

## CATHARINE COCKBURN ON SUBSTANTIVAL SPACE

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### 1. INTRODUCTION

[The] dangerous dilemma . . . of thinking either that real space is God, or else that there is something beside God which is eternal, uncreated, infinite, indivisible, immutable. Both which may justly be thought pernicious and absurd notions. (George Berkeley, *Principles of Human Knowledge*, II, 94)<sup>1</sup>

**I**n the early eighteenth century, the English philosopher Catharine Trotter Cockburn (1679–1749)<sup>2</sup> put forward an extremely unusual account of space. The originality of her account is best appreciated by contrasting it with others of the period; to this end, I introduce Cockburn’s metaphysics as an attractive solution to a formidable theological problem peculiar to early modern conceptions of substantival space.

Substantivalism is the thesis that space or spacetime is a concrete, irreducible being, to be listed on the contents of the universe as an entity in its own right.<sup>3</sup> Early modern substantivalists face a peculiar problem: on many conceptions of space, space is held to possess properties traditionally ascribed only to God. Consequently, as Berkeley argues above, substantivalism can lead to blasphemy. Identifying space with God leads to what I will label Spinozistic “pantheistic blasphemy”; and postulating the existence of something in addition to God with divine properties—in effect, a second God—leads to what I will label “polytheistic blasphemy.” Although these concerns are rarely made explicit, I suggest that those early moderns who endorse substantivalism have taken care to avoid both horns of Berkeley’s dangerous dilemma. These substantivalists generally use one of two strategies, both of which have their philosophical costs. René Descartes accepts that space is a substance but, by identifying space with matter, denies that it has any divine properties; this entails the counterintuitive consequence that space empty of matter is impossible. In contrast, Isaac Newton

attributes to space many properties—including all the divine properties listed by Berkeley above—but denies that space is a substance. In this period, the substance-property distinction, the thesis that all existing things are either substances or properties of substances, is widely accepted, so it is implicit that, if space is ascribed properties, it must be a substance; Newton's view is problematic in this context as it is unclear how something that is not a substance can bear properties.

I suggest that Cockburn's account of space provides a neglected third strategy for advancing substantivalism and avoiding Berkeley's dilemma. Cockburn holds that space is a substance *and* (or, so I will argue) that space possesses divine properties. However, her account avoids both charges of blasphemy because it makes novel use of a theological thesis, the Great Chain of Being. This thesis holds that all possible things exist, and all existing beings differ from one another only gradually. Cockburn argues that, as material substance and immaterial substance do not differ from each other gradually, space should be posited *as a third kind of substance* to fill the apparent gap. Although space possesses some uniquely divine properties, and, hence, may appear to lie open to the charge of polytheistic blasphemy, space cannot—by its very position in the Great Chain—be a second God. The philosophical cost of this solution is the assumption of the Great Chain of Being. In the context of early modern philosophy, this cost may be preferable to those incurred by its rival strategies. Cockburn's metaphysics of space deserves renewed scholarly attention.

This paper will proceed as follows. Section 2 sets the metaphysical scene. The first half of this section explains Berkeley's charges of blasphemy before expanding on the two strategies generally taken to avoid them by seventeenth-century substantivalists. The second half of this section discusses an early eighteenth-century faction of English philosophers—including Edmund Law and Isaac Watts—who reject substantivalism in favor of antirealism about space. Section 3 explores Cockburn's account of space. The first, negative part of Cockburn's discussion rejects the antirealism of Law and Watts, using an unusual empiricist methodology. The second, positive part of Cockburn's discussion sets forth her argument for substantivalism. Section 4 will offer some final thoughts.

## 2. SPACE IN EARLY MODERN METAPHYSICS

### 2.1 Berkeley's Dangerous Dilemma and Substantivalism

Following Henry More, a number of attempts are made from the late seventeenth century to deify space, by—for example—construing space as a property of God. It is these attempts that Berkeley is reacting to

in his *Principles* (1710), where he sets forth his dangerous dilemma. Berkeley is arguing that, if you hold space to be a real being, rather than nothing, you will hang yourself on one of his blasphemous prongs. Berkeley's own arguments against the reality of space are not relevant to this paper,<sup>4</sup> but the theological concerns that he articulates so precisely are; further, we will see that other philosophers are conscious of the same dangers. Thinkers such as Henry More and Newton deify space, but they still take care to avoid both of the blasphemies that Berkeley voices. Before explaining the strategies that substantivalists use to avoid these blasphemies, it is worth asking why the horns of Berkeley's dilemma are so dangerous.

The first horn, the charge of pantheistic blasphemy, poses an obvious theological danger: it is a thinly veiled allusion to Baruch Spinoza's *Ethics* (1677), which expresses the pantheistic thesis that God is the only substance and that one of the attributes of the divine substance is spatial extension (IP11). Spinoza has been accused of atheism and materialism: by seemingly identifying God with the material world, he has destroyed the traditional theological distinction between creator and created. In this period, most if not all philosophers would want to disassociate their metaphysics from Spinozism.

Several early moderns are also aware of the danger surrounding the second horn of Berkeley's dilemma, the charge of polytheistic blasphemy. Gottfried Leibniz is certainly conscious of this concern,<sup>5</sup> and I will argue below that Newton and Cockburn are too. However, it is not obvious what the theological danger posed by the second horn actually is. The properties that Berkeley lists—eternal, uncreated, infinite, indivisible, immutable—are traditionally ascribed to God. At first glance, the blasphemy entailed by the second horn may appear to be that we cannot postulate the existence of a substance that shares *any* of God's properties. However, this cannot be the case; God is also held to be knowing and loving, and so are human minds (albeit to a lesser degree). Instead, the blasphemy entailed by the second horn is ascribing properties to a substance that are traditionally held to belong *uniquely* to God. God is usually held to be the *only* eternal, uncreated, infinite, and immutable substance. The only property that Berkeley mentions that does not fit with this reading is indivisibility, for, although God is traditionally held to be divisible, sometimes also are human souls. Despite this possible exception, I suggest that this reading is extremely plausible: the special difficulty that attaches to (all but one of) the properties he lists is that they should all belong only to God. I will say a little about these properties in turn.

If something is *eternal*, it has always existed and will always exist. As all created beings come into existence through an act of creation—which

implies that there is a time when they do not exist—no created beings are eternal; conversely, all eternal beings are uncreated. If something is *uncreated*, then it is not brought into existence in the way that created things are. If something is *infinite*, it is boundless. If something is *immutable*, it is changeless. While a human body is mutable because it possesses properties that are subject to change, God is immutable.

Although Berkeley holds that substantivalism about space is inherently blasphemous, many early moderns disagree. They have generally avoided the charges of blasphemy articulated by Berkeley in one of two ways; one way is exemplified by Descartes, and one way is exemplified by Newton. I will discuss their strategies in turn.

Descartes takes the first strategy: he argues that space is a substance, but he denies that it has any uniquely divine properties. In his *Principles of Philosophy* (1644), Descartes argues that there are two kinds of substances—concrete entities that depend on nothing for their existence except God and can bear properties or modes—each of which have a distinct attribute, that which constitutes their nature or essence (AT VIII A 25; CSM I 210<sup>6</sup>). The attributes of a substance are unchanging; they can be contrasted with its modes or accidents, the properties of a substance that are subject to change and that depend for their existence on the substance. The attribute of incorporeal substance is thought, while the attribute of material substance is spatial extension. As spatial extension—in length, breadth, and width—just *is* space on the Cartesian picture, this entails that space and corporeal matter are not different in reality (AT VIII A 45; CSM I 227). Although Descartes accepts that space is a kind of substance, he denies that space has *any* divine properties. Material substance has parts; it is divisible; and it is “indefinitely,” rather than “infinitely,” extended, for only God is appropriately called infinite (AT VIII A 52; CSM I 232). Further, material substance is created by God (AT VIII A 24; CSM I 210). Although Cartesian substantivalism successfully avoids both horns of Berkeley’s dilemma, it incurs a significant cost: by identifying space and matter, the Cartesian world becomes a plenum in which space devoid of matter is impossible.

Newton exemplifies the second strategy for avoiding Berkeley’s blasphemies. Newton attributes to space many divine properties but denies that space is a substance and, as such, refrains from positing a substance that could be construed as a second God. In *De Gravitatione* (probably written in or before 1685<sup>7</sup>), Newton seems to be aware of something like Berkeley’s dilemma: “I see what Descartes’ feared, namely that if he should consider space infinite, it would perhaps become God because of the perfection of infinity” (Newton 1685/2004, 25). Newton is particu-

larly concerned with the possibility of an uncreated substance: “If we say with Descartes that extension is body, do we not manifestly offer a path to atheism . . . because extension is not created but has existed eternally” (ibid., 31). In other words, extension would become a second God. Of course, to make this objection to Descartes, Newton is applying *his* conception of extension—as something that is uncreated and has existed eternally—to Descartes’s system; Descartes would absolutely reject this. This consciousness of the issues that Berkeley would later formalize as his dilemma may have played a role in Newton’s conception of space. While Descartes holds that space is a substance but avoids blasphemy by denying space divine properties, Newton advances the opposite strategy: space bears divine properties, but it is not a substance. Newtonian space is immutable, indivisible, partless, and infinite (ibid., 26). Newton is also explicit that space is uncreated because space has always existed eternally (ibid.). Despite his ascription of these uniquely divine properties to space, Newton avoids blasphemy in virtue of his frequent and explicit denial that space is a substance on the grounds that space lacks the capacity to act on things (ibid., 21).

Samuel Clarke follows Newton in ascribing to space divine properties, yet denying that space is a substance. In *A Demonstration of the Being and Attributes of God* (1705), Clarke states that immensity (that is, space) cannot be nothing, for it has properties and modes, and “nothing” does not have properties and modes. Space can be understood with Newton to be infinite, immutable, uncreated, and eternal (Clarke 1705/1998, 13). Clarke claims that space is not a substance—although he offers no argument for this—so it must be a property. As such, it must be a property of some infinite and eternal substance: God. “Infinite space is nothing else but abstract immensity or infinity . . . [the mode of a] substance incomprehensible to us” (ibid.). In the *Leibniz-Clarke Correspondence* (1717)—where Clarke defends Newton’s absolutism—Clarke implies in his third letter that this is also Newton’s view: “Space is not a being . . . but a property, or a consequence of the existence of a being infinite and eternal” (Clarke 1717/1951, §3). Although Clarke is not mentioned by Berkeley in connection with his dangerous dilemma, James Ferguson argues that Berkeley probably had Clarke in mind, as well as Locke and others (Ferguson 1974, 31); more on this below.

This second strategy is also not without its costs. For Newton and Clarke, it is unclear how something that is not a substance can bear properties. Newton and Clarke are attempting to sail a middle course through the rocks: they do not wish to identify God and space, yet neither do they wish to allow the existence of a being with uniquely divine properties in addition to God. Their middle course attempts to deify space without going as far as pantheism, but it is not obvious that they

succeed. If Newton regards space as something apart from God, then—in the absence of any additional metaphysical machinery, such as that of Cockburn, below—he falls foul of polytheistic blasphemy. Newton's further denial that space is a substance only raises more questions, for, in the context of early modern metaphysics, it is unclear how a being can be neither a property nor a substance. This is one of the objections that Law makes to Clarke's Newtonian position (Law 1732, 41). If, on the other hand, Newton conceives—like Clarke—space to be a property of God, then whether he avoids the charge of pantheistic blasphemy will depend on how he conceives the notion of a property. If, for example, the unchanging properties of God are conceived to be anything like the Cartesian notion of an attribute—that which constitutes the essence of a substance, such that there is no difference in reality between a substance and its attribute—then God would in some literal sense *be* space.

We have seen two strategies for avoiding Berkeley's dangerous dilemma. Although Descartes's and Newton's views on space are very different, they have this much in common: neither of them accepts that space is a substance *and* that space has divine properties. Below, I will argue that Cockburn's account of space combines these views.

## 2.2. Space in 1730s English Theology

With the exception of Berkeley's critique, Clarke's broadly Newtonian strategy for advancing substantivalism and avoiding blasphemy escaped relatively unscathed for several decades. However, this changed with the publication of Law's *Origin of Evil* (1731), an English translation of William King's Latin *De Origine Mali*, which contained copious notes by Law criticizing Clarke's view of space. As Cockburn takes the antisubstantialist views of Law and Watts (one of Law's supporters) as her target in her discussion of space, it is worth setting them out in some detail.

Law rejects the deification of space and, with it, the reality of space: he argues that space is merely an abstract idea in the mind.<sup>8</sup> Law makes use of an argument found in John Locke's *An Essay Concerning Human Understanding* (1690). Locke's wider role in these debates will be discussed below; here, I focus on the Lockean argument that Law appears to appropriate. In the *Essay*, Locke claims that we obtain the idea of an infinite space by considering particular lengths, such as a foot or a mile, and multiplying them (II.xiii.5). Similarly, Law argues that we do not derive our idea of space directly, but rather by considering extended bodies and abstracting from them the idea of space:

Thus observing that all Bodies agree in being *extended*, as well as solid, though they differ never so much in magnitude and figure, we take the former of these properties apart from the latter, and also

from any particular Magnitude or Shape, and call it *Extension* in the abstract; which being thus made general it will comprehend all particular Extensions and may be enlarged every way and amplified *in infinitum* . . . it will become independent and serve both as a common *measure* and a common *Receptacle* for all Bodies. (Law 1732, 6)

Taking himself to have established that this is the way in which our idea of space is formed, Law goes on to argue that the nature of this idea is such that it exists nowhere but in the mind: the existence of such ideas do not provide proof of the existence of anything, except the mind's capacity to form them (Law 1732, 7). Against Clarke's argument that space must be a real being because it has properties—such as its capacity to receive objects—Law objects that this is no better than urging that darkness must be something because it has the power or property of receiving light: “[T]o attribute Extension or parts to space . . . will be the same as to talk of the extension or parts of *Absence*, of *Privation*, or of *mere Nothing*” (ibid.). Law assumes that a shadow is not a real being but merely an absence of light, which does not really have any properties or powers. Analogously, space is nothing in itself but a mere absence of bodies, and as such does not really have properties. If space is only an abstract idea in the mind and not a real being, it cannot possibly be an attribute of God.

Law's notes sparked a brief but intense debate in England, and one of his supporters is Watts, who discusses the debate in his *Philosophical Essays on Various Subjects* (1733). Watts agrees with Law that space is a “nothing” in itself, merely the absence of material bodies, but goes even further than Law in also denying that space is an idea in the mind. He argues for this conclusion using a *reductio*, by considering what space would be like if it were a “something,” motivated by the fact that space seems to have properties (Watts 1733/1990, 3). If it is a something, Watts claims that space must be either an idea in the mind or—in keeping with the substance-accident distinction—a substance or a mode (ibid., 2). He immediately rejects the possibility that space is an idea on the grounds that Clarke has “proved” that it is infinite, and we cannot have ideas of infinite things (ibid., 4). Further, space cannot be a mode because it can exist independently of all other beings, whereas—as we saw above—modes depend for their existence on a substance: “Try to suppose all Beings annihilated, yet you cannot conceive Space to be annihilated. . . . [T]his can never be a Mode of Being; for if it has any real subsistence at all, it subsists of itself, which is the first Character and Property of a Substance” (ibid., 7). If space is a substance, it would be created by God or uncreated; Watts argues that space must be uncreated, because we cannot conceive of space not existing (ibid., 8). It would be blasphemous in this context to posit the existence of an uncreated

substance *in addition* to God, and Watts does not even consider this possibility, jumping straight to the conclusion that, if space is an uncreated substance, it must *be* God. This supposition is seemingly confirmed by the fact that we can attribute to space several further divine properties, including infinity, indivisibility, eternity, and immutability (*ibid.*, 9–10). We have, in effect, arrived at the pantheistic blasphemy described in the first horn of Berkeley’s dilemma; like Berkeley, Watts condemns it. Watts argues that this conclusion results in “frightful and absurd” consequences (*ibid.*, 11). For example, if God is space, Watts objects that God will have parts that can be measured by feet and inches (*ibid.*, 12).<sup>9</sup> The notion that God has parts is, of course, theistically untenable. Having revealed the absurdity of supposing that space is a “something,” Watts concludes that space must really be “nothing.” In response to his initial suggestion that space has properties, Watts replies—like Law—that space has no more real properties than does a shadow (*ibid.*, 25). For Watts, space is no more a “something” than darkness is.

The debate between the supporters of Clarke’s substantivalism and Law’s antirealism continued for another decade; the later developments are comprehensively explained by Baker (1932) and Ferguson (1974, 59–78). Into the wake of this debate, Cockburn enters the fray.

### 3. COCKBURN ON SPACE

Cockburn’s principal discussion of space can be found in the second of her “Cursory Thoughts,”<sup>10</sup> prefaced to her *Remarks upon Some Writers on Morality* (1743). The discussion has two parts. The first, negative half rejects the spatial antirealism of Law and Watts. The second, positive half advances her own substantivalist position; this can be understood as a third solution to the problem of blasphemy facing early modern substantivalists.

The first half of Cockburn’s discussion draws on Lockean principles to reject spatial antirealism. At this point, it may be useful to say a little more about Locke’s role in these debates more generally. In the *Essay*, Locke puts forward two pertinent theses about space. First, Locke rejects the Cartesian identification of matter and space; for example, he argues that our idea of matter is distinct from our idea of spatial extension because the former includes the notion of solidity, while the latter does not (II.xiii.11). Second, Locke argues that the origin of our idea of space lies in our perception of material bodies: “we get the Idea of Space, both by our Sight, and Touch” (II.xiii.2). In this context, Locke argues that we acquire the idea of infinite space by enlarging our idea of finite spaces (II.xiii.4); it is this claim that Law makes use of above. However, Locke refrains here from advancing a positive view on the

*nature* of space. Although Locke appears to accept that space is a real being of some kind—for example, in the quote below, the implication is that space is not nothing—he professes ignorance as to what space *is* (II.xiii.15–7):

If any one ask me, *What this Space, I speak of, is?* I will tell him, when he tells me what his *Extension* is. . . .

Either this *Space* is something or nothing; if nothing be between two Bodies, they must necessarily touch; if it be allowed to be something, they ask, whether it be Body or Spirit? To which I answer by another Question, Who told them, that there was, or could be nothing, but Solid Beings, which could not think; and thinking Beings that were not extended? Which is all they mean by the terms *Body* and *Spirit*.

If it be demanded (as usually it is) whether this *Space* void of *Body*, be *Substance* or *Accident*, I shall readily answer, I know not; nor shall be ashamed to own my Ignorance, till they that ask, show me a clear distinct *Idea* of *Substance*.

Conceiving of space as extension is unhelpful, for we have no clear idea of extension; similarly, conceiving of space as substance is unhelpful, for we have no clear idea of substance. The way that Locke questions substance dualism—the traditional division of being into two kinds of substance, mind and matter—is tantalizing, but Locke does not develop the issue any further. Locke also refrains here<sup>11</sup> from opining on deifying space, raising the question of whether we literally “live and move” in God but leaving it open (II.xiii.26). Nonetheless, Berkeley reads Locke as making God extended (I, 37), and Locke may have been one of the targets of Berkeley’s dangerous dilemma. An odd consequence of Locke’s quietism is that his views are cited by both sides of the Law-Clarke debate.<sup>12</sup> And, as we shall see, Cockburn is no exception.

Cockburn is well acquainted with Locke, as evidenced by her first philosophical work *A Defence of Mr Locke’s Essay* (1702). In the *Remarks*, Cockburn advances an empiricist methodology drawn from Locke to refute the spatial antirealism of Law and Watts. Cockburn’s commitment to substantivalism is clear from the opening line of her essay, placing herself firmly with those who “maintain the real existence of space” (Cockburn 1743/2006, 95). Against Law, Cockburn gives us two arguments for substantivalism. First, she rejects Law’s claim that we abstract the idea of space from considering extended material substances, citing instead Locke’s claim that we obtain the idea of space through sight and touch. Building on this, Cockburn argues that the idea of space is “early obtruded” on the mind by the senses and “unavoidably perceived by it” (*ibid.*). She argues that our senses give us as much reason to believe in the reality of space as they do the reality of matter: our minds do not

“frame” the idea of matter—it is simply present to us—and neither do our minds frame the idea of space (*ibid.*). Cockburn argues that, if one denies that we apprehend space in this way, then one must deny that we apprehend matter in this way too, a denial that would lead to unacceptable Berkeleyan idealism (*ibid.*). Second, Cockburn argues that space is required to explain motion. Although Cockburn does not cite Locke’s *Essay* at this point, her argument may be inspired by Locke’s claim that the idea of motion requires the idea of space (II.xiii.11). Cockburn argues that it is impossible to conceive of the motion—and indeed, the existence—of material bodies without the idea of space in which they move; if we wish to allow for moving bodies, we must allow for space (*ibid.*, 96). Cockburn’s strategy with both of these arguments is to link the existence of matter to the existence of space; opponents to her claim that space really exists must either show how this link can be broken or else deny the existence of matter and fall into idealism.

Having rejected Law’s arguments for antirealism, Cockburn considers Watts’s claim that space is really nothing:

The only ground I can apprehend for denying the real existence of space, is, that we know not in what class of beings to place it. And indeed Dr. Watts . . . seems at last to determine space to be nothing, chiefly because he cannot find out what kind of being it is. But surely our ignorance of its nature is no sufficient reason to exclude from existence a thing, which so forces itself upon the mind. (Cockburn 1743/2006, 96)

Cockburn argues that Watts has not made an “adequate division of being”: he has neglected some of the ontological categories into which space might fit. Building on Locke’s scepticism of substance dualism,<sup>13</sup> Cockburn argues that space is a third kind of substance: this is the possibility that Watts has neglected to consider.

This brings us to the positive part of her discussion, and Cockburn’s wholly novel argument for substantival space. Cockburn’s argument for substance pluralism rests on the assumption that all of reality is structured into an ontological hierarchy known as the Great Chain of Being. Arthur Lovejoy provides an excellent book-length treatment of this thesis; I broadly follow him in distinguishing two principles within it (Lovejoy 1936, 52–56). The first principle, the Principle of Plenitude, holds that whatever can exist does exist. There are no uninstantiated possible beings: everything that is possible is instantiated in the actual world. This principle is arguably present in Plato’s *Timaeus*, the myth-like cosmogony where Plato writes that the universe “comprehends within itself all intelligible living things” (30c–31a). The second principle, (that I label) the Principle of Continuity, holds that all kinds of

beings differ from each other gradually and by degrees. This principle is present in Aristotle. For example, in the *History of Animals*, Aristotle writes, “Nature proceeds little by little from things lifeless to animal life in such a way that it is impossible to determine the exact line of demarcation” (588b4–14). The Principle of Continuity additionally implies that beings differ gradually in degrees of perfection. If we picture all the possible kinds of living species stretched along a continuous line, it is not only the case that there are no breaks on the line but also that species are graded: the species at the top of the line are more perfect than those further down. When we put these two principles together, we reach the Great Chain of Being: the universe conceived as a hierarchy of every possible kind of being, with only gradual differences between each kind, wherein God—the most perfect being—sits at the top and presides over increasingly less perfect beings including angels, human beings, animals, plants, and inanimate matter.

The Great Chain of Being is present in the work of many early moderns, including Locke’s *Essay* (III.vi.12):

[I]n all the visible corporeal world we see no chasms, or gaps. All quite down from us the descent is by easy steps, and a continued series of things, that in each remove differ very little one from the other. . . . [Also] there are far more species of creatures above us than beneath; we being in degrees of perfection much more remote from the infinite being of God, than we are from the lowest state of being.

Cockburn explicitly cites Joseph Addison’s and Locke’s expression of the Great Chain (Cockburn 1743/2006, 97); as Law also quotes Ralph Cudworth’s expression of the thesis, it is likely that Cockburn would have been familiar with that too.<sup>14</sup> Cockburn describes this “scale of beings” as a “gradual progress in nature,” where the most perfect example of an inferior species comes very near to the most imperfect example of the superior species above, such that every “chasm” in nature—from plants to humans, and upward to corporeal spirits—is filled up (*ibid.*). Although Cockburn does not tell us why she assumes the existence of the Great Chain, it is likely that she does so for reasons similar to those of her contemporaries. Not least, the Great Chain offers a theologically tenable explanation for the enormous variety of living organisms evident in nature. The Principle of Continuity is also still used in contemporary science; to use a particularly famous example, it can be found in Darwin’s theory of evolution.<sup>15</sup>

Cockburn argues that our conception of the Great Chain currently stands unfinished: there is an untenable gap between body and spirit. Cockburn’s thesis is that body and spirit are such different *kinds* of substances that the gap between them is too large to be described as

gradual, and this would break the pattern of God's creation. Consequently, Cockburn argues that a further kind of substance must fill the chasm, and that substance is space:

[T]here should be in nature some being to fill up the vast chasm betwixt body and spirit; otherwise the graduate would fail, the chain would seem to be broken. What a gap between *senseless material*, and *intelligent immaterial* substance, unless there is some being, which, by partaking of the nature of both, may serve as a link to unite them, and make the transition less violent? And why may not space be such a being? Might we not venture to define it, *an immaterial unintelligent substance, the place of bodies, and of spirits, having some of the properties of both.* (Cockburn 1743/2006, 97)

This position is unusual in at least three ways. First, where Descartes and other early moderns posit two kinds of substances, Cockburn posits a minimum of three. I say "a minimum" because, in light of the Lockean worry that we do not know enough about substances to place restrictions on the kinds that may exist and the Principle of Plenitude, it seems unlikely that Cockburn would wish to restrict the number of substances to three. Second, her account rejects the Cartesian thesis that immaterial substances are necessarily thinking things. This view can also be found in Locke's *Essay* (II.i.10). Cockburn argues that thinking is an action, and, as such, it cannot be a substance; not only is it impossible to conceive how the actions of a being are the being itself, but Cockburn also argues that human souls can cease to act while continuing to be (Cockburn 1743/2006, 100–101).<sup>16</sup> Lastly, in the context of early modern substantivalisms, she has offered a rare conjunction of claims: space is a substance, and (as I will argue) space has properties that are traditionally held to be uniquely divine.

This conjunction risks running afoul of Berkeley's dangerous dilemma. The risk is not of pantheistic blasphemy—Cockburn is not identifying God and space—but rather polytheistic blasphemy. By positing the existence of a substance with properties that are uniquely held to be divine, Cockburn could be accused of positing a second God. I will argue that, on Cockburn's account, space has uniquely divine properties, before explaining how it escapes polytheistic blasphemy.

Cockburn is explicit that space possesses two divine properties: it is incorporeal and indivisible (1743/2006, 98). Given the close connection between being divisible and having parts in early modern metaphysics, we can also assume that space, as an indivisible substance, lacks parts. This is confirmed by the way that Cockburn characterizes immaterial spirits as "indivisible" rather than "partless" (*ibid.*). Cockburn would not mean that spirits are indivisible yet may have parts; instead, indivis-

ibility implies partlessness. However, none of these divine properties are held to belong uniquely to God, so there is no risk of blasphemy here. Further, Cockburn is explicit that the infinity of space is not akin to God's infinity. In fact, she appears to be aware of something like Berkeley's charge of polytheistic blasphemy when she discusses the extent of space, arguing that it cannot have a positive infinity—if that means an “absolute perfection, to which nothing can be added”—for that can only be applied to God and his attributes (*ibid.*, 104). Instead, drawing again on Locke, Cockburn argues that space possesses only a negative infinity, the property of being continually added to without end (*ibid.*).

As Cockburn has not explicitly attributed to space any properties that are held to be uniquely divine, it might be difficult to charge her with polytheistic blasphemy. However, I argue that Cockburn implicitly ascribes to space further properties that are traditionally held to be uniquely divine: space on Cockburn's account is immutable, uncreated, and eternal.

Cockburn does not discuss the immutability of space, but there is certainly no indication on her account that space can bear properties that are subject to change. Cockburn also does not discuss whether space is uncreated or eternal. However, there is good reason to believe that space would be uncreated and eternal, as Cockburn holds *all* beings to necessarily exist in space.

Cockburn holds that material substances necessarily exist in space. In her correspondence, she explains that, while space is uninvolved with the creation of matter, space is a prerequisite for the existence of matter: “[T]he existence of matter supposed, the existence of space must be likewise admitted” (Cockburn 1743/2006, 250). Cockburn also argues that immaterial spirits are necessarily spatially located and, against Watts, that this does not entail that they have parts. She puts forward several arguments to show that the notion of a nonlocated finite spirit is unacceptable. First, Cockburn argues that spirits must be located where they act: “[Can Watts] really conceive, or have any idea of a *conscious active power*, exerting its consciousness and activity, or even barely existing, without it being somewhere, any more than he can conceive a body to be, without being somewhere?” (*ibid.*, 98). Cockburn here is drawing on the “No action at a distance” thesis, which holds that beings must be located where they act. For example, material bodies cannot act on bodies that are spatially separate from them (unless there is some intermediary between them). This thesis is accepted by Descartes, Newton, and Locke. Cockburn is arguing that, if we accept this thesis for material bodies, we should also accept it for immaterial spirits: spirits are located where they act. This thesis is also accepted by Newton and Locke. Second, Cockburn argues that immaterial finite

spirits exist nearer and farther from some spirits than others because Watts's alternative scenario is untenable:

Can he suppose, that a human soul, as soon as it is free from the prison of the body, and finds itself in the world of spirits, is in that moment equally present to all the myriad of spirits, that may exist in the universe? . . . This surely would be to make them infinite, which, he justly says, *we know they are not*. If then finite spirits cannot be present to all of their kind at once . . . what ground can we conceive of such a limitation, but that they are nearer to and farther from some spirits than from others? And that, I think, implies being in a *place*. (ibid., 98–99)

Finite spirits must have spatial location, for else they violate the thesis of no action at a distance, and we have no way of explaining why they are not present to all of their fellows at once. A further implicit view can be read into these arguments: God is spatially infinite. This is implied by the first argument, for God is traditionally held to be omnipotent, and, if God has the power to act anywhere and everywhere, then—in line with the thesis of no action at a distance—God must *be* everywhere. This is also implied in the second argument: Cockburn's emphasis of the fact that human spirits are spatially finite, as opposed to infinite, strongly suggests a contrast with God, here conceived as a spatially infinite spirit. God is present to all human souls at once, and this is grounded by his literal omnipresence in space. During the course of her essay on space, Cockburn gives us no reason to believe that she does not treat all immaterial spirits in the same way concerning spatial location: immaterial finite spirits are spatial, and so is the immaterial infinite spirit God.

I further argue that if, on Cockburn's view, God exists in space now, it must be the case that God has always existed in space. To claim otherwise would violate God's immutability. As God exists eternally, this entails that space must also exist eternally; consequently, space must be uncreated. In support of this reading, consider the alternative scenario on which space is created by God. Precreation, God would not be spatial; postcreation, God would be spatial. This scenario is impossible to reconcile with God's changelessness. If God is spatial and God is eternal, space must also be eternal.

A possible objection to my claim that Cockburn conceives space to be eternal lies in the worry that she might equate necessity with eternity, given her view that all necessary beings exist eternally. A worry along these lines is expressed by Law: "[I]f Space distinct from Bodies is an uncreated Substance, it will follow either that it is God, or that God is not the only Substance which necessarily exists" (Law 1732, 28). As Cockburn denies that space is God, the worry is that space may be

a necessary being in addition to God. Cockburn agrees with Law that such a conclusion is untenable. Earlier in the *Remarks*, in the context of defending Clarke's cosmological argument for the existence of God, Cockburn discusses God's necessary existence. She argues that the supposition that there could be two beings that necessarily exist is a "plain contradiction" (Cockburn 1743/2006, 93). Implicitly, only God exists necessarily, while all other beings exist contingently. In this discussion, Cockburn clearly accepts that a necessary being would exist eternally, writing that, if the "first cause"—that which does not require a cause of its existence and is identified with God; unlike, for example, human beings whose existence is caused by God—is necessarily existent, "it must have always existed" (*ibid.*). If eternity were all that Cockburn's account of necessity involves, then space could not be eternal on her account; otherwise, she would be subject to Law's objection: space would exist necessarily, and that would be unacceptable. In response to this objection, I argue that Cockburn's account of necessity requires eternity but is not exhausted by it. In the same passage, Cockburn argues that a necessary being "cannot possibly cease to exist. . . . [I]t was not possible for it not to have existed" (*ibid.*, 93–94). For Cockburn, it is necessary but not sufficient that a necessarily existing being must exist eternally: it is also the case that a necessarily existing being could not cease to exist and that it is impossible that it did not exist. Indeed, Cockburn agrees with Clarke that the eternity of God can be deduced from the necessity of his existence (*ibid.*, 93). On my reading of Cockburn, space exists eternally but not necessarily. Space might not have existed, and presumably God *could* destroy space, even if he never would (because such a possibility is difficult to reconcile with God's immutability).

The ascription of uniquely divine properties to space—that it is immutable, eternal, and uncreated—appears to leave Cockburn's account open to Berkeley's charge of polytheistic blasphemy, for she is apparently positing the existence of a substance in addition to God with properties that are held to be uniquely divine. However, the very nature of Cockburn's unusual substance pluralism protects her account from this charge of blasphemy.

The very proof of the existence of space as a substance derives from the apparent gap it fills in the Great Chain of Being: by its very nature, space has only some of the properties of material substance, and only some of the properties of immaterial substance. Although space possesses *some* of the properties traditionally ascribed only to God, it does not by its very nature have *all* of them: otherwise, it would not occupy the position that it does in the Great Chain. We can simplify the properties belonging to the relevant substances as follows: matter is unintelligent, material, and created; God is intelligent, immaterial, and uncreated;

space is unintelligent, immaterial, and uncreated. Although space has some of the properties traditionally ascribed uniquely to God—it is immutable, eternal, and uncreated—it lacks other divine properties; in particular, it is unintelligent or senseless. (Also, as we saw above, it exists eternally but not necessarily.) A senseless, unintelligent substance could never be a second God, and, as such, Cockburn's account is immune to Berkeley's polytheistic blasphemy. Further, on Cockburn's system, space is *necessarily* less perfect than spiritual substance, given its lower position in the ontological hierarchy of being. Again, a less than wholly perfect being could never be thought to constitute a second God. Despite the fact that Cockburn holds space to be a substance and ascribes to it traditionally uniquely divine properties, Berkeley's charges of blasphemy can find no traction against her view.

#### 4. FINAL THOUGHTS

Cockburn's account of space is distinctive in many respects. Her arguments against spatial antirealism are grounded in an unusual empiricist methodology, and her arguments for substantival space—which posit substance pluralism—make novel use of the Great Chain of Being. Further, as we have seen, Cockburn's substantival account of space avoids Berkeley's dangerous dilemma in a way that is at least as credible as that advanced by Descartes and Newton. The cost of Cockburn's position, positing the Great Chain, is no worse in the context of early modern philosophy than the costs incurred on the systems of its rivals. Indeed, Cockburn's strategy for positing substantivalism yet avoiding the charges of blasphemy is arguably neater than its competitors, for it avoids the theological pitfalls by using a theological thesis. Cockburn's novel ontology of space deserves reconsideration.<sup>17</sup>

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#### NOTES

1. References are to the Luce-Jessop edition of Berkeley's *Works* by volume and page number.

2. For biographical information and general overviews of Cockburn's work, see Waithe (1991), Bolton (1996), and Sheridan's "Introduction" to Cockburn (1743/2006). For a discussion of Cockburn's work (including her plays) from a more literary perspective, see Kelley (2002). For Cockburn's moral philosophy, see Sheridan (2007). Broad (2002) discusses many aspects of Cockburn's philosophy, including (unusually) her metaphysics and her views on space.

3. The term “substantivalism” came into existence in the twentieth century. It is misleading because it connotes that substantivalists hold space to be a substance, but many early moderns are substantivalists according to the way I have defined the position, even though they deny that space is a substance.

4. But, for the interested reader, here is a summary. Berkeley argues in the *Principles* that space is merely that which is perceived by the senses: the perceived distances between bodies (II, 92). Accordingly, there is no such thing as “pure space”: space that exists independently of bodies (II, 93). This is, of course, contrary to the views of substantivalists such as Newton. Later, in *An Essay on Motion* (1721), Berkeley further argues that pure space is unreal because, when we try to conceive it independently of anything else, we produce only “an idea of the purest nothing” (IV, 46). This prefigures the subsequent objections of Law. However, there is no evidence that Law read Berkeley; Baker (1932, 588) agrees.

5. In his fourth letter of the *Leibniz-Clarke Correspondence*, Leibniz (1717/1951) writes: “If space is an absolute reality . . . [i]t will be not only immense in the whole, but also immutable and eternal in every part. There will be an infinite number of eternal things *besides* God.”

6. I follow the standard abbreviations to Descartes. “AT” refers to *Oeuvres de Descartes* edited by Adam and Tannery; “CSM” refers to *The Philosophical Writings of Descartes*, vols. 1 and 2, edited by Cottingham, Stoothoff, and Murdoch.

7. For more on the dating, see Janiak’s “Introduction” to the text (xviii); for the purpose of referencing, I will assume this latest date.

8. Importantly, these philosophers are arguing for antirealism or nihilism about space, *not* relationism, as Broad suggests (2002, 159). Relationism is the Leibnizian thesis that space is reducible to the spatial relations holding between bodies. This is not the thesis that Law advances, although he does remark that Leibniz “justly” calls space the idol of some modern Englishmen (Law 1732, 10) and uses Leibniz in support of one of his arguments (*ibid.*, 16). Watts explicitly rejects relationism (Watts 1733/1990, 6).

9. Watts adds that, if space is God, then, objectionably, an elephant or a whale possesses more of the essence of God than does the best and holiest man in the world—unless they be of equal size (Watts 1733/1990, 11).

10. The thoughts are “cursory” in the sense that Cockburn composed and appended them during the interval between deciding to publish her *Remarks* and sending off the final manuscript. In a letter dated September 3, 1743, from Cockburn to her niece (published in 1751), Cockburn writes, “[H]aving met with some things in Dr. Watt’s *Philosophical Essays* upon part of the subjects I had treated of, I made several additions relating to them, all which employed the few leisure hours I have, for about two months” (Cockburn 1751/1992, 209). Thanks to Elizabeth Sund for this point.

11. Arguably, Locke does deify space; see Baker (1932, 578) and Grant (1981, 406n329). For wider discussions of Locke’s views on space, see Grant (1981, 238–40) and Yolton (1984, 65–70).

12. For further details of the way that both camps draw on Locke, see Baker (1932, 587–88).

13. Cockburn also cites Pierre Gassendi's rejection of the substance-accident distinction (Cockburn 1743/2006, 97), presumably as another example of why we might question the traditional divisions of being. Although Cockburn prefaces her own account by saying that she takes "the hint" from Gassendi (*ibid.*), she seems to mean no more by this than that we should question the traditional divisions, for she does not reject the substance-accident distinction.

14. In *The Intelligent System of the Universe* (1678), Cudworth writes, "There is unquestionably a scale or ladder of nature" (434). Broad cites several references to Cudworth in Cockburn's work, and—in the context of this passage from Cudworth—argues that Cockburn alludes to him (Broad 2002, 160).

15. For example, Darwin argues that the evolution of any species is a "finely graduated organic chain" (1859/2003, 269).

16. Cockburn refers us to her *Defence*, where she argues at greater length that a human soul may continue to be yet cease to act, for example, when it is asleep (1743/2006, 62).

17. I am grateful to participants of the 2012 Cambridge Philosophy of Science (CamPoS) group and of the 2013 Annual Women in the History of Philosophy Lecture (University of Sheffield) for helpful comments on earlier versions of this paper. I owe further thanks for valuable notes from Rae Langton and Jacqui Broad.

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