otherwise-less-stable, though still lawfully organized, sea of ideas of sense that we experience. I call these groups *predictive opportunities*.[7]

As I read Berkeley, an object is a predictive opportunity. As we saw in chapter one (section 2.2.2) Berkeley thinks that God organizes the natural world for our benefit: "without a regular course, nature could never be understood; mankind must always be at a loss, not knowing what to expect, or how to govern themselves, or direct their actions for the obtaining of any end" (S 160, cf. PHK 31). God's grouping ideas into predictive opportunities is a part of this divine enterprise. These groupings exhibit a unity we routinely exploit in the object-directed thought, action, and speech that pervade our lives.

Before I can identify specific signification relations that create predictive opportunities, I must introduce two important aspects of Berkeley's philosophy that we have not yet encountered. The first is his bifurcated view of extension. By 'extension', I mean a region of space with a shape and size. Berkeley's view of extension is bifurcated because he holds that there are *distinct visible* and *tangible* kinds of extension, occupying distinct visible and tangible spaces (NTV 111-3). Tangible extension is the proper object of

[6] Berkeley allows that some signification relations are more predictively powerful than others because they follow from relatively more universal laws of nature (S 266, PHK 65, and cf. Winkler 1989, pp. 255-63). I take this to imply that some lawful correlations among ideas of sense are stronger than others.
[7] As has been the case throughout the dissertation, I set aside the problem of unperceived existence. Here, notice that actual ideas in God's mind and potential ideas that God *would* create under such-and-such conditions can equally well comprise predictive opportunities in my intended sense.

geometry and physics (NTV 148-59, cf. DM 13). It can be two- or three-dimensional and resides in a three-dimensional tangible space. It is determinate, measurable, and mathematizable because it is not perceptually relative (NTV 55, 61, 148-59)—the tangible extension of the apple stays the same whether the apple is close to you or far from you. By contrast, visible extension is not the proper object of any precise science since, due to perceptual relativity, it is indeterminate,[8] not measurable, and not mathematizable (ibid.)—the apple has a large visible extension when viewed from up close, but a small visible extension when viewed from far away. Its visible shape also changes with shifts in perspective. Visible extension is two-dimensional, residing in a two-dimensional visible space that coincides with the height and breadth dimensions of the visual field (cf. Schwartz 2019, 2022a).

The second aspect is Berkeley's view that *visible* and *tangible secondary qualities* are necessarily co-instantiated with extension. He thinks that visible extension is necessarily colored (NTV 122-3), and that tangible extension is necessarily hard or soft, warm or cold, etc. (PHK 10). He takes these results to follow from his arguments against abstract general ideas (for example, color and extension must be co-instantiated because an idea of one abstracted from the other is inconceivable (NTV 130, PHK I 7, PHK 5)). Said results help to safeguard common sense, ensuring that tomatoes are really red, and snow is really cold. Going forward let it be assumed that visible extensions are colored, and tangible extensions are hard or soft, warm or cold, etc. With this background in view, we can begin to identify

[8] Berkeley is explicit about this indeterminacy in the passages referenced. He does not mean visible extension is indeterminate in the metaphysical sense that a Lockean abstract idea would be. I take him to mean that it is epistemically indeterminate because it is not stable enough to be meaningfully measured.

some of the specific signification relations that Berkeley takes to bind ideas of sense into objects.

The first sort of signification relation I consider connects visible parts of an object with other visible parts of the same object, such that movement[9] of one part signifies movements of the others but does not typically signify movement of any visible ideas outside the object. At NTV 110 Berkeley explicitly links such signification relations to the metaphysics of objects. He argues that when a newly sighted Molyneux patient immediately sees a man,

> There crowd into his [the patient's] mind the ideas which compose the visible man, in company with all the other ideas of sight perceived at the same time. But all these ideas offered at once to his view he would not distribute them into sundry distinct combinations, till such time as, by observing the motion of the [visible] parts of the man and other experiences, he comes to know which are to be separated and which to be collected together. (NTV 110)

Berkeley is explicitly concerned here with the ideas that "compose" or (as he says elsewhere in the same paragraph) "constitute" the visible man. Berkeley's point is that the newly sighted patient cannot visibly discriminate the man from surroundings until he (the patient) learns to group the extended visible parts of the man together into one unit. This happens through suggestion based on the constant conjunction of "the motion of the [visible] parts of the man". For example, movement of the man's visible arm across the room is typically accompanied by movement of his other visible body parts across the room but is not typically accompanied by movement of any other visible ideas.

[9] I leave it open whether movement of an idea consists in a single idea moving through space, or in a series of numerically distinct ideas appearing in contiguous spatial locations at successive times.

Of course, not all visible objects have articulable parts in the way a human body does, however, all visible objects *are* made of atomic visible points (*minima visibilia* (NTV 80-3)). Berkeley's claim in this passage is therefore strongest (because it has the most general applicability) if we take it to apply to visible points.[10] Thus understood, his claim is that for *any* visible object, the movement of some (or one) of the visible points in the object signifies movement of other visible points in the object but does not typically signify movement of any other visible ideas.

Berkeley is not explicit, but it seems safe to assume that the same sort of signification relations arise for tangible extension, too (Berkeley is committed to *minima tangibilia* just as he is committed to *minima visibilia* (NTV 54)). Hence, for example, movement of some tangible points on the man's tangible shin signifies movement of the rest of the man's tangible body but does not typically signify movement of any other tangible ideas. We can now see, at least in a rough way, how certain signification relations make visible extensions and tangible extensions, respectively, into predictive opportunities.

The next class of signification relations we must consider are those that connect visible and tangible extensions to each other. Several key passages about such relations are revelatory of Berkeley's view of objects. He writes, "The magnitude of the [tangible] object… continues *always invariably the same*; but the visible object still changing as you

[10] A theme in NTV 109 and 110 is the countability of perceptible units. Visible points are the smallest countable units we can see—for example, Berkeley references a "round… plane, of about thirty visible points in diameter" (NTV 44). In general, I do not consider the connections Berkeley draws between objects and number (NTV 109, PHK 12) because he is clear that number is a *notion* rather than an idea (S 288, 355-357) and providing a substantive interpretation of Berkeleian notions lies beyond the scope of this dissertation. However, see the appendix below.

approach to or recede from the tangible object, it has no fixed and determinate greatness" (NTV 55, my emphasis). The "tangible object [=extension]" and "visible object [=extension]" Berkeley mentions are clearly meant to belong to one and the same ordinary physical object: otherwise, it is not clear why approaching the tangible extension would predictably occasion changes in the visible extension, as Berkeley assumes.

This motif is repeated often in Berkeley's writings on vision—that is, he repeatedly talks of lawfully coordinated visible and tangible extensions in ways that presuppose the membership of the extensions in some common object. He writes, "Whenever we say an object is great or small, or this or that determinate measure, I say, it must be meant of the tangible and not the visible magnitude which, though immediately perceived [by sight], is nevertheless little taken notice of" (NTV 61). Again, he is talking about the tangible and visible magnitudes contained in *a single object.* Otherwise, the question he is answering—about which kind of extension we denote when we describe some such object as "great or small"—would make no sense. A little earlier he contrasts the changing visible extensions of the moon that one would see if one were to fly upward from earth's surface with the tangible moon, which has an invariant tangible extension (NTV 44). Both are members of a single object, *the moon.* He draws a similar contrast between the multitude of visible extensions of a tower and its invariant tangible extension (ibid.).[11] Again, both belong together to a single object, *the tower*. The texts just canvassed provide further insight into Berkeley's view of the signification relations that bind objects together.

[11] Berkeley's main point at NTV 44 is that the tangible moon and tangible tower are located in three-dimensional tangible space at some distance away from the perceiver. This clearly implies that they have tangible extensions of the sort that Berkeley discusses more explicitly in subsequent paragraphs, beginning around NTV 48.

A conspicuous aspect of these relations, which follows from the fact that visible extensions are perceptually relative and tangible extensions are not, is that there is a *many-to-one* relation between the visible extensions and tangible extension of a single object: the apple has many different visible extensions, each corresponding to a different perspectival view of the apple, but it has just one tangible extension. By the same token, a visible extension by itself underdetermines the tangible extension of the object it belongs to: the visible extension of the apple when viewed from up close could be equivalent to that of a whole building when viewed from far away, even though apple and building have very different tangible extensions (this example pertains to size, but mutatis mutandis for shape). Berkeley's general strategy is to close this underdetermination gap by appealing to signification relations involving additional visible features co-instantiated with visible extensions. I call these additional features *auxiliary visible ideas*.

He pursues this strategy most explicitly in his account of visual perception of tangible size. Listing the combinations of visible sizes and auxiliary visible ideas that suggest (and, per the laws of nature, signify) tangible sizes, Berkeley formulates the following *ceteris paribus* law:

> And these I find to be, *first,* the magnitude or extension of the visible object which, being immediately perceived by sight, is connected with that other which is tangible and placed at a distance; *secondly,* the confusion[12] or distinctness; and *thirdly*, the vigorousness or faintness of the aforesaid visible appearance. *Caeteris paribus*, by how much the greater or lesser the visible object is, by so much the greater or lesser do I conclude the tangible object to be. But, be the idea immediately perceived by sight never so large, yet, if it be withal confused, I… [perceive] the [tangible] magnitude of the thing to be but small. If it be distinct and clear, I… [perceive] it greater. (NTV 56)

[12] "Confusion" here refers to the focus blur we experience when viewing objects at very short distances.

He later adds visible situation[13] to the list of auxiliary visible ideas: having dubbed the ideas we immediately see "pictures", he says, "Now by the greatness of the pictures, their faintness, and their situation, we perceive the magnitude of tangible objects. The greater, the fainter, and the upper pictures suggesting [and signifying] the greater tangible magnitude" (TVV 54, cf. NTV 77).

Visible size plus auxiliary visible ideas of situation, faintness, and/or focus blur ("confusion") signify tangible size. Visible mountains that appear faint and take up a large chunk of the visual field signify a very large tangible size, whereas a visible coin that takes up an equally large chunk of visual field but is blurry ("confused") signifies a small tangible size. If visible objects *a* and *b* are neither faint nor blurry nor at different heights in the visual field, but *a* has larger visible size than *b*, *a* signifies a larger tangible size; if *a* and *b* are the same visible size, but *b* is higher in the visual field, then *b* signifies a larger tangible size, and so on.

This analysis implies that for a single object, there are *many* signification relations that each connect (a) a combination of one of the object's visible sizes with such-and-such auxiliary visible ideas, to (b) the object's one unchanging tangible size. For the apple, for example, there is the signification relation from the small, faint visible extension of the apple viewed from far away and the apple's constant tangible size; and likewise, from the large, blurry visible extension of the apple viewed from close up and its constant tangible

[13] Visible situation is location in the height and/or breadth dimensions of visible space (NTV 77, 99, TVV 54, 57).

size; and so on. As Schwartz has rightly pointed out (2022b), this account amounts to an early theory of visual size constancy.

Berkeley gives a similar, albeit less detailed, analysis of visual perception of tangible shape. At NTV 140 he writes that "visible figures are the marks of tangible figures… which by nature they are ordained to signify" (NTV 140). The visible shape of the distant mountain is wide at the base and grows progressively narrower toward the top, and this signifies that the tangible shape of the mountains is wider at the base and narrower at the top, and so on. Importantly, however, this, too, is a *ceteris paribus* law for Berkeley: in many cases, effects of perspective and/or refraction weaken or destroy any such obvious correspondence between visible and tangible shapes—think of the bent visible shape of the half-submerged stick, for example. Nevertheless, it seems reasonable to assume that here, too, auxiliary visible ideas—for example, the visible water surrounding the lower portion of the stick—might come to compensate for this weakening or destruction, given appropriate experience: if one frequently views partially submerged objects, then a bent visible shape in conjunction with visible partial submersion may come to suggest a straight tangible shape—Berkeley never says this explicitly, but it is well within bounds of his theory to claim. He thus has available an account of visual shape constancy analogous to his more explicit account of size constancy.

I have indicated four groups of signification relations that Berkeley associates with objects:

(1) Those connecting parts of an object's tangible extension to other parts of its tangible extension,

(2) Those connecting parts of an object's visible extension to other parts of its visible extension,

(3) Those connecting an object's many visible sizes—each accompanied by such-and-such auxiliary visible ideas—to its one tangible size, and

(4) Those connecting an object's many visible shapes—each accompanied by such-and-such auxiliary visible ideas—to its one tangible shape.

I claim that these signification relations are present in all objects in Berkeley's universe, and that they form objects by binding ideas of sense into predictive opportunities. In the texts I've been drawing on, Berkeley is primarily concerned to make points about vision, not objects, and so he takes the existence of objects for granted. But the view of objects I am attributing to him is capable of a non-circular explanation of the formation of an object: where God joins tangible points into a tangible extension via signification relations of type (1), joins visible points into visible extensions via signification relations of type (2), and joins said tangible extension and visible extensions via signification relations of types (3) and (4), an object is formed.

Take the tennis ball and tennis racket, for example. The two are connected via a certain signification relation when the ball hits the racket, however, there are many situations in which they are not connected by that relation: when the ball is sitting on the shelf or sitting courtside in a bucket with other balls. During all these situations, the ball will still be structured by signification relations of the four kinds just picked out: visible points in its visible extensions will move together, as will tangible points in its tangible extension; and the many different visible extensions it exhibits from different perspectives will all be lawfully coordinated with its one tangible extension. These relations hold the

ideas in the ball together more tightly than other signification relations connect the ball to the racket, or to the planet earth, or anything else. They make the ball a predictive opportunity.

To be sure, Berkeley thinks objects include additional signification relations, as well, that vary more idiosyncratically from object to object. First, as noted above, he thinks that objects include immediately perceptible sounds, tastes, and smells (PHK 1, TD 204, 230, 249). The apple includes certain taste-ideas caused by God when someone bites it, or smell-ideas caused by God when someone sniffs it (though, of course, not all objects have smells or tastes; and not all make sounds).

Second, I believe Berkeley would say that general laws of nature entail the inclusion in objects of many ideas of sense that cannot be immediately perceived by the naked senses and that are the special province of natural philosophy: ideas of sense of the micro-structure of the tennis ball (seen through a microscope), or of the compressed shape it temporarily deforms into when it impacts the racket (seen via slow-motion camera).[14] Berkeley thinks these natural-philosophical ideas of sense (so to speak) can also be imagined: "figures and motions which cannot actually be felt by us, but only imagined, may nevertheless be esteemed tangible ideas, forasmuch as they are of the same kind with the objects of touch, and as the imagination drew them from that sense" (TVV 51). The natural philosopher can 'horizontally'[15] explain various features of ordinary objects—why the tennis ball is so bouncy, for example—by appeal to signification relations between such

[14] Berkeley did not have slow-motion cameras. Without anachronism, the point made here does apply to imagining microstructure ideas and to seeing them through a microscope.
[15] Cf. chapter 1, section 2.2.

ordinary features and these imagined or artificially perceived natural-philosophical ideas. Unlike the general kinds 'visible extension' and 'tangible extension', the kinds of natural-philosophical ideas found in objects will vary widely, depending (among other things) on what the object is made of and what its surrounding physical conditions are like. A tennis ball and a similarly sized snowball seen through a microscope will exhibit very different microstructure ideas, for example.

In sum, an object is a collection of ideas of sense connected through signification relations to form a predictive opportunity. The signification relations involved coordinate visible and tangible extensions, establishing the possibility of tangible size- and shape-constancy mediated by perspectival, visible ideas. Additional signification relations connect these visible and tangible extensions with their co-instantiated secondary qualities, (possibly) with a range of sounds, tastes, and smells, and with a range of natural-philosophical ideas of microstructure, etc.

2 Perceiving Objects

Now that this picture of Berkeley's metaphysics of objects is in view, it is time to consider his view of the perception of objects. Berkeley thinks that beginning in early infancy (Alc. 4.11) we are mediately perceiving by sense all the time:

> We cannot open our eyes but the ideas of distance, bodies, and tangible figures are suggested by them [=by immediately seen visible ideas]. So swift and sudden, and unperceived is the transition from visible to tangible ideas that we can scarce forbear thinking them equally the immediate object of vision. (NTV 145)

We cannot open our eyes without mediately seeing (cf. NTV 51, 79, TVV 52). Thus, *all* normal visual perception of objects includes mediate perception by sense. Berkeley's famous example of mediately hearing a coach come down the street outside (TD 204) indicates that the same goes for at least some non-visual object perceptions. Hence, going forward I will speak as if all object perception is through mediate perception by sense.[16,17]

Mediate perception by sense makes objects figure, as such, in our mental and practical lives, on Berkeley's view; it is the gate to thinking, reasoning, and acting in response to objects. This is essentially because mediate perception by sense functions to *discriminate* objects from their surroundings (Fields 2020). It makes us experience ideas in an object as mutually associated in a way that allows us to treat the object as a single unit.

[16] As noted at the end of section 1.1, however, not all mediate perception by sense is object perception, since distinct objects can suggest each other.

[17] Though Berkeley often speaks of mediately perceiving objects (TD 204, NTV 110, Alc. 4.10-11) he also speaks of immediately perceiving objects on some occasions (PHK 38, 95, TD 230). Accordingly, there is debate in the secondary literature over whether objects can be immediately perceived or must be mediately perceived. Commentators cluster into three camps: those who think objects can *only* be mediately perceived (Pitcher 1986, Atherton 2007, Fields 2020); those who think objects can be both immediately and mediately perceived (Winkler 1989, pp. 155-61, Rickless 2013, ch. 2); and those who think the primary (or only) way objects can be perceived is immediately (Pappas 2000, pp. 180-1). My view is consistent with the first camp's. It is also consistent with the second camp's, for even though I speak *as if* object perception is all mediate, I leave it open that there is some distinct sense of 'perceive' in which objects can also be immediately perceived. On such a reading, however, it is crucial to keep in mind that immediate perception of an object cannot discriminate the object from surroundings in the way mediate perception by sense can (see next body paragraphs) and therefore cannot make objects figure as such in our mental and practical lives in the way mediate perception by sense can. This is because immediate perception involves no mental associations among ideas. So, perhaps we count as immediately perceiving an object in a fairly anemic sense of 'perceive' just in virtue of immediately perceiving one of the ideas in it, but this does not allow us to point out the object or direct our thoughts toward it. For that, mediate perception by sense (or some other sort of mediate perception) is required (see Winkler 1989, pp. 159-61 for a similar proposal, and cf. Pearce 2017, p. 113). My view is *not* consistent with the third camp's view, but this view is independently implausible because it is inconsistent with the primary texts where Berkeley speaks of mediately perceiving objects (TD 204, NTV 110, Alc. 4.10-11). Pappas tries to defend this view by appeal to common sense, arguing that "Berkeley says repeatedly that he is a champion of common sense" and that "One of the key elements of common sense, for Berkeley, is the claim that physical objects are immediately perceived". But as Atherton has pointed out (2007, p. 109), by the lights of common sense we just *perceive* physical objects. Common sense does not individuate immediate and mediate perception as two sub-types of perception.

We have already seen Berkeley make this point where, discussing the newly sighted Molyneux patient, he writes:

> There crowd into his [the patient's] mind the ideas which compose the visible man, in company with all the other ideas of sight perceived at the same time. But all these ideas offered at once to his view he would not distribute them into sundry distinct combinations, till such time as, by observing the motion of the parts of the man and other experiences, he comes to know which are to be separated and which to be collected together [by suggestion]. (NTV 110)

The newly sighted patient cannot discriminate the man from surroundings until he (the patient) learns to group the parts of the man together into one unit through mediate perception by sense. We also discriminate objects when we group their visible and tangible extensions together through mediate perception by sense in exercising our capacities for size- and shape-constancy as described in section 1.2 of this chapter.

Consider another of Berkeley's examples: the immediately seen glowing red color of a hot metal bar suggesting tangible heat (TD 204). The bar includes both red and heat ideas. When the tangible heat is suggested by the red color, you experience it as associated with the red color in a way that it is not associated with other ideas you experience, and so the bundle of ideas *red-heat* becomes a discriminable unit carved out in your experience. Next, we must consider exactly how this discriminable bundle—the hot metal bar as *we* experience it—relates to the *full* collection of ideas of sense that constitutes the metal bar.

3 Objects as Experienced

When an object is perceived,[18] immediate perceptions of ideas of sense in the object trigger production of ideas of imagination[19] that represent other ideas of sense in, or seemingly in, the object. The immediately perceived ideas of sense and the ideas of imagination are *both* perceptual appearances, but the latter are representations made by human minds while the former are real physical qualities made by God (cf. chapters 1 and 2). What bears noting is that the collection of ideas experienced by a perceiver because of this process is *not* itself an object, since objects are divinely-made collections of ideas of sense that do not include representations.

The point is made vivid by considering cases of perceptual illusion in which experienced collections are *inconsistent* with the collections of ideas of sense that metaphysically constitute perceived objects. The collection that constitutes the partially submerged stick includes a straight tangible shape not a bent tangible shape, yet the collection experienced by the person who perceives the stick as bent includes an idea of imagination that represents a bent tangible extension (TD 238). The collection that constitutes the moon includes a single (large) tangible extension, yet because of the moon illusion the collection experienced by the person seeing the moon traverse the night sky includes imagined representations of more than one tangible extension (NTV 67-78). The collection that constitutes a realistic landscape painting includes a single, flat tangible extension in a single location in tangible space, yet the collection experienced by a person

[18] Remember: I speak as if all object perception is mediate.
[19] Object perception may additionally involve suggestion of notions, but I set this issue aside here. For more on this, see the appendix.

seeing the painting includes representations of items in the painting as being located at different tangible distances (TVV 25).[20]

Furthermore, because it can in principle be perceived by an infinite number of different perceivers under an infinite number of different conditions, there are an infinite number of token ideas of sense included in the collection that metaphysically constitutes any object.[21,22] By contrast, the collection experienced by one who perceives the object includes only a finite number of token ideas (of both sense and imagination). Consider, for example, the following well-known passage:

> And how are we concerned any farther? I see this *cherry*, I feel it, I taste it; and I am sure *nothing* cannot be seen, or felt, or tasted: it is therefore *real*. Take away the sensations of softness, moisture, redness, tartness, and you take away the cherry. Since it is not a being distinct from sensation; a *cherry,* I say, is nothing but a congeries of sensible impressions, or ideas perceived by various senses: which ideas are united into one thing (or have one name given them) by the mind; because they are observed to attend each other. (TD 249)

In reporting sensations of the cherry ("I feel it, I taste it…") Berkeley is listing immediately perceived token ideas of sense that belong to the collection which metaphysically constitutes the cherry. However, he lists only a finite number of these token sensations. Then, in the final sentence, he says that these members of the collection "are united into

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[20] An experienced collection of ideas can also be inconsistent with a metaphysically constitutive collection because the ideas in the latter collection change over time. For example, if a cherry has rotted on the vine, then the laws of nature dictate that it will no longer produce a sweet flavor if tasted, and so sweetness ideas cease to be included in it. If looking at it still suggests sweetness, this is now an error.

[21] Another motivation for this claim is the fact that Berkeley thinks natural mechanisms are "inexhaustible" (S 283), so that a given object may be able to include an infinite number of natural-philosophical microstructure ideas, other things being equal.

[22] This point, though not made explicitly by Berkeley, is often acknowledged by commentators (e.g., Flage 1987, Glauser 2007, Pearce 2014, 2017). As noted in chapter 1, I allow these ideas either to actually exist in God's mind or to exist only potentially, pending human perceptions. Per note 20, I also allow that the kinds of ideas included can change over time—sweet ideas might change to sour ideas as the cherry rots. At a given moment, there are still an infinite number of possible sweet- (or sour-)experiences that God could cause in possible human perceivers; depending on the sort of interpretation you favor, these might actually exist in God's mind at that moment.

one thing… by the mind; because they are observed to attend each other". He is describing the imagination-involving process of mediately perceiving the cherry by sense: immediately perceiving a small number of ideas from the cherry comes to suggest a small number of other ideas from the cherry, with the result that these ideas are "united into one thing" by the mind. This "one thing" is *not* the cherry as it is in itself, but the finite collection of token ideas (of *both* sense and imagination) experienced by one who mediately perceives the cherry by sense. The cherry as it is in itself is made by God independently of this process (see section 1.2 of this chapter).[23]

This distinction is also evinced by a comparatively obscure passage from *Siris* where Berkeley is gently criticizing the overreliance of vulgar intellects on the senses:

> Natural phaenomena are only natural appearances… They and the phantoms that result from those appearances, the children of imagination grafted upon sense… are thought by many the very first in existence and stability. (S 292)

The phantoms Berkeley references are ideas of imagination ('phantasm' being a standard Scholastic term for imaginary image). The natural phenomena are natural objects—rocks,

[23] As noted earlier (see note 1) TD 249, along with TD 245-6 and PHK 1, have often been taken to support human-made objects. We have just seen how TD 249 can be reinterpreted so it is consistent with divinely-made objects, and the same sort of reinterpretation is possible for the other passages. At TD 245-6, commenting on what is "thought sufficient to constitute a new kind or individual", Berkeley writes, "men combine together several ideas, apprehended by divers [sic] senses, or by the same sense at different times, or in different circumstances, but observed however to have some connexion in Nature, either with respect to co-existence or succession; all which they refer to one name and consider as one thing." As in the cherry passage, this 'one thing' is experience of an object generated through mediate perception by sense rather than an object itself: the passage is about what we *think* sufficient to constitute an object, not what in fact constitutes one. At PHK 1, Berkeley writes: "[A]s several of these [ideas] are observed to accompany each other, they come to be marked by one name, and so to be reputed as one thing. Thus, for example a certain colour, taste, smell, figure and consistence having been observed to go together, are accounted one distinct thing, signified by the name *apple*." Here, too—especially in virtue of the well-known reference to ideas of imagination earlier in PHK 1—Berkeley is best understood as describing the creation of an experience through mediate perception by sense, and not the creation of an object. He goes on, "Other collections of ideas constitute a stone, a tree, a book, and the like sensible things…" Here, given the reference to *constitution*, Berkeley may have switched to speaking of the collections of ideas created by God, or he may mean to be talking about the groups of ideas that constitute human experiences of objects, as apart from these divinely-created collections—either reading is consistent with my interpretation.

rivers, trees, clouds, etc.—and the natural appearances are ideas of sense that make up these objects. Berkeley is commenting on our tendency to fixate on these objects as they first appear to us in experience: not as collections of ideas of sense only, but rather as "grafted" *mixtures* of "natural appearances" *and* "phantom" appearances that "result" from our experience with natural appearances. We vulgar humans regard the resultant mixtures as "the very first in existence and stability", and give them our attention (even though, as Berkeley points out, they are unstable and fleeting compared to God). These mixtures include ideas of imagination, which are made by finite human minds and are no part of the physical reality created for us by God.

As a first approximation, then, Berkeley's proprietary doctrine of twofold existence holds that when a human perceives an object, her mind forms a finite group of token ideas of both sense and imagination. The ideas of sense are divinely-made members of the collection that metaphysically constitutes the object she is perceiving, but the ideas of imagination are fallible human-made representations of other ideas of sense in (or seemingly in) that collection. This group of ideas in her mind is the object *as she experiences it*, in contradistinction from the object as it is itself:

- **Object as it is in itself**: a group of (an infinite number of) divinely-made token ideas of sense interconnected by certain privileged divinely-made signification relations (cf. section 1.2).
- **Object as experienced**: a group of token ideas including both (i) a finite subset of token ideas of sense in the object being perceived, and (ii) token ideas of

> imagination that represent another finite subset of the ideas of sense in (or seemingly in) that object.

The suggestion relations that bind ideas into an object as experienced in a perceiver's mind typically overlap some of the signification relations that in fact structure the object as it is in itself, in the natural world. In cases of illusion, however, the extent of this overlap is diminished, and objects as experienced become inconsistent with objects as they are in themselves, as we have seen.

One might still object that if perceivers can identify *which* of the ideas in an object as experienced are ideas of sense (as opposed to imagination), then Berkeley's doctrine of twofold existence is trivial because objects as experienced still provide transparent access to physical reality.[24] But, as we saw in chapter 2, Berkeley emphasizes in his writings on vision that we are typically *unable to discriminate* between sensed (visible) and imagined (tangible) ideas in visual experience: "we find it so difficult to discriminate between the immediate and mediate objects of sight, and are so prone to attribute to the former what belongs only to the latter. They are, as it were, most closely twisted, blended, and incorporated together" (NTV 51); "the very different and distinct ideas of those two senses [sight and touch] are so blended and confounded together as to be mistaken for one and the same thing—out of which prejudice we cannot easily extricate ourselves" (NTV 79);

> But nothing, certainly, does more contribute to blend and confound them [visible and tangible ideas] together than the strict and close connection they have with each other. We cannot open our eyes but the ideas of distance, bodies, and tangible figures are suggested by them. So swift and sudden, and unperceived is the

[24] That perceptual appearances provide such transparent access to physical reality is a central contention of the familiar story I reject. Cf. Introduction, n. 2.

> transition from visible to tangible ideas that we can scarce forbear thinking them equally the immediate object of vision. (NTV 145)
>
> [T]he mind is wonderfully apt to be deluded by the sudden suggestions of fancy which it confounds with the perceptions of sense, and is prone to mistake a close and habitual connection between the most distinct and different things for an identity of nature. (TVV 52)

That the tomato is red is something we immediately see, but that it is bulgy (hence, spatially three-dimensional) is something we mediately see: the bulginess we visually experience is an idea of imagination that represents tangible bulginess. This idea of imagination is mixed together by suggestion with the visible ideas of redness, etc., that we immediately see, and our mind constructs this experience so quickly that we cannot discriminate the parts contributed at different stages of processing from one another. The result is an apparently seamless visual experience of a colored surface extended, in bulgy fashion, in three-dimensional space.

I do not suppose that all cases of mediately perceiving objects by sense involve this sort of indiscriminability, for Berkeley—the mediately heard coach and the hot iron bar mentioned earlier, for example, likely do not. However, Berkeley does think that the suggestion of tangible spatial ideas involved in most any visual perception of an object is subject to this sort of indiscriminability, and so this sort of indiscriminability is found in many (perhaps a majority) of our object perceptions.

To the extent that mediate perception by sense produces phenomenal perceptual appearances that are indiscriminable from the phenomenal appearances we enjoy via immediate perception, we cannot tell through experience which of our ideas are imagined and which are sensed. This means that imagination not only augments ideas of sense but makes ideas of sense as they are by themselves—that is, the physical world as made by

God—subjectively *inaccessible* to us in experience. I noted in chapter one (section 2) that the simplest case of perception is *dyadic* for Berkeley, consisting in an unmediated relation between mind and world. Though this is still true, we can now see that this simplest case of perception is the exception, for Berkeley, rather than the norm—dyadic perception occurs only in infants and the newly sighted people who were born blind. *Normal* perception (at least in vision, if not in other sense-modalities) involves a mediated, *triadic* perceptual relation between mind, representation, and world: we cannot experience the world of divinely caused objects as they are in themselves because as soon as we open our eyes, our minds alloy the divinely caused ideas of sense actually in the objects with ideas of imagination of our own fabrication, and we cannot typically tell the two apart. Thus, objects as experienced do not provide transparent access to physical reality, as the familiar story alleges, and Berkeley's doctrine of twofold existence is far from trivial.

4 Skepticism

It is natural to wonder how Berkeley's anti-skeptical goals comport with the picture just painted, on which he thinks objects as they are in themselves are subjectively inaccessible to us. I focus on skepticism about perceptual appearances of the sort that Berkeley took to follow from Locke's representational theory of perception.[25]

Late in *EHU*, Locke concedes that

[25] I suspect that Popkin (1951) is correct that Berkeley views Locke as an inadvertent Pyrrhonian skeptic, and that the skeptical problem Berkeley is responding to here—that is, the problem I focus on this section of the chapter—is based on material from Bayle's *Dictionary* (cf. chapter 1, note 24), rather than from Descartes' *Meditations* or other early modern works that are more familiar nowadays.

> 'Tis evident the Mind knows not things immediately, but only by the intervention of the *Ideas* it has of them… *Our knowledge* therefore is *real*, only so far as there is a conformity between our *Ideas* and the reality of Things. But what shall be here the Criterion? How shall the Mind, when it perceives nothing but its own *Ideas*, know that they agree with Things themselves?" (EHU IV.iv.3).

Optimistically, he goes on to argue that there are "*Ideas*, that, we may be assured, agree with Things" (ibid.; cf. IV.iv.4, IV.xi.4-5).

Not all Locke's readers would share in this optimism. The Scholastic author John Sergeant, responding to EHU in the late 1690s in a passage that Berkeley is likely to have read,[26] argued that Locke's theory of ideas leads inexorably to skepticism. Sergeant writes,

> We cannot possibly know at all the Things themselves by the Ideas, unless we know certainly those Ideas are Right Resemblances of them. But we can never know (by

[26] Sergeant lived from 1622 (or 1623) to 1707; he was a contemporary of Locke's. He wrote three large works of philosophy near the end of his life.[26] The second of these, published in 1697 and cumbersomely titled *Solid Philosophy Asserted against the Fancies of the Ideists; or the Method to Science further illustrated, With Reflexions on Mr. Locke's 'Essay concerning Human Understanding'* (hereafter, SPA), was in all likelihood read by Berkeley. As is suggested by its title, the work contains a long and critical commentary on Locke's EHU. It also contains an exposition of Sergeant's own positive philosophical position, i.e., an assertion of his own 'Solid Philosophy'. Given that Berkeley was heavily engaged with Locke's philosophy in the early 1700s, it stands to reason that he would have been interested also in commentaries on it. And entry 840 in Berkeley's early notebooks confirms his engagement with Sergeant's solid philosophy. There Berkeley writes, "I say not with J.S. that we see Solids I reject his Solid Philosophy. Solidity being only perceived by touch" (PC 840). (While this passage indicates Berkeley read Sergeant's SPA, I confess that I am unsure how best to understand Berkeley's interpretation). SPA offers a positive theory of notions intended to remedy the defects Sergeant thought were intrinsic to the theory of ideas. For Sergeant, notions are "the things themselves spiritually existing in our understanding as its objects" (see Brandish 1929, p. 581 for this text of Sergeant's; and cf. SPA preliminary discourse II). In the context of Sergeant's Aristotelian metaphysics, this means that a notion is the *form* of something as assimilated into the intellect (cf. Adriaenssen 2017, ch. 6). Since there is just one, numerically identical form, the 'thing itself' is in a sense directly in one's mind. Making the thing itself directly accessible to the mind in this way may be an anti-skeptical gambit that traces back to other scholastic thinkers, such as Aquinas (cf. Adriaenssen 2017, ch. 1). Berkeley, for his part, rejects such talk of abstract notions—unlike some older interpreters of Berkeley, I do not think his doctrine of notions has anything to do with Sergeant's notions (cf. PHK Intro 17). But I do think he was probably influenced by some of Sergeant's criticisms of Locke's empiricism and representational theory of ideas. See, for example, Sergeant's argument that Locke's theory of ideas leads to skepticism (quoted in the body text). And there is also Sergeant's argument against Lockean abstract ideas, which he voices as a plea for notions over ideas: "[W]e are as certain we have General Notions, as that we have Particular ones; nay, we can conceive them as General; that is, we can conceive their Generality. If then we have an Idea or Likeness of Universality, or Generality, What is it like? It must either be Like the Thing, or must be like Nothing, and so is no Idea or Likeness at all. But it cannot be like the Thing in any respect, because in the Thing there is nothing that is General or Universal; but all that is there is Particular and Determin'd; which is quite Unlike, nay, Opposite to Universality or Generality" (SPA, Preface, 24). For more on Berkeley and Sergeant (and their respective reactions against Locke), see West (2023).

> the Principles of the Ideists) that their Ideas are Right Resemblances of the Things; therefore we cannot possibly know at all the Things by their Ideas. (SPA, Preliminary Discourse II, article 13)

Thus, because ideas are mere resemblances, "they can never reach or engage the Thing it self, or give us Knowledge of it; that is, they can never make us know any thing; any more than a Picture can make us know a Man we never saw, nor ever shall or can see but by means of that Picture" (SPA, Preliminary Discourse II, article 25).

Berkeley, too, thinks that Locke's theory of ideas leads to skepticism, and for the same reasons as Sergeant. As we saw in chapter 1, he has Philonous remark,

> It is your opinion, the ideas we perceive by our senses are not real things, but images, or copies of them. Our knowledge therefore is not farther real, than as our ideas are the true representations of those originals. But as these supposed originals are in themselves unknown, it is impossible to know how far our ideas resemble them; or whether they resemble them at all. We cannot therefore be sure we have any real knowledge. (TD 246, cf. PHK 18, 86-7)

Both Berkeley and Sergeant argue that if we have immediate access only to putative resemblances of real things, then we have no way to check these simulacra against the archetypes they supposedly represent, and so we have no reason to believe that they represent accurately.

I have argued that for Berkeley, the real physical world of divinely-made objects is subjectively inaccessible to us. However, this is not because he thinks we immediately perceive only resemblances, or simulacra, of real physical things, but rather because he thinks we perceive both real things *and* simulacra (=ideas of imagination), and that we tend to have trouble distinguishing the two. This view gives Berkeley an escape route from the relevant skeptical problem that isn't available to Locke.

Berkeley's view implies that, given almost any idea of imagination generated via suggestion, it is possible (at least in principle) to put oneself in physical circumstances such that one will immediately perceive the physical quality represented by that idea of imagination.[27] For example, I can always reach out and hold the tomato in my hand, and thereby immediately perceive its actual, bulgy tangible 3D shape by touch without the need for any representation. In this way, I can in principle check the accuracy of my representational ideas against physical reality.[28] This is not possible on Locke's view.

A skeptic could still object that if Berkeley provides no way to discriminate ideas of sense from misrepresenting ideas of imagination, then knowledge of the sensible world remains out of reach. However, as we saw in chapter 2, the indiscriminability of sense and imagination to which he is committed is merely psychological, a byproduct of the perceptual process. As we have seen, Berkeley describes it as a habitual "prejudice" of the mind (NTV 51, 146). Thus, unlike the sort of in-principle indiscriminability of appearance from reality that opens the door to classical arguments for radical skepticism, Berkeley's indiscriminability opens the door only to perceptual fallibility and can in principle be overcome by empirical means. I presume that this is what Berkeley believes *himself* to have done in formulating his theory of vision: he notes in NTV that the relevant "prejudice" may be overcome through "obstinate striving and labor of the mind" (NTV 146). This may have

[27] There are some exceptions. For example, we cannot do this with the tangible extent of the moon. This is another idea that the natural philosopher may model with imagination (TVV 51) but which we cannot immediately perceive. We cannot verify such representations by comparing with immediate perception, but there is no reason this should lead to skepticism about perception in general.

[28] Note that the only ideas whose accuracy needs to be checked are ideas we mediately perceive by sense, and these ideas have usually been immediately perceived before in the lawful course of nature (where this prior experience is the basis for the ideas' being mentally associated). There is therefore usually no possibility of suggestion generating groupings of ideas radically at odds with the lawful groupings of ideas of sense made by God.

to do with training or re-training attention so that we begin to notice differences between the relevant visible and tangible ideas more easily.

Additionally, (and perhaps relatedly) empirical knowledge—knowledge of laws of nature—can help us to overcome the relevant prejudice. Remember, for example, that only ideas of sense are immediately perceived, and immediate perception is lawfully correlated with motions at the relevant sense organs (TD 241, cf. chapter one, 3). Thus, Berkeley can infer that the change in apparent size of the moon that occurs in the moon illusion is a product of imagination (not sense) from the fact that the moon's retinal projection does not change size during the illusion (a fact Berkeley was well aware of, cf. NTV 67). He can infer that visual experiences of depth and distance must be products of imagination because they are not lawfully correlated with features of the two-dimensional retinal projection (cf. NTV 2). The partially submerged stick might seem like a counterexample to this approach because its bent visible look *does* correspond to a projection of bent shape in the retinal image. But in this case, one can appeal to a different class of laws of nature unrelated to immediate perception: laws governing refraction. One can infer that the stick only looks bent because it is partially submerged, and its tangible extension is in fact straight. Thus, even if the divinely caused world of ideas of sense as it is in itself cannot be directly accessed in experience, our knowledge of the laws of nature[29] allows us to access it in

[29] Cf. Atherton (2007) for another account of Berkeley's response to skepticism centered on the laws of nature.

thought.[30] (Such empirical knowledge may well be a part of what helps us understand how to retrain attention to overcome the prejudice, as discussed in the previous paragraph).[31]

The relative ease of these responses to skepticism reflects the fact that in Berkeley's theory of perception (as opposed to Locke's), information about physical objects is conveyed to us not only through representations, but also through non-representational states (ideas of sense). Mediate perception by sense is, so to speak, trained on a steady diet of these non-representational states; because these states provide direct access to a lawfully organized physical reality, the representations produced through mediate perception by sense tend to anticipate and conform to this reality well (cf. chapter 2, section 3.4). And when mediate perception by sense does, or might, misrepresent an object, we can usually check its products against these non-representational states for accuracy.

Thus, for Berkeley, perceptual appearances of objects are comprised of a continual *compromise* between the sensory input provided us by God—a sampling of the real physical world as it is in itself—and the representational output of our own imaginations. Perceptual appearances of objects are neither identical with physical reality (as Berkeley has historically been taken to think) nor with representations of physical reality (as his opponents are typically taken to think) because they are a symbiosis of both.

[30] Here it might be objected that this opens laypeople without knowledge of the laws of nature to skeptical threat. However, as I read Berkeley, he doesn't think skeptical problems arise for laypeople in the first place, and so they would not need this solution (cf. TD 229-30).
[31] For more on intellectual or conceptual guidance of the imagination in Berkeley, see the appendix.

Conclusion

In summary, Berkeley takes physical objects to be made by God through the institution to certain privileged signification relations. Physical objects enter into our mental lives when we mediately perceive said objects by sense. However, because of the imagination's appearance-generating role in this process, it follows that physical objects as experienced are at some remove from physical objects as they are in themselves, and that we do not enjoy subjective access to the latter in perception. This result does not create skeptical problems for Berkeley, though, because it remains possible, on his view, to distinguish representing ideas of imagination from immediately perceived ideas of sense, whether through the training of attention, appeal to background knowledge about the laws of nature, or both.

AFTERWORD: Mind's Place in Nature, Before and After Berkeley

In this afterword I attempt to contextualize Berkeley's philosophy within a broader historical epoch that leads up to, and includes, the present. I begin by summarizing the most fundamental contrasts between Berkeley's views and those of his materialist opponents, Locke and Malebranche. I then connect Berkeley's theory of vision to Hermann von Helmholtz and (through the intermediary of Helmholtz) to present-day vision science. I suggest that the same metaphysical concerns and commitments that distanced Berkeley from his materialist opponents in the 18th century may have an interesting role to play in connection with present-day investigation of visual psychology.

Malebranche, Locke, and Berkeley

Recall that Locke believes our ideas of secondary qualities do not resemble anything in the *real* world. The real world for him (*ex hypothesi*, anyway) is comprised by corpuscular mechanisms characterizable purely in terms of primary qualities. These mechanisms are often microscopic in scale. As Locke explains:

> If a great, nay far the greatest part of the several ranks of *Bodies* in the Universe, scape our notice by their remoteness, there are others that are no less concealed from us by their *Minuteness*. These insensible Corpuscles, being the active parts of Matter, and the great Instruments of Nature, on which depend not only all their secondary Qualities, but also most of their natural Operations, our want of precise distinct *Ideas* of their primary Qualities, keeps us in an uncurable Ignorance of what we desire to know about them… But whilst we are destitute of Senses acute enough, to discover the minute Particles of Bodies, and to give us *Ideas* of their mechanical Affections, we must be content to be ignorant of their properties and ways of Operations; nor can we be assured about them any farther, than some few Trials we

> make, are able to reach. But whether they will succeed again another time, we cannot be certain. (EHU IV.iii.25)

For Locke, it is only at the micro-scale that we find (ex hypothesi) the "real essence" of physical things. Due to the imprecision of our senses, Lockean corpuscular real essences are entirely absent from ordinary perception.

In Malebranche we find a relevantly similar picture. Near the opening to his *Search After Truth* he includes the following, wonderful description of micro-organisms as he thought them to be:

> With magnifying glasses, we can easily see animals much smaller than an almost invisible grain of sand; we have seen some even a thousand times smaller. These living atoms walk as well as other animals. Thus, they have legs and feet, and bones in their legs to support them (or rather on their legs, for the skin of an insect is its skeleton). They have muscles to move them, as well as tendons and delicate animal spirits to fill or move these muscles in succession. Without this, it is impossible to conceive how they should live, nourish themselves and move their tiny bodies from place to place according to the various impressions of objects—or rather, it is impossible for those who have spent their whole lives in anatomy and the study of nature to imagine the number, diversity, and delicacy of all the parts of which these little bodies are necessarily composed in order to live and carry out the things we see them do. (pp. 25-6)

By comparison with the riches of the micro-world, Malebranche thinks, the world revealed to us by our senses is impoverished: "Yet vision hides all these beautiful things from us; it makes us scorn these works of God so worthy of our admiration" (p. 31); "our senses and imagination, meanwhile, would depreciate God's works and inspire us with none of the ideas of these things that we discover with microscopes or by reason" (p. 27).

However, even if microscopes and reason allow us to appreciate some of the microworld, there is far more of it—*infinitely* more, in fact—that is beyond the reach of our

senses and reason, according to Malebranche: "Nothing but infinites are found everywhere; and not only are our senses and imagination too limited to comprehend them, but even the mind, as pure and detached from matter as it is, is too coarse and feeble to penetrate the smallest of God's works" (p. 27). This leads Malebranche to a skeptical conclusion about the reliability of the senses themselves:

> It is clear we must not rely on the testimony of our eyes to make judgments about size. It would be better to listen to reason, which proves to us that we do not know how to determine the absolute size of the bodies surrounding us, or what idea we ought to have of a square foot of our own body such that the idea would represent it to us as it is. For reason teaches us that the smallest of all objects would not be small by itself, since it is composed of an infinite number of parts from each one of which God could fashion an earth that would be but a point in comparison to the others taken together. Thus the mind of man is incapable of framing an idea sufficiently great to encompass and comprehend the least extension in the world since the mind is limited whereas the idea must be infinite. (pp. 28-9)

The problem, according to Malebranche, is that because material bodies are infinitely divisible but our ideas are only finitely divisible, our ideas cannot represent material bodies as they are in themselves. Thus, Malebranche thinks that material bodies as they are in themselves are entirely absent from ordinary perception.

In sum, Locke and Malebranche identify the physical world, respectively, with corpuscular real essences and infinitely complex microstructures. Such things, by their very nature, could never be available to us in immediate perception. It follows that all that *can be* available to us in immediate perception, for these authors, are representational ideas. Accordingly, perception is *constitutively* representational for them.

I want to suggest that the considerable differences in the way Berkeley conceives the role of representation in perception, as compared to his materialist predecessors, flow

from his non-reductive metaphysics of the natural world, and its attendant philosophy of science (as discussed in chapter 1): Berkeley's aversion to the disenchantment of nature leads him to identify physical reality with lawfully organized ideas of sense, as opposed to anything essentially microscopic, and this gives him room to hold that physical reality is available to us in immediate perception. He *also* thinks representation plays a crucial role in perception, in generating illusions and hallucinations and in explaining how impoverished sensory input (e.g., a 2D retinal image) becomes enriched into full-fledged perception. But for all that, perception is not constitutively representational, for Berkeley—an infant or a newly-sighted person born blind can perceive the world without any representation (though, admittedly, theirs will be a useless kind of perception, incapable of facilitating the direction of thought or action toward objects).

As we'll see next, Berkeley's ideas about visual processing have proven influential for subsequent generations of vision theorists (including some working today), and yet important aspects of the metaphysical context in which Berkeley first deployed these ideas tend to be forgotten.

Berkeley, Helmholtz, and Beyond

Berkeley's theory of vision, and his approach to perception more broadly, would influence many subsequent generations of empiricist philosophers and vision scientists. These two traditions (empiricism and vision science) intersect powerfully in the work of Hermann von Helmholtz. Helmholtz's main philosophical influence is often identified as Kant, and, while this is surely true, it seems to me that Berkeley exerted a strong influence on

Helmholtz, as well. One place where this is especially apparent is in Helmholtz's account of *unconscious inference.*

Helmholtz famously argued that perception is mediated by a process of unconscious inference. Berkeley tends to distinguish inference from suggestion, emphasizing that the former depends on the faculty of reason while the latter does not (TVV 42). However, what Helmholtz means by *unconscious inference* turns out to be very close to what Berkeley means by *suggestion* (cf. Hatfield 1990, ch. 5). Helmholtz explains:

> When those nervous mechanisms whose terminals lie on the right-hand portions of the retinas of the two eyes have been stimulated, our usual experience, repeated a million times all through life, has been that a luminous object was over there in front of us on our left. We had to lift the hand toward the left to hide the light or to grasp the luminous object; or we had to move toward the left to get closer to it. Thus while in these cases no actual conscious inference is present, yet the essential and original office of such an inference has been performed, and the result of it has been attained; simply, of course, by the unconscious processes of the association of ideas going on in the dark background of our memory. (Helmholtz 1867, 3.24)
>
> There appears to me in reality only a superficial difference between the inferences of logicians and those inductive inferences whose results we recognize in the intuitions of the outer world we attain through our sensations. The chief difference is that the former inferences are capable of expression in words, while the latter are not, because instead of words they deal only with sensations and memory-images of sensations. Indeed, it is precisely the fact that such sensations cannot be described in words that makes it so difficult to discuss this area of mental activity at all. (Quoted in Hatfield 1990, p. 201, from *Selected Works of Hermann von Helmholtz,* ed. Kahl, p. 217.)

Through "unconscious processes of the association of ideas going on in the dark background of our memory", we come to mentally associate sensations, so that immediate perception of a given sensation (through stimulation of the nerve "terminals") will trigger production of associated "memory-images of sensations". Helmholtz thinks of this as an inferential process because of the logical relationship between sensations, not because of

any particular mental faculty that is involved in the process. If sensations A and B always co-occur and have become mentally associated as a result, this mental association can function as the major premise in an unconscious inference: *As co-occur with Bs*. The minor premise in this case might be an instance of sensation A caused by current stimulation: *This current sensation is sensation A*. Together, the two premises entail the conclusion: *This current sensation co-occurs with sensation B*. Thus, through this unconscious inference, immediate perception of sensation A triggers production of a "memory-image" of sensation B. As bare psychological process, then—in isolation from surrounding metaphysical commitments—Helmholtzian unconscious inference is essentially the same as Berkeleian suggestion (cf. Hatfield 2002).[1]

This psychological process is embedded within very different metaphysical pictures for the two thinkers, though.[2] Following Kant, Helmholtz thinks that the sensations we immediately perceive and the "memory-images" of sensations produced via unconscious inference are equally incapable of providing direct access to things in themselves. Both are mere signs of an external world that is itself inaccessible through the senses, but which can

[1] Both are antedated significantly by al-Haytham's 11th century theory of unconscious syllogism, which is the earliest clear example of a theory of unconscious inference I know of. Cf. Hatfield 2002, Smith 2001. Roger Bacon, Kepler, Descartes, and Malebranche also hold versions of the theory of unconscious inference, all descended more or less directly from al-Haytham's. However, for all of these thinkers, the inferences are deductive and based on a priori principles (e.g., rules of geometry). Berkeley's theory is standardly thought to be revolutionary partly because it is the first theory of vision to explain visual processing purely in terms of laws of association and constant conjunction of sensations (cf. Atherton 1990, Schwartz 1994). Thus, suggestion naturally tracks statistical regularities in the flow of ideas. Helmholtz thinks of unconscious inference along the same lines, especially later in his career, after he has studied Mill's logic (Hatfield 1990, ch. 5, section 3). The idea of perception as driven by statistical learning is central to many of today's most promising scientific approaches to perception, including those discussed below.

[2] There are also important differences between Berkeley's and Helmholtz's respective pictures of many empirical details of vision besides the core process of unconscious inference/suggestion: Helmholtz did, and Berkeley did not, know about binocular stereopsis; Helmholtz thought that we use unconscious inference to construct the visual field from non-spatial primitives, whereas Berkeley thought we use suggestion to construct visual experience from an already-spatial two-dimensional visual field *qua* primitive. See the appendix for more on this matter.

be inferred as the cause of the sensations we immediately perceive. Thus, for Helmholtz, too, perception is constitutively representational—the external world just isn't the sort of thing that it can present us with. We have already seen how Berkeley's picture, on which ideas of sense are immediately perceptible physically real qualities, contrasts with such a view.

Helmholtz's ideas about unconscious inference have proven influential in the 20th and 21st centuries, often credited as laying the foundations for now-popular hierarchical Bayesian and predictive processing theories of perception (cf. Seth 2019, Swanson 2016). The results of this dissertation indicate that Berkeley deserves at least some of this credit, too. However, my main goal here is not to defend a claim about historical priority, however important that matter may be. Rather, I want to consider the question of whether Berkeley's thought contains conceptual resources that remain in present-day discussion.

Both of the present-day approaches just mentioned tend to map their respective analogues of Helmholtz's major and minor premises onto distinct bottom-up and top-down channels of information-flow in the brain. Additionally, both see *many* processes of unconscious inference happening repeatedly and in parallel in many different levels of the cortical hierarchy. For the classic hierarchical Bayesian approach (Lee and Mumford 2004) the minor premise is replaced with a bottom-up signal caused by external stimulation of the sense organs, which signal encodes a hypothesis, or guess, about its external cause; the major premise is replaced by a top-down signal originating in a higher cortical area, which signal encodes a prior that can be used to optimize the choice of the aforesaid hypothesis or

guess through top-down feedback; the 'conclusion' of the unconscious inference is the optimization of this choice in light of the top-down prior.[3]

For the predictive processing framework, which is essentially a variant of the hierarchical Bayesian model just sketched, higher cortical areas are instead thought to issue in top-down signals that encode hypotheses or guesses about the causes of the bottom-up sensory signals, and these hypotheses are Bayes-optimized to minimize prediction error (Clark 2013, Howhy 2013, Seth 2019). A distinctive feature of the predictive framework is that the bottom-up sensory signals themselves are not taken to carry any semantic content; instead, they carry only *error information* (a measure of the difference between predicted input and actual input) which propagates up the hierarchy and is used to optimize the top-down prediction signals.[4]

Many present-day theorists working on these Helmholtz-inspired, hierarchical frameworks take for granted something like Helmholtz's neo-Kantian vision of the mind as incapable of directly accessing the physical world, and of perception as constitutively

[3] Lee and Mumford nicely illustrate with an example: "In this framework each cortical area is an expert for inferring certain aspects of the visual scene, but its inference is constrained by both the bottom-up data coming in on the feedforward pathway… and the top-down data feedback… Each cortical area seeks to maximize by competition the probability of its computed features (or beliefs) x*i* by combining the top-down and bottom-up data… The system as a whole moves, game theoretically, toward an equilibrium in which each x*i* has an optimum value given all the other *x*'s. In particular, at each point in time, a distribution of beliefs exist at each level. Feedback from all higher areas can ripple back to V1 [a visual area lower in the hierarchy] and cause a shift in the preferred beliefs computed in V1, which in turn can sharpen and collapse the belief distribution in the higher areas. Thus long-latency responses in V1 will tend to reflect increasingly more global feedback from abstract higher level features, such as illumination and the segmentation of the image into major objects. For instance, a faint edge could turn out to be an important object boundary after the whole image is interpreted, although the edge was suppressed as a bit of texture during the first bottom-up pass. The long-latency responses in IT [a visual area higher in the hierarchy], on the other hand, will tend to reflect fine details and more-precise information about a specific object. The feedforward input drives the generation of the hypotheses, and the feedback from higher… areas provides the priors to shape the inference at the earlier levels…" (Lee & Mumford 2004, 1436-7).

[4] Some authors have claimed that this distinctive scheme constitutes a revolution in cognitive science (Seth 2019, Clark 2013, Howhy 2013) but others have (justifiably, I think) called these claims into question (Cao 2020).

representational. For these authors, the mind can access only its own predictions or hypotheses about the external world. This point is cast in particularly dramatic terms by Anil Seth:

> In this view, our perceptions come from the inside out just as much as, if not more than, from the outside in. Rather than being a passive registration of an external objective reality, perception emerges as a process of active construction—a controlled hallucination, as it has come to be known. (Seth 2019, 43)

I want to propose that Berkeley, equipped with his proprietary doctrine of twofold existence, points us toward an alternative set of conceptual and metaphysical possibilities that may be worth exploring.[5]

All of the empirical theories of perception under consideration—Berkeley's, Helmholtz's, hierarchical Bayesian, predictive processing—view perception as a process whereby the mind seeks a stable *compromise* between bottom-up signals (or ideas, sensations, etc.) evoked by sensory stimulation and top-down signals determined at least partly by past experience. One important feature of Berkeley's theory, which he shares only with the predictive processing theory, is the positing of an *ontological* difference between bottom-up and top-down signals. Whereas for Helmholtz, all sensations are alike signs, and for the hierarchical Bayesians, all signals are alike hypotheses (where those higher in the

[5] The neo-Kantian version of predictive processing I describe in the body text is best represented by Howhy (2013) and Seth (2019). It is important to acknowledge that Clark (2013) instead links predictive processing to the extended mind, embodied cognition, and to enactive and ecological theories of perception and cognition. The case *could* be made that Berkeley is forefather of this enactive (or, ecological) version of predictive processing whereas Helmholtz is forefather of the neo-Kantian version (cf. Schwartz 1994 for a compelling attempt to link Berkeley's theory of vision with Gibson's ecological theory of perception, which is a predecessor of Clark's enactive theory). However, I harbor some worries about the enactive approach that Clark and others associate with predictive processing: in particular, this approach tends to *identify* perception with action, and this identification seems fundamentally confused to me (and I expect that Berkeley would agree). Considering these matters in detail here would take me too far afield. For simplicity's sake, I pit Berkeley only against the neo-Kantian version of predictive processing in the body text.

hierarchy serve as priors constraining those lower in the hierarchy, cf. note 3), Berkeley takes there to be a stark ontological difference between ideas of sese and ideas of imagination, as we have seen, and the predictive processing theorist takes there to be a stark ontological difference between error signals, which carry no semantic content, and prediction signals, which do carry semantic content.

However, there is a crucial difference between Berkeley's ontological distinction and the predictive processing theorist's: Berkeley's ideas of sense, although they are not representational and include no doxastic element, are also not meaningless. They are ideas *of* various qualities, where this means that they are immediately perceived real instances of those qualities. Of course, in view of their lacking any doxastic element, we cannot *take* them to be ideas of this or that quality until higher mental faculties of imagination and reason become involved. For Berkeley, in immediately perceiving ideas of sense we are enjoying direct access to a universal language expressed to us infallibly by God—the language of Nature (NTV 147, S 254-5, PHK 60-6). It falls to us, however, to *decode* this divine language, a task for which we must mobilize the rest of our mental faculties, and at which we are unavoidably fallible. (Yet without such decoding, we cannot even discriminate physical objects from their surroundings, much less think or speak about them, or act on them, and so we have little choice but to expose ourselves to the possibility of perceptual error).

A similar metaphysical picture may be available to the predictive processing theorist. Here, in crude and admittedly speculative terms, is one way the story *might* go: we would reinterpret the bottom-up error signals as bottom-up *meaning signals* carrying

(Gricean) *natural meaning* about their causes. Top-down prediction signals would try to accurately identify the causes of these bottom-up meaning signals, thereby accurately decoding said signals and rendering transparent our perceptual access to the natural (factive) meaning of current sensory stimulation. (These meaning signals would carry just as much 'error information' as on the typical predictive processing view, and this information would be usable, just as on the typical view, for correcting inaccurate top-down predictions). On this picture, there would be no need to view perception as "controlled hallucination".

In his defense of a relational, as opposed to representational, conception of perceptual experience, John Campbell suggests a way of conceiving perception—conscious perception, anyway—that is more appropriate for our neo-Berkeleian purposes:

> Suppose we have a medium which, like glass, can be transparent. But suppose that, unlike glass, it is highly volatile, and needs constant adjustment and recalibration if it is to remain transparent in different contexts. Suppose, in fact, that the adjustment required is always sensitive to the finest details of the scene being viewed. The upshot of the adjustment, in each case, is still not the construction of a representation on the medium of the scene being viewed; the upshot of the adjustment is simply that the medium becomes transparent. You might think of visual processing as a bit like that. It is not that the brain is constructing a conscious inner representation whose intrinsic character is independent of the environment. It is, rather, that there is a kind of complex adjustment that the brain has to undergo, in each context, in order that you can be visually related to the things around you; so that you can see them, in other words. (2002, p. 119)

Campbell's 'volatile medium' idea can be usefully adapted to the neo-Berkeleian metaphysics of perceptual processing roughly sketched in the previous paragraph: the volatile medium would be transparent just to the extent that top-down prediction signals accurately decoded bottom-up meaning signals and would lapse into opacity just to the

extent that prediction signals inaccurately guessed the meanings of the meaning signals.[6] Our neo-Berkeleian picture would differ from Campbell's, however, because Campbell sees perception as purely relational (dyadic) as opposed to representational (triadic), and this simple relational view is, as we now know, not Berkeleian. Instead, on the neo-Berkeleian view we are envisioning, the top-down prediction signals would be representational, so that a transparent volatile medium would be the result of successful *coordination* between representational (=top-down) and non-representational (=bottom-up) mental states. This, anyway, is one direction in which a neo-Berkeleian account of perception might be developed. Although numerous questions clearly remain to be answered, I won't pursue the matter any further here.

My hope in this afterword has primarily been to illustrate the more general point that while Berkeley's ideas about suggestion can be traced to present-day attempts at modeling cognitive and perceptual systems in more or less the same way Helmholtz's ideas about unconscious inference can be, Berkeley's views are likely to contain metaphysical resources we aren't going to find in Helmholtz (or other broadly neo-Kantian thinkers), and these resources may make a substantive difference for the way we think about the relevant models—not computationally or physically, but metaphysically—within present-day philosophy and science of brain and mind.

[6] To clarify, this would only go for the portion of cortical hierarchy in which activity is *conscious*, but in the visual system (for example) this would only exclude the earliest areas (lateral geniculate nucleus, a part of the thalamus, would be excluded, but it is far less clear whether primary visual cortex (V1) would be (cf. Marr 1982 p. 72). Activity in V2 is almost certainly available to consciousness (cf. Prinz 2012)).

APPENDIX: Berkeley's Theory of Vision: A New Interpretation

This appendix will add concreteness to the interpretation defended in the dissertation, offering an account of precisely how mediate perception by sense can generate three-dimensional visual appearances by integrating visible and tangible ideas. It will also offer an account of the role of the understanding, or reason, (and notions) in Berkeley's theory of perception. For these reasons, the appendix can be taken as a useful extension of the dissertation.

However, the appendix was written as a standalone essay, for journal publication, and so it differs from the dissertation in various details of presentation and emphasis. I note these differences here in order to avoid confusion and make it clearer that the following essay is consistent with the foregoing dissertation in its substance, if not its every letter.

(1) The appendix offers a simplified version of Berkeley's view that suggestion generates ideas of imagination, ignoring the role of attention, as well as the four differences between ideas of sense and imagination discussed at length in chapter two. These details can be safely interpolated in the interpretation to follow without any loss.

(2) The process I call *mediate perception by sense* in the dissertation is denoted instead *suggestion to the imagination* in the following essay. These are both Berkeley's own formulations; he uses both to refer to the same process. For reasons that will be obvious, the latter formulation proves more convenient in what follows.

(3) In the dissertation I emphasized that suggestion is distinct from judgment or inference, for Berkeley. This holds only for *suggestion to the imagination*, though. As we will see in what follows, Berkeley allows for a distinct kind of suggestion that is due to the understanding, not imagination, and that produces acts of judgment or inference, not ideas.

(4) The following essay will add a layer of complexity, not noted in the dissertation but fully compatible with its results, to the sense in which Berkeley thinks ideas of imagination (or anything else) can represent via *resemblance*.

Introduction

Berkeley's theory of vision is regarded as both an important part of his idealist philosophical system[1] and an influential early work in the foundations of vision science.[2] According to the theory, the visual process begins with experience of the *proper object of sight*, a collection of *visible* ideas of light and color that occur when an image is projected onto the retina. Through experience, we come to associate these visible ideas with *tangible* ideas of distance, size, shape, and situation.[3] These tangible ideas consist in tactile, haptic, or kinesthetic experiences—feeling the bulgy, rounded shape of an object, feeling your body move a certain distance through space as you traverse a landscape, and so on.[4] Once visible ideas are associated with tangible ideas, the former automatically evoke the latter

[1] Cf. PHK 42-3, Hight (2013, 35), Atherton (1990), Lennon (2011), Rickless (2013).
[2] Cf. Hatfield and Epstein (1979), Atherton (1990), Hatfield (1990), Falkenstein (1994), Schwartz (1994, 2019, 2022a, 2022b).
[3] Distance, size, and situation are Berkeley's main topics, but discussion of shape is sprinkled throughout his writings on vision, too (e.g., NTV 141-4).
[4] I provide some textual evidence for this reading of ideas in section 1.

through a process Berkeley dubs *suggestion*. By means of visible ideas suggesting tangible ideas, we see the spatial properties of the world around us.

In this paper, I defend a new interpretation of Berkeley's theory of vision that is designed to address a pair of interrelated interpretive problems. The first problem has to do with whether suggestion of tangible ideas can generate experience of *depth* and *three-dimensionality* in the visual field, and the second has to do with whether suggestion is psychologically *flexible* enough to play all the roles Berkeley seems to assign it. Though the first problem has been much-discussed, previous solutions are unsatisfying for reasons to be explained; the second problem has not, to my knowledge, been discussed before.

Along the way, my interpretation contextualizes Berkeley's theory of vision among both his views of the *mental faculties* and his tripartite distinction between *ideas of sense*, *ideas of imagination*, and *notions*. These two underexplored aspects of his thinking are important to his general views of psychology and cognitive economy, yet they have been only rarely and incompletely connected with his views of vision in the secondary literature. Making these connections clearer will illuminate the theory of vision and, at the same time, position us to understand Berkeley's broader views of perception, cognition, and intentionality more deeply.

Section 1 lays foundations for the discussion to come: I defend a reading of the proper object of sight and of the differences between visible and tangible ideas. In section 2, I explain the two aforementioned problems in detail—both have to do with the way suggestion operates on the proper object of sight—and I show that neither has been satisfactorily solved by earlier interpretations. In sections 3 and 4 I show that Berkeley in

fact appeals to *two different kinds of suggestion*, each depending upon a different combination of mental faculties, and I show (in 3) that the first kind of suggestion is the key to solving the first of our two problems, and (in 4) that the second kind of suggestion, taken together with the first, is the key to solving our second problem. In part 5, I briefly discuss some of the ways the results and implications of the preceding discussion stand to illuminate and complicate Berkeley's broader views of perception, cognition, and intentionality.

1. The Proper Object of Sight (and its Heterogeneity with the Tangible World)

Berkeley thinks the proper object of sight is comprised of *visible ideas of sense* that we *immediately perceive*. He repeatedly identifies ideas of sense with *sensations* such as "Light and colors, heat and cold, extension and figures, in a word the things we see and feel" (PHK 5, cf. PHK 4, 18, 19, 136, TD 215). In articulating his idealism, he *reifies* the ideas of sense, claiming that they are *real physical qualities* willed into existence by God: "The ideas imprinted on the senses by the Author of nature are called *real things*" (PHK 33); "Ideas of sense are real things, or archetypes" (PC 823, cf. TD 244, 251, 262, N 843). In view of characterizations like these, I take ideas of sense to be phenomenally concrete particulars: feelings of warmth or pressure on the skin, lights and colors in the visual field, and so on.[5]

Berkeley thinks that ideas of sense are immediately perceived when appropriately related events—themselves ideas of sense—occur at our sense organs (TD 241, Atherton

[5] This is sometimes called an *imagistic* conception of ideas and is often rightly attributed to Berkeley (Conolly 2022, Winkler 1989, Tipton, 1986, Urmson 1982, Pitcher 1977). For alternative, non-imagistic readings, see Fields (2011) and Hatfield (2021).

1990, 69, 71, Schwartz 1994, 10).[6] When an image is projected onto the retina, corresponding visible ideas are immediately perceived (TVV 57); when pressure is applied to the skin, corresponding tangible ideas are immediately perceived (DM 13); and so on. When an idea of sense is immediately perceived, we become conscious of it.

The proper object of sight is the starting point of the visual process, according to Berkeley. It is comprised of the ideas of sense we immediately see when an image is projected onto the retina. It is generally agreed that there is *some* degree of correspondence between the retinal image, which is spatially two-dimensional, and the proper object of sight. However, commentators disagree as to how much of the two-dimensional spatial structure of the retinal image is preserved in the proper object of sight. Some commentators argue that *no* spatial structure is preserved at all, so that the proper object of sight is an aspatial collection of light and color (Atherton 1990, Copenhaver 2014, 2021, cf. Schwartz 1994, Dunlop 2011). Call this the *Aspatial Reading.* Others argue that the proper object of sight preserves all or most of the retinal image's spatial structure, so that it is a spatially two-dimensional array of light and color (Schwartz 2019, 2022a, 2022b, Falkenstein 1994, Pitcher 1976, Thrane 1977, Armstrong 1960, cf. Grush 2007). Call this the *Spatial Reading*. I believe the Spatial Reading is correct.[7]

To begin with, the Spatial Reading enjoys the preponderance of textual evidence. In NTV Berkeley explains that "what we immediately and properly see are only lights and colors in sundry situations and shades, and degrees of faintness and clearness, confusion

[6] Berkeley can explain the existence of things that are not currently perceived by any human (like our retinas) by holding that such things are perceived by God. Cf. Hight (2008) and Winkler (1989).
[7] Debate between Spatial and Aspatial Readers of Berkeley's theory extends back into the 19th century. For illuminating review, see Falkenstein (1994).

and distinctness" (NTV 77). The "situations" of these lights and colors are their relative orientations (above, below, etc.) in the height and breadth dimensions of the proper object of sight. Aspects of the proper object of sight that suggest tangible distance and magnitude include "the situation of visible points or objects, as upper or lower, the one suggesting a farther distance and greater magnitude, the other a nearer distance and lesser magnitude" (ibid.). A cue for "the situation of… tangible things" is "the situation of visible things in respect of one another" (NTV 99).

In TVV, Berkeley explains that "The proper immediate object of vision is light, in all its modes and variations, various colors in kind, in degree, in quantity, some lively, others faint; more of some, and less of others; various in their bounds or limits; various in their order and situation" (TVV 44). He goes on to call portions of the proper object of sight "pictures", and he contrasts these with "images," which are portions of the tangible projection on the tangible retina and as such not immediately visible:

> To know how we perceive or apprehend by sight the real magnitude of tangible objects, we must consider the immediate visible objects, and their properties or accidents. These immediate objects are the pictures. These pictures are some more lively, others more faint. *Some are higher, others are lower in their own order, or peculiar location* which, though in truth quite distinct, and altogether different from that of tangible objects, has nevertheless a relation and connection with it, and thence comes to be signified by the same terms, 'high', 'low', and so forth. Now by the greatness of the pictures, their faintness, and their *situation*, we perceive the magnitude of tangible objects. The greater, the fainter, and the *upper pictures* suggesting the greater tangible magnitude. (TVV 54, my emphasis)
>
> [T]here are pictures relative to those images and the pictures have *an order among themselves* answering to the situation of the images, in respect of which order they are said to be '*higher'* and '*lower'*. These pictures also are more or less faint, they, and not the images, being in truth the visible objects. Therefore what has been said of the images must in strictness be understood of the corresponding pictures whose faintness, *situation*, and magnitude, being immediately perceived by sight, do all

> three concur in suggesting the magnitude of tangible objects, and this only by an experienced connection. (TVV 57, my emphasis)

Features of these two-dimensional pictures serve as cues that suggest tangible spatial ideas to the mind.[8]

On the Aspatial Reading, it is impossible to make sense of many of these cues: focus blur (NTV 21-26, TVV 68) presupposes that points are arranged into edges, for only an edge can be blurry. Image size (TVV 62, NTV 56) presupposes that points are arranged into units with extensive magnitudes. Height in field (NTV 77, TVV 62-3) presupposes a field organized in the height dimension. Familiar size/shape (TVV 62) presupposes units with sizes and shapes in the height and breadth dimensions. Moreover, Berkeley's account of mediately seeing situation depends on the possibility of setting up correlations between spatial directions and locations in the immediately seen visual field, and tangible directions and locations (NTV 97-8, 102). If Berkeley's theory takes the starting point of the visual process to be more primitive than something two-dimensional, it is unclear how we ever escape this primitive start to reach the later stages of vision via the very cues posited by the theory.[9]

Despite these texts, commentators still endorse the Aspatial Reading. One possible motivation for doing so is Berkeley's insistence that the proper object of sight is not a flat plane. Flatness presupposes determinate depth relations between points on a surface, and

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[8] Passages cited in support of the Aspatial Reading are at best inconclusive: Berkeley sometimes claims that we immediately see *nothing but* light and color: "in a strict sense, I see nothing but light and colors, with their several shades and variations" (NTV 130, cf. 103, 129, 156). But he also thinks that color can neither exist nor be conceived of apart from visible extension (NTV 130, PHK I 7, PHK 5). So, Berkeley is best understood as meaning that all we immediately see is light and color *and two-dimensional visible extension* apart from which the light and color cannot exist or be conceived of. In other texts, Berkeley says that we do not immediately or "strictly speaking" see space (NTV 46). This claim is plausibly understood as being about *tangible* space only, which is the kind of space that ordinary spatial talk is about (NTV 61).

[9] For a similar argument, see Schwartz (2019).

such determinate structure-in-depth is no part of the proper object of sight: "smoothness and uniformity or, in other words, this planeness… is not perceived immediately by vision; for it appears to the eye various and multiform. From all which we may conclude that planes are no more the immediate object of sight than solids" (NTV 157-8). However, the proper object of sight can be two-dimensional without being a plane: I believe Thrane (1977) is correct to conclude that for Berkeley the proper object of sight is a two-dimensional spatial manifold with an indeterminate third-dimensional structure.

Berkeley's heterogeneity theses—his claims about the deep differences between visible

and tangible ideas—can also seem to motivate the Aspatial Reading. First, there is the *weak heterogeneity thesis* that visible and tangible ideas are always numerically distinct (NTV 49). Berkeley makes this thesis fit with a two-dimensional proper object of sight by arguing that the proper object of sight does not occupy the same spatial dimensions as the tangible world. Rather, we are subject to heterogeneous visible and tangible spaces (NTV 111-3). Tangible space is three-dimensional and is populated by orderings of tangible points—*minima tangibilia* (MT)—impressed upon our skin or traced by motions of our body (cf. NTV 145). MT have tangible qualities like warmth or hardness (NTV 54, 62). Visible space is two-dimensional and is populated by orderings of visible points—*minima visibilia* (MV)—that we immediately see, and which have the visible qualities of color and brightness (NTV 79-82, cf. Schwartz 2019).

Second, there is the *strong heterogeneity thesis* that visible and tangible ideas may not be of the same *sort* (NTV 127). This thesis is relatively easy to accept for individual MV or MT: MV have only light and color properties, and MT have only warmth (or coolness),

hardness, etc. We run into trouble when we consider spatial configurations of MV or MT. Why can't a warm triangle—an assemblage of MT—be of the same sort as a red triangle—an assemblage of MV?[10] This is the most serious challenge facing the Spatial Reading.

Berkeley sometimes claims that *a* and *b* are of the same sort if they resemble (PHK Draft Intro 19, Alc. First edition VIII.7, NTV 128, Pearce 2017, 89-90, Wilson 1999b). He never explicates the relevant concept of resemblance. However, a helpful hint is provided by other texts in which Berkeley claims that *a* and *b* are of the same sort just in case *it is convenient for humans to treat them as such*. A "combination of ideas is considered as one thing by the mind, and in token thereof is marked by one name. Now, this naming and combining together of ideas is perfectly arbitrary, and done by the mind in such sort as experience shows it to be *most convenient*" (NTV 109, my emphasis). Note that a group of MV or MT assembled into a visible or tangible shape is such a combination of ideas. Elsewhere, Berkeley says that our conventions of naming are "framed by the vulgar, merely for *conveniency* and dispatch in the common actions of life, without any regard to speculation" (TD 246, my emphasis). These two hints—that sorting is based on resemblance but is also based on practical convenience—can be put together in a way that both vindicates the Spatial Reading and makes Berkeley's strong heterogeneity thesis appear more plausible than it is sometimes taken to be (cf. Wilson 1999b).

As I read Berkeley, *a* and *b* are of the same sort if they resemble, where the relevant concept of resemblance is partly *practical*:

> **Resemblance**: *a* and *b* resemble *iff* they share a range of properties or features sufficient for them to play a common role in human life.

[10] This trenchant formulation of the problem is due to Wilson (1999b).

We will see later (section (3)) that this conception of resemblance also plays a role in Berkeley's views of representation. Here, my goal is to defend the claim that for Berkeley, resemblance, as just defined, does *not* obtain between visible and tangible extensions (including tangible distances).

Berkeley thinks that visible extensions are indeterminate because, in virtue of their propensity to change with shifts in perspective, they have no time-invariant shape or size: "the visible object still changing as you approach… or recede… it has no fixed and determinate greatness" (NTV 55); "a visible inch is itself no constant determinate magnitude" (NTV 61); "visible extensions in themselves are little regarded and have no settled determinate greatness" (NTV 151). As a result, Berkeley concludes, "it [is] evident that visible extension and figures are not the object of geometry" (NTV 151): "[T]he perpetual mutability and fleetingness of those immediate objects of sight render them incapable of being managed after the manner of geometrical figures" (NTV 156). By contrast, tangible extensions do have time-invariant shapes and sizes: they "continue… always invariably the same" (NTV 55).

Thus, tangible extensions are the objects of geometry (and by extension, physics) (NTV 149-58). Berkeley conceives geometry as a practical science of the measurement of bodies (Alc. 7.15, *Analyst* Queries 2, 53). He writes that "men measure altogether by the application of tangible extensions to tangible extension" (NTV 151). We have in mind tangible extensions but not visible extensions when we think of stable bodies in the environment around us. This is reflected in the linguistic conventions that govern our talk of bodies: "Whenever we say an object is great or small, of this or that determinate

measure, I say, it must be meant of the tangible and not the visible extension" (NTV 61). Thus, tangible extension's roles in human life cannot be played by visible extension.

At the same time, Berkeley thinks we use visible extensions as *signs* that carry information about tangible spatial properties. For example, a visible square is a sign of a tangible square (NTV 141-4). Essential to the usefulness of visible ideas as signs is that we can see things from a distance: "by the perception of visible ideas… [we] may be able to foresee the damage or benefit which is like to ensue upon the application of… [our] own bodies to this or that [tangible] body which is at a distance" (NTV 59). Obviously, tangible extensions cannot be utilized in this way since tangible ideas arise on contact. So, visible extension's roles in human life cannot be played by tangible extension.

It is because there is no overlap between the roles played in our lives by visible and tangible extensions that they cannot resemble each other. Further evidence for this reading is that it can sense of a famously puzzling passage in NTV: where Berkeley argues that visible squares signify tangible squares (NTV 141-4), he insists that they do not resemble and yet concedes that they both have the same number of sides and angles. If resemblance were just a matter of sharing properties or features, then this would make no sense. But on my proposed explication of resemblance, it does make sense: Berkeley contends that *even though* the visible and tangible square share a certain range of properties, this is not enough to allow them to play any common role in human life, and therefore not enough to make them resemble.

We can now see why, for Berkeley, visible and tangible shapes are not of the same sort, even if both share certain features, like being composed of points disposed in two spatial dimensions, or having *n* sides or angles. An aspatial proper object of sight is

therefore not required to make sense of strong heterogeneity The Spatial Reading is vindicated: Berkeley's proper object of sight is best understood as a spatially two-dimensional array of light and color—in essence, a conscious version of the retinal image. We can now turn to the interesting business of how suggestion operates on the proper object of sight to produce full-fledged visual perception.

2. Two Problems

Before I get to my own reading of suggestion's role in the visual process, I want to highlight two problems my reading is intended to solve. The first problem, which has been extensively discussed by other commentators, has to do with visual appearances of *three-dimensionality*: even though the proper object of sight is spatially two-dimensional, objects typically appear to sit at different *depths* in the visual field, and they often appear to have *bulgy*, rounded three-dimensional shapes. Can Berkeley's theory of vision accommodate these phenomenological facts?

According to what I call *Pessimistic Readings*, the answer is 'no'. Russell (1948, 51) writes that "Berkeley's theory of vision, according to which everything looks flat, is disproved by the stereoscope". Pitcher (1977, 20-21) claims that "Berkeley without doubt denies… that the 'visual appearances' contain a third, or distance, dimension" and that the visual field we phenomenally experience is in fact a "flat expanse of light and color" (ibid., 22). Similarly pessimistic answers are found in Armstrong (1960, ch. 1) and Schwartz (2019).

Pessimism results primarily from the way *suggestion* is understood. Armstrong (1960, pp. 3, 16-7) describes suggestion as "judgment" or "estimation". Pitcher (1977, p. 9) describes suggestion as "an 'intellectual' process… [that creates] a resultant belief". Schwartz (2022b) reads suggestion as *perceiving-as*: when *a* suggests *b*, *a* is perceived *as* a sign for (=as meaning) *b*. On these construals, suggestion does not *generate new ideas*. Rather, it attaches new *meanings* to ideas already in view.[11] Because it does not generate new ideas, it does not add new appearances to the proper object of sight. Note that although the commentators cited in this paragraph all happen to be Spatial Readers, one could also pair a conception of suggestion like theirs with the Aspatial Reading and the result would be a different form of Pessimistic Reading, on which the visual process culminates with experience of a *totally* aspatial visual field that is taken to *mean* this or that (whether by means of judgment, belief, or perceiving-as).

Another group of commentators hold what I call *Optimistic Readings*: they allege that Berkeley's theory *can* accommodate three-dimensional appearances. Clearly, if Berkeley's theory has the resources to support such a reading, then such a reading ought to be preferred since it renders the theory far more empirically plausible than the Pessimistic alternative.[12] According to Atherton (1990), suggestion transforms an aspatial proper object of sight into experience of a three-dimensional spatially organized visual field in which things phenomenally "look" to be at a distance (76). Inspired by Atherton,

[11] This is a common construal of suggestion. For other examples, cf. Atherton (2008), Fields (2022), Dicker (2017), Cummins (1987).

[12] Berkeley rejects Locke's theory of abstract general ideas at least partly because it does not accurately capture Berkeley's own introspectable experience of thinking. It stands to reason that he wouldn't want to accept a theory of vision that inaccurately portrayed introspectable visual appearances, either, and such appearances typically include three-dimensionality and depth.

Copenhaver (2014, 1-2) is emphatic that "typical perceivers experience [tangible] distance, figure, magnitude, and situation *visually*" rather than through judgment. Whereas both Atherton and Copenhaver pair their Optimism with Aspatial Readings, Thrane (1977, 285) claims that when distance is suggested, a spatial proper object of sight is pushed and stretched "like a piece of India rubber" into determinate third-dimensional configuration.[13]

All these Optimistic Readings face the same problem: they do not satisfactorily explain how suggestion of *tangible* ideas can contribute new appearances to the *visual* field. Consider, for example, Copenhaver's description of how this happens:

> Berkeley explains how this happens by linking the visible with the spatial [=tangible]: visible features are signs or marks of spatial features. The spatial significance of visible features enables typical humans to see [tangible] distance, figure, magnitude, and situation. Though spatial features are not immediately perceived by sight, they are perceived by sight nevertheless. (ibid.)

The claim that features of the proper object of sight have a spatial significance or meaning tells us nothing about how the process of suggestion of tangible ideas could generate new appearances in the visual field. Said claim is equally compatible with the view that suggestion is a purely intellectual process that generates no appearances at all. It is of course possible that Berkeley's theory cannot do any better than this. As I show in the next section of the paper, however, he *does* have the resources to provide a more compelling story. So, we should not rest content with either a Pessimistic Reading *or* an Optimistic Reading that leaves it a mystery how suggestion of tangible ideas can generate new

[13] Thrane's way of thinking about Berkeley's view of the matter, which I take to be on right track, is reminiscent of Helmholtz, who thought that appearances of depth and three-dimensional structure in the visual field preserve topological structure present in the height and breadth dimensions of the visual field, so that visual depth perception is a matter of pushing or stretching this two-dimensional manifold, like a sheet of rubber, in a third, depth dimension (Helmholtz 1867, Vol 3, 132-4, cf. Hatfield 1990, 177).

appearances in the visual field. Spelling out a more satisfying Optimistic Reading is the first problem this paper addresses.

The second problem has to do with the *psychological flexibility* of suggestion. It was well-known in Berkeley's day that many cues used for seeing shorter distances do not work for seeing longer distances.[14] The degree of rotation of the eyes, for example, may allow us to discriminate between something's being an inch away and its being a foot away, but it will not help us discriminate something's being 1000 feet away from its being 1500 feet away. The same holds of sensations of straining the eyes, which Berkeley also appeals to as a distance cue (NTV 16-7). Berkeley thinks (in agreement with what he takes his predecessors to have thought) that "the estimate we make of the distance of objects considerably remote is rather an act of judgment grounded on experience than of sense" (NTV 3, cf. 4-8). Elsewhere, he makes it clear that he thinks this "act of judgment" is still a case of visual perception via suggestion (NTV 45).

Though it is implausible that visual appearances are *never* three-dimensional, it is not at all implausible that *some* visual appearances are not, or at least not robustly, three-dimensional. Seeing a distant mountain range rising behind a distant forest, we can certainly see that the mountains are further away than the forest, and yet we do not visually experience much (or perhaps any) depth between the two. At NTV 3 Berkeley is saying that we see that the mountains are further away than the forest through an act of judgment in which we take certain features of the proper object of sight—for example,

[14] Cf. Descartes (1637, 107) for a relevant example.

height in field, or faintness/bluishness—to *mean* that the mountains are a longer tangible distance away.[15]

Thus, the judgment-like processes with which Pessimistic Readers identify suggestion *do* have a place in the story, after all, and Optimistic Readers must acknowledge that while suggestion is sometimes a generator of appearances, it can *also* function as a generator of judgments about appearances. How can suggestion be flexible enough to do both jobs? Answering this question is our second problem. Whereas our first problem viz. three-dimensionality, has been much discussed, this second problem has rarely, if ever, been addressed.[16] I offer a solution to the first problem in the following section of the paper and a solution to the second in the subsequent section. Along the way, a new way of understanding Berkeley's theory of vision will emerge.

3. Suggestion to the Imagination

Suggestion is driven by contingent ("arbitrary") relations of constant conjunction, according to Berkeley: "two things by their mere coexistence or two ideas, merely by being perceived together, may suggest or signify one the other, their connection being all the while arbitrary; for it is the [arbitrary] connection only, as such, that causes this effect" (TVV 39, cf. Alc. 4.11, TD 204, 245, TVV 68).[17] When an idea of sense *a* and some other

[15] Recent empirical work (reviewed in Granrud 2012) indicates that, likewise, we achieve visual size constancy for objects farther away than 5-6 meters through rapid acts of inference, whereas such inferences are not needed to accurately see the sizes of closer objects. Though Berkeley is not explicit on the matter, he took many of the same cues driving visual perception of distance to also drive visual perception of size, and so he may have thought we also perceive faraway objects' sizes via an act of judgment, rather than sense.
[16] Atherton (1990) does seem to take suggestion to be flexible in roughly this way, but does not offer an account of what, in Berkeley's underlying views of psychology, explains this flexibility.
[17] Suggestion is standardly taken to be based on constant conjunction. For alternative accounts see Rickless (2013, ch. 1) and Copenhaver (2014).

thing *b* are constantly conjoined in experience, immediate perception of *a* comes to suggest *b*. I believe Berkeley is committed to *two* different sub-types of suggestion. I focus on the first sub-type in this section of the paper and the second in the next.

Berkeley calls the first sub-type *suggestion to the imagination*: "when we are said to see a red-hot bar of iron the solidity and 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" (TD 204, my emphasis). He explains what this means in more detail in a pair of passages near the beginning of TVV:[18]

> Besides things properly and immediately perceived by any sense, there may be also other things suggested to the mind by means of those proper and immediate objects. Which things so suggested are not objects of that sense, being in truth only objects of the imagination, and originally belonging to some other sense or faculty. (TVV 9)
>
> The peculiar objects of each sense, although they are truly or strictly perceived by that sense alone, may yet be *suggested to the imagination* by some other sense. The objects, therefore, of all the senses may become objects of imagination, which faculty represents all sensible things. A color, therefore, which is truly perceived by sight alone may nevertheless upon hearing the words 'blue' or 'red' be apprehended by the imagination. It is in a primary and peculiar manner the object of sight; in a secondary manner it is the object of imagination, but cannot properly be supposed the object of hearing. (TVV 10, my emphasis)

When an idea of sense is suggested to the imagination, it is not immediately perceived by any sense. Rather, it is represented by the imagination. How does the imagination represent?

Berkeley thinks the imagination represents by producing ideas of imagination that represent ideas of sense: "Ideas of sense are real things, or archetypes; ideas of

[18] In addition to TD 204 and TVV 10, Berkeley makes explicit reference to suggestion to the imagination at TVV 39. He more often uses the phrase 'suggestion to the mind', a term that I take to generalize over both sub-types of suggestion I discuss. Cf. note 25 below.

imagination, dreams, &c. are copies, images of them" (PC 823). "The ideas imprinted on the senses by the Author of Nature are called *real things:* and those excited in the imagination… are more properly termed *ideas*, or *images of things*, which they copy and represent" (PHK 33, cf. 27-8).[19] Two characteristics of ideas of imagination are of chief importance: first, they are phenomenally concrete particulars just like ideas of sense. Otherwise, they could not be 'copies' or 'images' of ideas of sense (cf. DM 53). Second, *unlike* ideas of sense, they are not real physical qualities because they are not products of divine will. Instead, they are fallible representations produced by human minds.[20]

Two conditions must be satisfied for an idea of imagination to represent an idea of sense. First, the idea of imagination must *resemble* the idea of sense according to the same notion of resemblance I deployed in section 1 of the paper: namely, that *a* and *b* resemble *iff* they share a range of properties or features sufficient for them to play a common role in human life. The relevance of this notion of resemblance is indicated by a comment Berkeley makes in a letter to Molyneux from 1709:

> [T]he ideas laid up in the imagination need not be images, strictly speaking of what they represent, for example, in demonstrating the proposition which says, that the sum of the angles of any polygon is equal to twice as many right ones, as there be sides in the figure, bating [=subtracting] four. You may make use of any one polygon, e.g., a pentagon to represent all the infinite variety of regular and irregular polygons that may possibly exist. Again when you recollect in your thoughts the idea of any house or city, for instance it is certain that idea does very rudely resemble the thing it represents, and not in each circumstance accurately correspond with it. And yet it may serve to most interests and purposes as well as if it did. (letter to Molyneux of 1709, in Hight 2013, 29).

[19] A standard view of imagination in Berkeley's broader intellectual context, both modern and Scholastic, was that imagination represents by generating mental images based on sensation (see Malebranche (ST p. 88), Locke (EHU IV.xi.5, cf. IV.iv.1, IV.xix.3), and on the Scholastic side, Sergeant (1697, 4th preliminary discourse, 20-28)).

[20] Note that immediate perception of ideas of sense is infallible (TD 238).

If I am representing polygons in general as part of the task of proving a theorem about polygons in general, I may do so by forming an idea of imagination of a pentagon, since a pentagon resembles all other polygons enough to play a common role with any of them in the task I am now undertaking (proving the theorem). So, general representation relies on the relevant notion of resemblance. Here, however, the important point is that ideas of imagination also represent particular ideas of sense via this sort of resemblance. If I am representing a particular house in imagination as part of the task of locating that house within a city, I may do so by forming an idea of imagination that only resembles the house in a few limited respects that prove relevant to my task and fails to resemble the house in many other respects. Thus, ideas of imagination can represent particular ideas of sense *without* being images or copies of them.

The second condition on representation is that something only functions as a representation if it is *used* as one by some agent. Although he does not say this explicitly, it is consistent with all Berkeley says, and it blocks the implausible implication that a thing represents *everything* it resembles. We will see some indirect textual evidence for this second condition later (in (5)). For now, we can leave it aside.

When idea of sense *b* is suggested to the imagination, the imagination generates an idea of imagination *i* that represents *b* in the manner just described. It has sometimes been argued (Pitcher 1976, ch. 1, Schwartz 2022b) that this process cannot drive vision since that would imply, quite implausibly, that visual perception of distance always involves imagined copies of tangible sensations of moving one's body through space or feeling tangible bodies and surfaces. But, as we have just seen, the permissiveness of the sort of

resemblance involved in representation, for Berkeley, means that an idea of imagination can represent *a* without being an image or copy of *a*.

I think it is precisely this permissive notion of resemblance allows Berkeley to hold that when *tangible distances and three-dimensional structures* are suggested to the imagination, they are represented by ideas of imagination that consist in *appearances of depth and bulginess in the visual field*. I'll defend this proposal—which is my solution to the first of our two problems—by answering five questions: first, what *are* appearances of depth and bulginess in the visual field? second, how do such appearances fit into Berkeley's theoretical framework? third, does Berkeley think the imagination capable of producing such appearances? fourth, can such appearances resemble tangible distance and shape enough to represent them? and fifth, can my proposal avoid violating Berkeley's heterogeneity theses?

So, what are depth and bulginess appearances? For illustrative purposes, I turn momentarily to some present-day sources. In her account of acquiring binocular stereoscopic depth perception as an adult, Susan Barry (2009) writes:

> I got into my car, sat down in the driver's seat, placed the key in the ignition, and glanced at the steering wheel. It was an ordinary steering wheel against an ordinary dashboard, but it took on a whole new dimension that day. The steering wheel was floating in its own space, with a palpable volume of empty space between the wheel and the dashboard. Curious and excited, I closed one eye and the position of the steering wheel looked 'normal' again; that is, it lay flat just in front of the dashboard. I reopened the closed eye, and the steering wheel floated before me. (94)

Barry describes a shift from an initial phase of an episode of visual perception in which she visually experiences only a very shallow depth between wheel and dash, so the wheel is "just in front of" the dash, to a second phase of the episode in which she visually

experiences a much deeper, "palpable" depth between the two. It is the *appearance of depth*, in my intended sense of the term, that changes from the first phase to the second.

For an illustration of bulginess, consider the following passage, from empirical work on picture perception by Koenderink, van Doorn, and Kappers (2006):

> Monocular and binocular stereopsis yield qualitatively different results. It has been repeatedly rediscovered that *true* stereopsis (binocular of course) gives rise to a *coulisses scene*: there is indeed spectacular depth, but it is as if the objects were disappointingly like flat stage cardboard cut-outs staggered at various depths, the depth gaps between the coulisses being well defined. In contradistinction, the depth gaps between objects are less well defined in monocular stereopsis... but the… objects look nicely rounded and solid. (12)

The authors describe the qualitative differences in experience that result from switching between two mutually exclusive ways of processing depth information: monocular and binocular stereopsis. We needn't linger on the interesting empirical details involved. The "rounded and solid" appearance the authors describe is an *appearance of bulginess*, in my sense of the term. These passages illustrate that differences in visual processing can make a difference for how much bulginess or depth visually appear to us. Although he was mostly ignorant of the underlying processing, Berkeley presumably had the same access we do to these visual appearances of depth and bulginess.

How do such appearances fit into Berkeley's theoretical framework? Obviously, such appearances are no part of the two-dimensional proper object of sight. However, I take Berkeley to hold that such appearances, *qua* ideas of imagination, can be added into our visual experience of the proper object of sight via suggestion to the imagination, so that (what are at first) two-dimensionally arrayed patches of color come to be rounded and solid and separated from one another by volumes of space in a third, depth dimension of

the visual field.[21] Although the two-dimensional proper object of sight can exist and be conceived of without any such depth and bulginess appearances, I do *not* think Berkeley would allow that depth and bulginess appearances can exist or be conceived of without the proper object of sight. To suppose otherwise would be like supposing that color can exist, or be conceived, in the absence of shape (or vice versa) and Berkeley denies that this is possible (NTV 130, PHK I 7, PHK 5).[22]

Thus, I take Berkeley to think that the two-dimensional array of light and color comprising the proper object of sight is blended together with ideas of imagination, in the form of depth and bulginess appearances, in ordinary visual experience. There is some textual evidence to encourage a reading like this. In TVV, Berkeley writes that, "[T]he mind is wonderfully apt to be deluded by the sudden suggestions of fancy which it confounds with the perceptions of sense, and is prone to mistake a close and habitual connection between the most distinct and different things for an identity of nature" (TVV 52). In *Siris*, he explains, "Natural phaenomena are only natural appearances [=ideas of sense]… They and the phantoms [=ideas of imagination] that result from those appearances, the children of imagination grafted upon sense… are thought by many the very first in existence and stability" (S 292). What I've been describing is the manner in which ideas of imagination are "grafted upon" ideas of sense in the visual process, for Berkeley, so as to form three-dimensional visual appearances.

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[21] I take the result of this process to be well-described in terms noted earlier (note 13) in connection with Thrane and Helmholtz: it is as if the proper object of sight is a sheet of rubber, and depth/bulginess appearances result from stretching and pushing the sheet in a third spatial dimension.

[22] Thus, we cannot imagine depth apart from the two-dimensional visible extension that, from our perspective, it overlays. Volumes of depth are therefore not empty spaces of the sort Berkeley finds problematic (cf. PHK 111-4, DM 53-8, 64, S 270).

Does Berkeley think the imagination capable of producing depth and bulginess appearances *qua* ideas of imagination, in the first place? One might worry that he thinks ideas of imagination must be copied from ideas of sense we have *actually* had in the past ("…are copies…" (PHK 33)). This would rule out depth and bulginess appearances in the visual field since these are not copied from any idea of sense we have actually immediately perceived.

Happily, Berkeley does not think ideas of imagination need to be copied from ideas of sense we've actually had—nor, even from ideas of sense we *could* have. Discussing our ability to reason about rays or particles of light forming the projected image on the retina, he says that "figures and motions which cannot be actually felt by us, but only imagined, may nevertheless be esteemed tangible ideas, forasmuch as they are of the kind with the objects of touch, and as the imagination drew them from that sense" (TVV 51, cf. 43). Imagined rays or particles of light must be 'drawn from' the sense of touch because they are objects of geometry (cf. NTV 148-59), not because they are copies of tangible ideas we can actually sense—Berkeley *says* we cannot actually sense them. (And it is not clear what sensed tangible ideas we *could* copy an imagined ray or particle of light from, anyway).

Thus, when Berkeley says, elsewhere, that "imagination is nothing else than the faculty which represents sensible things either actually existing *or at least possible*" (DM 53, my emphasis) I take him to include among possible sensible things sensations that we *could* have immediately perceived if only God had made our sense organs quite differently. I therefore also think it plausible that Berkeley took depth and bulginess appearances in the visual field to be *imaginable* even if they are not immediately perceptible through any

of our senses. But as opposed to microphysical entities, I am claiming that Berkeley thinks these imagined depth and bulginess appearances represent tangible ideas of sense that we could (in most cases) immediately perceive by touch.

How can these depth and bulginess appearances resemble tangible distance and shape enough to represent them? Recall the relevant notion of resemblance: resembling is sharing a sufficient range of properties or features to play a common role in human life. Appearances of depth and bulginess in the visual field share with tangible distance and shape a set of dispositions to change in certain ways, contingent on certain bodily movements and actions. Evidence of this is that depth in the visual field tends to covary in (approximately) direct proportion with tangible distance: as you walk down a hallway, for example, tangible distance to the end of the hallway *and* the visual depth between you and the end of the hallway shrink at about the same rate; as you back away from the end of the hallway, they grow at about the same rate. Mutatis mutandis for visual bulginess and tangible shape: cut a chunk off of a tangible apple so the apple has a flat surface normal to your line of sight, and the bulgy front of the apple in your visual field is correspondingly replaced by a flat-looking surface of exposed apple-flesh.

In virtue of this approximate proportionality, ideas of tangible distance and shape and imagined appearances of depth and bulginess in the visual field can play common roles in supporting empirical judgments about the environment (much as many different imagined houses can play common roles in supporting judgments about a particular house). You might judge that one tree is closer than another on the basis of the imagined visual depth to each tree, whereas I might make the same judgment on the basis of the

different kinesthetic experiences I have of walking to each tree. This is the common role in human life that allows imagined depth and bulginess in the visual field to represent tangible distance and three-dimensional structure.[23]

Finally, how can this account—on which suggestion of tangible ideas generates new appearances in the visual field—avoid violating Berkeley's heterogeneity theses? Recall that the upshot of the weak heterogeneity thesis is that visible and tangible ideas exist in distinct visible and tangible spaces, such that we can never see and touch the same thing. My reading is consistent with this since it claims that imagined representations of tangible ideas, rather than actual tangible ideas, appear in the visual field. (And it's a further question whether appearing to occupy a *third* dimension in the visual field is a way of being *in* visual space, which is by nature only two-dimensional, according to Berkeley).

As for the strong heterogeneity thesis, which denies sorts common to vision and touch, nothing I have said in this section undermines the interpretation of strong heterogeneity offered in (1), above. Although visible ideas may trigger the generation of imagined representations that play a common role with tangible ideas in virtue of sharing certain properties, the visible ideas themselves do not resemble the tangible ideas in this way. Unlike the relevant representations, the visible ideas *themselves* cannot support empirical judgments about tangible spatial properties in the environment for reasons familiar from earlier discussion (1).

[23] Berkeley argues that even though the retinal image and proper object of sight are directly proportional, they are strongly heterogeneous and incapable of resembling each other (TVV 53). However, I believe the issue is not that direct proportionality cannot make two things resemble, but rather that in *this* case of direct proportionality, the two things cannot resemble because they happen to play no common role in human life.

By appealing to suggestion to the imagination, Berkeley can tell a compelling story about how suggestion of tangible ideas generates appearances of three-dimensionality and depth in the visual field. I turn now to our second problem.

4. Suggestion to the Understanding

Recall that Berkeley distinguishes some cases of suggestion as *judgmental*: "the estimate we make of the distance of objects considerably remote" is "an act of judgment grounded on experience [rather] than of sense" (NTV 3). At NTV 45, Berkeley provides a more detailed explanation of the process of mediately seeing long distances:[24]

> Having of a long time experienced certain ideas perceivable by touch—as distance, tangible figure, and solidity—to have been connected with certain ideas of sight, I do, upon perceiving these ideas of sight, forthwith *conclude* what tangible ideas are, by the wonted ordinary course of nature, like to follow. Looking at an object, I perceive a certain visible figure and color, with some degree of faintness and other circumstances, which from what I have formerly observed, determined me to *think* that if I advance forward so many paces or miles I shall be affected with such and such ideas of touch… what [a person] sees only *suggests to his understanding* that, after having passed a certain distance, to be measured by the motion of his body, which is perceivable by touch, he shall come to perceive such and such tangible ideas, which have been usually connected with such and such visible ideas. (NTV 45, my emphasis)

The process he describes here is prima facie quite different from the process of suggestion to the imagination: rather than generate any new ideas, this process generates *thoughts* or *conclusions* (or perhaps judgments) about ideas of sense we've immediately perceived. Our

[24] In the preceding section, NTV 44, Berkeley has just been considering the example of seeing that a tower is one mile away.

second problem is to explain how suggestion can be *flexible* enough to generate *both* new appearances *and* thoughts, conclusions, or judgments about appearances already in view.

Key to solving the second problem is something else Berkeley says in NTV 45: he characterizes the process he is describing as *suggestion to the understanding*.[25] The understanding and the imagination are distinct mental faculties, for Berkeley (S 303-5, cf. TVV 42), and I take him to hold that *each* is capable of a distinctive form of suggestion.[26] We have already seen how suggestion to the imagination works. I turn now to its more intellectual counterpart, *suggestion to the understanding*.

Berkeley's view of the activity of the understanding is best understood in terms of his doctrine of *notions*. He contrasts notions sharply with ideas: "There are properly no ideas or passive objects in the mind, but what were derived from sense: but… there are besides these her own acts or operations; such are notions" (S 308). Ideas and spirits are the only *things* that exist (PHK 1-2), but notions aren't things at all. They are acts or operations of minds. This is broadly how they fit into Berkeley's ontology.

Most commentators who've written on notions would agree that Berkeley thinks a notion is a mental act of *understanding meaning*.[27] He says that "knowledge, and notions…

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[25] Berkeley also makes explicit reference to 'suggestion to the understanding' when describing the cognition of linguistic meaning at NTV 17. He more frequently says 'suggestion to the mind', which is ambiguous between the two subtypes of suggestion I am distinguishing. Cf. note 18, above.

[26] Delineating the respective roles of the mental faculties, Berkeley explains, "Sense supplies images to memory. These become subjects for fancy to work upon. Reason [=the understanding] considers and judges of the imaginations. And these acts of reason become new objects to the understanding" (S 303). Other texts (PHK I 16, 21) indicate that the understanding can consider and judge ideas of sense as well as ideas of imagination. As the body text goes on to explain, these mental acts of considering and judging ideas are notions.

[27] Seizing on the textual evidence quoted in the next body paragraph, some commentators take notions to consist essentially in acts of understanding propositional, or linguistic, *meaning* (Woozley 1976, Pitcher 1976, 212-22, Flage 1987). Others take notions to be *concepts* (Park 1972 cf. Bracken 1974). And others take notions to consist essentially in *knowledge* (Hill, 2022 cf. Bracken 1974). Berkeley does not use the term

always go together" (S 309) and "what I know, that I have some notion of" (PHK 142). He also writes that "We know a thing when we understand it: and we understand it, when we can interpret or tell what it signifies" (S 253). Understanding meaning is uniquely the province of the faculty of the understanding: "As understanding perceiveth not, that is, doth not hear or see or feel, so sense knoweth not: And although the mind may use both sense and fancy, as means whereby to arrive at knowledge yet sense… knoweth nothing" (S 305, cf. 253).

In some cases, a notion is an act of grasping a conventional, linguistic meaning: "we have some notion of soul, spirit, and the operations of the mind, such as willing, loving, hating, inasmuch as we know or understand the meaning of those words" (PHK 27). Berkeley makes the same inference—from our understanding the meaning of a term to our having a corresponding notion—on several other occasions (PHK 140, 142, Alc. 7.5, TD 231, 234). I do not take Berkeleian notions to be exclusively linguistic in this conventional sense, though.

As is well-known, Berkeley also thinks that the natural world has a language-like structure (or, according to some commentators, that it literally *is* a language).[28] The gist of this view is that God follows the *laws of nature* in ordering and organizing our ideas of sense (PHK 30, S 160), so that one idea of sense may predict—hence, *mean*—that such-and-such others are likely to occur. Berkeley frequently invokes this picture by talking of ideas

'concept', but he does routinely describe notions in terms of both *knowing things* and *understanding meanings*, and he can be read as taking knowledge to consist in understanding meaning (where this involves more than just understanding conventional linguistic meaning). What I am saying about notions and about their role in perception is quite generic and is compatible with a wide range of readings of Berkeley on both notions and meaning.

[28] Cf. NTV 147, PHK 60-66, S 254, Turbayne 1970, Pearce 2017.

of sense "signifying" one another (PHK 60-6, S 254). Such signification or meaning is not a matter of convention, but of law. A notion can consist in an act of understanding what an idea means, in this natural sense, too. Where he says, "We know a thing when we understand it: and we understand it, when we can interpret or tell what it signifies" Berkeley is primarily making a point about our understanding of "the connexion of natural things" (S 253).

Notions are not appearances. They are not the sort of entity that could be extended, colored, warm, or loud. A notion might consist, for example, in judging or considering an appearance to be an appearance of *p*. Thus, despite his well-known anti-abstractionism, Berkeley is not a philosopher who tries to explain cognition or even perception in terms of the phenomenally concrete outputs of sense and imagination alone.

Notions' relation to ideas is nicely illustrated by Berkeley's view that we have notions, not ideas, of number: "Number is no object of sense: it is an act of the mind. The same thing in a different conception is one or many." (S 288, cf. 357, PHK 13). That is, many different notions of number can be applied to the same idea: "the same extension is one or three or thirty six, according as the mind considers it with reference to a yard, a foot, or an inch" (PHK 12, cf. NTV 109-10). Along similar lines, Berkeley explains that "we know and have a notion of relations between things or ideas, which relations are distinct from the ideas or things related, inasmuch as the latter may be perceived by us without our perceiving the former" (PHK 89, cf. 142). In short, notions comprise a cognitive or conceptual overlay applied to the ideas we experience.

Berkeley thinks that *notions are suggested*. In TD he has Philonous remark that, "In reading a book, what I immediately perceive are the letters, but mediately, or by means of these, are suggested to my mind the notions of God, virtue, truth, etc." (TD 174). In *Alciphron*, he has Euphranor deny that "words can suggest notions before a man hath learned the language" (Alc. 4.9). Later, Euphranor says,

> [I]n reading we run over the characters with the slightest regard, and pass on to the meaning. Hence, it is frequent for men to say, they see words, and notions, and things [=ideas] in reading of a book; whereas in strictness they see only the characters which suggest words, notions, and things [=ideas or spirits]" (4.12).

I believe that *suggestion to the understanding* is equivalent to suggestion of a notion.

In suggestion to the understanding, a subject automatically takes immediately perceived ideas to have a certain meaning via an act of the understanding (e.g., an act of judgment) because said immediately perceived ideas have been constantly conjoined with the experience of said act of the understanding in the past. For example, in learning to read, immediate visual perception of the written word 'virtue' may be constantly conjoined with judgments that something or someone is good (in some context), so that said immediate perception comes to trigger said judgments automatically, through suggestion. Another example is furnished by Berkeley's argument, from the end of PHK (147-8), that we can *see* God: once we have spent a while reflecting on Berkeleian philosophy, we will have repeatedly inferred that God is the only possible cause of the natural world, in all its staggering complexity and orderliness, and so we will mentally associate God with every immediate perception of the natural world, and all such perceptions will suggest the notion of God to our mind.

Finally, note that suggestion to the understanding and suggestion to the imagination can come apart, even where the two are based on the same pattern of constant conjunction of ideas of sense. Berkeley explains how words and ideas come apart as we learn to understand conventional language:

> It does… often happen either in hearing or reading a discourse, that the passions of fear, love, hatred, admiration, disdain, and the like, arise immediately in his mind upon the perception of certain words, without any ideas coming between. At first, indeed, the words might have occasioned ideas that were fit to produce those emotions; but, if I mistake not, it will be found that when language is once grown familiar, the hearing of the sounds or sight of the characters is oft immediately attended with those passions, which at first were wont to be produced by the intervention of ideas, that are now quite omitted. (PHK I 20)

The passion of love and certain ideas lawfully related to the passion of love are constantly conjoined in our experience so that the word 'love' at first suggests *both* these ideas and this passion. But because the suggested ideas turn out to be relatively useless in this context, they drop out and are "quite omitted" and the word 'love' suggests only the passion without any accompanying ideas. I presume that Berkeley likewise thinks that words and ideas more generally which at first suggest *both* ideas and notions can come to suggest only notions where this is more useful or efficient (cf. Alc. VII.5). Thus, a given pattern of constant conjunction among ideas of sense can in principle give rise to suggestion to the understanding without any accompanying suggestion to the imagination.

Now, consider NTV 45 one more time:

> Having of a long time experienced certain ideas perceivable by touch—as distance, tangible figure, and solidity—to have been connected with certain ideas of sight, I do, upon perceiving these ideas of sight, forthwith *conclude* what tangible ideas are, by the wonted ordinary course of nature, like to follow. Looking at an object, I perceive a certain visible figure and color, with some degree of faintness and other circumstances, which from what I have formerly observed, determined me to *think*

> that if I advance forward so many paces or miles I shall be affected with such and such ideas of touch… what [a person] sees only *suggests to his understanding* that, after having passed a certain distance, to be measured by the motion of his body, which is perceivable by touch, he shall come to perceive such and such tangible ideas, which have been usually connected with such and such visible ideas. (NTV 45, my emphasis)

I take Berkeley's view to be that in a case like the one described here, a notion of what some idea of sense means in the language of nature is suggested by the proper object of sight and no new ideas enter the mind at all (i.e., nothing is suggested to the imagination). So, for example, immediate visual perception of the faint, bluish appearance of the mountain range triggers an automatic judgment that the mountains are many tangible miles away.

It is because Berkeley has available *both* suggestion to the understanding, in the sense just described, *and* suggestion to the imagination, as described in part 3, above, that suggestion is *flexible* enough to function both as a generator of appearances *and* a generator of judgments about appearances. This is the solution to our second problem.

Still, a significant issue may seem to remain: if the suggestion to the understanding Berkeley mentions at NTV 45 is suggestion of notions, why doesn't he say so? More broadly, why doesn't he mention notions anywhere in the writings on vision?

I believe the answer has to do with the way Berkeley uses the term 'idea'. In PHK and TD he distinguishes sharply between ideas and notions and insists that while we cannot have ideas of spirits, we can have notions of them (PHK 25, 142). However, he allows that with certain qualifications—when using the term 'idea' "in a large sense" (PHK 140) or "in the modern way" (PHK 142)—we may still speak of having ideas of spirits.

This reference to the "modern" way of speaking may be an allusion to Locke's broad usage of the term 'idea'. Early in the *Essay* Locke tells us that he will use the term 'idea' "to express whatever is meant by *Phantasm, Notion, Species,* or whatever it is, which the Mind can be employ'd about in thinking" (EHU I.i.8). Scholastic authors[29] had carefully distinguished between the referents of the italicized terms: *sensible species* were involved in sensory perception of objects, *phantasms* were employed in imagination of objects, and *notions* (also called *intelligible species*) were employed in conceptual thought about objects.[30] Lockean ideas can be understood to include all such mental states.[31]

As we have seen, the primary way in which Berkeley uses the term 'idea' in his metaphysical writings is more restricted than this. Ideas are phenomenally concrete things, and we cannot have ideas of spirits, numbers, or relations (PHK 1, 2, 12, 89, 142, NTV 109-10, S 355, 357). On Locke's broad usage, by contrast, we can have ideas of numbers and relations, as well as spirits (EHU II.xvi.1-2, II.xxv.4, IX.x.7).

However, in the writings on vision Berkeley *does* employ something like Locke's broad usage of 'idea'. In NTV, he writes: "I take the word 'idea' for any immediate object of *sense, or understanding*—in which large signification it is commonly *used by the moderns*" (NTV 45, my emphasis).[32] And indeed, he talks of perceiving both number (NTV 109-10) and certain spatial relations (being above, to the left of, etc.) (NTV 99-102, TVV 46-8) by

[29] John Sergeant (1697), for example, attacks Locke for collapsing these distinctions. Berkeley is known to have read Sergeant's criticisms of Locke on this point (cf. PC 840, West 2023).
[30] Scholastic authors lumped sense and imagination together as forms of 'sensory cognition', and contrasted them with the intellect, which was responsible for 'intellective cognition' (Pasnau 1997, pp 12-3).
[31] I am suggesting that Locke holds a pluralistic, non-imagistic view of ideas (cf. Connolly (2022)). For an alternative reading of Lockean ideas, on which they are imagistic, see Ayers (1991, vol. 1, part 1).
[32] Furthermore, Berkeley describes suggestion to the imagination as mediate perception "by sense" (TD 204) and seems, in general, to think of imagination as lumped together with sense (cf. note 30).

means of suggestion.[33] These are likely further cases of suggestion of notions, but Berkeley does not say so explicitly because he is content, in this context, to use 'idea' in the broad, Lockean way, which encompasses *both* (of what the Berkeley of PHK and TD calls) ideas and notions.[34]

One reason for this may be dialectical: no one objected to the broad usage of 'idea' in the writings on vision. Though his reasons for doing so are not entirely clear, Berkeley may well have introduced his technical usage of 'notion' in the 1734 editions of PHK and TD in response to the objection—which had been raised by Andrew Baxter in 1733,[35] for instance—that the theory propounded in PHK and TD could not explain how knowledge of spirits is possible (given that in these texts Berkeley both insists that we cannot have ideas of spirits (PHK 27), and also seems to say (PHK 1-2) that only ideas and spirits exist). No similar objection could be raised against the theory of vision since it says almost nothing about spirits, and so Berkeley may have felt it unnecessary to make his idea/notion distinction explicit in the writings on vision. A second possibility is that Berkeley thought the broad, Lockean usage of 'idea' would be more familiar to his audience and thus make his theory of vision easier to understand.

In any case, the Berkeley of PHK and TD evidently reprises his own version of the tripartite Scholastic distinction between sensible species, phantasms, and notions that Locke effaces with his broad usage of 'idea'. For this Berkeley, there are ideas of sense,

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[33] Note that tangible distance is not necessarily a relation, for Berkeley. An idea of tangible distance is a span of tangible extension, a chunk of the tangible world composed of MT traceable by bodily movements. Such ideas can be suggested to imagination in the way described in (3). Of course, a notion of distance, as a relation, could *also* be suggested to the understanding.

[34] In a similar vein, Daniel Flage shows (1987, 46-7) that some of Berkeley's references to 'ideas' in the Introduction to PHK are plausibly references to what Berkeley later calls 'notions'.

[35] See the excerpt from Baxter in McCracken and Tipton, eds. (2000), 193-207.

ideas of imagination, and notions. When we read this classical tripartite psychology into the Berkeley of NTV and TVV (which is what I have been doing in this and the last section of the paper), it becomes evident that Berkeley thinks each of the three plays a distinctive role in shaping our visual perception of the world. The correctness of this proposal is underwritten by the fact that, as we have now seen, it helps us to solve longstanding problems for interpretation of the theory of vision. At the same time, the interpretation I have been defending raises new questions for Berkeley, some of which I briefly consider in the next (and final) section of the paper.

5. Conclusion: Meaning's Place in the Mind

What exactly is Berkeley's view of the division of labor between imagination and understanding? It is useful to end by briefly addressing this question. Doing so will both put a finishing touch on my interpretation of Berkeley's theory of vision and at the same time point us toward a suite of new and intriguing interpretive questions.

A stated goal of Berkeley's theory of vision is to explain how we see tangible distance, tangible size, and tangible situation (NTV 1). My discussion has focused primarily on seeing distance—both seeing shorter distances via suggestion to the imagination and seeing longer distances via suggestion to the understanding. But these forms of suggestion generalize to the visual perception of tangible size and situation as well as tangible shape, and other qualities. In each case, there is a distinctive story to tell about how imagination and understanding contribute to visual perception. For example, tangible sizes of faraway objects are more likely than the sizes of nearby objects to be seen through suggestion to the

understanding. It may be that we *only* see tangible situation through suggestion to the understanding.[36] In principle, though, it is open to Berkeley to claim that any tangible quality is seen *either* through suggestion to the imagination or suggestion to the understanding. He could even claim that qualities are seen in *both* ways at once.

My interpretation of the theory also provides Berkeley a satisfyingly rich and flexible account of perceptual illusion. As I read him, Berkeley thinks we can suffer perceptual misrepresentation *both* at the level of judgments about appearances *and* at the level of appearances themselves (where they are due to imagination rather than sense, anyway) (TD 238). So, Berkeley can distinguish carefully between a case like the partly-submerged stick looking bent, in which we err by making the false judgment (=suggestion to the understanding) that the stick is bent, and a case like the moon illusion where we err by generating a misleading appearance (=suggestion to the imagination) of the moon's size.[37]

[36] Discussing our capacity to mediately see tangible situation in NTV, Berkeley describes it as a capacity to "*denominate*" various parts of the experienced visual field as 'up' or 'down', etc. (NTV 98, my emphasis, and cf. NTV 102). In TVV he writes that "those motions and situations of the head, which in truth are tangible do confer their own attributes *and appellations* on visible ideas, wherewith they are connected [by suggestion], and which by that means *come to be termed 'high' and 'low', 'right' and 'left'*" (TVV 47, my emphasis). He says in the next section that we must connect the "terms relative to tangible place" to our immediately seen visible ideas (TVV 48). Learning to mediately see tangible situation is portrayed in these passages as, at least in part, a process of learning to understand the applicability of certain linguistic terms to certain visible ideas. This fits much better with suggestion to the understanding than suggestion to the imagination. Moreover, situation is relational in a stronger sense than other tangible spatial qualities. A tangible distance is an extended chunk of tangible world, whereas being *to the right of* does not entail being any particular distance to the right of, and thus does not pick out any particular chunk of physical world. This may be another reason to think that we have notions, not ideas, of situation (cf. PHK 89, 142).

[37] Berkeley describes the stick-in-water illusion as being possible through *either* judgment or imagination (TD 238). However, the phenomenal appearance of the illusion is already present in the ideas we immediately see, so it's hard to see how it could be explained by introducing *more* ideas into our experience. The opposite is true of the moon illusion.

A deeper question concerns the respective roles played by imagination and understanding in connection with representation and meaning. As we have seen, Berkeley insists that only the understanding can know, or understand, meaning: "As understanding perceiveth not, that is, doth not hear or see or feel, so sense knoweth not: And although the mind may use both sense and fancy, as means whereby to arrive at knowledge yet sense… knoweth nothing" (S 305). Berkeley is even more emphatic earlier in *Siris*:

> We know a thing when we understand it: and we understand it, when we can interpret or tell what it signifies. Strictly the sense [presumably lumped together with imagination] knows nothing. We perceive indeed sounds by hearing, and characters by sight: but we are not therefore said to understand them. After the same manner, the phaenomena of nature are alike visible to all: but all have not alike learned the connexion of natural things, or understand what they signify, or know how to vaticinate by them. (S 253)

What do these passages imply about Berkeley's views of perception, cognition, and intentionality? As we have seen in (3), Berkeley repeatedly talks of imagination *representing* sensible things (TVV 9, 10, 51, DM 53, PHK 33). But if the understanding alone is capable of taking something to have a meaning, this limits the sense in which imagination alone (without help from the understanding) can represent anything.

Berkeley has at least two options. First, he can say that imagination and understanding represent in two different senses so that while the imagination cannot understand meaning in the way the understanding can, it can do so in a different, less demanding way. Second, he can say that imagination alone (or accompanied only by sense) cannot represent anything but that imagination *does* represent, in practice, inasmuch as it is always accompanied by activity of the understanding. There is not space here to definitively settle this issue, but I am skeptical about option one, since I think Berkeley

would have difficulty spelling out the less demanding sense in which imagination alone could represent.[38]

By contrast, it is easy to see how option two would work. For an idea of imagination to represent *p* it would need to be *used by the understanding* as a representation of *p* (it would be usable as such in virtue of resembling *p*). This fits naturally with what I earlier made a condition on representation: *a* only represents *b* if it is used by some agent as a representation of *b*. (The passages from *Siris* we've been discussing—in which Berkeley insists that only the understanding grasps meaning—may be indirect evidence for his commitment to this second condition).

The view that imagination can be used as a tool by the understanding—for example in mathematical reasoning—was standard in Cartesian philosophy with which Berkeley was familiar. Option two generalizes such a view to Berkeley's picture of imagination's role in perception. On this picture, whenever imagination represents, including in suggestion to the imagination, it does so in virtue of being *made* to do so by an act of the understanding. Since acts of the understanding are notions, this means that all suggestion is, either in part or in whole, suggestion to the understanding and that sensory perception is by and large permeated by notions.[39]

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[38] Resemblance by itself isn't enough, since most things resemble far too many other things to have even a remotely determinate content via resemblance alone, whether in the specific sense of resemblance I have been employing in this paper, or in a more generic sense.

[39] Near the end of *Siris,* Berkeley writes: "In things sensible and imaginable, as such, there seems to be no unity, nothing that can be called one prior to all act of the mind; since they being in themselves aggregates, consisting of parts or compounded of elements, are in effect many. Accordingly… to collect many notions into one, and to consider them as one, is the work of intellect, and not of sense or fancy" (S 355). 'Idea' and 'notion' aren't technical terms in *Siris*, so it's possible that by "notions" (at S 355) Berkeley means something like 'ideas' in the broad, Lockean sense (he uses the term 'notion' this way at PHK 5). Understood in this way, Berkeley is saying at S 355 that perceiving an object—an aggregate of ideas—requires deployment of a notion of *oneness*, or *unity*. (NTV 109 further supports this reading). If this is what Berkeley thinks, then suggestion

I bring up this possibility here partly because I suspect there is something to it but primarily because I want to offer the reader at least one possible way of bringing into sharper focus the division of labor between imagination and understanding. I also bring it up to illustrate, the interesting avenues of interpretation that become available when we take Berkeley's views of the mental faculties and of the differences between ideas of sense, ideas of imagination, and notions seriously.

Whatever the case with these further interpretive questions, it should now be clear that efforts to interpret the theory of vision can benefit greatly by consulting Berkeley's broader views of the mental faculties, and of ideas and notions, and by noticing the presence of (at least) two distinctive kinds of suggestion in his theorizing. Taking this approach allows us to see (*inter alia*) how Berkeley can explain both three-dimensional visual appearances and the peculiar psychological flexibility of suggestion.

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to the understanding—in particular, suggestion of a notion of unity—has a role to play in all object perceptions. More generally, this may help to explain the unity implicit in "grafting" imagination upon sense (cf. S 292, discussed in (3)).

Bibliography

Adriaenssen (2017). *Representation and Skepticism from Aquinas to Descartes*, (Cambridge: Cambridge University Press).

Al-Haytham, Ibn (1030 (approx.)) *Kitab al-Manazir* , English translantion of 13th c. Latin translation (trans. Unknown) in Smith (2001), p. 339-651. Translation of original Arabic text in Sabra (1989), vol. I.

Armstrong, David (1960). *Berkeley's Theory of Vision* (Victoria: Melbourne University Press).

----. (1991) "Berkeley's *New Theory of Vision*" in Creery v. 1, pp. 171-4.

Atherton, Margaret (1990). *Berkeley's Revolution in Vision*, (Ithaca, NY: Cornell University Press)

----. (1991). "Corpuscles, Mechanism, and Essentialism in Berkeley and Locke", Journal of the History of Philosophy 29, pp. 47-67.

----. (1995). "Berkeley Without God", in R. Muehlmann, ed., Berkeley's Metaphysics, pp. 231-248.

----. (2007). "The Objects of Immediate Perception" in Daniel, ed., New Interpretations, 107-119.

----. (2008). "'The books are in the study as before': Berkeley's claims about real physical objects", British Journal for the History of Philosophy, vol. 16, no. 1, pp. 85-100

----. (2019). *Berkeley* (Hoboken, NJ: Wiley-Blackwell).

Armstrong, David (1960). *Berkeley's Theory of Vision* (Victoria: Melbourne University Press).

Ayers, Michael (1991). *Locke* (New York: Routledge).

Barry, Susan R. (2009). *Fixing My Gaze: A Scientist's Journey into Seeing in Three Dimensions.* (New York: Basic Books).

Berkeley, George (1707-8). *Philosophical Commentaries*, reprinted in Thomas, ed., (2019), pp. 1-329.

----. (1709) Principles Draft Introduction, reprinted in Fraser (1901, v. 3), pp. 357-383.

----. (1709). *Essay Toward a New Theory of Vision*, reprinted in Turbayne, ed., (1963), pp. 19-102.

----. (1710). *Principles of Human Knowledge*, reprinted in Winkler, ed., (1982) A Treatise Concerning the Principles of Human Knowledge (Indianapolis, IN: Hackett Publishing Group).

----. (1713). *Three Dialogues Between Hylas and Philonous*, reprinted in Clarke, ed., (2009) The Philosophical Writings of George Berkeley (Cambridge: Cambridge University Press), pp. 151-242.

----. (1721). *De Motu*, reprinted in Clarke, ed., (2009) The Philosophical Writings of George Berkeley (Cambridge: Cambridge University Press), pp. 243-268.

----. (1732). *Alciphron*, reprinted in Fraser (1901, v. 2), pp. 1-368.

----. (1733). *Theory of Vision Vindicated and Explained*, reprinted in Turbayne (1963), pp. 117-152.

----. (1734). *The Analyst*, reprinted in Fraser (1901, v. 3), pp. 1-60.

----. (1734-5). *The Querist*, reprinted in Fraser (1901, v. 4), pp. 415-476.

----. (1744). *Siris*, reprinted in Fraser (1901, v. 3), pp. 115-300.

Berman, David. (1999). *Berkeley*, (New York: Routledge).

Bolton, Martha Brandt (2008). "Berkeley and Mental Representation: Why not a Lockean Theory of Ideas?". Printed in *New Interpretations of Berkeley's Thought* ed., Daniel, pp. 77-106.

Boyle, Robert (1666). *The Origin of Forms and Qualities according to the Corpuscular Philosophy*, in M. A. Stewart, ed., Selected Philosophical Papers of Robert Boyle, (Indianapolis, IN: Hackett Publishing Company, 1991), pp. 1-96.

----. (1674) "The Grounds for and Excellence of the Mechanical or Corpuscular Philosophy", in M. A. Stewart, ed., Selected Philosophical Papers of Robert Boyle, (Indianapolis, IN: Hackett Publishing Company, 1991)

Bracken, Harry M. 1974. *Berkeley*. (London: St. Martin's Press).

Bradatan, Costica (2006) *The Other Bishop Berkeley: An Exercise in Reenchantment*…

Brandish, Norman (1929). "John Sergeant, A Forgotten Critic of Descartes and Locke". *The Monist*, 39, 4, pp. 571-628.

Brykman, Geneviève (2008) “On Human Liberty in Berkeley’s *Alciphron* VII”, printed in Daniel, ed., (2008), pp. 231-246.

Burge, Tyler (2005). “Disjunctivism and Perceptual Psychology”, *Philosophical Topics*, 33, 1, pp. 1-78.

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

Burtt, Edwin (1932) *The Metaphysical Foundations of Modern Science*…

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

Campbell, John and Cassam, Qassim (2014). *Berkeley’s Puzzle,* (Oxford: Oxford University Press).

Cao, Rosa (2020). “New Labels for Old Ideas: Predictive Processing and the Interpretation of Neural Signals”, *Review of Philosophy and Psychology*, 11, 3.

Chappell, Vere (1994). “Locke’s Theory of Ideas”, in V. Chappell, ed., *Cambridge Companion to Locke*, (Cambridge: Cambridge University Press), pp. 26-55.

Clark, Andy (2013). “Whatever Next? Predictive Brains, Situated Agents, and the Future of Cognitive Science”. *Behavior and Brain Sciences*, 36, pp. 181-204.

Connolly, Patrick J. (2022). “Berkeley and Locke”, printed in Rickless, ed., (2022), pp. 446-463.

Copenhaver, Rebecca (2014). “Berkeley on the Language of Nature and the Objects of Vision”, *Res Philosophica* 91 (1), pp. 29-46.

----. (2021). “Berkeley and Reid”. Printed in Rickless, ed. (2022). 615-637.

Creery, Walter, ed., (1991). *George Berkeley: Critical Assessments* (vol. 1-3), (London: Routledge).

Cummins, Phillip (1987). "On the Status of Visuals in Berkeley's 'New Theory of Vision'", in Creery (1991, v. 1), pp. 343-369.

Daniel, Stephen H., ed., (2008). *New Interpretations of Berkeley's Thought* (New York: Humanity Books).

Daniel, Stephen H., ed., (2007) *Reexamining Berkeley's Philosophy* (Toronto: University of Toronto Press)

Descartes, Renee (1633). *Treatise of Man*, T. Hall, trans. and ed., (Amherst, NY: Prometheus, 2003).

----. (1684). *Rules for the Direction of the Mind*, in J. Cottingham et al, trans., The -Philosophical Writings of Descartes, vol. I, (Cambridge: Cambridge University Press, 1984), pp. 7-78.

----. (1637). *Optics*, P. Olscamp, trans. and ed., revised edition, (Indianapolis, IN: Hackett, 2001).

----. (1641). *Meditations on First Philosophy* and *Objections and Replies*, in J. Cottingham et al, trans., The -Philosophical Writings of Descartes, vol. II, (Cambridge: Cambridge University Press, 1984), pp. 1- 62, 66-383.

Dicker, Georges (2006). "Berkeley on Immediate Perception: Once More Unto the Breach", *The Philosophical Quarterly* 56, pp. 517-535.

----. (2011). *Berkeley's Idealism*, (New York: Oxford University Press).

Downing, Lisa (1992) "Are Corpuscles Unobservable in Principle for Locke?" …

----.(1995). "Siris and the Scope of Berkeley's Instrumentalism", *British Journal of the History of Philosophy,* 3, 2, pp. 279-300.

----. (1998). "The status of mechanism in Locke's Essay", *Philosophical Review* 107, pp. 381-414.

----. (2002). "Robert Boyle", in Nadler, ed., (2002) *A Companion to Early Modern Philosophy*, (Malden, MA: Blackwell), pp. 338-353.

----. (2005). "Berkeley's natural philosophy and philosophy of science", in K. Winkler, ed., *Cambridge Companion to Berkeley* (Cambridge: Cambridge University Press), pp. 230-265.

----. (2021). "George Berkeley" *SEP* entry…

Dunlop, Katherine (2011). "The Role of Visual Language in Berkeley's Account of Generality", *Philosophy and Phenomenological Research* 83, 3.

Falkenstein, Lorne (1994). "Intuition and Construction in Berkeley's Account of Visual Space". *Journal of the History of Philosophy*, 32, 1. 63-84.

Fasko, Manuel and West, Peter (2020). "The Irish Context of Berkeley's Resemblance Thesis". *Royal Institute of Philosophy Supplement,* 88.

Fields, Keota (2011). *Berkeley: Ideas, Immaterialism, and Objective Presence.* (Lexington Books).

----. (2020). “Berkeley on Perceptual Discrimination of Physical Objects”, *History of Philosophy Quarterly* 37, 2, 2020.

----. (2022). “Berkeley on Perception”, printed in Rickless, ed., (2022), pp. 256-278.

Flage, Daniel (1987). *Berkeley’s Doctrine of Notions* (New York: Routledge).

----. (2001). “Berkeley’s Archetypes”, *Hermathena*, 171, pp. 7-31.

Foti, Veronique (1986). “The Cartesian Imagination”, *Philosophy and Phenomenological Research,* 46, 4, pp. 631-642.

Fraser, Alexander C., ed., (1901). *The Complete Works of George Berkeley*, vols. 1-4, (Oxford: Clarendon Press).

Garber, Daniel (1982). “Locke, Berkeley, and Corpuscular Skepticism” ‘Locke, Berkeley and corpuscular skepticism’, in Turbayne, ed., (1982) *Berkeley: Critical and Interpretive Essays*, pp. 174-193.

Glauser, Richard (2007). “The Problem of the Unity of a Physical Object in Berkeley”, printed in Daniel, ed., (2007), pp. 50-81.

----. (2017). “Immediate and Mediate Perception in Berkeley”, printed in eds., Belfrage and Brook (2017), *Bloomsbury Companion to Berkeley*, (Bloomsbury: New York), pp. 355-384.

Granrud, Carl. (2012). Granrud, “Judging the Size of a Distant Object: Strategy Use by Children and Adults”, printed in *Visual Experience*, ed. Allred and Hatfield (Oxford: Oxford University Press, 2012). 13-34 .

Grush, Rick (2007). “Berkeley and the Spatiality of Vision”, *Journal of the History of Philosophy,* 45, 3, pp. 413-442.

Hatfield, Gary (2009). *Perception and Cognition,* (Oxford: Oxford University Press)

----.(1988). “Representation and Content in Some (Actual) Theories of Perception”, reprinted in Hatfield (2009), pp. 50-87.

----. (1990). *The Natural and the Normative*. (MIT Press)

----. (1992). ‘Descartes’ physiology and its relation to his psychology’, in J. Cottingham, ed., *Cambridge Companion to Descartes*, (Cambridge: Cambridge University Press), pp. 335-370.

----. (2002). “Perception as Unconscious Inference”, reprinted in Hatfield (2009), pp. 124-152.

----. (2015). “On natural geometry and seeing distance directly in Descartes”, in V. De Risi, ed., *Mathematizing Space*, (New York: Springer).

----. (2015a). “Natural geometry in Descartes and Kepler”, *Res Philosophica* 92, pp. 117-148.

----. (2002). “Perception as Unconscious Inference”, reprinted in Hatfield (2009) pp. 124-152.

----. (2020). “Geometry and Visual Space from Antiquity to the Early Moderns”, printed in: *Space*, ed. Janiak, Oxford University Press (2020), pp. 184-222.

----. (2021). "Sense Data", *The Stanford Encyclopedia of Philosophy* (Fall 2021 Edition), Edward N. Zalta (ed.).

Eds. Hatfield, Gary, and Allred, Sarah (2012). *Visual Experience*. (Cambridge: MIT University Press).

Hatfield, Gary and Epstein, William (1979). "The sensory core and the medieval foundations of early modern perceptual theory" in Hatfield (2009), pp. 358-385

Von Helmholtz, Hermann (1867). *Handbuch der physioloigschen Optik*. (Leipzig: Voss, 1867).

Hight, Marc (2007). "Why My Chair is Not Merely a Congeries: Berkeley and the Single-Idea Thesis", printed in Daniel, ed., (2007), pp. 82-107.

----. (2012*). Idea and Ontology: An Essay in Early Modern Metaphysics of Ideas* (Philadelphia, PA: University of Pennsylvania Press).

----., ed., (2013). *The Correspondence of George Berkeley* (Cambridge: Cambridge University Press).

Hill, James (2022). "Berkeley on Ideas and Notions", printed in Rickless, ed., (2022), pp. 45-63.

Howhy, Jakob (2013). *The Predictive Mind*. (Oxford: Oxford University Press).

Hume, David (1739). *A Treatise ofHuman Nature*, D. and M. Norton, eds., (Oxford: Oxford University Press, 2000).

Jacovides, Michael (2017). *Locke's Image of the World*, (Oxford: Oxford University Press).

Jesseph (1993). *Berkeley's Philosophy of Mathematics* (Chicago, IL: University of Chicago Press)

Koenderink, Jan J., van Doorn, Andrea J., and Kappers, Astrid M. L. (2006). "Pictorial Relief". Printed in *Seeing Spatial Form* ed., Jenkin and Harris (Oxford: Oxford University Press, 2006).

Lennon, Thomas M (2011). "The Main and Part and Pillar of Berkeley's Theory: Idealism and Perceptual Heterogeneity". *Southern Journal of Philosophy*, 49, 2. 91-115.

Lindberg, David (1976). *Theories of Vision from Al-kindi to Kepler*, (Chicago: University of Chicago Press).

Locke, John (1689). *An Essay concerning Human Understanding*, P. Niddich, ed., (Oxford: Oxford University Press, 1975).

Machamer, Peter, and Robert Turnbull, eds. (1978). *Studies in Perception*, (Columbus: Ohio State University Press).

Maddy, Penelope (2022). "A Plea for Natural Philosophy", printed in *A Plea for Natural Philosophy: And Other Essays*. (Oxford: Oxford University Press). Pp. 13-48.

Malebranche, Nicolas (1674). *The Search After Truth*, Lennon and Olscamp, ed. and trans. by, (Cambridge: Cambridge University Press, 1997).

McCracken, Charles J. (2008). "Berkeley's Realism" in Daniel, ed., (2008), pp. 23-44.

Ed. McCracken, Charles J., and Tipton, Ian C. (2000). *Berkeley's Principles and Dialogues: Background Source Materials*. (Cambridge: Cambridge University Press).

Migely, Genevieve (2007). "Berkeley's Actively Passive Mind", printed in Daniel, ed., (2007), pp. 153-171.

Molyneux, William (1692). *Dioptrica Nova,* (reprinted by Gale Eighteenth Century Collections).

Ed., Muehlmann, Robert G. (1995) *Berkeley's Metaphysics: Critical and Interpretive Essays* (Philadelphia: Pennsylvania State University Press).

Newton, Isaac (1687) *The Principia*, in Janiak, ed., *Newton: Philosophical Writings*, (Cambridge: Cambridge University Press, 2014), pp. 59-114.

Ott, Walter (2019). "Berkeley's Best System: An Alternative Approach to Laws of Nature", *Journal of Modern Philosophy*, 1, 4, pp. 1-13.

Palmer, Steven E. (1999). *Vision Science* (Cambridge, MA: MIT Press, 1999).

Pappas, George (2000). *Berkeley's Thought* (Ithaca, NY: Cornell University Press).

----. (1987) "Berkeley and Immediate Perception" in Sosa ed….

Park, Desiree. (1972). *Complementary Notions: A Critical Study of Berkeley's Theory of Concepts*. (The Hague: Martinus Nijhoff).

Pasnau, Robert. (1997). *Theories of Cognition in the Later Middle Ages*. (Cambridge: Cambridge University Press).

Pasnau (2017). *After Certainty*. (Oxford: Oxford University Press).

Pautz, Adam (2021). *Perception*, (New York: Routledge)

Pearce, Kenneth L. (2017). *Language and the Structure of Berkeley's World,* (Oxford: Oxford University Press).

----.(2014). “Berkeley on Unperceived Objects and the Publicity of Language”, *History of Philosophy Quarterly,* 34, pp. 231-250.

Pitcher, George (1976). *Berkeley* (London: Routledge and Kegan Paul).

Popkin (1951) “Berkeley and Pyrrhonism” printed in *The High Road to Pyrrhonism* (San Diego: Austin Hill Press, 1981). Pp. 297-318.

Prinz, Jesse (2012). *The Conscious Brain.* (Oxford: Oxford University Press).

Reid, Thomas (1764). *An Inquiry into the Human Mind on the Principles of Common Sense*, D. Brooks, ed., (University Park, PA: Pennsylvania State University Press, 1997).

Rickless, Samuel (2013). *Berkeley’s Argument for Idealism,* (Oxford: Oxford University Press).

----. ed., (2022). *The Oxford Handbook of Berkeley*, (Oxford: Oxford University Press).

Sabra, A. I., trans., (1989) *Ibn al-Haytham’s Optics* (vols I and II), (London: The Warburg Institute)

----. (1978) ‘Sensation and inference in Alhazen’s theory of visual perception’, in Machamer and Turnbull [1978], pp. 160-185.

Schmitter, Amy M. (2021). "17th and 18th Century Theories of Emotions", *The Stanford Encyclopedia of Philosophy* (Summer 2021 Edition), Edward N. Zalta (ed.).

Schwartz, Robert (1994). *Vision: Variations on Some Berkeleian Themes* (??: Wiley-Blackwell).

----. (2019). “Berkeley’s Account of Extension and its Place in Vision Science”, in Glenney and Silva, eds., *The Senses and the History of Philosophy* (London: Routledge), pp. ??-??.

----. 2022a. “Berkeley’s Theory of Vision”. Printed in Rickless, ed. 2022. 279-299.

----. 2022b. “A Puzzle About Mediate Perception”. Printed in Fasko and West, eds. 2022. *Berkeley’s Doctrine of Signs Reconsidered* (Berlin: De Gruyter). ?-?.

Sergeant, John (1697). *Solid Philosophy Asserted against the Fancies of the Ideists; or the Method to Science further illustrated, With Reflexions on Mr. Locke’s ‘Essay concerning Human Understanding’*, retrieved from Early English Books Online Text Creation Partnership, https://quod.lib.umich.edu/e/eebo/A59247.0001.001?view=toc.

Seth, Anil K. (2019). “The Neuroscience of Reality” printed in *Scientific American*, September 2019.

Smith, A. Mark, trans. and ed., (2001) *Alhacen’s Theory of Visual Perception: A Critical Edition, with English Translation and Commentary, of the First Three Books of Alhacen’s De Aspectibus, the Medieval Latin Version of Ibn al-Haytham’s Kitab al-Manazir* (Philadelphia, PA: American Philosophical Society).

----. (2005) “The Alhacenian Account of Spatial Perception and its Epistemological Implications”, from *Arabic Sciences and Philosophy*, vol. 15 (Cambridge: Cambridge University Press, 2005). Pp. 219- 240.

Stein, Howard (2004). “The Enterprise of Understanding and the Enterprise of Knowledge: For Isaac Levi: In Admiration and Friendship”, *Synthese*, 140, 1, pp. 135-176.

Stoneham, Tom (2018). "Action, Knowledge, and Embodiment in Berkeley and Locke", *Philosophical Explorations*, 21, 1, pp. 41-59.

Stroud, Barry (1980). "Berkeley v. Locke on Primary Qualities" *Philosophy,* 55, 212, pp. 149-166.

Swanson, Link (2016). "The Predictive Processing Paradigm Has Roots in Kant". *Frontiers in Systems Neuroscience*, 10.

Thomas, George H., ed., (2019). *Philosophical Commentaries by George Berkeley*, (New York, NY: Routledge).

Tipton, Ian (1986). "Ideas in Berkeley and Arnauld", *History of European Ideas* 7, pp. 575-584.

Thrane, Gary (1977). "Berkeley's 'Proper Object of Vision'", *Studies in History and Philosophy of Science* part A, 6(1):3. Reprinted in Creery (1991, v. 1), pp 278-298.

Travis, Charles (2004). "The Silence of the Senses", *Mind*, 113, 449, pp. 57-94.

Turbayne, Colin (1970). "Berkeley's Metaphysical Grammar", in *A Treatise Concerning the Principles of Human Knowledge/George Berkeley with Critical Essays*, (??: Bobs-Merrill). Reprinted in Creery (1991, v. 1), pp. 50-73.

----., ed., (1963). *George Berkeley: Works on Vision* (USA: Bobs-Merrill).

----., ed., (1982). *Berkeley: Critical and Interpretive Essays* (MN: University of Minnesota Press).

Urmson, James Opie. (1982). *Berkeley.* (Oxford: Oxford University Press).

West, Peter. (2023). “Going Beyond ‘The Curtain of the Fancy:’ Anti-Representationalism in Berkeley and Sergeant”. *Berkeley Studies*, 30. 3-21.

Wilson, Catherine (1995). *The Invisible World*. (New Jersey: Princeton University Press).

Wilson, Margaret (1979). “Superadded properties: on the limits of mechanism in Locke”, reprinted in her (1999a), pp. 196-208.

----. (1982). “Did Berkeley completely misunderstand the basis of the primary-secondary quality distinction in Locke?”, reprinted in her (1999a), pp. 215-228.

----. (1985). “Berkeley and the Essences of the Corpuscularians”, reprinted in her (1999a), pp. 243- 256.

----. (1987). “Berkeley on Colors”, reprinted in her (1999a), pp. 229-242.

----. (1999a). *Ideas and Mechanism*, (Princeton, NJ: Princeton University Press).

----. (1999b) “The Issue of Common Sensibles in Berkeley’s New Theory of Vision”, reprinted in her (1999a), pp. 257-275.

Winkler, Kenneth (1989). *Berkeley: An Interpretation,* (Oxford: Oxford University Press).

----. (2005). “Berkeley’s Doctrine of Signs”, in K. Winkler, ed., *Cambridge Companion to Berkeley* (Cambridge: Cambridge University Press), pp. 125-165.

Yolton, John (1956). *John Locke and the Way of Ideas*, (Oxford: Clarendon Press).