2018 TheoLogica
An International Journal for Philosophy of Religion and Philosophical Theology
ORIGINAL PAPER
DOI. https://doi.org/10.14428/thl.v2i2.1883

Celestial Spheres: Angelic Bodies and Hyperspace

AUSTIN M. FREEMAN
Trinity Evangelical Divinity School
austinmfreeman@gmail.com

Abstract: Angels probably have bodies. There is no good evidence (biblical, philosophical, or historical) to argue against their bodiliness; there is an abundance of evidence (biblical, philosophical, historical) that makes the case for angelic bodies. After surveying biblical texts alleged to demonstrate angelic incorporeality, the discussion moves to examine patristic, medieval, and some modern figures on the subject. In short, before the High Medieval period belief in angelic bodies was the norm, and afterwards it is the exception. A brief foray into modern physics and higher spatial dimensions (termed "hyperspace"), coupled with an analogical use of Edwin Abbott's *Flatland*, serves to explain the way in which appealing to higher–dimensional angelic bodies matches the record of angelic activity in the Bible remarkably well. This position also cuts through a historical equivocation on the question of angelic embodiment. Angels do have bodies, but they are bodies very unlike our own. They do not have bodies in any three–dimensional space we can observe, but are nevertheless embodied beings.

Keywords: Angels, Bodies, Hyperspace, Dimensions, Flatland

The pseudo–scholastic question about how many angels might dance on the head of a pin is in fact a question about the relationship of angels to place, and by extension a question about angelic bodies.[1] While a modern reader may take as given that angels are immaterial and incorporeal intellects (following Aquinas),[2] the question of the corporeality of angels has been an open one in the history of the Church, with major figures on either side. The burden of this paper will be to ask whether, in hypothesizing angelic bodies as not simply corporeal but hyper–corporeal (that is, as existing in higher spatial dimensions than the third), we might make more sense of the biblical testimony

[1] Pseudo-scholastic because not actually discussed by scholastics, although often reported. See Ross (1985).

[2] This paper assumes a traditional stance on angelology, namely, that angels exist and are personal beings, etc. This means that some highly influential modern angelologies, such as Karl Barth's, are left to the side.

regarding angels than in accepting an incorporealist account. More specifically, I will demonstrate that properly framing the discussion of angelic bodies within the context of hyperspace, we can make a distinction in what was formerly an equivocation: that angels do and do not have bodies in the traditional sense. They *do* have bodies, but not three–dimensional bodies. The situation as it stood could have easily led to describing angels as possessing bodies occupying space or as possessing "subtle bodies."

We will therefore proceed in three steps, followed by a conclusion unpacking this last claim. None of these steps will serve as a definitive argument (space does not permit such an undertaking), but instead provide a survey and suggest a solution on each count. First, we will examine prominent passages in Scripture and ask whether the Biblical witness is consistent with corporeality. If this cannot be demonstrated, the argument does not get off the ground. Second, we will examine the history of the discussion in major Christian figures, in order to situate ourselves dogmatically and grasp the scope of the subsidiary issues under consideration. Thirdly, we will survey the burgeoning acceptance of higher dimensions among cosmologists and physicists as perhaps constituting a necessary component of our universe. We will also explore a phenomenology of higher–dimensional beings—what would they look like to us? How might they behave? What could they do? Then we will tie this to the biblical testimony on angels.

1. Angels We Have Heard on High(er Dimensions)

We should begin with the Scriptural witness for angels and their behaviors. We will first examine the common texts cited *against* the notion of angels as embodied beings—they are far fewer than we might expect. Then we will turn to the various places in which angels are depicted as embodied, either explicitly or implicitly, and find that their behaviors match our description of the capabilities of higher dimensional beings. We will conclude that while the Bible of course does not speak of angels in terms of higher dimensions, such a hypothesis makes very good sense of the data.

There are surprisingly few explicit assertions of the spirituality of angels. It is rather surprising that something taken as firmly established can garner such scant (though not non–existent) biblical support. Heb 1:7, a quotation of Psalm 103:4, is perhaps the flagship passage for the incorporeality of angels. But of course the statement itself says very little about disembodied substances, and its interpretation relies much too heavily on post–biblical understandings of the word *pneuma* (spirit) as immaterial. *Pneuma*, of course, may also mean wind or breath, both subtle material substances. In fact, we ought to read these statements not as metaphysical descriptions but as illustrations of God's power. Heb 1:7 is contrasted with 1:8, so that the Son as king is set above the

messengers and ministers of the celestial kingdom. The author's emphasis is not on *pneumata* but on *angeloi* (messengers) and *leiturgika* (ministers), and thus the meaning of *pneumata* should be rendered the same as its original context. Tracing the citation back to its source, we find strong evidence that *pneumata* should be rendered as "wind." The entirety of Psalm 103 dwells on nature imagery and God's control over the physical world. Would it not be strange if, after "water," "clouds," and "the wings of the wind," in the preceding verse, and "fire" and "earth" immediately after, we were to render the pneumatic messengers here as "disembodied individuals" rather than "winds?" We remember that the original Hebrew also supports the complete synonymy of "wind" and "spirit" with *ruach*. There is not a single shred of reasoning to support reading this verse as an assertion of angelic incorporeality.

But perhaps the wider context of similar uses of *pneuma* would support an immaterial angelology? If we assume that angels and demons are the same sort of creature, then we have many more references to these beings as spirits. Demons are often called evil or unclean spirits, and go in and out of the bodies of human beings. And if we remember the Gerasene demoniac who carried a legion of demons, do we not have good evidence for demons as disembodied spirits, and thus indirectly for incorporeal angels? The fact that the Bible says many demons can live inside of a person, or that they can go in and out, does not necessarily establish incorporeality. What if, for instance, a demon is simply very small? There might be any number of ant–sized devils swarming around inside a person. So the weight of the argument must fall on the meaning of the word *pneuma* and not merely on demonic behavior.[3]

And we find, in 1 Cor 15, evidence that *pneuma* can at least in some instances refer to an embodied individual—Jesus Christ. Indeed, all those who participate in the resurrection to life will have spiritual bodies that differ from earthly bodies but are no less concrete (vv. 36–42). The close association of heavenly bodies with the spiritual and with a Spirit can easily lead us to surmise that these heavenly bodies are angelic ones. In Matt 22:30/Mk 12:25/Luke 20:35–36, Jesus Himself says that resurrected people are "as the angels in heaven are" or "angel–like." Note especially that in Luke 20 Jesus is probably not referring to genderlessness but to the obsolescence of marriage as a tool for procreation, due to the immortal and imperishable nature of these *heavenly bodies*.[4] Paul is here saying in 1 Cor 15 that heavenly bodies are not like earthly ones, but nowhere does he hint that they are not bodies at all. It is therefore impossible to establish that the

[3] The word's meaning may also change from one instance to another. See, e.g. Lk 24:37-39, where Jesus seems to use "spirit" to refer to a folk belief in ghosts.

[4] Note the overlapping themes. They do not marry to create new children because they are all immortal children of God, children of the resurrection. The command to be fruitful and multiply, the impetus of sex, is abrogated.

evil or unclean *pneumata* of the Gospels are disembodied intellects, only that their bodies have a different nature to ours.[5] This is fully consonant with our thesis. The final passage sometimes used to support angelic incorporeality is found in Judg 6, where the angel refuses to eat food. But this is a very weak defense indeed, since angels *do* eat bread in Gen 19, and manna is called the bread of angels in Ps 78:35!

We may here make a concluding remark about temporary bodies and anthropomorphic imagery, since we have run out of biblical support for the incorporealist case. Those who deny angelic bodies explain their appearance in a variety of ways, as discussed above. They argue that, when angels seem to have bodies, they are merely pulling a docetic trick or taking them up on an as–needed basis. Certainly this is a possibility, but we must ask *why?* If we had strong biblical evidence to support a default angelic immateriality, then this might be a good option, but we do not. There seems no *motive* for resorting to such appeals, save for tacit metaphysical assumptions smuggled into the text via prior philosophical commitments. But could we not say that the many passages in which angels are embodied are simply images, much like the arm of the Lord or the eyes of God? Any number of embodied angels might be explained away with this strategy! In fact, it explains *too much*. First, unlike God, angels are created beings—there is a fundamental disanalogy between our reasons for denying God's bodiliness and that of angels, so our interpretation should differ. Second, were we to "demythologize" angelic appearances we would lose all those passages where context makes clear that a real, physical body is meant (see below). The method is too destructive for too little reason and makes mincemeat of the text.

In short, in every instance in which an angel appears in Scripture, it appears in a *body*.[6] This is beyond dispute, and provides a problem around which the incorporealist must wrangle.[7] Whether these bodies ought to be understood literally or metaphorically may in some instances depend on genre, but angelophanies often appear in historical narratives, in the waking (non–visionary) world. Angels appear as "men" in Genesis, and a common interpretation of Gen 6 sees the "sons of God" as angels—clearly embodied in some fashion. Lot's angels are mistaken for humans, and the author of

[5] We might here draw attention to the three unclean spirits of Rev 16:13. The unclean spirits here have a definite shape. But due to the nature of the genre and the contrastive passage in the Gospels where the Holy Spirit (definitely immaterial) descends as a dove, we do not place weight on this passage.

[6] The only exceptions are when only angelic voices are thought to be heard (e.g. John 12:29). But this is actually the voice of the Father, and in all other instances of which I am aware the angel is said to "call *from heaven*," i.e. from a *place* depicted elsewhere as corporeal. If this is contested, we may respond thus: surely we believe that Christ is incarnate in a physical human body for all eternity? But if this is true, where did it go in the Ascension?

[7] See below for such wranglings.

Hebrews affirms that this may still occur (Heb 13:2). Angels also appear as men in Judges 6 and 13 (though in 13 the angel is "like a man, but awesome"). In 1 Kgs 19 the angel is able to physically touch human bodies, negating the Tobit–like hypothesis that the angelic bodies are mere appearances. Michael is able to be detained and must move from place to place. The angels of Daniel are clearly corporeal (Dan 8–10). Angels are also bound or detained in 2 Pet 2:4, Jude 1:6, and in the Lake of Fire in Revelation. Even when angels appear quite alien to us (as in Ezek 9–10, Isa 6, Rev 4) they still have definite shapes in the world of the senses.

2. The Battle over Bodies

For we who live in the modern world, where the immaterial nature of angels seems a settled question (if angels come up at all), it might be surprising to learn that angelic corporeality has been an open question for the history of the Church. We present here only a sampling of commentators on the subject. Before the Church, the Stoics famously maintained the physical existence of *pneuma*, a mixture of fire and air (Engberg–Pederson, 2010). Justin Martyr notes that angels are nourished and eat food (*Dialogue with Trypho*, 57), while Origen declares plainly, "It is an attribute of the divine nature alone...to exist without any material substance, and without partaking in any degree of a bodily adjunct," (*On First Principles* I.6.3).[8] Tertullian agrees, saying, "Everything which exists is a bodily existence *sui generis*. Nothing lacks bodily existence but that which is non–existent," (*On the Flesh of Christ* 11.4). He argues that angels have corporeal bodies but not of the same kind as humans have. It is a spiritual body. Those bodies which they possess in angelophanies are formed *ex nihilo* for the purpose of appearing to humans (6). Ambrose continues this line: "We however think that nothing is exempt from material composition, with the sole exception of the substance of the adorable Trinity, which is truly pure and simple and of an unaltered, unmixed nature" (*De Abraham libri duo* II.8.58).[9] This position, so widespread in the ancient Church, is called hylomorphism, from Aristotle's claim that substance is a mixture of matter (*hule*) and form (*morphe*).

Basil speculates, "Thus too in the case of the heavenly powers; their substance is, perhaps, an aerial spirit, or an immaterial fire…wherefore they exist in space and become visible, and appear in their proper bodily form to them that are worthy," (*On the Holy Spirit* 16.38). Augustine leaves the question unresolved in *De Trinitate*, unable to

[8] This statement draws into question the medieval assignation of universal hylomorphism (discussed below) to Solomon ibn Gabirol (Avicebron) in around 1042.

[9] PL 14:506, trans. here by Serge-Thomas Bonino.

decide whether in Old Testament theophanies God appears miraculously or, "whether angels…were so sent…taking a corporeal form from the corporeal creature, for the purpose of their ministry, as each had need; or else…changing and converting their own body itself, to which they are not subject, but govern it as subject to themselves, into whatever appearances they would that were suited and apt to their several actions," (*On the Trinity* II.7). Gregory the Great writes, "As their very spirits, in comparison indeed with our bodies, are spirits, but being compared with the Supreme, and Incomprehensible Spirit, they are Body," (*Morals on the Book of Job* II.3, 1:170).

John of Damascus, the summarizer of Patristic thought, offers a paradoxical account of angelic bodies, stating explicitly that angels are "an incorporeal race, a sort of spirit or immaterial fire…they are minds…and are not circumscribed after the fashion of a body. For they have not a bodily form by nature, nor are they extended in three dimensions," (*Exposition of the Orthodox Faith* II.3). Setting the Thomist precedent, John describes angels as, "an intelligent essence, in perpetual motion, with free–will, incorporeal, ministering to God, having obtained by grace an immortal nature: and the Creator alone knows the form and limitation of its essence." But he also echoes Origen, Tertullian, Ambrose, Augustine, and Gregory: "[A]ll that we can understand is, that it is incorporeal and immaterial. For all that is compared with God Who alone is incomparable, we find to be dense and material. For in reality only the Deity is immaterial and incorporeal." The Second Council of Nicaea in 787 also affirmed the corporeality of angels.

By the Thirteenth Century, *universal* hylomorphism was the ruling paradigm, with its popularity usually credited to the (actually Jewish) writer Avicebron (Wippel 2011, 45).[10] This position begins with a presupposition that only God is changeless and uncaused and thus, the only being free from the mutability inherent to matter. If all else is changeable, all else must therefore be a composition of form and matter (the principle of change). Even angels or other bodiless spirits must then possess matter in some way—this is called, somewhat oxymoronically for contemporary readers, "spiritual matter."[11]

Bonaventure, for example, following Alexander of Hales, supports spiritual matter in three ways. He argues that since angels are changeable they must not be simple, and so admit of composition. This principle of mutability is matter.[12] Second, an angel has both active and passive elements. Form is act, and matter is passivity—this is clear from Aristotle. Third, since angels are part of a genus, they must have both a principle of

[10] But see page 46, n. 1 and 2 for the controversy over the origin of this concept.

[11] For a bibliography of primary medieval texts on this issue, see Pasnau (2010, 644, n14).

[12] Citing Augustine and Boethius.

commonality and a principle of individuation. The common element is form, while the individual element is matter.[13]

Thomas Aquinas departs dramatically from many angelologists before him when he argued that angels are pure intellects, without any matter–form composition. Like those other theologians, he believes that we ought to maintain that God alone is perfectly simple and that all creatures admit of some composition, but his innovation comes in positing this composition not as a distinction between form and matter but between act and potency, between essence and existence. Aquinas' rejection of universal hylomorphism and thus of spiritual matter has significant consequences for angelology. What is his motivation, however?

The debate over universal hylomorphism is primarily about metaphysics, with physics, as it were, only a tangential concern. The conclusion that angels have bodies is merely a byproduct of the philosophical presuppositions driving the argument. The idea of spiritual matter, seemingly necessary to uphold God's uniqueness, is no longer necessary for Aquinas; contingency solves this problem. In the same way, angelic bodies are rejected because universal hylomorphism is rejected, and yet universal hylomorphism actually has very little to do with the question of angelic bodies *per se*. It is quite plausible, for instance, that a fact may be unnecessary but true. Whether it is *necessary* that angels have or do not have bodies in order to uphold the Creator–creature distinction does not determine whether they actually have them. Their bodies may be both contingent and "spiritually" material. After Aquinas, therefore, theologians reject the idea of angelic bodies because of an accident in the history of philosophy; angelic bodies happen to be a corollary to a discarded position.

Additionally, Aquinas seems to assert incorporeality not due to biblical testimony but for philosophical reasons. It seems fitting to his cosmology that it should be so. Nothing else.[14] He is, however, following the Fourth Lateran Council in 1215, after the recovery of Aristotle, and the majority of thinkers afterwards also take this line. But, importantly, not all theologians have argued for angelic bodies on the basis of universal

[13] For this summary of *In Sent.* 2.3.1, see Wippel (2012, 47-53). Bonino cites four reasons for the acceptance of universal hylomorphism up to this point. First, Latin theology draws heavily from the above-mentioned Stoic materialism, such that an immaterial substance is not readily conceivable. Second, the Fathers had to find a way in which to maintain the Creator-creature distinction—only God can be perfectly simple and transcendent. Third, the Church was drawing on the overwhelming testimony of Scripture: angels appeared with bodies in the Bible. Fourth, the widespread acceptance of *demonic* corporeality led naturally to the inference that the same situation held true for angels. See Bonino (2016), 113-115.

[14] See *Summa Theologia* I.50. He cites only a single biblical verse to establish his position, Heb 1, and the rest of his citations come from extra-biblical (and often Greek) sources. See also Aquinas, *De Spiritualibus Creaturis*, 5-7.

hylomorphism. Many thinkers, independent from Aristotelianism, posit angelic bodies on the basis of Scriptural evidence.[15]

3. Angles and Angels

Something changes in our concept of angelic bodies between 787 and 1215, and apart from some modern authors who reaffirm the corporeality of angels,[16] the idea of angelic bodies now seems very foreign, and perhaps even un–Christian. But advances in the study of geometry and physics in the 20th Century provide a new way to conceive of angelic bodies—as objects existing in higher spatial dimensions, what we will call "hyperspace." In short, the highly paradoxical idea of "spiritual" matter—of a substance which possesses materiality but not (three–dimensional) bodiliness—has become plausible again. It is now, furthermore, disconnected from the debate over universal hylomorphism and can be treated as an independent question again. With the advent of hyperspace physics, we can introduce a distinction that solves the apparent paradox. Angels are composed of material bodies but not *three–dimensional* material bodies. I also see no reason to retain the medieval assumption that angels are simple and non–extended, once that assumption is divorced from a chain–of–being style of reasoning where angels must occupy a mediatory place between the simple God and substances with material quantity.

But is this all pure speculation or do we have actual evidence for believing in higher spatial dimensions? If such dimensions are pure fancy, impenetrable to scientific investigation (like a multiverse hypothesis), then we ought not to postulate non–demonstrable extra causes to explain our angelic problems. As it turns out, however, such alternate–dimensional accounts are currently the cutting edge of physical and cosmological research. Rather than re–present a vast body of technical literature, we will focus on a few of these suggestive possibilities.

The idea of a higher invisible space finds its most famous ancient form in Plato's allegory of the cave. Here Plato analogizes the prisoners' confusion of shadows with reality—of two–dimensional representations with three–dimensional bodies—to our ignorance of the higher, purer world of forms. Aristotle, quite critical of the forms, is also critical of the idea of higher dimension. He conclusively rules out any spatial dimension higher than the third in Book I of his *De Caelo*, although the arguments he

[15] See again, Bonino, n11 above.

[16] For two influential examples, See, e.g. Bavinck (2004, 455-456); Berkhof (1996, 143). Most notably, Hud Hudson (2005, 193-195) suggests precisely that angels might have higher-dimensional bodies. For more on this, see below.

deploys are questionable at best. Indeed, his entire case rests on a mystical Pythagorean equation of 'three' with 'all.'[17]

Shortly after Aristotle, Euclid confines space to three dimensions in the fifth postulate of his *Elements*, although he admits that the postulate is not provable. Many thinkers attempted both to prove and disprove the postulate, although Euclidean geometry based on flat planes, for over two thousand years, simply *was* geometry (Lewis 1920, 16–23). However, the fifth postulate remained unproved and many figures toyed with the idea of higher dimension. Henry More, for example, argued for a fourth spatial dimension he called "spissitude" in 1712. Immanuel Kant ardently denied the existence of higher dimensions in his 1783 *Prolegomena*, showing by implication that the idea is present. Psychologist Gustav Fechner published a short story about higher dimensionality in 1846, and indeed the fourth dimension became a fairly common theme in art and literature after 1700.

In 1854 Bernhard Riemann delivered his lecture "Uber die Hypothesen welche der Geometrie zu Grunde liegen," totally revolutionizing the field of geometry. Euclidean geometry only functions on a flat plane, but Riemann worked out a geometric system valid for curved surfaces that contradicted Euclid's controversial fifth postulate. Since

[17] From Aristotle, *De Caelo*, I.1 (translated by J.L. Stocks): "A magnitude if divisible one way is a line, if two ways a surface, and if three a body. Beyond these there is no other magnitude, because the three dimensions are all that there are, and that which is divisible in three directions is divisible in all. For, as the Pythagoreans say, the world and all that is in it is determined by the number three, since beginning and middle and end give the number of an 'all', and the number they give is the triad. And so, having taken these three from nature as (so to speak) laws of it, we make further use of the number three in the worship of the Gods. Further, we use the terms in practice in this way. Of two things, or men, we say 'both', but not 'all': three is the first number to which the term 'all' has been appropriated. And in this, as we have said, we do but follow the lead which nature gives. Therefore, since 'every' and 'all' and 'complete' do not differ from one another in respect of form, but only, if at all, in their matter and in that to which they are applied, body alone among magnitudes can be complete. For it alone is determined by the three dimensions, that is, is an 'all'. But if it is divisible in three dimensions it is every way divisible, while the other magnitudes are divisible in one dimension or in two alone: for the divisibility and continuity of magnitudes depend upon the number of the dimensions, one sort being continuous in one direction, another in two, another in all. All magnitudes, then, which are divisible are also continuous. Whether we can also say that whatever is continuous is divisible does not yet, on our present grounds, appear. One thing, however, is clear. We cannot pass beyond body to a further kind, as we passed from length to surface, and from surface to body. For if we could, it would cease to be true that body is complete magnitude. We could pass beyond it only in virtue of a defect in it; and that which is complete cannot be defective, since it has being in every respect. Now bodies which are classed as parts of the whole are each complete according to our formula, since each possesses every dimension. But each is determined relatively to that part which is next to it by contact, for which reason each of them is in a sense many bodies. But the whole of which they are parts must necessarily be complete, and thus, in accordance with the meaning of the word, have being, not in some respect only, but in every respect."

Riemann, the concept of curved space and non–Euclidean geometry have led to a revolution in our understanding of the universe. Riemann himself was doubtless aware of the metaphysical and theological implications of his work,[18] and they were at least widely felt by 1884 when Edwin Abbott Abbott published his celebrated theologico–geometrical work *Flatland,* a novel about a sphere visiting the second dimension.[19]

Albert Einstein used Riemann's curved spaces to create his theory of general relativity, challenging Newton's Euclidean model of physics. Einstein's theories were later verified and became the new standard model for physics and cosmology. In the early 20th Century, Theodore Kaluza and Oscar Klein hypothesized that by adding a fifth spatial dimension to Einstein's four dimensions of matter and time, one could produce equations unifying not only matter and energy but also electromagnetism. Kaluza–Klein theory was a crucial precursor to modern string theory and superstring theory in particle physics. While the theory itself has largely been abandoned in favor of various string theories, the insight that higher dimensions might solve certain quandaries has proven highly fruitful.

While this may sound like pure speculation, as with Einstein's now–verified gravitational phenomena, there are several proposed methods of verifying higher dimensions. Most of these methods depend on analysis of particle collisions at places like the LHC in Switzerland. Some particles produced in such collisions would only appear if higher dimensions exist.[20] It must be noted, however, that so far the LHC has not observed any such phenomena, and has in fact ruled out some ranges in which large extra dimensions would appear (CMS Collaboration). Proponents of the "LED" model

[18] Riemann was, coincidentally, a vibrant Christian who originally studied theology.

[19] Abbott was, of course, also a committed Christian.

[20] As CERN's official website states: "Theories that suggest extra dimensions predict that, in the same way as atoms have a low-energy ground state and excited high-energy states, there would be heavier versions of standard particles in other dimensions. These heavier versions of particles – called Kaluza-Klein states – would have exactly the same properties as standard particles (and so be visible to our detectors) but with a greater mass. If CMS or ATLAS were to find a Z- or W-like particle (the Z and W bosons being carriers of the electroweak force) with a mass 100 times larger for instance, this might suggest the presence of extra dimensions. Such heavy particles can only be revealed at the high energies reached by the Large Hadron Collider (LHC). If gravitons exist, it should be possible to create them at the LHC, but they would rapidly disappear into extra dimensions. Collisions in particle accelerators always create balanced events – just like fireworks – with particles flying out in all directions. A graviton might escape our detectors, leaving an empty zone that we notice as an imbalance in momentum and energy in the event. We would need to carefully study the properties of the missing object to work out whether it is a graviton escaping to another dimension or something else. This method of searching for missing energy in events is also used to look for dark matter or supersymmetric particles" (CERN, "Extra Dimensions").

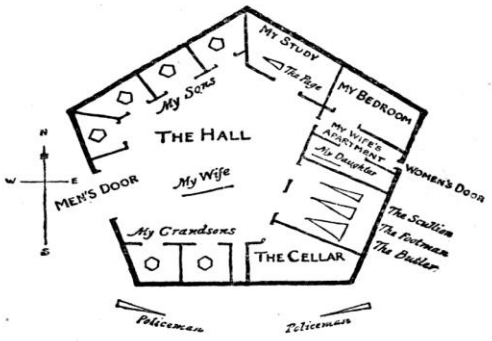
point out, however, that the LHC can only test a small portion of the predicted range of such dimension (Chalmers 2011).

In addition, current understandings of string theory are rendered consistent only by the assumption of at least ten dimensions. String theory, in its most basic form, posits that we ought to understand physical particles like gluons and neutrinos not as points but as incredibly small one–dimensional strings. Based on the way in which each string resonates, it will appear as a different fundamental particle. These strings are so small ("compacted") that they appear to be zero–dimensional points. In truth, however, the strings have ten dimensions—the three spatial dimensions and one temporal dimension that we perceive, as well as six other dimensions rolled up into tiny balls. Alternatively, rather than the six extra dimensions curling into balls, our four–dimensional space–time world might exist on the surface of a higher–dimensional topological space called a "brane."[21] While a Kaluza–Klein type of extra dimension can be no larger than an ant, brane theories may feature extra dimensions of infinite size.

These extra dimensions are often offered as explanations for the fascinating problem of dark matter and dark energy. According to CERN, the entirety of visible matter—every star and galaxy—only makes up about five percent of the universe. The rest of the universe is composed of dark matter (27%) and dark energy (68%). They are called dark because they are invisible and must be observed indirectly, such as through their gravitational effects. CERN states, "Dark matter candidates arise frequently in theories that suggest physics beyond the Standard Model, such as supersymmetry and extra dimensions. One theory suggests the existence of a 'Hidden Valley,' a parallel world made of dark matter having very little in common with matter we know." (CERN, "Dark Matter") In short, if dark matter turns out to be an indicator of extra dimensions, then we ought to think of the invisible, higher–dimensional world as the primary one, and our visible space–time world as only a subset of a much larger and more mysterious existence. What could it be like?

In order to understand how a four–dimensional being might appear to us, it may be helpful to first ask how we might appear to a being in two dimensions. Let us imagine that there exists a world of creatures who can only perceive in two dimensions or lower. Edwin Abbott writes of such a world in his novel *Flatland*, mentioned above. Imagine that this world exists on something like a sheet of paper. As three–dimensional beings, we can look down onto this plane and have a top–down view of the world that gives us a greater perspective than those creatures that exist on the plane. We could see inside houses, or even inside people. The policeman in the house below would have to move over to the men's door to see inside, but we can see the whole house at once.

[21] See, by way of introduction, Langlois (2003).



Notice that we can even see inside the people in the house, and easily know the contents of locked rooms or safes. Now imagine that we could interact with this world. If we talked to these beings and told them what was inside their two–dimensional safe without opening the door, for example, we would seem to possess supernatural powers of clairvoyance. If we tried to step into their world we could only pass through the plane on which they live and create a two–dimensional cross–section of ourselves, like an MRI scan. Let us say that I put my fingers into the plane, creating five unconnected circles. Since the Flatlanders have no concept of depth, unless an object is connected in the second dimension it is not connected. If I told them that those five circles are actually part of the same object and invisibly connected in a way I can't explain, I might be called a religious philosopher.

Now imagine that I decided to pass a cube through the plane, corner first. As the cube initially touches the plane it appears to the flatlanders as if a point has appeared out of thin air. The point grows into a triangle which changes shape into a hexagon, and then into a triangle again before returning to a point and vanishing altogether. If I passed the cube through the plane face–first, it would look as if a square appeared, remained for a moment, and then disappeared. If I wanted to pick up one of the beings and place him somewhere else, it would appear as if I had teleported him—he would vanish and reappear in a different location. I could rob a flatlander bank without breaking through any vaults, since I could pick the treasure up into the third dimension and place it back somewhere else on the second. I could perform surgery by, for instance, removing a tumor without breaking the skin. Depending on how clever I am and how good my vision is, I could see inside a flatlander's brain to detect the electrical flow of his synapses and even guess his thoughts. If I stuck my finger into his world, making a small circle, I would appear the same size and shape as he is, but if I crossed the plane lengthwise I would be a giant. I would seem much stronger than I looked as a small finger–circle, since most of my mass and muscle exists outside of the flatlanders' perception.

Let us say that this flatland spans many miles on the piece of paper. In order to get from one end to the other, a flatlander would have to travel straight across the paper. But if I folded the paper, I could place two distant points next to one another and travel great distances instantly. I could take another flatland on another piece of paper, roll it up into a tube, and fit the whole world perpendicularly into a wardrobe. If I let part of that alternate paper–world intersect with the original one just right, I might even be able to create a bridge through which creatures could travel from one to the other.

Some aspects of my interactions with the flatlanders might be frightening or grotesque. If I passed myself through the plane from foot to head, I would appear as constantly changing blobs that merge and separate, turning from skin to nail to tooth to hair and all manner of other textures and substances. No cage could hold me—I could simply step over it. If I were at war with the flatlanders, I could raise myself above their weapons and crush them without their ever seeing me or being able to defend themselves.

Now we can translate these concepts upward into the fourth dimension. A sphere passing through the second dimension looks like a circle that appears, grows bigger, then shrinks and vanishes. A hypersphere (a four–dimensional sphere) would appear to us as a *sphere* that appears, grows larger, and then shrinks and vanishes. But remember that the sphere we see is only the cross–section of the hypersphere, as the circle is to the three–dimensional sphere. We cannot imagine what the real shape would look like. A four–dimensional being could do in the third dimension what we could do in the second. He could appear and disappear, change his shape to be more or less accommodating to us, teleport, pass through or "step over" solid objects, transport humans in mysterious fashions, and be vastly bigger and stronger than he appears. Let us say that this hyperbeing is equivalent to a human, but translated into four dimensions. Depending on how he is oriented to the third dimension, the being would appear as growing, changing, separating, connecting balls of skin, muscle, guts, hair, eyes, bone, and teeth—his insides would be visible as he passes through our dimension. But of course we have no reason to think that a hyperbeing would look "like us" in this way—more on this below.

By now, the relevance of hyperspace for Christian thought ought to be obvious, but we will nevertheless bring out a few salient points. Hudson's brief (about two pages) discussion of angels leaves most of these parallels implicit. After providing a list–style survey of angelic activities, he concludes:

> Angels and demons, should they exist, can be embodied with perfectly determinate shapes and sizes, and they can be endowed with familiar causal powers to manipulate the material objects in our everyday environments, and they can be thoroughly subject to

> detection even by perceptual faculties as crude and insensitive as ours. Yet they can accomplish their merciful or awesome or sinister feats (as the case may be) while avoiding exposure—simply by carefully exploiting the opportunities afforded by movement in hyperspace (Hudson 2005, 195).

Without making a decisive case, Hudson suggests that angelic or demonic nondetection results from a location in hyperspace, but does not go further than this. He concludes modestly, "it is pleasantly suggestive and one of a number of intriguing considerations that together begin to construct a case worthy of consideration," (Hudson 2005, 195).

I do not claim to present a new argument on this score, merely to more expansively explain the ways in which the biblical behaviors ascribed to angels can all be plausibly interpreted by an appeal to hyperspace. I aim to thicken Hudson's argument by an appeal to biblical and historical considerations, and to expand on his catalogue of angelic behaviors with concrete connections between such behaviors and their hyperspatial explanations.

First, a word about methodological propriety. We should not fear to relate angelic beings to these new realms of physics and cosmology. God has created the whole universe, and as created beings angels fit into the same continuum of creation that we investigate using science, mathematics, and philosophy. Angelology does not *prima facie* require the same order of analogical thinking that theology proper does, nor is it *prima facie* improper to expect evidence of angels as located in our created universe.[22]

A being existing on a dimension "above" ours would, as noted above, possess several remarkable powers consonant with the sort of supernatural abilities we see ascribed to angels. When angels appear or disappear, even in locked jail cells, they might simply be moving between hyperspace and our space.[23] Might we see an indication of this spatial movement in the scene at Jacob's ladder, or in the ascension of Christ?[24] Their appearance might be at times terrifyingly odd or so normal we might not notice them.[25]

---

[22] An objection that appeals to angels as by definition "supernatural" and thus immune to scientific investigation begs the question in favor of incorporeality, and creates a falsely impermeable divide between the realms of nature and "supernature." I am far from convinced that "supernature" is a helpful category. Much better to posit the biblical distinction between Creator and creature.

[23] E.g. Acts 12:7

[24] *Pace* Lewis: "To say that Christ's passage to a new 'Nature' could involve no such movement, or no movement at all, within the 'Nature' he was leaving, is very arbitrary. Where there is passage, there is departure; and departure is an event in the region from which the traveller is departing. All this, even on the assumption that the Ascending Christ is in a three-dimensional space. If it is not that kind of body, and space is not that kind of space, then we are even less qualified to say what the spectators or this entirely new event might or might not see or feel as if they had seen." Lewis (2007, 441).

[25] Compare Heb 13:2 with Ezek 1!

This could be accomplished by altering their orientation to our plane. Perhaps, just as I might draw a human figure on my fingertip and press it to the flatlanders' page–world, thus appearing as a two–dimensional human, angels might do the same in three dimensions.[26] Angels with hyperspace–vision could see things that appear impossible to humans, including, perhaps, making a good guess as to our emotional or mental state by observing our brains inside our skulls. An angel might stand between earth and heaven and easily lay waste to an army without ever suffering injury.

They could transport people between dimensions and from one place to another in the material world by picking them up into hyperspace and setting them back down again.[27] They could possess strength enough to roll a huge stone away from the tomb while appearing like mere young men (remember that most of their mass may be in hyperspace). We may even have indication of angels performing "hyperspace surgery" in Acts 12:23—and who is to say that the mechanics of angelic healing at the pool of Bethesda, for example, did not involve a hyperspatial removal or manipulation of physical substances?

4. Bodies are Better

Having now sufficiently situated the debate, we may note two ways in which positing higher dimensions solves specific philosophical problems. First, hyperspace cuts through the debate about corporeality and incorporeality. Since hyperspace is so disanalogous to the space we know, we might affirm at the same time that angels have no extension in (normal) space, but still possess bodies. Just as Damascene says, these bodies would be incorporeal compared to us (they are not like ours) but corporeal compared to God (who does not have any body whatsoever). If one forces the

[26] A bit of speculation: if angels possess every mark of culture that humans do (language, food, names, tools, clothes, social orders, jobs…) is it unreasonable to assume that angels also possess technology? If so, might they be able to use celestial machines to travel or "flatten" themselves into our dimension? The fact that we might not be able to imagine how such machines could function proves nothing. We would not expect to be able to guess what sort of work might be done in higher dimensions, any more than a flatlander could understand, say, a car engine. A bit more speculation: perhaps we have evidence of these machines in the more reputable reports of UFOs or other such strange phenomena. Quite a lot more speculation: if we understand that angels have a different relationship to time, and assume that angelic culture or technological achievement might advance in their own timeline, could we then imagine that the varying depictions of angels we see in Scripture (from monstrous alien beings to terrifying anthropoids to being mistaken for mere humans) might represent a progress in this projection technology, happening linearly in their own time but appearing non-linear and temporally jumbled to us? But clearly we can put no weight on any of these ideas.

[27] E.g. Lk 16:22

discussion into only three dimensions, as does Aristotle, then one would also be forced to affirm angels as bodiless created intellects, as does Aquinas. One would also, strangely enough, be forced to distinguish between common and "spiritual" matter! But if this restriction is lifted, one might equivocate between saying an angel is (three–dimensionally) incorporeal or that an angel is (hyperspatially) corporeal.

Until the advent of non–Euclidean geometry in the 19th Century, hyperspace was either unknown or unallowable. As such, theologians and philosophers attempting to cope with four dimensional phenomena would have no vocabulary appropriate to describe any such phenomena they encountered. They would have lacked the frame of reference with which to synthesize an apparent corporeality with an apparent lack of three–dimensional presence, and would thus have postulated that angelic spirits are either completely bodiless or possessed of incredibly subtle (but still three–dimensional) bodies.

This leads us to our second point. The incorporealist must somehow explain how angels can be localized and, when they appear as bodies, where these bodies come from. Aquinas and others solve the problem of angelic location by an appeal to the activity of the intellect on a specific area (Aquinas, *ST* I.52), but this seems insufficient to account for passages where angels are detained or constrained, such as Daniel 10 or 2 Peter 2:4.[28]

As to the nature of angelic appearances, there are several incorporealist views on offer,[29] none of which is particularly appealing. But a hyperspace hypothesis could solve both problems at once. Angels are invisible yet localized because their bodies exist in a higher dimension. They cannot be detained, constrained, or harmed in the third dimension but they could be in the fourth. When they appear they are using their own (hypercorporeal) bodies, intersecting with our world at various orientations.

But what does it mean to be "hypercorporeal?" This may be a more difficult question than it at first appears, even when attempting to decide how many dimensions we ourselves might occupy (Hudson 2005, 49)! Humans, at least, normally only *perceive* in three dimensions of space and one of time. I would hazard that, given our experience with lower dimensions, any being occupying space in a higher dimension can affect a

[28] Defenders might respond by saying that the angelic intellects were somehow preoccupied by certain cogitations or limited in their activity. I therefore find the "argument from hellfire" unconvincing as proof of angelic bodies. When asked how a bodiless intellect could suffer in hell, an incorporealist could simply respond that this is a metaphor for mental anguish, perhaps a reflection on one's sinfulness and loss of bliss.

[29] Perhaps angels compress air into the shape of a human body (Aquinas, *ST* I.51.2, reply 3). Perhaps they use temporary bodies specially created for the purpose (Augustine, *On the Trinity* II.7). Perhaps the appearance is merely a mental phenomenon (Aquinas, *ST* I.51.2, *responsio*). Or perhaps angels practice a form of "good possession," using pre-existing human bodies as vehicles (David Keck [1998], 32).

lower, but not the reverse. While an angel might move a human through higher dimensions, I do not see how the angel could enable a human to *perceive* higher dimensions, as this would entail the creation of entirely new faculties. Such may be a task for God alone. In any event, such questions are decidedly *not* the task of this paper; I aim rather to affirm that angels probably have bodies of a certain dimensionality, and to point out what such a body might be able to do, without committing to any specific metaphysics of place, location, or so forth.[30] Bodies are better able to handle the evidence we have on hand, and due to a decided *lack* of biblical evidence in favor of angelic incorporeality, this seems the simpler solution.

Conclusion

We have traced the biblical evidence for angelic bodies, both for and against, and have found that there is no good evidence for *denying* bodies to angels and a preponderance of evidence for *affirming* angelic corporeality. We sprinted through the history of Christian thought and noted that universal hylomorphism was the common view prior to the High Medieval Period, but that after 1215 (with a few exceptions) most thinkers denied angelic bodies. We then toured the history of hyperspace, seeing that Riemannian geometry and new advances in physics have once more opened a space above us in which angelic bodies can dwell. Finally, we explicated how hyperspace might account for most or all of the powers attributed to angels in the Bible. No doubt this discussion belongs to the realm of theological adiaphora, and cannot be emphatically accepted or rejected. It comes down to wisdom consonant with biblical reasoning. We must therefore ask: what is to be lost by denying our friends, the celestial spheres?

Bibliography

Ambrose. 1815–1875. *De Abraham libri duo*. Patrologia Latina, vol. 14. Edited by J.P. Migne. Paris.

Aristotle. 1922. *On the Heavens*. Translated by J.L. Stocks. Oxford: Clarendon Press.

Aquinas, Thomas. 1949. *De Spiritualibus Creaturis.* Translated by Mary C. Fitzpatrick and John J. Wellmuth. Marquette University Press.

Aquinas, Thomas. 1920. *Summa Theologia.* Second revised edition. Translated by Fathers of the English Dominican Province.

[30] For three contemporary options, see Inman (2017).

Augustine. 1873. *On the Trinity*. Translated by A.W. Haddan. In *The Works of Aurelius Augustine: A New Translation*, Vol. 11. Edited by Marcus Dodds. T&T Clark.

Basil of Caesarea. *Liber de Spiritu Sancto*. Patrologia Graeca, vol. 32. Edited by J.P. Migne. Paris.

Bavinck, Herman. 2004. *Reformed Dogmatics Vol. II: God and Creation*, trans. John Bolt & John Vriend. Baker Academic.

Berkhof, Louis. 1996. *Systematic Theology*. Eerdmans.

Bonino, Serge–Thomas O.P. 2016. *Angels and Demons: A Catholic Introduction*. The Catholic University Press of America.

Chalmers, Matthew. 2011. "Reality check at the LHC." *Physics World* 24 (2). https://doi.org/10.1088/2058–7058/24/02/24.

CERN. "Dark Matter." Home.CERN. http://home.cern/about/physics/dark–matter.

CERN. "Extra Dimensions, Gravitons, & Tiny Black Holes." Home.CERN. http://home.cern/about/physics/extra–dimensions–gravitons–and–tiny–black–holes.

CMS Collaboration. 2010. "Search for Microscopic Black Hole Signatures at the Large Hadron Collider." *CERN–PH–EP* 2010–073.

Engberg–Pedersen, Troels. 2010. *Cosmology and Self in the Apostle Paul: The Material Spirit*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199558568.001.0001.

Gregory the Great. 1884. *Morals on the Book of Job*. John Henry Parker.

Hudson, Hud. 2005. *The Metaphysics of Hyperspace.* New York: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199282579.001.0001.

Inman, Ross D. 2017. "Omnipresence and the Location of the Immaterial." In *Oxford Studies in Philosophy of Religion, Volume 7*. Edited by Jonathan Kvanvig. Oxford: Oxford University Press.

John of Damascus. 1899. *Exposition of the Orthodox Faith*. Translated by E.W. Watson and L. Pullan. From *Nicene and Post–Nicene Fathers, Second Series*, Vol. 9. Edited by Philip Schaff and Henry Wace. Christian Literature Publishing Co.

Justin Martyr. 1885. *Dialogue with Trypho*. Translated by Marcus Dods and George Reith. From *Ante–Nicene Fathers*, Vol. 1. Edited by Alexander Roberts, James Donaldson, and A. Cleveland Coxe. Christian Literature Publishing Co..

Keck, David. 1998. *Angels & Angelology in the Middle Ages*. Oxford University Press.

Langlois, David. 2003. "Brane cosmology: an introduction," in *Progress of Theoretical Physics Supplement* 148:181–212. https://doi.org/10.1143/PTPS.148.181.

Lenz, Martin. 2016. Editor, *Angels in Medieval Philosophical Inquiry: Their Function & Significance*. Routledge.

Lewis, C.S. 2007. *The Complete C.S. Lewis Signature Classics*. Zondervan.

Lewis, Florence P. 1920. "History of the Parallel Postulate." *The American Mathematical Monthly* 27 (1): 16–23. https://doi.org/10.2307/2973238.

Origen. *On First Principles*. 1885. Translated by Frederick Crombie, in *Ante–Nicene Fathers*, Vol. 4. Edited by Alexander Roberts, James Donaldson, and A. Cleveland Coxe. Christian Literature Publishing Co.

Pasnau, Robert. 2016. "Form and Matter," in *The Cambridge History of Medieval Philosophy*. Edited by Robert Pasnau. Cambridge: Cambridge University Press, 635–646.

Ross, George MacDonald. 1985. "Angels." *Philosophy* 60: 499–515. https://doi.org/10.1017/S0031819100042534.

Tertullian. 1885. *On the Flesh of Christ*. Translated by Peter Holmes. From *Ante–Nicene Fathers*, Vol. 3. Edited by Alexander Roberts, James Donaldson, and A. Cleveland Coxe. Christian Literature Publishing Co.

Wippel, John. 2012. "Metaphysical Composition of Angels in Bonaventure, Aquinas, and Godfrey of Fontaines." In Tobias Hoffman, editor, *A Companion to Angels in Medieval Philosophy*. Brill. https://doi.org/10.1163/9789004229792_004.