

THE UNITY OF SUBSTANCE IN ARISTOTLE'S *METAPHYSICS* Λ

by

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DALHOUSIE UNIVERSITY  
DEPARTMENT OF CLASSICS

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For Lucy,  
so that I could finally come home.

# TABLE OF CONTENTS

ABSTRACT.....	vii
ACKNOWLEDGEMENTS.....	viii
CHAPTER 1 INTRODUCTION.....	1
1.1    THE ORIGIN OF THE QUESTION.....	4
1.2    THE UNITY OF A SCIENCE.....	5
1.3    PREVIOUS INTERPRETERS.....	6
1.4    DIVERGENCE FROM THE INTERPRETERS.....	8
1.5    THE ANALOGY OF THE GENERAL AND THE ARMY.....	10
1.6    OUTLINE OF THE ARGUMENT.....	12
CHAPTER 2 PERISHABLE SENSIBLE SUBSTANCE.....	15
2.1    THE FOUR CAUSES OF SENSIBLE SUBSTANCE.....	16
2.2    THE ANALOGICAL UNITY OF THE FOUR PROXIMATE CAUSES.....	28
2.3    THE GENERAL, THE ARMY AND PERISHABLE SUBSTANCE.....	34
2.4    CONCLUDING SUMMARY.....	40
CHAPTER 3 IMPERISHABLE SENSIBLE SUBSTANCE.....	42
3.1    THE STRUCTURE OF THE HEAVENS IN A.8.....	43
3.1.1 THE PROBLEM OF THE REVOLVING SPHERES.....	44
3.1.2 THE RESOLUTION.....	47
3.2    THE CAUSES OF IMPERISHABLE SENSIBLE SUBSTANCE.....	48
3.2.1 THE SCOPE OF THE STUDY OF HEAVENLY SUBSTANCES.....	50
3.2.2 THE APPLICABILITY OF THE CAUSES AND PRINCIPLES OF SUBSTANCES LISTED IN A.2-5 TO THE HEAVENLY SUBSTANCES.....	51
3.2.3 THE UNMOVED MOVERS CORRESPOND TO THE GENERAL.....	55
3.2.4 EACH UNMOVED MOVER IS THE UNIQUE CAUSE OF A SPHERE.....	56
3.2.5 THE UNMOVED MOVERS AS EFFICIENT CAUSES.....	58
3.2.6 THE UNMOVED MOVERS AS EXEMPLARY CAUSES.....	62
3.2.7 THE UNMOVED MOVERS AS FINAL CAUSES.....	65
3.3    CONCLUDING SUMMARY.....	71

CHAPTER 4 SEPARATE SUBSTANCE AND CONCLUSION .....	73
4.1    THE LIMITS OF THE ANALOGY APPLIED TO SEPARATE SUBSTANCE.....	73
4.2    GOD, ACTUALITY AND POTENTIALITY .....	77
4.3    THE UNITY OF THE COSMOS.....	80
4.3.1 THE TWO DIMENSIONS OF COSMIC UNITY .....	82
4.3.2 GOD AS THE EFFICIENT CAUSE OF ALL SUBSTANCES.....	87
4.3.3 GOD AS THE EXEMPLARY CAUSE OF ALL SUBSTANCES .....	89
4.3.4 GOD AS THE FINAL CAUSE OF ALL SUBSTANCES .....	91
4.4    CONCLUSION.....	92
BIBLIOGRAPHY.....	93

## ABSTRACT

This thesis investigates whether Aristotle is actually presenting substance as the subject of a single science in *Metaphysics*  $\Lambda$ . It proposes that he is, and that the common principles of all substances, which are required for there to be a single science of substance, are those found in  $\Lambda$ .2-5. Although these causes and principles describe change, the analogy of the general and the army, which describes the relationship between God and the cosmos, also describes the relationship between causing and caused sensible substances. The analogy of the general and the army is used to show that the principles that describe the actuality and effects of separate substance are analogically similar, and that the cause of this similarity is God's ordering of the cosmos to be like his own eternal actuality as far as possible.

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## CHAPTER 1 INTRODUCTION

That the means by which we can understand substance is through its causes (αἴτια) and principles (ἀρχαί) is made clear by the opening lines of *Metaphysics* Λ, “περὶ τῆς οὐσίας ἢ θεωρία: τῶν γὰρ οὐσιῶν αἱ ἀρχαὶ καὶ τὰ αἴτια ζητοῦνται.”<sup>1</sup> The contemplation of substance is also the contemplation and investigation of its causes and its principles. Within the space of the first chapter of Λ, Aristotle brings before us one of the main questions for the interpretation of *Metaphysics* Λ: whether all three kinds of substance (sensible perishable, sensible eternal and separate, immoveable substance) can be considered through one science, or whether the immoveable, invisible kind must be considered apart from sensible substance. The project laid out in *Metaphysics* Α, the search for Wisdom or the *divine science*, prescribes a science which grasps the principles of all things,<sup>2</sup> showing that Aristotle conceives of a science that could embrace all three kinds of substance. A single science, Aristotle says in Λ, requires a common principle (ἀρχὴ κοινή).<sup>3</sup> Since Aristotle never explicitly answers the question, establishing the plausibility that Λ does present a single science of substance requires one to prove that a common principle of all substances is present in the book’s argumentation. The difficulty lies in determining how Aristotle can provide a common principle, or even principles, to substances which exhibit changeableness,

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<sup>1</sup> Aristotle, *Metaphysics* Λ, 1069a18-19.

<sup>2</sup> 982a1-9; 983a5; 993b26; 1003a21-30. These passages from *Metaphysics* Α point to the study of the highest science as the science of substance generally, such as it is considered in *Metaphysics* Λ. The first passage describes what wisdom is, namely, a knowledge of all things, but not in detail. The second passage calls this science, or wisdom, divine in two ways: 1) because it has eternal and divine things as its object, and 2) because of all sciences, it would be possessed by God. In the third passage Aristotle reaffirms that what is sought is the first principle, God, who as the “most true” is the cause of all derivative truths. The fourth differentiates Aristotle’s study of being qua being from those sciences, which as part of a whole, study only one section of being. Here he associates knowing the first principles and highest (ἄκροτάτα) causes with the study of being which is universal (καθόλου).

<sup>3</sup> 1069b1.

and those which do not, but exist immutably, especially since he excludes intelligibles, such as being and unity, which *are* common, from being principles of substance.<sup>4</sup>

The science of sensible, changeable substance, appears at other places throughout the *Metaphysics*, and is given an especially rigorous treatment in Z, H and  $\theta$ . In these books scant reference is given to divine, or separate, substance. Even in  $\Lambda$ , where all three kinds of substance are studied, there is no declaration either way about whether there is or is not a single science of substance. The first half of  $\Lambda$ , chapters two through five, present the principles that explain the being and changing of sensible substances: form, matter, privation and agency.<sup>5</sup> These chapters even acknowledge the role of the divine as a cause in their being and changing,<sup>6</sup> but chapters six through ten, which consider separate substance, do not refer to the same principles. Some conclude, therefore, that the project of the *Metaphysics* does not succeed in seeking the single science of *being qua being*. Joseph Owens, S.J. describes the *Metaphysics*' supposed failure:

In one respect this study of the *Metaphysics* has led to a negative result. Nowhere in any of the treatises is separate Entity explained in the way required by A-E. A-E had projected a science of separate Entity which should treat universally of all Being.  $\Lambda$  and – as far as can be gathered from the indications – the positive treatment presupposed by N develop the theme of Entity only in itself and as the final cause of all sensible Entity. They make no attempt to show that the Being of the separate Entities is the Being expressed and studied in all other Beings. Yet a treatment from this viewpoint is the only kind that could fill the requirements of A-E.<sup>7</sup>

If there is to be a unified science of substance, it must be shown how, as Owens says, “the Being of the separate Entities is the being expressed in all other beings”. In this thesis, I

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<sup>4</sup>1070b7. “οὐδὲ δὴ τῶν νοητῶν στοιχεῖόν ἐστιν, οἷον τὸ ὄν ἢ τὸ ἔν:...”

<sup>5</sup>1071a34.

<sup>6</sup>1070b35.

<sup>7</sup> Owens, 298. (Owens translates οὐσία as ‘Entity’.)

intend to show that common to all substances there is such a principle, or more accurately, *principles*. These common principles must be found in the highest kind of being, the separate substances and in lower and less perfect beings. The causes and principles sought are those which belong to the highest substance, and yet also belong to changeable substance, without attributing changeableness to separate substance.

The principles that govern the relationship between a causing substance and caused substance are of this sort. The relationship of cause and caused even applies to God and the cosmos, as expressed in the analogy of the general and the army,<sup>8</sup> in addition to every other substance, since even those which are not the cause of anything else are caused. Every substance besides the first depends upon an already actual substance for its existence (or simply for its coming to be). Even the unmoved mover, although it has no potency, is not without a relation to potency in that it actualizes the first sphere's potential for motion. Every substance is involved, *in a like way*, in the relationship of an actual substance actualizing a potential substance. In this thesis, I argue that the interpretive key of *Metaphysics* Λ is the analogy of the army and the general from Λ.10, an image Aristotle provides for understanding how God is the good and cause of the cosmos. I will show that all substances are involved in the kind of causal relationship contained in the general-army relation, although some substances are only ever on one side of the causing/caused dichotomy. Furthermore, Aristotle's account of causality in Λ.3 shows that everything that is caused is conformed to its efficient cause,<sup>9</sup> so that both its existence and essence have their origin in it. The implication of this causal relationship is that the common structure we are invoking in all substances is not a loosely connected series of likenesses, but is rather grounded in the

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<sup>8</sup>1075a14.

<sup>9</sup>1070a4-5.

continuity of causes which stretch between the unmoved mover, the heavens, and the sublunary realm. Consequently, there is a likeness of God's eternity and power to actualize found throughout the other two kinds of substance which make up the cosmos.

## 1.1 THE ORIGIN OF THE QUESTION

*Metaphysics* Λ does not open with a question, but a basic statement about substantiality and how the investigation is to proceed.<sup>10</sup> The contemplation of substance-being (οὐσία) proceeds by seeking out and investigating the principles of substances. In Λ.1 Aristotle does not say whether these principles will be the same for all or not, but instead reflects on a number of other questions, including what substance's place in the whole universe is and whether universals or particulars are substances.<sup>11</sup> The question of whether Λ is divided into two sciences does not emerge as such. When Aristotle introduces the distinction between the three kinds of substances, it is already clear that the sensible substances are studied by physics.<sup>12</sup> Separate substance, however, since it does not change in any way, cannot be studied by physics, and so must be the subject of another science. The question Aristotle raises is whether the science which studies separate substance also includes the substances studied by physics. Aristotle does not make it his goal to determine whether or not there is a common principle that would allow this, nor does he deny the possibility. Nevertheless, the question remains an important one to consider. Without a common science of substance it is doubtful that there could be a θεωρία περὶ τῆς οὐσίας, but only of the distinct kinds of οὐσία.

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<sup>10</sup> Elders, 69-70. Elders cautions against the use of "substance" as a translation of οὐσία, as does Owens (Owens, 150), who prefers to translate it as 'entity'. The investigation is not about a single being, but about primary being generally, or the "beingness of things". Elders also remarks that it refers to particular subsistent beings when used in the plural.

<sup>11</sup> 1069a18-30.

<sup>12</sup> Ibid. 36.

## 1.2 THE UNITY OF A SCIENCE

The existence of a single science for all kinds of substances, or for substances generally, depends upon the existence of a common principle. The causes and principles of all things, Aristotle is careful to remark repeatedly, are different.<sup>13</sup> Causes and principles are, properly speaking, particular substances.<sup>14</sup> Does Aristotle argue that sensible substances and separate substances all share a single substance as a cause as a requirement of belonging one science? If having a common principle, or principles, is the measure of belonging to the same class of being, what is the common principle which makes second philosophy or physics a single science? Every sensible substance has a form, matter and privation, common universal principles, despite the fact that what these are for each substance is particular and different for each: e.g., houses have matter; this matter is bricks. Another possible similarity which might give unity to physics as a science is the capacity for all natural substance to suffer change or motion. This principle is matter, but the matter is different in each sensible substance, and the capacity for change, or potency *qua* potency, is not a subsistent substance. Therefore, in the case of those substances that are studied by physics, what is alike in each of them, seems to be an *analogically* common principle. We must be cautious, however, since substances have more than one principle. The potency of natural substances would be nothing, after all, without the actuality of form for which any potency exists, and an external agency to actualize the potential in the matter. Without these analogical principles, potency would simply be non-being, not a potency at all. The existence of analogical principles does not at all rule out that a particular principle can *also* be common and even related to the

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<sup>13</sup> 1070a30-31. “τὰ δ’ αἴτια καὶ αἱ ἀρχαὶ ἄλλα ἄλλων ἔστιν ὅς”.

<sup>14</sup> 1070b8-9. The elements are either relative beings or substances, and relative beings cannot be the principles of substances, nor vice versa.

analogical principles of substances. Examples of this include the Sun<sup>15</sup> and the unmoved mover, without which neither substances, nor even non-substantial beings, would exist at all.<sup>16</sup> Proximate causes are analogically like, but the more remote and universal causes are particular substances. By investigating the relationship between analogical and particular common causes we will come to understand how there can be common causes of both kinds.

### 1.3 PREVIOUS INTERPRETERS

Commentators on  $\Lambda$  differ widely on what the subject, structure and goal of the book is. Some take it to be primarily devoted to ontology, either divided into one or two sciences; others take it as theology, to which physics is subordinated. Aquinas views  $\Lambda$  as the single science of first philosophy.<sup>17</sup> He holds that there is a common principle, namely, being a substance, which he takes first philosophy to study, a science which must therefore study all beings. His interpretation of the whole of  $\Lambda$  is justified by Aristotle's introductory statement about the book: that is it is a "περὶ τῆς οὐσίας ἢ θεωρία", i.e. that the whole work is conducting the science of substance-being *qua* substance-being. Owens, like Aquinas, takes  $\Lambda$  to be primarily ontological, or ousiological, but as we noted above, he denies that the subject of physics and separate substances are studied, or as he states it, "a study of Entity first in sensible Entity and then in immobile Entity."<sup>18</sup> Ross holds, in contrast with this ontological interpretation, that  $\Lambda$  is a work of theology, ordered towards establishing claims

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<sup>15</sup> 1071a15-16.

<sup>16</sup> 1071a35-36. The first unmoved mover is the cause of all things, and so all substances, without which substances there would be no other beings of any of the other categories.

<sup>17</sup> Aquinas, §2426; Lang, 261. Lang agrees with Aquinas, saying "But if, as I am arguing, the subject of inquiry is substance, a topic recognized even by the ancients, then the division of substances into kinds is the first step in implementing the inquiry into substance. Consequently, these three kinds must possess a common principle sufficient to include them within a single investigation..."

<sup>18</sup> Owens, 453; Lang, 257.

about divine being rather than making claims about substance.<sup>19</sup> Helen Lang is critical of both Ross' and Owens' approaches. She agrees that the work as a whole is not theology, but she grants that theology is its culmination of a single account of substance.<sup>20</sup> If there is no common principle then there are either two equal investigations (as per Owens), or one investigation for which the rest of is an instrument (as per Ross). If there is a common principle, there is one investigation which equally involves the whole of the book.

Interpretations about whether  $\Lambda$  includes common principles of all substance also depend upon how God and the other unmoved movers are conceived of, either as efficient causes or as final causes, or perhaps both. If God and the other unmoved movers are causes in a way entirely unlike the other substances, it is difficult to see a likeness between the causes that govern sensible substances and their interactions, and the principles which describe the existence and activity of the separate substances. If on the other hand, separate substances are understood as efficient causes, this association becomes much more plausible. Averroes considers God and the unmoved movers to be efficient causes, in addition to being formal and final causes of the spheres. Averroes regards the efficiency of the unmoved movers as concomitant with their existence. He says that "...it is impossible that any of these noble principles exists without any activity, as it is impossible that no ignition originates from the essence of fire. These principles are active [principles], just as the Sun generates light by its nature."<sup>21</sup> In this case the unmoved movers cause something besides themselves, just as light is distinct from the Sun. Averroes does not recognize this efficiency as a kind motion by impulse, but as the cause of the very existence of the sphere, which in turn moves

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<sup>19</sup>Ross, xxix, cxxx-cliv.

<sup>20</sup>Ibid. 258, 263. That is, if  $\Lambda$ .1-8 is taken as a whole, rather than divided into two separate, but similar investigations. Lang takes the last two chapters as answering questions which the main treatment in  $\Lambda$ .1-8 raises but does not answer.

<sup>21</sup> Averroes, 149.

through desire for the unmoved mover.<sup>22</sup> Kosman's description of the unmoved movers' efficiency differs insofar as he considers it to be like the soul of one of the heavenly bodies.<sup>23</sup> Whereas Averroes considers the spheres to have their own souls, Kosman does not. Neither regards any of the unmoved movers as efficient in the sense of causing motion physically. Elders sees Aristotle's position that God is a "subsistent thinking" in  $\Lambda$  as being in tension with God as described in *Physics* VIII as an efficient cause. For Elders, God, as the Good, is a final cause in  $\Lambda$  and not an efficient cause.<sup>24</sup> In such a view God is regarded as the ordering principle of all things, but not a principle of the existence of all things. Simplicius, however, regards Aristotle's God as a creator, immediately, of the spheres, and more remotely, of the perishable substances through the motions caused by the spheres.<sup>25</sup>

## **1.4 DIVERGANCE FROM THE INTERPRETERS**

I agree with Lang's view that the theology does not dominate the work but rather stands as the culmination. I also agree with Owens that the work itself is primarily aimed at describing substance, but I depart from his position which regards the account of separate substance and sensible substances as two separate accounts. The two accounts in  $\Lambda$  are one by virtue of both a hierarchical relationship and an analogical relationship. I will argue that the analogical likeness of the principles of all substances are a likeness to the principles which belong to the causal relationship between God and the cosmos, as described by the analogy of the general and the army in  $\Lambda$ .10. The validity of this analogy depends upon

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<sup>22</sup> Ibid. 151.

<sup>23</sup> Kosman, 1994, 145.

<sup>24</sup> Elders, 13-4.

<sup>25</sup> Simplicius, 115-6.



accepting that the unmoved movers are efficient causes in virtue of their actuality, and the efficient causality that belongs to other substances is a likeness of the unmoved movers' causality. Furthermore, this excludes the possibility that the unmoved movers are like a soul or a form, since they would not correspond to the distinction between intrinsic causes (form, matter, privation) and the extrinsic efficient cause. These four causes are the analogically common principles of all substances, which though different numerically, all share in the structure described by analogy of the general and the army.

I will also argue that the analogical likeness of all principles of substance depends upon the order or nature of the cosmos, as described by the same analogy of the general and the army. By reading the two central analogies of  $\Lambda.10$  together, i.e. the analogy of the army and the analogy of the household, along with Aristotle's concluding invocation of Homer's saying that "many kings is not good; let there be one king" so that "the things that are will not be governed badly,"<sup>26</sup> Lang seeks to explain how substances share a  $\pi\rho\acute{o}\varsigma \acute{\epsilon}\nu$  relationship, explained with reference to one order originating in the divine ruler, God as the one (and only)<sup>27</sup> unmoved mover. I agree with Lang, on her point that  $\Lambda.10$  completes the discussion of substance by examining a common principle of all substance, which she identifies as a  $\pi\rho\acute{o}\varsigma \acute{\epsilon}\nu$  principle.<sup>28</sup> I argue, however, that this one order also allows the particular principles of substance to be seen as *analogically* like. The order which governs all substances, also orders individual substances, or rather, the order of the whole is manifested in and through the individual natures of all substances. The chain of causality, beginning with the first

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<sup>26</sup> 1076a3-5. τὰ δὲ ὄντα οὐ βούλεται πολιτεύεσθαι κακῶς. "οὐκ ἀγαθὸν πολυκοιρανίη: εἷς κοίρανος ἔστω." All translations from the *Metaphysics* and *De Anima* are my own.

<sup>27</sup> Lang, 266-7. She takes Aristotle's conclusion in  $\Lambda.8$  and the argument about matter to be an answer to the question whether there are one or many movers. She is not referring only to the first unmoved mover, but any unmoved mover at all.

<sup>28</sup> *Ibid*, 277.

mover, orders the whole by causing the first motion, which in turn orders the next, etc. so that it is clear that God is the first principle of all substances. Theology has priority in  $\Lambda$  because it studies the principle upon which everything else depends. This common structure is strong evidence that *Metaphysics*  $\Lambda$  presents a unified study of substance by providing common principles, both in the analogical structure of all three kinds of substance, and in the role played in the cosmos by God and the other unmoved movers, whose efficient, ordering causation explains the existence of the analogical structure which unites the three kinds of substance.<sup>29</sup>

## 1.5 THE ANALOGY OF THE GENERAL AND THE ARMY

The analogy of the general and the army is indispensable insofar as it provides an analogical structure applicable to all substances, both sensible and separate. Applying it correctly requires a careful analysis of the meaning of the image of the general and the army and the context in which it is introduced, which is to explain the relationship between God and the cosmos. Aristotle introduces the analogy of the general and the army in the last chapter of *Metaphysics*  $\Lambda$ :

It ought to be considered in what way the nature of the whole possesses the good and best, whether as some separate thing itself by itself, or as its own order. Or is it in both ways, just

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<sup>29</sup> Averroes, 156, 158. Averroes regards God as the cause of the world's unity as a whole, rather than an accidental unity: "On the whole, the world is one because it has one principle, otherwise its unity would be accidental or it would follow that it does not exist at all." Averroes does not only interpret God as an ontological or ousiological first principle, but as ordering things through providence (ibid. 179). The question of providence in  $\Lambda$  cannot be avoided if one reads  $\Lambda.10$  with any seriousness. Providence and ontological causality need not be distinct however, especially if the cause of the order in the whole is equally the cause of actuality of all the substances.

as an army? For its well-being is in its order and its general, but more the general. He does not exist because of the order, but the order because of him.<sup>30</sup>

In this analogy, the army is representative of the whole, which has its actuality in virtue of its order, since it would not even be an army without an order. We must keep in mind that this analogy is responding to a very specific question about the *nature* of the whole, that is, the whole as a distinct being, which has its own *primary motion* and order. In particular, Aristotle considers where its good, i.e., its perfection and actuality, lies. The structure of the analogy is reminiscent of Aristotle's response to the Platonic Ideas,<sup>31</sup> seen through the examples of art and reproduction:<sup>32</sup> a sensible substance truly possesses its nature in itself, yet the origin of its nature is an external cause similar in nature to it (either as the same form biologically, or as the artist's pattern). In a similar manner, the general gives his army its order but remains, nevertheless, distinct from it. This order, however, does not just originate in the general arbitrarily but according to the general *being a general*. The army's order depends upon the general to such a degree that Aristotle suggests that the good belongs more to general than to the army's possession of its own order. Aquinas' explanation of this is that the army exists for the sake of doing the general's will, but the general does not exist for the sake of the army.<sup>33</sup> This is a valid reading of the text so long as it is interpreted in such a way that it is not subject to the Aristotle's criticism of Anaxagoras, that *voũs* moved all things for an external end, and thus does not stand as the good of the whole.<sup>34</sup> The army (and its order)

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<sup>30</sup>1075a11-15: ἐπισκεπτέον δὲ καὶ ποτέρως ἔχει ἢ τοῦ ὅλου φύσις τὸ ἀγαθὸν καὶ τὸ ἄριστον, πότερον κεχωρισμένον τι καὶ αὐτὸ καθ' αὐτό, ἢ τὴν τάξιν. ἢ ἀμφοτέρως ὡσπερ στρατεύμα; καὶ γὰρ ἐν τῇ τάξει τὸ εὖ καὶ ὁ στρατηγός, καὶ μᾶλλον οὗτος: οὐ γὰρ οὗτος διὰ τὴν τάξιν ἀλλ' ἐκείνη διὰ τοῦτόν ἐστιν.”

<sup>31</sup> 1071b14-15. Aristotle says that the Ideas will not be principles of sensible substances if they do not have a principle which can effect change, i.e., generation.

<sup>32</sup> 1070a27. The causes of the sensible substances are also sensible substances, which have a capacity to cause either something like themselves, or to make something according to a pattern or plan contained in the mind.

<sup>33</sup> Aquinas, §2630.

<sup>34</sup>1075b9.

is the direct effect of the general's actualizing activity (i.e., organizing or raising the army), and through his activity the army caused to become like its ruling principle out of an initial unlikeness.

The general of course represents God, the separate substance and first mover, who already possesses complete actuality and causes the actuality of the cosmos. All four causes and principles of substance are present in this analogy: form, matter and privation on the side of the whole which is given order and actuality, and the agency of separate actuality and form, on the side of God. These principles describe the relationships between substances, and thus as part of an ordered whole. Both perishable and imperishable sensible substance are thus shown to possess a very real likeness to the cosmic order, whereby the three elements of the natural whole depend upon a transcendent agent, which is always already actual. In order to establish the validity of this interpretation of *Metaphysics* Λ, the analogy of the general and the army must be shown to be operative in the accounts of all three kinds of substance. For each in its own way, the transcendent character of agency and actuality is distinct from and prior to the principles associated with potentiality.

## **1.6 OUTLINE OF THE ARGUMENT**

Chapter 2 first examines the principles that Aristotle attributes to sensible substances, and explains how these four principles (form, matter, privation and agency) apply to the perishable sensible substances. By understanding how these four principles work in relation to perishable sensible substance, I will establish in the subsequent chapters the extent to which these principles can be attributed to all substances by analogy, a claim which Aristotle makes in Λ.4. Secondly, I examine sensible perishable substances as an example of an

analogical unity within a class of substances. I will then show that analogy that alone cannot be the ground of such a unity, and what is needed for it to be express a real unity. Since Aristotle already accepts that “perishable sensible substance” is a meaningful division of substance showing that unity of such substances is analogical will affirm the possibility that such a unity might also be applied to all substances. Finally I will show how the analogy of the army and the general applies to the sensible perishable substances, demonstrating that it is possible to employ this analogy in a meaningful and helpful way which clarifies these perishable substances and their principles in themselves. Understanding perishable sensible substances according to this analogy is also a first step in showing how these seemingly lowly substances have a certain structural likeness to the divine. Chapter 3 addresses how the principles of sensible substance apply to the eternal sensible substances, and will take stock of the difficulties involved, especially whether these principles can be applied in the same way as they are to the perishable sensible substances. As with the second chapter, it will examine how the analogy of the army and the general applies to them. In order to do so we will also consider vexing problems posed by Aristotle’s astronomical account in *Λ.8*, difficulties introduced by the revolving or rewinding spheres. Besides providing a basic understanding of how the heavens are ordered, I show how Aristotle tried to establish a heavenly system that allowed each of the unmoved movers to be counted by being an immediate cause of one of the heavenly motions. Finally, the chapter shows how the unmoved movers are the efficient, exemplary, and final causes of the spheres. Since in Aristotle’s system each sphere has its own unmoved mover, this examination of the operation of the principles of substance in heavenly beings opens up the question of the final chapter, how the analogy of the general and the army applies to the separate substances in themselves.

Chapter 4, the final chapter and conclusion, turns to immaterial, unmoving substance, showing that of the four causes from A.2-5, only agency applies to the unmoved mover, but that this need not threaten the possibility that all substances can be described by these analogical principles. The analogy itself describes the relationship between two substances, one caused and one uncaused. The unmoved movers do belong to this relationship, but do not have any causes. While the form of the caused substance is often taken to be the most important of the causes, agency is actually primary, since it is an actuality prior to form. This helps illustrate the complete primacy of the general over the army in the analogy. Having established that even the unmoved movers belong to the analogical structure that explains the causes of both eternal and perishable substance, the fourth chapter concludes by showing how the three kinds of substances are ordered together by the unmoved movers. The reason the analogy holds between the three kinds of substance is that all substances approximate the divine actuality as far as they are able. The four analogical principles discovered in the analysis of sensible perishable substances are thus shown to apply to all three kinds of substance, once these are understood through the analogy of the general and the army.

## CHAPTER 2 THE PERISHABLE SENSIBLE SUBSTANCES

The first kind of substances to be considered are the sublunary sensible substances, both natural and artificial. In chapters two to five of *Metaphysics* Λ, Aristotle establishes the initial list of causes and principles of sensible substance. Beyond the insight gained into sensible substances through an examination of these opening chapters of *Metaphysics* Λ, a careful reading of this section also shows us what kind of causes and principles of a substance Aristotle is seeking. A second reason for the importance of this first section is its implicit and explicit reliance upon analogical unity. On more than one occasion<sup>35</sup> Aristotle makes a distinction between the way in which the causes of things are different and the way they are the same for individual substances. Aristotle rejects separate universals, e.g. the Platonic Ideas. The principles of each substance are a certain form, i.e. the actuality of the individual substance, a particular matter (potentiality for this actuality), along with a substance which causes the potentiality to become actual. Each set of causes is particular, and no substance shares all of the same causes with another.<sup>36</sup> The principles of substance can only be the same, and understood universally, through a structural or analogical likeness. Since there cannot be a science of individuals for Aristotle, but only of universals, a science of substance, i.e. a science of its principles and causes, depends upon such an analogy to provide the common principles for such a science.<sup>37</sup> I will first show how the analogy of the

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<sup>35</sup> 1070a30; 1071a34.

<sup>36</sup> The particular form and matter must be different, though the efficient cause could be one and the same substance.

<sup>37</sup> The particular causes could not be known as causes without a universal knowledge of causes. In *Metaphysics* M, Aristotle concludes that “knowledge has a double meaning, just as knowing does, knowledge potentially and knowledge actually. The potential knowledge as matter is universal and indefinite and is knowledge of a universal and indefinite object, but actual knowledge is definite and has a definite object, it is a particular knowledge of a particular thing”. (“ἡ γὰρ ἐπιστήμη, ὡσπερ καὶ τὸ ἐπίστασθαι, διττόν, ὃν τὸ μὲν δυνάμει τὸ δὲ ἐνεργείᾳ. ἡ μὲν οὖν δύναμις ὡς ὕλη τοῦ καθόλου οὐσα καὶ ἀόριστος τοῦ καθόλου καὶ ἀορίστου ἐστίν, ἡ δ’ ἐνεργεία ὠρισμένη καὶ ὠρισμένου, τόδε τι οὐσα τοῦδέ τινος...”) *Metaphysics* M, 1087a15-19. (All the

general and the army sufficiently describes, and even illuminates the principles and causes of sensible, perishable substances. By establishing just how the principles enumerated in the first half of  $\Lambda$  relate to this analogy we will set a standard against which we can compare the how the same analogy is applied to the other two kinds of substances, and thereby, to substance as a whole.

## **2.1 THE FOUR CAUSES AND PRINCIPLES OF SENSIBLE SUBSTANCE**

The relationship we are now considering is that between the intrinsic causes (form, matter and privation) and extrinsic cause (agency) of *substance*.<sup>38</sup> These causes must be carefully understood, both in terms of what each cause is in itself and how they relate to each other. Once properly understood the structure of the causes and principles of perishable substances can be related to the analogy of the general and the army, and thereby, ultimately, also to God and the cosmos. Similarly, as per the proportional nature of Aristotelian analogy, the structure of God and the cosmos might also be understood as analogically descriptive of the causes of all substances. As we noted in the introduction, there is a difficulty regarding the universal applicability of matter and privation as causes of substances. Nevertheless, they are, certainly, causes of all the substances in the sublunary realm. It is essential to understand these four principles Aristotle initially gives, and is indeed, satisfied with,<sup>39</sup> to explain

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translations from the *Metaphysics* are my own.) Lynne Spellman, in *Substance and Separation in Aristotle*, concludes that Aristotle's conception of knowledge acknowledges that particular substances are what is known but as being "numerically the same" and "indistinguishable from other species of the same kind." (Spellman, 82.)

<sup>38</sup>1070b29-32; 1071a34.

<sup>39</sup> 1071b1. Aristotle begins  $\Lambda$ .6 with definitive statement about the state of the investigation of the principles of sensible substance, and the complexities of their sameness and difference, that is, that "they have been said." "τίνες μὲν οὖν αἱ ἀρχαὶ τῶν αἰσθητῶν καὶ πόσαι, καὶ πῶς αἱ αὐταὶ καὶ πῶς ἕτεραι, εἴρηται."



sensible substances. How any of these grander relationships and puzzles are to be understood depends upon a solid understanding of the substantial principles laid out in the first half of the work.

The beings that are described by the structure of these four causes are not *kinds* of being, but *particular* beings. Just as one real general gives order to an individual army, and God is the cause of the one and only cosmos,<sup>40</sup> so are all substances individual actualities with equally individual causes. Aristotle points this out in chapter three by giving two examples, saying:

It is indeed evident because of these causes that Ideas are not necessary, for a man begets another man, and each man a particular man. Likewise in the case of the arts; for the medical art is the form of health.<sup>41</sup>

It is individual substances that cause others individuals to come to be and to be what they are; a man begets a man in virtue of being a man, and a doctor health in virtue of the medical art. Similarly in chapter five Aristotle notes that "...and so these [proximate causes] are not the universals; a principle of an individual substances is individual."<sup>42</sup> Aristotle uses these principles to explain how substances can both be and be involved in generation, destruction and change generally. In Λ, specifically in Λ.2, Aristotle gives an account of change, which

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<sup>40</sup> 1074a32-38. Here Aristotle argues against the possibility of multiple *cosmoi* on account of the prime mover being one (and immaterial).

<sup>41</sup> 1070a27-28: "φανερὸν δὴ ὅτι οὐδὲν δεῖ διὰ γε ταῦτ' εἶναι τὰς ἰδέας: ἄνθρωπος γὰρ ἄνθρωπον γεννᾷ, ὁ καθ' ἕκαστον τὸν τινά: ὁμοίως δὲ καὶ ἐπὶ τῶν τεχνῶν: ἡ γὰρ ἰατρικὴ τέχνη ὁ λόγος τῆς ὑγιείας ἐστίν." 'ἐκεῖνα', in the neuter plural, refers to the two neuter predicates of the previous sentence, "πάντων δὴ πρῶται ἀρχαὶ τὸ ἐνεργεῖα πρῶτον τοῦ καὶ ἄλλο ὃ δυνάμει." Following Ross, I take the subject 'πάντων δὴ πρῶται ἀρχαὶ' to mean proximate rather than first principles. Ross, however, takes the 'ἐκεῖνα' to refer to universal causes, which would mean 1071a20 would read "And so these universals do not exist". (W.D. Ross, *Aristotle's Metaphysics*, Vol. II. (Oxford: Clarendon Press, 1970) 365.)

<sup>42</sup> 1071a18-20. "ἐκεῖνα μὲν οὖν τὰ καθόλου οὐκ ἔστιν: ἀρχὴ γὰρ τὸ καθ' ἕκαστον τῶν καθ' ἕκαστον:..."

is essential for understanding substantial being, especially of the perishable sort. The relationship between change and actuality hearkens back to two of the pillars of Platonic idealism, Parmenidean being and the Heraclitean flux, between which Aristotle's theory intends to navigate. In so doing it establishes the analogically similar causes of all sensible, and therefore changeable,<sup>43</sup> substances, which explain the being and becoming of substances through their relation to other substances that are their principles.

Two points emerge from a close reading of *Λ.2* and 3: first, form, matter and privation are the logical parts of a sensible being, rather than its corporeal parts, and second, these principles explain how actuality includes potentiality. They describe, respectively, the actuality of a substance (form), a potency for the actualization of the same substance (matter), and the other substance in which this potency exists, and is regarded as being in a state of privation relative to the form. David Charles' analysis of matter in *Λ.2* provides an alternative to the misconception that form is imposed upon matter as if the two were distinct beings at odds, or even conflicting natures forced into one actuality. Charles offers a description of matter which is equally applicable to the perishable and eternal sensible substances, saying that "Matter, in both cases, might be taken to be what is directly required if the relevant substance is to carry out its requisite changes..."<sup>44</sup> These changes are

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<sup>43</sup> Charles, 83. Charles considers whether sensible substances are changeable in virtue of being sensible, a point which Aristotle states matter-of-factly. Charles' suggests that because all sensible things are abstracted from matter in perception, they must also have matter, and if matter, potency of some sort, and are therefore changeable.

<sup>44</sup> Charles, 91. Much of Charles' essay on *Λ.2* engages with the difficulty of assigning matter generally to all sensible substances when some have matter for change and others, the eternal sensible substances, do not. One of Charles' aims is to determine whether they can share matter as principle by way of analogy, so that matter plays an equivalent role in each. He determines that the analogical likeness shared by all matters, as descriptive of substance being, is "just the potentiality to change or be changed in the ways required by the form." (Ibid.) This agrees with what I am proposing, insofar as it accepts that all sensible substances are caused in virtue of a capacity that is actualized by an agent. Charles is most helpful for showing that though the heavenly bodies do not come to be, they do have a matter in a way that is analogous to the sublunary substances.

described by the form.<sup>45</sup> Gadamer describes Aristotle’s concept of matter thus, “Was erst so und dann anders sein kann, ist ein Sein, das weder so noch anders ist, das beides nicht ist: ein Sein, das durch sein Seinkönnen charakterisiert ist.”<sup>46</sup> Matter is nothing, except a capacity for some being or substance to become actual. Therein lies the wonderful sufficiency of Aristotle’s example of colour and a surface. A surface has a capacity to be coloured. Its capacity to be coloured is not a colour, yet it must always be coloured, either white or not-white—and it must always be specific capacity, e.g., colour, rather than for sound. Matter, understood as this, cannot *be* a corporeal part of anything, nor can it be opposed to an actuality. Therefore, Aristotle explicitly rejects the crude interpretation in  $\Lambda.10$ , saying that some thinkers make the mistake of assigning matter as one of the two contraries, i.e. as form or privation, which negate each other.<sup>47</sup> We must be cautious, however. The three principles, or elements, as Aristotle also terms them, do exist contemporaneously, but in a qualified way, which explains the *changeable nature* of a substance rather than its *constitutive parts* (e.g., H<sub>2</sub>O is a constitutive description).<sup>48</sup> Aristotle’s introduction to  $\Lambda.2$  establishes as much in its simple opening phrase, “substance is changeable”.<sup>49</sup> Immediately thereafter he notes that a pair of contraries is necessary to explain change,<sup>50</sup> but that they themselves do not change.<sup>51</sup> These contrary actualities, one of which is the form proper, and the other the privation explain change, along with the matter. The capacity to be other, i.e., the matter, is

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<sup>45</sup> These changes could include all the changes that are involved in the growth and daily activities of a natural sensible substance.

<sup>46</sup> Gadamer, 52.

<sup>47</sup> 1075a33.

<sup>48</sup> Cf. Charles, 95. Charles notes that Aristotle’s strategy for defining matter deliberately avoids a definition that describes matter as the physical constituents of a substance, rather than a principle describing the potential being of an actuality.

<sup>49</sup> 1069b2. “ἡ δ’ αἰσθητὴ οὐσία μεταβλητὴ”.

<sup>50</sup> He specifies that it is contraries, rather than mere opposites which are necessary to explain change. The opposites must belong to the same genera.

<sup>51</sup> 1069b6. “οὐ γὰρ τὰ ἐναντία μεταβάλλει.”

actualized otherwise, so that one form is replaced by another. This is possible because the capacity to be otherwise existed *in* the first actuality, which relative to the new form is a privation. These three causes, along with the efficient cause, suffice to explain how one thing can change into another.

There are four kinds of changes: substantial, qualitative, quantitative and local change. The first kind is the generation or destruction of a substance, while the last three are changes in relative or *πρός τι* beings, for which a substance and its capacities are the matter.<sup>52</sup> In these latter changes, the matter of the change is the substance which persists through the change *unchanged* with regard to its essence. Essential change, the change of one substance into another, is the kind of change which concerns us, since its principles are the principles which govern sensible substances. Aristotle's approach to explaining essential change depends upon the potency that exists in a substance in virtue of its form, since what it is determines its potentialities. Matter is not like Anaxagoras' One, in which everything was mixed and needed only to be sorted out.<sup>53</sup> On the contrary, the matter of any change exists in virtue of and through the actually existing substance, which defines the changes it is capable of undergoing. Matter is not a substance but the matter for a substance is *in* a substance, in virtue of its form. The form is what some being is, it is its distinct actuality, which either orders itself in virtue of itself (in the case of nature),<sup>54</sup> or is simply an imposed order (in the

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<sup>52</sup> 1069b9-13. “εἰ δὴ αἱ μεταβολαὶ τέτταρες, ἢ κατὰ τὸ τί ἢ κατὰ τὸ ποῖον ἢ πόσον ἢ ποῦ, καὶ γένεσις μὲν ἢ ἀπλῆ καὶ φθορὰ ἢ κατὰ τὸ τόδε, αὐξήσις δὲ καὶ φθίσις ἢ κατὰ τὸ ποσόν, ἀλλοίωσις δὲ ἢ κατὰ τὸ πάθος, φορὰ δὲ ἢ κατὰ τόπον, εἰς ἐναντιώσεις ἂν εἶεν τὰς καθ’ ἕκαστον αἱ μεταβολαί.”

<sup>53</sup> 1069b21. “καὶ τοῦτ’ ἔστι τὸ Ἀναξαγόρου ἕν: βέλτιον γὰρ ἢ ὁμοῦ πάντα...”

<sup>54</sup> The discussion of nature in *Metaphysics* Δ.4 is helpful for understanding form and substance. Nature is the source of the primary motion in a natural being, a non-artificial substance (1014b19). The primary motion of a being is actuality. For animals it is to grow and live as an animal, for the elements to move into their proper place, and for the heavens to move with an eternal circular motion. Aristotle extends this notion of an internal and proper principle to substances of all kinds by way of analogy because it describes it as the attaining and attainment of substantial form, “φύσις δὲ ἢ τε πρώτη ὕλη...καὶ τὸ εἶδος καὶ ἡ οὐσία: τοῦτο δ’ ἔστι τὸ τέλος τῆς

case of art). It is true that sensible substances, at least perishable ones, have parts, i.e. distinct body parts,<sup>55</sup> but they are actualized as a whole and refer to the form, just as eyes and feet are distinct parts which belong to and serve a whole substance. Form is the actuality of the whole of a being, and all parts of a body are subordinate to this one, internally actualized, order.<sup>56</sup> This actuality, however, as sensible and thus corporeal does have the potential to be actualized in a different way by a different form, but how it can change is dependent upon its actuality. One form, as a principle of order, does not change into another, but is replaced by another by the agency of something else.<sup>57</sup>

The relationships between the principles of substance are clear, particularly that matter and privation are dependent upon form. Matter is a capacity of certain forms or changes, and is thereby defined as relative to forms. Like form, it does not come to be in the process of change, but already exists and is changed or actualized differently.<sup>58</sup> The matter is not something *absolutely* but is in the privation. In the process of change the privation is the actuality that has the matter or capacity for whatever form comes to be. While in itself it is an actuality, relative to the generated substance it is a negation, an absence of the

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γενέσεως” (1015a7,11), and thus says that every substance is called a nature, “μεταφορᾷ δ’ ἥδη και ὅλως πᾶσα οὐσία φύσις λέγεται διὰ ταύτην, ὅτι και ἡ φύσις οὐσία τίς ἐστιν (ibid, 12).

<sup>55</sup> The definition of forms always includes parts, in the way that one would call a human being a *two-footed animal* (1037b14). In another way, since human being has parts, hand, eye, foot etc., on account of its form, we may also say that the form has parts.

<sup>56</sup> Aristotle, *De Anima*, 412a17-21. The form itself is immaterial, such as the soul in living things in the *De Anima*, in which Aristotle says, “the couldn’t be a body; for body is one of the things that depends upon a substratum, or rather, is a substratum and matter. It is necessary that the soul is a substance, the form [and actuality] of a potentially living natural body.” (“...οὐκ ἂν εἶη τὸ ψυχῆ· οὐ γάρ ἐστι τῶν καθ’ ὑποκειμένου τό σῶμα, μᾶλλον δ’ ὡς ὑποκείμενον και ὕλη. ἀναγκαῖον ἄρα τὴν ψυχὴν οὐσίαν εἶναι ὡς εἶδος σώματος φυσικοῦ δυνάμει ζῶην ἔχοντος.”) Aristotle, nevertheless, acknowledges that informing can even be seen as effected through heat and concoction. This is considered in depth by Gad Freudenthal. In his work *Aristotle’s Theory of Material Substance* he considers the role of heat in transforming the ‘logos’ of a corporeal entity so that it becomes something else, such as the case of reproduction. (Freudenthal, 22-24.)

<sup>57</sup> 1069b36. “μετὰ ταῦτα ὅτι οὐ γίγνεται οὔτε ἡ ὕλη οὔτε τὸ εἶδος, λέγω δὲ τὰ ἔσχατα. πᾶν γὰρ μεταβάλλει τι και ὑπὸ τίνος και εἰς τι.”

<sup>58</sup> Ibid.

form of the newly generated substance.<sup>59</sup> Aristotle’s example of the house in Λ.4 is helpful. A house is constructed from bricks, which were without the order of the house previously.<sup>60</sup> They were not disorderly bricks in themselves, but only the disorderly bricks of a house. Once the house is built there are no longer any disorderly bricks, but a house. The nature of the bricks in themselves is not destroyed, but assimilated to a greater form, of which they were previously deprived. Likewise the corporeal parts of a sensible substance changed into another are reorganized. We might call these parts the ‘first matter’ of a substance,<sup>61</sup> like the parts of the body, having the capacity to be moved with the characteristic motion of the nature of a form if we recall the Aristotle’s description of nature as “that immanent thing from something which a growing thing grows, or still, the source of the primary motion in each natural being in virtue of which [a natural being] exists.”<sup>62</sup> The matter has the capacity for this first motion to be actualized by the form and the efficient cause.

We must pause to consider Aristotle’s language in Λ.3 which appears to grant matter substantiality and independence, against which we have so far been arguing. All sensible substances are an actualization, by the form, of some capacity, or matter. Nevertheless, Aristotle says that in some cases form is able to be considered distinctly from the matter, and in other cases it is identical with its matter. The prior kind are natural substances; the latter are the objects of art,<sup>63</sup> which, though they were denied substantiality in Z and H,<sup>64</sup> are

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<sup>59</sup> With the proviso that privation cannot be applied like this in every change. Aristotle would not call health, one of his common examples of a substance in the process of change, the privation of disease.

<sup>60</sup> 1070b28.

<sup>61</sup> Cf. 1017b23-25. Here Aristotle says that substance can indeed refer to both the form and last matter, the body of a particular substance, which is what it is only as ordered by the form.

<sup>62</sup> 1014b18-20. “ἓνα δὲ ἐξ οὗ φύεται πρώτου τὸ φύομενον ἐνυπάρχοντος: ἔτι ὅθεν ἢ κίνησις ἢ πρώτη ἐν ἐκάστῳ τῶν φύσει ὄντων ἐν αὐτῷ ἢ αὐτὸ ὑπάρχει...”

<sup>63</sup> 1070a14. In those those substance which exist only by contact Aristotle does not recognise them as possessing a nature or form of their own, except in their arrangement. He says, “On some occasions, the particular being is nothing apart from the composite substance, such as the form of a house, unless in the sense of the art [of housebuilding]...” (“ἐπὶ μὲν οὖν τινῶν τὸ τόδε τι οὐκ ἔστι παρὰ τὴν συνθετὴν οὐσίαν, οἷον οἰκίας

counted as substances in Λ.<sup>65</sup> To show the way in which each is a substance, Aristotle makes a second list of the three kinds of substance, saying:

The [kinds of] substances are three in number: the matter is an individual thing existing visibly (those beings which exist by contact rather than a natural unity are matter or substratum); the nature is an individual thing and a condition for possessing this nature; the third kind of substance is that according to both matter and nature, such as Socrates or Callias.<sup>66</sup>

Is Aristotle seriously suggesting that matter and form exist independently of each other? No. Instead, his consideration of the combination of matter and form answers two questions about sensible substances: how do artificial substances exist, and what is relationship the between members of the same natural species?

Λ.3's list of three kinds of substances is contextualized by its location in the text. It appears directly after the description of generation in Λ.3 which introduces the efficient cause. In that discussion, Aristotle makes the distinction between artificial and natural substances, and also substances caused by chance or by spontaneity.<sup>67</sup> The common factor in every case of generation is that "each substance comes to be from something of the same name (both natural substances and all the rest)."<sup>68</sup> This is referring to the likeness of agent

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τὸ εἶδος, εἰ μὴ ἡ τέχνη...")The form of such substance is nothing more than the arrangement of their parts, which possessing the capacity to be so arranged, are called the matter.

<sup>64</sup> 1041b29-30. "ἐπεὶ δ' ἔνια οὐκ οὐσίαι τῶν πραγμάτων, ἀλλ' ὅσαι οὐσίαι, κατὰ φύσιν..." Here in *Metaphysics* Z on Aristotle says that some things are not substances, and only those which are according to nature, or a nature, are substances.

<sup>65</sup> 1070a5.

<sup>66</sup> 1070a9-13. "οὐσίαι δὲ τρεῖς, ἡ μὲν ὕλη τόδε τι οὕσα τῶ φαίνεσθαι (ὅσα γὰρ ἀφῆ και μὴ συμφύσει, ὕλη και ὑποκείμενο), ἡ δὲ φύσις τόδε τι και ἕξις τις εἰς ἣν: ἔτι τρίτη ἡ ἐκ τούτων ἡ καθ' ἕκαστα, οἷον Σωκράτης ἡ Καλλίας."

<sup>67</sup> 1070a5-6.

<sup>68</sup> 1070a4-5. "μετὰ ταῦτα ὅτι ἐκάστη ἐκ συνωνύμου γίνεταί οὐσία (τὰ γὰρ φύσει οὐσίαι και τὰ ἄλλα)."

and its effect.<sup>69</sup> Aristotle is not describing human conventions of naming, but the ontological basis that explains why names are shared. That lions beget lions and bakers make baked goods describes an essential relationship between the cause and the caused, that any cause causes something like itself, albeit with some differences, depending on the nature of the cause.<sup>70</sup>

The substances that Aristotle associates with matter have two primary attributes: visibility and external unity. This is contrasted with the form, which is described with no reference to a corporeal existence, but rather a principle, a nature, which animates bodies. Both artificial and natural beings are substance, but the artificial have a cause of their apparent unity externally, while the natural possess it intrinsically. They consist of parts which have a nature, e.g., the tree-ish nature of the wooden bed,<sup>71</sup> but considered as a whole, it is an externally imposed contact rather than nature that is the unifying principle. This contact is a not a nature, but is still a form, since it gives the product of art its shape or essence, e.g. to be a chair rather than a table. It is against this likeness of form that Aristotle establishes what form is in itself. Whereas each of the parts of a natural substance has a

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<sup>69</sup> Aristotle does not specify whether “that from which it comes” is of the matter or the agent, or somehow both. Elders cites Ross and Aquinas as taking this claim to refer to the likeness of agent and its effect, although he cautions that elsewhere in the Aristotelian corpus similar expressions have primarily referred to the agent, but “material and formal causality are connoted.” (Elders, 99-100.) Aristotle lists four ways for things to come to be, by nature, art, chance and spontaneity, all of which describe kinds of agency, rather than an ex quo, suggesting that above Aristotle is referring to the likeness of the agent and its effect. Additionally, when Aristotle gives an example of the precept just stated, he offers the familiar “man begets man.” Man here is not a matter, since the man that is begetting does not change, but the efficient, agent cause which produces a substances like itself. This likeness of agent and effect is very important one for understanding Aristotelian causality, and will become central to this project.

<sup>70</sup> Aquinas, §2444. The likeness, if not specific, insofar as the artist differs specifically from the artefact, is still grounded in a similarity. The artist has the form of the art in his mind (1070a16-17; the form is the art), the possession of which makes him an artist (of some sort).

<sup>71</sup> Aristotle, *Physics II*, 193a12-17. In this section Aristotle distinguishes two senses of nature, one referring to the form and another to the substratum or matter. His example of the nature as a matter is the persistence of wood as wood though it is shaped into a bed. He claims that if such a bed were buried it would sprout a tree, in accordance with the nature of wood, rather than a bed. All parts of artificial beings likewise have an underlying “nature”.



relation to all its other parts, the parts of an artificial substance are indifferent to each other. Their plan or order exists in the mind of the artist or as the art itself, but not in the parts themselves.<sup>72</sup> That they are called matter initially seems to be in a kind of tension with the claim that matter is nothing, but it is not. An artificial substance is nothing its parts ordered by art; it does not possess its form by nature. Considered in themselves, the products of art are identical with their matter.

Natural substances have an intrinsic unifying principle, a cause of their σύμφυσις, or growing-together of their parts to be a whole.<sup>73</sup> This is the nature, which describes precisely what those things that grow together grow into.<sup>74</sup> It is the order of the sensible parts. What the nature orders is sensible, but as distinguished from matter, which has the capacity to be ordered, it is not visible in itself, and hence can be *considered* separately from the composite, particular substances, although it does not exist apart. Hence, particular natural substances, such as Socrates and Callias, are said to be according to matter and form because they are not only one by contact, having corporeal parts, but this contact is caused and determined by the ordering nature.

Aristotle's description of nature explains natural generation and unity of species. While Aristotle eschews Plato's Ideas and the possibility of a universal existing substantially and apart from its instances, he nevertheless accounts for the sameness of form within a species through generation, and more specifically, reproduction. In generation the efficient cause exists prior to form that it generates, but the form is simultaneous with the existence of that which is generated. Aristotle thus says,

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<sup>72</sup> 1070a14-15-17. “ἐπὶ μὲν οὖν τινῶν τὸ τόδε τι οὐκ ἔστι παρὰ τὴν συνθετὴν οὐσίαν, οἷον οἰκίας τὸ εἶδος, εἰ μὴ ἢ τέχνη...”

<sup>73</sup> Cf. 1070a10. Aristotle does not attribute σύμφυσις to natural substances positively, but notes that this is what those which do not have a nature lack.

<sup>74</sup> 1070a11.

It is indeed evident because of these causes that Ideas are not necessary, for a man begets another man, and each man a particular man. Likewise in the case of the arts; for the medical art is the form of health.<sup>75</sup>

The form in two men is at once the same and different, especially in the case of parent and child. One causes a like form to come to be in an appropriate matter. The informing power of an efficient cause allows Aristotle to reject separate universal forms because there is an explanation for how a like form comes to be in substance, while retaining a certain universality of forms, since an identical form is perpetuated through a species. Natural substances in the sublunary realm have the power to make other substance like themselves, not in addition to their form, but in virtue of it. The generative powers are part of a nature. Art too is works in a similar way. The pattern of the product is one with the power that makes it: the science of health both makes doctors doctors, i.e., the ability to make others healthy and share according to understanding the causes of health. Nevertheless, nature is superior to art, because a natural being makes another like itself, which can in turn make another like it, so that the species exists eternally.<sup>76</sup> A natural species remains the same through the generation and corruption of its individual members, just as the sections of a circle are always in a different location on account of its rotation, which is the cause of both its difference and sameness. Art, however, resembles rectilinear motion, which has a set beginning and end. With each completed pair of shoes the shoemaker must begin again; the

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<sup>75</sup> 1070a28-30. “φανερὸν δὴ ὅτι οὐδὲν δεῖ διὰ γε ταῦτ’ εἶναι τὰς ιδέας: ἄνθρωπος γὰρ ἄνθρωπον γεννᾷ, ὁ καθ’ ἕκαστον τὸν τινά: ὁμοίως δὲ καὶ ἐπὶ τῶν τεχνῶν: ἡ γὰρ ἰατρικὴ τέχνη ὁ λόγος τῆς ὑγείας ἐστίν.”

<sup>76</sup> Aristotle, *De Anima*, 415a27-415b1.

shoes don't continue the activity of the shoemaker. While natural substances are self-perpetuating, artificial substances do not themselves produce anything.

The structure of substantial change is clear. The matter for a certain substance is actualized, and hence this initial form is called a privation. The matter of a change always exists prior to the change, in another actuality, and this determines its potencies. This is why the matter is not said to 'come to be' at 1069b36. These three elements, as Aristotle calls them, do not explain why there is a change, or in what way the form also exists before the change occurs. The role of the agent answers both of these questions. The agent is not an intrinsic cause, but extrinsic.<sup>77</sup> The agent is also a substance, and thus is actual and has form. The agent acts upon the matter and actualizes a form which was previously only a potency. What the agent effects is in virtue of its own form, in the case of nature, or some form that it possesses in mind, in the case of art, which still depends on rational and productive human nature. Regarding this, Aristotle remarks that "each substance comes to be from a [substance] of the same name."<sup>78</sup> It is in this way that a man begets a man by nature, and a sculptor and statue by his art. The agent's role in substantial change not only begins the process of change, but directs what changes occur. The agent brings a matter into accord with his own form (or art), such that the form and agent can be viewed as one. The form does not come to be, but comes to be actualized in another substance, as with the medical art and health, or the begetter and begotten man.<sup>79</sup>

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<sup>77</sup> 1070a1.

<sup>78</sup> Ibid, 7-8.

<sup>79</sup> 1070b33.

## 2.2 The analogical unity of the four causes and principles of sensible substance

The four proximate causes are always particular substances. Aristotle acknowledges therefore, that they are always “different for different substances, but if we should speak universally and according to analogy, they are the principles of all.”<sup>80</sup> A science of substance depends upon this analogical unity. Even if some substances did share a particular efficient cause, or had, at different times, come from the same matter,<sup>81</sup> their forms, which are simultaneous with and identical to their distinct actualities, are different. There cannot be a shared set of substances which are the proximate causes of all sensible sublunary substance, and there would not be common principles of substance, and thus no science.<sup>82</sup> In Λ.5, Aristotle distinguishes between three ways in which the principles of sensible substance can be considered as common despite their differences: 1) they each have, by analogy, form, matter, privation and agent; 2) everything depends upon substances, without which nothing that is would be; and 3) that which is first in “complete reality”, God, is the cause of the rest.<sup>83</sup> The third recognizes that substances depend upon a first cause, a point which will prove important for explaining the ground of their analogical unity. The second establishes something common *about* substances, i.e., that they are causes of themselves and all other being. Only the first, however, can show that all the causes of sensible substance are common.

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<sup>80</sup> 1070a30-31. “τὰ δ’ αἷτια καὶ αἱ ἀρχαὶ ἄλλα ἄλλων ἔστιν ὥς, ἔστι δ’ ὥς, ἂν καθόλου λέγη τις καὶ κατ’ ἀναλογίαν, ταῦτὰ πάντων.”

<sup>81</sup> That this is even possible is rather tenuous, since we have denied that matter has any being on its own.

<sup>82</sup> See footnote 37.

<sup>83</sup> Cf. 1071a33-5. “...πλὴν ὥδι καὶ πάντων, ὥδι μὲν ταῦτὰ ἢ τὸ ἀνάλογον, ὅτι ὕλη, εἶδος, στέρησις, τὸ κινεῖν, καὶ ὥδι τὰ τῶν οὐσιῶν αἷτια ὡς αἷτια πάντων, ὅτι ἀναιρεῖται ἀναιρουμένων: ἔτι τὸ πρῶτον ἐντελεχεία.”

It is necessary to understand how analogy makes the principles genuinely common to all substances so that we might later see how they apply to all substances by a similar analogy. Analogy by itself need not be the ground of the unity of a genus. An analogy represents a structural likeness between at least four terms, e.g., A is to B as X is to Y. The existence of such an analogy does not make A and B belong to the same science as X and Y. Music and medicine could share such an analogy, perhaps, between harmony and health, and the instruments used to achieve them, e.g., a lyre and a potion. Music and science, however, would not fall under a single science. If an analogy is to describe the unity of sensible substance, and perhaps all substance, in one science there must be something which enables analogy to ground the unity of the causes and principles of substance.<sup>84</sup>

In  $\Lambda$ .4 and 5 Aristotle shows how the causes and principles are both different and the same. Their difference is stated most simply as the familiar “the principles of different things are different,”<sup>85</sup> and the reason he gives is that the proximate principles of any substances are always particulars themselves. A particular actuality actualizes a particular potentiality in something else,<sup>86</sup> and thus is not the principle of anything else, and certainly not a universal.<sup>87</sup> In  $\Lambda$ .4 Aristotle gives several parallel examples of particular causes to show that they are structured in the same manner and fulfill the role of the form, matter, and

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<sup>84</sup> Crubellier, 139. Crubellier suggests that for Aristotle every substance has, in a sense, its own first principles, since particular substances are “in a sense the most real beings.” Crubellier suggests that principles which are “the same” will therefore have to be considered in a weaker, less strict sense than numerical unity. I think his point is a fair one, but we should not take from it that recognizing an analogical unity is a secondary, trifling abstraction. On the contrary, we will see that analogy provides insight into the nature of individual substances.

<sup>85</sup> 1070a30. “τὰ δ’ αἴτια καὶ αἱ ἀρχαὶ ἄλλα ἄλλων ἔστιν...”

<sup>86</sup> 1071a19-20.

<sup>87</sup> We must also acknowledge on this point that Aristotle does admit that some causes can be stated universally, which he states at 1071a18 (“ἔτι δὲ ὁρᾶν δεῖ ὅτι τὰ μὲν καθόλου ἔστιν εἰπεῖν, τὰ δ’ οὐ...”). Such a universal cause would have to be a single, particular substance which affects all substances, or at least some whole, such as that which is first in perfection is a universal cause by causing the rest (1071a35).

privation.<sup>88</sup> He gives the examples of a house, of daytime, of colour, and of health and describes each of their particular intrinsic causes, showing how the structure is the same in each.<sup>89</sup> These examples, though referring to beings that might not be considered substances, point to a similar structure in art, the natural world and even accidental qualities. The examples in Λ.4 point towards a universal structure in all beings and categories, which Gadamer notes exists in endless variety, expressing its universality neither being a hypostatized universal nor collapsing the differences between the proximate causes of substances.<sup>90</sup> Nevertheless, Aristotle says that Plato was “not speaking badly” when he applied the Ideas to natural substances, which share and pass on a like form.<sup>91</sup> This commendation shows that Aristotle affirms that there is a way in which universals are applicable to substances, and that there can be a specific unity, such as is found in living substances. Universals, though they do not exist apart from particular substances, are essential to science. Without them nothing common could be said; no predication would be possible.

To begin to understand what allows an analogy to provide for meaningful unity we can start with an example of where this is, for Aristotle, certainly the case. A natural species

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<sup>88</sup> 1070b21

<sup>89</sup> 1070b20-22, 28-29. Aristotle gives the structure most explicitly in his account of the house, describing it as having a form, some disorder (a privation), bricks (the matter) and a house-builder. Likewise the causes of health are health, disease, the body and the medical art. For colour they are white, darkness and a surface; for day and night the causes are light, darkness and air. The repetition makes manifests the same structure present in each. Although we are investigating the causes of substances, in another way the causes of all beings are being explored at the same time. (“οἷον ἐν χρώματι λευκὸν μέλαν ἐπιφάνεια: φῶς σκότος ἀήρ, ἐκ δὲ τούτων ἡμέρα καὶ νύξ... ὑγίεια, νόσος, σῶμα: τὸ κινοῦν ἰατρικὴ. εἶδος, ἀταξία τοιαδί, πλίνθοι: τὸ κινοῦν οἰκοδομικὴ καὶ εἰς ταῦτα διαιρεῖται ἢ ἀρχή.”)

<sup>90</sup> Gadamer, 53. “Gegen Plato betont er also in unermüdlicher Variation die bloß analogische Selbigkeit der Prinzipien.” The omnipresence of this analogy stands against the distinct Ideas for each kind of being, since everything can be shown to share the same being in some sense. This is not necessarily a devastating attack on Platonic idealism, but it does suggest the universal applicability of *intrinsic* causes, which do not participate in an Idea.

<sup>91</sup> 1070a18-19. “διὸ δὴ οὐ κακῶς Πλάτων ἔφη ὅτι εἶδη ἔστιν ὅποσα φύσει, εἴπερ ἔστιν εἶδη ἄλλα τούτων οἷον πῦρ σὰρξ κεφαλή...”

is one such example. A specific unity is also an analogical unity.<sup>92</sup> The point which Aristotle makes about the difference and sameness of the principles of Callias and Socrates describes the relationship between members of the same natural species. Insofar as the causes of each thing are particular, they are distinct causes. Callias has a different form than Socrates, and I have a different form (i.e., actuality) than your form.<sup>93</sup> As we discussed above, the causes and principles of substances are themselves substances, and as such the same causes would be the cause of one and the same substance. It is necessary that their causes be different. Nevertheless, the members of the species share not only a similar form, but all the same principles analogically. In our example, all have the form of humanity, and a human parent and a like matter and privation, the (potency for human generation in) blood of the mother.<sup>94</sup> Some analogies liken the structures of disparate beings to each other, but this is not the case in the species, in which the likeness is not between disparate things, but substances which seem to differ only in their individuality. The possibility of this specific unity, while it is described by analogy, belongs to capability of the species to cause other beings of like form

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<sup>92</sup> *Metaphysics* Δ, 1016b35-6; Crubellier, 139. Crubellier lists the four kinds of being one listed towards the end of Δ.6 (numerical, formal, generic, and analogical) as those which (besides the numerical unity) describe the sameness of different principles. That the specific or generic is distinct from the analogical does not preclude the specific and generic from also being analogical unities. Aristotle makes this very point, saying “the latter always follow with those prior”, so that the primary sense includes the broadest sense too, but not vice versa. “ἀεὶ δὲ τὰ ὕστερα τοῖς ἔμπροσθεν ἀκολουθεῖ...”.

<sup>93</sup> 1071a27-29. “καὶ τῶν ἐν ταύτῳ εἶδει ἕτερα, οὐκ εἶδει ἄλλ’ ὅτι τῶν καθ’ ἕκαστον ἄλλο, ἢ τε σὴ ὕλη καὶ τὸ εἶδος καὶ τὸ κινήσαν καὶ ἡ ἐμή, τῷ καθόλου δὲ λόγῳ ταυτά.” Elders comments that the use of the second person in refers to the concrete matter, i.e. the body. He also comments that the use of τὸ εἶδος in line 29 refers even to personal characteristics, reflecting particular characteristics (see Freudenthal below). In this way my form and yours really are different, and not just one form in different substances, which Aristotle sometimes calls “τὰ ἔσχατα εἰδή”. Nevertheless these forms are still one universally. (Elders, 1927, 134). Aquinas speaks similarly saying that the my form and your form differ as soul and body. Whether soul is quite the same as the cause of the different characteristics of an individual he does not say. The form, as soul in the human, and matter are one according to their universal intelligibility, i.e. the same in definition. (Aquinas, §2483.)

<sup>94</sup> Freudenthal, 24-25. Freudenthal explains Aristotle’s physical account of generation according to vital heat. The heat of the male semen concocts (literally, an evaporation of the cold water) the menses of the mother into a similar form. The variation in the child produced depends upon the strength of the vital heat from the father. The hotter the heat the more perfect the concoction, and the more the child resembles the father. Less heat will result in either a form closer to a another relative, but not the father, or even a female child. While Aristotle does not express this detail in *Metaphysics* Δ, it does show that the efficient cause is understood as being an agent by conforming matter to itself.

to come to be. And because they are of a like form, they must have a like agent,<sup>95</sup> matter and privation<sup>96</sup>. As man begets man, and a lion another lion, the possibility of a special unity depends upon a cause which effects a likeness, power of agency. Aristotle will not go along with Plato in accepting that this shared form has a separate existence, but the unity of the species is nothing accidental—it belongs to the essence of natural beings to propagate a form through analogically like offspring.

If we take the above conditions for analogy to be descriptive of a real unity, i.e., that the analogy explains or manifests a kind of a formal likeness in virtue of a like, or even common,<sup>97</sup> origin, we can apply them to the level above the natural species, to the broader category of natural sensible substances, or even to all substances. Sensible substances, taken generally, differ more radically than members of the same species do since they do not all share the same form. They do, however, share something in form, being or individual actuality, or *substance-being*, i.e., existing apart and sensibly, whereas all accidental beings depend upon them. This is the likeness that unites them, something common to them, either *prior to* or *in* them. This likeness has a common cause which underlies this unity in substance-being. It cannot be reproduction of a single form, as it is for the natural species, but it must explain the actuality and potential for these substances to be actual.

There are a few possibilities as to what might provide the basis for this analogical likeness. The first is the general capability of all substances to actualize other substances, or at least, affect other substances. The sensible substances are always affecting each other in some manner; some generate new substances by art or nature, some consume or destroy

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<sup>95</sup> Cf. 1070a4-5. Recalling the claim that things are generated from something of the same name, this would apply across a whole species.

<sup>96</sup> The matter and privation must be similar within a species because they must have the potential to become the same form.

<sup>97</sup> The same form exists throughout a species through reproduction.



others (and in so doing generate something else), others are incidentally involved in the process of change, e.g., as a sword is used in destroying a living being (which in turn is consumed or dissolved into its elements). This characteristic capacity of sensible substance to actualize potentialities, and to be changed,<sup>98</sup> even in many different ways, can be thought the common cause of their likeness.

If we contend that the actualizing power of agents amid the infinite potential of the sublunary realm is akin to reproduction insofar as it accounts for actualities coming to be and their continuing activity of actualizing other substance, we can also trace this back to a single cause. The second common originative principle we can consider is the Sun, which governs and causes this cycle of generation and corruption in the course of the seasons.<sup>99</sup> Aristotle mentions it only once in *Λ.5*, where it is counted as cause of change even besides the proximate agent. In *Λ.4* and *5* God is mentioned twice, first at that end of *Λ.4* as that which “as first of all things moves all things”<sup>100</sup> and then in *Λ.5* God is described as universal cause of all substances, since it is first in perfection or complete reality.<sup>101</sup> The Sun is not God, but it is given a similar role as a remote, or even first cause<sup>102</sup> as the common cause of all sublunary substances. Sublunary substances are subject to the Sun, which is itself a sensible, albeit, eternal, substance. It is the cause of the actuality of sublunary substances in virtue of its movement on the ecliptic, by which it governs the similar cycle of generation and destruction in the sublunary realm.<sup>103</sup> Moreover, it might be likened to the general of the

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<sup>98</sup> Even as actual they are still able to be changed or destroyed, and are themselves potentials.

<sup>99</sup> 1071a15-16; Aristotle, *On Generation and Corruption*, 336b16-20.

<sup>100</sup> 1070b35. Aquinas, §2474. Aquinas notes that Aristotle makes the proximate agent the first cause of substance that it generates, and following this pattern, as per *Physics VIII*, we can find a first cause of this sort, a first moving cause, God.

<sup>101</sup> 1070a36. “... τὸ πρῶτον ἐντελεχία.”

<sup>102</sup> Relative to the sublunary realm.

<sup>103</sup> Aristotle does not say any more about how it is a universal cause. It causes the natural world, probably by effecting the agents in the world, which in turn also have particular effects. The Sun is therefore also involved

army, the army being the sublunary realm in this case, for which it is the extrinsic cause of the pattern of generation, and thus also the cause of the actuality of all sublunary beings. The reduction in Λ.5<sup>104</sup> of the four causes to two, actuality and potentiality, under which matter and privation are subsumed, fits easily with this analogy. The sublunary realm is a potential, which is actualized, or ordered, by a prior actuality, the Sun. The actuality is in one way effected by the Sun’s activity upon the potentiality of the natural substances, but this does not negate the role of the proximate agent, e.g. the parent, which is the proximate cause of actuality.<sup>105</sup>

The use of the Sun as a principle for describing the ground for the analogical unity of the sensible substances by being the “remote” cause of the actuality of all of them can’t help but lead us back to Plato’s own use of the Sun in the *Republic*. Insofar as the Sun is such a cause, a universal cause, it seems not unlike that which as “first in perfection”<sup>106</sup> is *the* universal cause. I will have more to say on this in the third chapter.

### **2.3 THE ANALOGY OF THE GENERAL AND THE ARMY AS DESCRIPTIVE OF THE RELATIONSHIP BETWEEN THE PRINCIPLES OF SENSIBLE SUBSTANCE**

The analogy of the general and the army illuminates the nature of the analogical likeness of the causes and principles of substance. The analogy itself discusses the relationship between the immanent and transcendent good of the cosmos. In particular, it describes the structure of principles that all sensible substances share, expressing how a form

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in the generation of beings, especially natural beings, whose reproduction, so influenced by the seasons (which the Sun causes) is similar to the Sun’s cyclical activity.

<sup>104</sup>Ibid,4-5. “ἔτι δ’ ἄλλον τρόπον τῷ ἀνάλογον ἀρχαὶ αἱ αὐταί, οἷον ἐνέργεια καὶ δύναμις...”

<sup>105</sup> Cf. Ibid 13-17; Aristotle, *On Generation and Corruption*, 336b16-20; Aristotle, *Physics II*, 194b14.

<sup>106</sup> 1070a36.

comes to be actualized, which is its good, or alternatively the actualizing power of form, which is the transcendent good, insofar as it the extrinsic cause of the good in a substance. It describes, therefore, the relationship between substances in the sublunary realm, and even, if we seriously follow Aristotle in acknowledging the Sun as the non-proximate cause of actuality in the sublunary realm, the relationship between the whole sublunary realm and its immediate transcendent good. In so doing, this analogy provides us with a general structure that describes the unity of sublunary sensible substance to compare with the two other kinds of substance and how they relate to the general and the army analogy.

As we have already noted, the analogy of the general and the army describes the dependence of the good in a substance upon the extrinsic good. The analogy speaks not only of the good but of the “good and the best”<sup>107</sup> and answers the initial question: whether the good and the best is separate from the cosmos (as the Platonic Ideas are separate) or *is* the order of the cosmos *in* the cosmos (e.g. like the soul in a body). Aristotle answers that both are true, but the former has priority, because the order in the cosmos depends upon an extrinsic cause. What is meant by “the good and the best”? The use of τὸ ἀγαθὸν in Λ is scant. It also appears in Aristotle’s description of Empedocles’ and Anaxagoras’ use of the good as first principle.<sup>108</sup> The question Aristotle poses about the nature of the cosmos does not use ‘good’ to refer a distinct extrinsic cause, otherwise extrinsic cause alone would be good. The good is also the order in the cosmos, i.e. *to be* just what it is, to possess its nature fully. At the same time, like the form in the particular substances, it is the cause of it being what it is. The cosmos’ unimpeded actuality is what is best about it (ἄριστον). Aristotle uses ἄριστον elsewhere to describe the best states of being, especially with reference to God in

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<sup>107</sup> 1075a11-12. “ἐπισκεπτέον δὲ καὶ ποτέρως ἔχει ἢ τοῦ ὅλου φύσις τὸ ἀγαθὸν καὶ τὸ ἄριστον, πότερον κεχωρισμένον τι καὶ αὐτὸ καθ’ αὐτό, ἢ τὴν τάξιν.”

<sup>108</sup> 1075b1-11.

Λ.7, describing θεωρία as the best state to be in, and God’s life as this best, and God himself as the best.<sup>109</sup> In this way ἄριστον denotes the height or perfection of something. In the case of the whole of nature, we would not be wrong to regard ἄριστον as the perfection of the whole, the achievement of its *best* possible order. Framed in this way, the good is that which causes this perfection to be in the whole of nature,<sup>110</sup> or in the case of our particular investigation, in any given sensible substance.

That the good of the army is found both in the general and its order leaves us with a certain amount of difficulty in describing the situation with regard to sensible substances. If the general is to represent the agent, and the army both the potential (the matter and privation) and the actuality of what is caused by the agent, we will have to locate the good of the sensible substance in its form (its immanent principle of order) and in its extrinsic agent. In the case of an army and its general it is not difficult to see how the general would be the good more than the order it causes, since without the presence of the general the army would disband, since its order would cease to exist. The Sun and its eternal motion which effects the whole of generation and destruction in the sublunary realm are in a similar position. When we take the analogy to describe particular sensible substances and their proximate causes we encounter an apparent disparity between the analogy and sensible substances. Unlike the general and the army, the agent need not exist alongside that which it causes. The parent can die and the good of the offspring (already begotten) will not be diminished, and certainly not destroyed. Likewise, a house once built does not collapse on account of the death of its builder. Recall that only form is simultaneous with a substance.<sup>111</sup>

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<sup>109</sup> 1072b24, 27-30.

<sup>110</sup> In this way “τὸ ἀγαθὸν καὶ τὸ ἄριστον” is regarded as a single term, referring to both the origin and continuing existence of the perfection of some being.

<sup>111</sup> 1070a21. “τὰ μὲν οὖν κινουῦντα αἴτια ὡς προγεγενημένα ὄντα, τὰ δ’ ὡς ὁ λόγος ἅμα...”

The solution to this difficulty would be to place the form in the place of the general as that upon which the order depends, and regard the good of the order as the *arrangement* of the corporeal parts of sensible substance as the good in the order of the army. The distinction of the three kinds of substance made by Aristotle in  $\Lambda.3$  might allow for this insofar as it recognizes a certain distinction between form in itself and the concrete form, if the form is seen as ordering something other than itself to itself. Nevertheless, this is not the view that Aristotle has of substances, except for the artificial sort, in  $\Lambda$ . The actuality of a sensible substance includes corporeality. Furthermore, as we have already noted, placing form in the role of the general makes too strong a dichotomy between form and body, which Aristotle does not put forth in his account of the causes, as if form were a constant imposition on matter, rather than that from which a substance comes to be actual. The form cannot be the separate good of a substance; it is the substance.

Given the immanence of form it cannot be represented by general. The analogy could not account for extrinsic causality, which the analogy of the general and the army was supposed to answer as representing the causal relationship between the cosmos and its separate (*κεχωρισμένον*) cause.<sup>112</sup> Since the efficient cause is one of the principles of sensible substances, an analogy that describes these common principles must include it.<sup>113</sup> When the analogy between the general and the efficient cause is not considered from a *temporal* perspective, but from a logical one, it can be resolved. If we regard only the relationships of substances, the primacy of the agent becomes intelligible. The caused and causing substances are distinct and independent of each other in so far as each exists apart.

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<sup>112</sup> 1075a12.

<sup>113</sup> 1070a31-2; cf. 1070b28-35.

The coming to be of the caused substance depends entirely upon its agent.<sup>114</sup> What it comes to be *is* determined by this agent, not by the substance itself. The effects of the agent remain ever with the caused substance. If the agent *never* existed, neither would the substance it would have caused. Is this analogous to the relationship between the general and the army? The army is conformed to what the general is, including the general's own end and purposes.<sup>115</sup> Similarly, every sensible substance comes to be by being conformed to its agent. This is the origin of its form. Hence a man begets man and not birds or elephants. The influence of the agent or extrinsic cause as the external cause of the form and its actuality does not cease even when the substance that was the agent perishes. If we were to push the analogy of the army and the general even further, we might consider the cases of armies which have secured their general's goals even if the general has been killed or has abandoned the army. Taking our understanding of the role of the general in this direction we must be cautious that we do not regard the general a transient principle, but as the real good of that which it orders. We must admit that this extrinsic good retains its influence after its perishing, which is admittedly, a privation of the fullness of the relationship between the general and the army, or the God and the cosmos, or even, the Sun and the sublunary realm. Recall that in the second half of his description of nature in Λ.3, Aristotle calls it "the habit for a particular nature", i.e. a tendency towards a particular form.<sup>116</sup> This form, which is perfected in the parent, is the end of the neophyte substance, and remains so throughout its existence as the form itself. In a sense the form of the agent is like the form of the form of the

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<sup>114</sup> Cf. Aquinas, § 2474.

<sup>115</sup> Ibid, §2630-1. Aquinas takes the primacy of the general over the army not only on account of the general being the cause of the order in the army, but also because the order of the army is directed towards achieving the general's goal. The men who are ordered into the army are conformed to the general's own end. I think this is a useful way of thinking about the analogy insofar as it explains how the intrinsic good is not only formed by, but conformed to the extrinsic good.

<sup>116</sup> 1070a12. "ἡ δὲ φύσις τόδε τι καὶ ἕξις τις εἰς ἧν:"

substance it causes. As the end and perfection of the form of that which it causes, the form of the agent (which even governs the agent's agency) is indeed the primary good of the sensible substance.

It is clear that no sensible substance can be understood through itself alone. Rather, it is by understanding the role of other substances, which are its principles that we understand what some substance is and how it comes to be. This is especially the case with the substance regarded in the position of the army, as the positive form which comes to be, but other substance are described in the analogy in the army and the general, especially the agent, through which we come to understand the power that belongs to actualities (in varying degrees, depending upon whether they are natural, artificial, etc...) to conform things to themselves. On this point we must remember that the very same substance which is described in the place of the army can also be considered from the place of the general too. That a man begets a man does not preclude the man begotten from begetting another man. The causes and principles that describe the coming to be, or even just the existence, of a substance do not cease to be its principles if it is regarded from the position of the general. On the contrary, the flexibility of the analogy is a testament to its ability to describe the relationships between substances generally. Moreover, it recalls that substances are never understood in isolation, but with reference to the other substances that they either effect or affect, or are effected or affected by. The natural world is an ordered whole, and as such every substance exists in relation to the others. The principles which describe substances must take the variety and variability of these relationships into account, which the structure of the general and the army analogy allows.

Artificial substances do not exhibit the same flexibility as the natural substances in being able to stand as either the general or the army. The products of artifice are more or less restricted to the role of the army, having a positive form, matter and privation and an agent, but are not able to be agents. The only exception to this case is if the natural parts of which the product of artifice is constructed, but then, only in virtue of their natural tendency.

## **2.4 CONCLUDING SUMMARY**

The proximate causes of sublunary substances are four in number, if one regards them analogically. Every such substance has four causes, and they differ for each and every sensible sublunary substance, both natural and artificial. What remains the same in every account of a substance's causes and principles is a structure outlining which substances interact with each other and effect or affect substances in virtue of themselves. Sensible substance can only be completely considered in such a structure. The structure of form, matter, privation and efficient cause accounts for all the changes in the sublunary realm by explaining how coming-to-be is possible. It can be reduced to a doctrine of actuality and potentiality. Actuality is prior to potentiality in two ways: 1) a potentiality is a capacity in an actuality, and 2) another actuality actualizes a certain potential in virtue of itself. The relationship is well illustrated by the analogy of the general and the army, which describes the actuality of a whole in terms of the good, both extrinsic and intrinsic. Moreover, this analogy also serves to explain the sublunary realm as a whole, with the Sun as its intrinsic good. In this sense the same analogical structure of causes and principles is able to apply to both individual substances, and the whole sublunary realm. Thus when Aristotle says that



there all substance share the same causes, we need not add several other remote causes, such as God or the Sun to complicate the structure, but rather, understand that the causes of particular substances belong to a grander structure, but one which is analogically one.

### CHAPTER 3 THE IMPERISHABLE SENSIBLE SUBSTANCES

*Metaphysics* Λ.8 has generally been treated as one source, alongside the *De Caelo*, of Aristotle's opinions regarding astronomy and metaphysics, and even theology. The real focus of Λ.8 is first philosophy, counting the unmoved movers, which it does with its instrument, astronomy. Astronomy helps to explain the nature of the heavens in virtue of their motions, and also points out certain characteristics of unmoved movers which cause these motions. Astronomy is not accidental to the study of heavenly and separate substance. Aristotle's cosmology is not indifferent to the particulars of the astronomical system. We must also appreciate that although Aristotle had interest in, and need of, astronomy, he was by no means a dedicated astronomer.<sup>117</sup> Controversies about such topics as the idle spheres (which I shall treat briefly) and the plurality of unmoved movers have dominated the more recent scholarship, especially as taken up by Jonathan Beere and István Bodnár. Far from discounting the importance of Λ.8 in light of the problems of the astronomical account, we must appreciate the limits of Aristotle's competence in astronomy and focus on understanding what Aristotle does *with* the astronomy, as a kind of instrument.<sup>118</sup> We can tolerate the problems in his astronomical account so long as we can understand what Aristotle is trying to demonstrate about heavenly and separate substance. Although Aristotle's astronomy is not perfect, it should not be treated superficially. On the contrary, the details of the astronomical account are required to understand the metaphysical claims of Λ.8.

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<sup>117</sup> Lloyd, 245. Lloyd's analysis of this point is very important, at least insofar as he probes what Aristotle was actually drawing upon to make his conclusions by looking at his other uses of astronomy in the *De Caelo* and *Meteorology*.

<sup>118</sup> Rosen, 13-31. The astronomical system Aristotle uses is not *instrumental* in the sense that some, perhaps erroneously, ascribe to Ptolemy, saying that Ptolemy's circles, which describe the motion of the heavenly bodies, are conceptual and descriptive of the motion, rather than the real parts of the heavens.

### 3.1 THE STRUCTURE OF THE HEAVENS IN Λ.8

The structure of Aristotle's cosmos is based upon the systems of Eudoxus and Callippus.<sup>119</sup> Λ.8 describes the number of substances and motions in the heavens, and numbers the substances which cause the motions of the heavens,<sup>120</sup> i.e. the motions of the spheres and stars.<sup>121</sup> All of the stars, both the fixed stars and the wandering stars,<sup>122</sup> are moved by spheres. The stars with complex motions are moved with the motion of more than one sphere, with one sphere as the cause of each one of the stars' motions. All the spheres are concentric and contiguous, like the layers of an onion. As the first unmoved mover<sup>123</sup> moves the first sphere, that of the fixed stars,<sup>124</sup> there is, likewise, an unmoved mover for each other sphere,<sup>125</sup> causing a particular motion. The spheres also transfer their motions downwards by contact, so that in addition to a motion proper to its nature, each sphere is also moved by the motions of the spheres above it. The sphere in which a star is contained moves with all of the motions exhibited by that same star. Accordingly, our schematic of the heavens consists of: a number of unmoved movers<sup>126</sup>, which move a number of spheres equal to the number of unmoved movers, which move the stars, both fixed and wandering. There are, then, three different kinds of beings that describe and explain the actuality of the heavens: one kind

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<sup>119</sup> 1073b17-33.

<sup>120</sup> 1073b14-15.

<sup>121</sup> 1074a25-28; cf. *ibid.* 19-20. Motions do not exist for their own sake or for the sake of other motions, but for that which is moved, and in the case of the heavens, this is the stars.

<sup>122</sup> The fixed stars are those which are embedded in the first heaven and have only one motion. The wandering stars are those which, relative to the fixed stars, "wander" by possessing a number of different motions.

<sup>123</sup> This is how Michael Frede refers to the unmoved mover considered in Λ.6 and 7 in his introduction to *Aristotle's Metaphysics Lambda*.

<sup>124</sup> 1072a9-11. The sphere of the first stars is that which possesses the first and unchanging cycle. It is distinct from the other spheres, the second and third, which are the causes of *variety, generation and corruption*, while they depend upon the first sphere as being always the same, as that which actual is prior to that which is potential.

<sup>125</sup> 1074a14-16. Here Aristotle equates the number of spheres with the number of movers.

<sup>126</sup> These are not *in* the heavens, but simply related to the heavens as moving causes. *De Caelo* places these invisible substances *outside* the cosmos where there lies no spatial extension (Aristotle, *De Caelo*, 271a12-15).

unmoved and moving, another moved and moving, and another which is simply moved but does not move anything. The scheme appears simple: there are unmoved movers, intermediary moved moving substances and moved substances.

### 3.1.2 THE PROBLEM OF THE REVOLVING SPHERES

As simple as it seems, this scheme is complicated by the interactions of the spheres with each other. The sphere of the fixed stars is said to carry the others spheres with it, yet Aristotle assigns an unmoved mover to all other spheres that have diurnal motion as their proper motion. Moreover Aristotle accounts for the effect the lowest sphere belonging to each star has on the sphere below<sup>127</sup> it by assigning additional spheres to counteract its effects upon the motion of the lower sphere.<sup>128</sup> Thus there are, in one sense, two kinds of movers for the stars: 1) the unmoved movers, and 2) spheres that move another sphere,<sup>129</sup> one of which must cause the diurnal motion of the spheres. In one way, all the causes of the motions of the stars are, ultimately, the unmoved movers, insofar as every motion has its origin in such a mover, but that will not solve this problem. We are concerned with the *proximate* movers of the stars.<sup>130</sup> If a sphere's motion is only caused by that above, it will not

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<sup>127</sup> E.g., the effect of the motion of the last sphere of the Jovian system upon the first sphere of the Martian system.

<sup>128</sup> Lloyd, 259. The rewinding spheres are Aristotle's contribution to astronomy. The rest comes from Eudoxus and Callipus, and Lloyd thinks he leaves many of the particulars of their system out.

<sup>129</sup> We might expect such a sphere to have a complex motion if it also has its own unmoved mover. It is difficult to say whether this is a problem or not. The stars are *seen* to move with a complex motion, but they are moved by spheres within spheres, and it might be said that they only possess the motion of the last sphere properly, but the others accidentally, as a man carried on a ship (*De Anima* II.1, 413a9). Whether the motion is imparted to the spheres directly or accidentally is not entirely clear. If directly, we might assume that the motion of the spheres *properly* can have 'component forces', to borrow from the vocabulary of contemporary physics.

<sup>130</sup> Cf. Beere, 3. Beere refers to this as the *per se* cause of motion. We might also relate it to the mover's motions which are for the sake of *some star*, "εἰ γὰρ πᾶν τὸ φέρον τοῦ φερομένου χάριν πέφυκε καὶ φορὰ πᾶσα φερομένου τινός ἐστιν" (Cf. 1074a26-7). The use of φέρον τοῦ φερομένου χάριν πέφυκε is a strong statement of the special relationship between movers and their objects, prior to any other accidental relations. This does,

have an unmoved mover, or rather it will have an unmoved mover that does not cause motion, or worse, it would have two proximate causes of one motion. Jonathan Beere offers a solution that is at once insightful and, as Bodnár points out, problematic. Beere suggests that if these so-called idle spheres do not receive the rotation of the sphere above they will, by necessity, need to be moved by an unmoved mover to accomplish the diurnal rotation. He offers a solution that would allow this to be the case without rejecting that the spheres do move each other:<sup>131</sup> that the motions of a sphere are not transferred across a shared axis, i.e. the poles which are at rest relative to each other.<sup>132</sup> Motion would be imparted only when the poles of the spheres are in motion relative the poles of the sphere below does, when the poles are translated.<sup>133</sup> By this suggestion Beere intends to show that all the spheres in the heavens are necessary because they are causal, both contributing to the whole motion of heaven *and* also having their own motion. If all the spheres have a proper motion, they can be said to have a *per se* cause of motion, i.e. not in virtue of another sphere, and thus a proximate cause which is not a sphere, but an unmoved mover, which can be counted.<sup>134</sup>

Beere's intended solution introduces other problems, which Bodnár points out. He notes that Beere's suggestion that motion is not imparted through stationary axes affects the

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however, raise questions about the supposedly *final* nature of the movers, taken up in the second half of this chapter.

<sup>131</sup> The rewinding spheres are an implicit admission of the direct influence of spheres upon each other, and they in turn revolve with a motion caused by an unmoved mover—motion which no other sphere could have imparted to them, since they revolve in an opposite direction to the spheres which influence them.

<sup>132</sup> Beere, 8-9. "The last of Saturn's unwinding spheres has a special feature, because its resultant motion, unlike that of most other spheres in the system, is an equable rotation. The special feature is that it has two sets of poles, the poles around which its unmoved mover rotates it and the poles around which its resultant rotation occurs. The latter set of poles corresponds to the poles of the fixed stars. The first set of poles is in motion; the second set of poles is at absolute rest (like the poles of the sphere of the fixed stars). The latter poles, at absolute rest, are the very points in which the poles of the next sphere, Jupiter's first, are fixed. Hence, the upper sphere imparts no motion to the lower, which in turn needs its own unmoved mover in order to move at all. The same obtains for every 'idle' sphere. Hence each 'idle' sphere requires its own mover, without which it would be at absolute rest."

<sup>133</sup> *Ibid.*, 9.

<sup>134</sup> *Ibid.*, 3.

motion of the whole heaven, so that it would exhibit radically different motions. If it were to retain the same motion, another cause explaining why certain motions would not be imparted based on “external considerations” must be invoked,<sup>135</sup> frustrating the possibility of counting the causes of the heavenly motions based on the number of motions alone. The problem is not limited to Beere’s solution, and Bodnár criticizes two others.<sup>136</sup> The first of these suggests that some of the spheres are not actually in motion, denying that all spheres contribute a real motion, even the rewinding spheres. The second, which was also rejected by Simplicius and Sosigenes,<sup>137</sup> is to eliminate the first sphere of each planetary system, i.e. that which contributes the diurnal motion. No single solution solves the difficulties. Each solution raises another problem. This tension is strung between the parts of what Aristotle is trying to establish: an account of the causes of each heavenly substances individually and an account of heavens motion as a hierarchically ordered whole.

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<sup>135</sup> Bodnár, 266-70. Istvan Bodnár also criticizes Beere’s position for making the unmoved movers of the rewinding spheres at best “unmoved axis setters”, setting the axis of the first sphere of the next planetary system without transferring any motion to it along the axis. Beere’s suggestion “will mean that a major presupposition of homocentric spheres is overruled in this in this instance...that the way revolutions of two consecutive homocentric spheres are combined does not depend on external factors”. Bodnár wisely points out that we will need a cause for this exception, and or “it will have to remain a special pleading and hence suspect”(268). On the other hand, if it applied in all cases, then the motion of the last rewinding sphere and the first sphere of the star below will be different, if the sphere before the last rewinding sphere revolves on a different axis, so that, no longer being stationary, it will transmit motion along its axis and add its motion to the sphere in contains in addition to what it mover moves it. The result would be heavenly phenomena vastly different from what Aristotle is describing.

<sup>136</sup> Ibid, 259-266. The first suggestion he criticizes suggests an extra rewinding sphere could free up the idle sphere to be moved by its own mover.

<sup>137</sup> Ibid., 263. Bodnár notes that Simplicius in his *Commentary on De Caelo* rejects this because it would not add up to the number of spheres Aristotle gives. Bodnár does not think this is a strong reason, but instead takes up Sosigenes’ reason, preserved by Simplicius for rejecting this solution, that the rotation of the first sphere of a planetary system is “adequate”, i.e. that its movement is the same as the first heaven, and that the rotation of the last rewinding sphere is *not* the same, but has a complex motion which only *results* in the diurnal motion.

### 3.1.3 THE RESOLUTION

In the face of these difficulties and equally problematic solutions, Bodnár holds that Aristotle's system "cannot be rejected outright",<sup>138</sup> and in fact he looks upon this impasse positively, saying:

Aristotle intended to arrive at a causally perspicuous system, which also unifies the different planetary motions into a single overarching system, with a unified account of the integration of the motions of different planetary systems[...] *Metaphysics* XII 8, then, on this understanding, is a chapter where Aristotle set the outlines of such a celestial system, but he did not appreciate the internal tensions involved and did not work out all of the ramifications of the principles operative in his celestial system.<sup>139</sup>

Bodnár's position is liberating. Indeed, if we ask with Lloyd, "why did Aristotle give *just* the information he gives here?"<sup>140</sup> we will be able appreciate that Aristotle's astronomy does not have to be perfect, it need only explain what he intends to do with it, i.e. study metaphysics according to the motions apparent in the heavens. The essential elements and relationships to do so are in place in the system as described in  $\Lambda$ .8. We learn from it that the heavens include two kinds of causes: that caused by the unmoved movers, which is the primary kind, since it *introduces* the different motions; and the kind between the spheres, which distributes the motions through the heavens, accounting for the wandering stars. We would do well to remember that Aristotle *invokes* astronomy rather than commands it, saying "It is necessary to examine the multitude of [heavenly] motions with the mathematical science closest to

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<sup>138</sup> Bodnár, 270.

<sup>139</sup> Ibid, 271.

<sup>140</sup> Lloyd, 257.

philosophy, astronomy.”<sup>141</sup> He is calling on science besides his own, first philosophy in this case, and uses what it has determined already to establish his own understanding of the heavens. He makes no claims to be an astronomer, and even shows diffidence regarding it, as noted by Lloyd.<sup>142</sup> It falls to other thinkers to prove the necessity of forty-seven or fifty-five spheres.<sup>143</sup> Despite his problematic solution, Beere’s words on this situation may be best:

His primary goal is not that we accept that there are 55 pure intellects, but rather that we accept that, as far as his account of the ultimate principles is concerned, nothing is lacking for such a demonstration.<sup>144</sup>

Λ.8 is nothing other than an *ousiology* and an *aitiology*, a study of the causes, i.e., the unmoved movers, of the primary heavenly bodies, the spheres. The analogy of the general and the army is well suited to discussing the relationship between these separate substance and the substances, the spheres, that they immediately not only *affect*, but *effect*.

### **3.2 THE CAUSES AND PRINCIPLES OF IMPERISHABLE SENSIBLE SUBSTANCES**

Both the spheres and the unmoved movers are agents of local change for the stars. Both are productive of a change in something other than themselves. A sphere causes a motion like its own in another, as is claimed of the first heaven, which is thought to cause the

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<sup>141</sup> 1073b3-5. “τὸ δὲ πλῆθος ἤδη τῶν φορῶν ἐκ τῆς οἰκειοτάτης φιλοσοφίας τῶν μαθηματικῶν ἐπιστημῶν δεῖ σκοπεῖν, ἐκ τῆς ἀστρολογίας...”

<sup>142</sup> Lloyd, 251;1074a16.

<sup>143</sup> 1074a17. Aristotle suggests two possibilities for the number of spheres, one given by Eudoxus, suggesting 47 spheres, and another by Callipus, who added two spheres each to the Sun and Moon, and one to the other planets, so as to better account for motions. Aristotle’s ambivalence on this point shows how he depends upon the opinions of the astronomers.

<sup>144</sup> Beere, 2.



diurnal motion throughout the heavens.<sup>145</sup> An unmoved mover, however, does not cause a motion that is like itself, since it does not move or change in any way. Instead, it causes motion as an object of desire moves the desirer by being what it is and does not suffer any change, either in place, quality or essence. Despite this difference, the relationship of that which is moved to either the unmoved movers or one of the other spheres can be understood through the analogy of the general and the army. In both cases the mover is an extrinsic cause of motion in some mobile substance. Just as the army exists because of an immanent order, thus do the motions of a sphere really belong to that sphere. All cases of heavenly motion, whether caused by an unmoved mover or another sphere, are an actualization of a potential. The heavenly substances are not generated, and their existence and cyclical motion have neither beginning nor end. In the course of their motions the stars come to be in a new place in every moment. This is a likeness to the causality of the sublunary realm: a certain state, a being in a location, is generated on account of the agency of another substance. The eternal motion, while not generated, is equally also caused, and has, as Aristotle points out, the potential for local change as its matter: Aristotle writes that “as many of the eternal (substances) are not generable but mobile by a motion [have matter], not for generation but for moving here and there.”<sup>146</sup>

Since we are acquainted with the sublunary causality the unmoved movers may seem to cause something less significant than substantial change, e.g. reproduction. It may even seem that the spheres are independently existing eternal bodies, necessary in virtue of

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<sup>145</sup> At 1072a19-25 Aristotle recounts what he has done in A.6. He has established that actuality precedes potentiality, rejecting the reverse view, which the theologians hold, that everything came to be “out of night”. This being the case he determines that the movement of the “first heaven” must have a cause of its motion, since motion is not a perfect actuality. Aristotle describes the “first heaven” as an intermediate mover, moved and moving, because it causes regular, cyclical motion in other things. At 1072a16-17 Aristotle points out its cosmic significance lies in being the cause of perpetual variety, when its regular motion is united to a second, different motion. Its effects are found throughout the whole cosmos.

<sup>146</sup> 1069b25. “καὶ τῶν ἀϊδίῳ ὅσα μὴ γενητὰ κινητὰ δὲ φορᾷ, ἀλλ’ οὐ γενητὴν ἀλλὰ ποθὲν ποί.”

themselves, that just happen to be moved by the unmoved movers and that the being of these spheres is not dependent upon the unmoved movers.<sup>147</sup> We will see that this not the case, but that the whole world depends upon God, so that the good and cause of the cosmos is found more properly in God than in the cosmos itself. Furthermore we shall also see that the agency that causes the proper motions of the spheres is the cause of their actuality, which is both *desirous* and *divine*.<sup>148</sup>

### 3.2.1 THE SCOPE OF THE STUDY OF HEAVENLY SUBSTANCES

One caveat before proceeding any further: we must not confuse the stars and the spheres, or substitute one for the other. Λ.8 does speak of both, especially about the numerous movements of the stars, calling them by name and examining their relationships with each other. As I have noted above, the stars are not moved by the unmoved movers directly, but by the spheres. Insofar as it is meant to establish the number of unmoved movers, Λ.8 first deduces the number of spheres by counting the motions of the stars. We are, therefore, primarily concerned with the spheres as the primary heavenly substances, whose *unmediated* causes are the unmoved movers. For our investigation, we can assume that the stars are embedded in the spheres and *benefit* from the spheres. As Aristotle establishes at 1074a18-19, it will be possible to count the unmoved movers “if there is no

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<sup>147</sup> Cf. Aquinas, O.P., *Summa Theologica*, I-I, Q.44, art. 1. Aquinas explains the force of this problem in the second objection: “Further, a thing requires an efficient cause in order to exist. Therefore whatever cannot but exist does not require an efficient cause. But no necessary thing can not exist, because whatever necessarily exists cannot but exist. Therefore as there are many necessary things in existence, it appears that not all beings are from God.” The consequence of this mistaken argument is that the unmoved movers are unrelated to the actuality of the spheres.

<sup>148</sup> 1072b2;1074b1-2. The unmoved movers move by being loved, thus the spheres, which they move, must be seen as desiring the unmoved mover. At 1074b1-2 Aristotle acknowledges that the tradition is correct in acknowledging that the heavenly bodies are divine.

such motion that does not exert itself upon the motion of a star.”<sup>149</sup> Additionally, we will only focus on the causes of heavenly substances individually, in order to establish a careful account of the ousiology of the eternal sensible substance. We will consider the whole cosmos in the next chapter when we investigate God as the first cause as the cosmos considered as a distinct substance.

### 3.2.2 THE APPLICABILITY OF THE CAUSES AND PRINCIPLES OF SUBSTANCES LISTED IN Λ.2-5 TO THE HEAVENLY SUBSTANCES.

The analogy of the general and the army applies to every level of substance. In every account of the causes of a substance there is an army that is really dependent upon a general, who, relative to the army, is self-dependent and actual.<sup>150</sup> Among the sublunary substances this is expressed by a potential substance that is made actual in virtue of a substance that is already actual. This potential and actualization, i.e. change, is described by the immanent ‘elements’, form, matter, privation and the (transcendent) agency. We can begin with one certainty about the change and agency in the heavens: that local change comes about on account of the immaterial, invisible substances, the unmoved movers. It is the spheres which undergo this change, and because the spheres do, so too the stars that they carry.<sup>151</sup> In terms of the language of Λ.2, which we used in the previous chapter, we can call these spheres in their motion a form or actuality, recalling what Charles says about sensible substances, that

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<sup>149</sup> 1074a18. “εἰ δὲ μηδεμίαν οἷόν τ’ εἶναι φορὰν μὴ συντείνουσαν πρὸς ἄστρου φορὰν...”

<sup>150</sup> Cf. 1069b36. “μετὰ ταῦτα ὅτι οὐ γίνεταί οὔτε ἡ ὕλη οὔτε τὸ εἶδος, λέγω δὲ τὰ ἔσχατα. πᾶν γὰρ μεταβάλλει τι καὶ ὑπὸ τινος καὶ εἰς τι.” As in the case of substantial change (i.e. the coming into being of a new substance), the causes of the change must already be actual for the change to occur. In a like manner, the general must possess his actuality or *perfection* in order to be a principle and cause.

<sup>151</sup> 1074a30. “ὥστ’ ἐπειδὴ οὐχ οἷόν τε εἰς ἄπειρον, τέλος ἔσται πάσης φορᾶς τῶν φερομένων τι θεῖων σωμάτων κατὰ τὸν οὐρανόν.”

each express its being in how it changes or moves.<sup>152</sup> Their matter, the potential to be what they are, is in this case not a matter for generation but for movement.<sup>153</sup> The agents of the spheres must be the unmoved movers, which are described as κινήτικόν or ποιητικόν.<sup>154</sup> We must also be careful when speaking of the form, and thus also the privation. If the motion is the form, and the spheres never cease, we can say that there is no privation. The motion of the sphere is always moving from place to place, and never rests in one part of its location. These moments of its rotation, like the disorderly bricks which make up the whole house, fit this role. These moments remain in the motion, but subordinated to it.

The proximate causes from Λ.2-5 are principles and causes of the heavenly substances in their proper motions. But applying them to accidental change of place in the heavens is not as easy. At the sublunary level the four causes and principles describe the generation and actuality of substances. In the heavens these proximate causes describe only the actuality and its causes, and obviously, not generation. The heavenly bodies and their motion never existing potentially,<sup>155</sup> but this does not make the individual spheres self-subsistent. Indeed they do have a matter, a capacity to be moved by the unmoved movers. As we will see, apart from the unmoved movers the spheres would not be actual, nor anything which depends upon their motion, i.e. the sublunary realm.<sup>156</sup>

Although it is not mentioned in Λ.8,<sup>157</sup> we would not be wrong to consider its heavens as composed of aether, and if not aether, or some other extended, mobile, stuff. The

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<sup>152</sup> Cf. Charles, 91.

<sup>153</sup> 1069b25-26. “καὶ τῶν αἰδίων ὅσα μὴ γενητὰ κινήτὰ δὲ φορᾶ, ἀλλ’ οὐ γενητὴν ἀλλὰ ποθὲν ποί.”

<sup>154</sup> 1071b12.

<sup>155</sup> *Metaphysics* Θ, 1050b16-22.

<sup>156</sup> Cf. 1071a35.

<sup>157</sup> The exclusion of aether from the chapter is likely due to the nature of the work as first philosophy aided by astronomy, and not a work of second philosophy. As we noted in the first part of this chapter, the spheres are not the object of the investigation, but a means to understand this investigation. Moreover, that the spheres are a

form of the each sphere must delineate the corporeal limits of each sphere. The form cannot, however, merely delineate sections of the heavens arbitrarily, as a surveyor might arbitrarily divide land into farm plots, but must have a reason for so delineating, i.e. a sphere's nature. This delineation is not something *imposed* externally,<sup>158</sup> but belongs to the sphere as its proper motion. Motion is the common feature of the stars<sup>159</sup> and spheres, and the differing motions distinguish each sphere, just as the immanent forms in sublunary substances distinguish one substance from another. Each sphere is distinguished by its motion, and if indeed the spheres are composed of aether, all the aether of one sphere shares in the same rotation, which is caused by an unmoved mover, and also the other rotations imparted by the spheres above. The motion of each sphere is not at all accidental, but is even the actuality of each sphere.

The dependence described here is not one which is perishable, but is eternally enacted. The cause of the actuality of the spheres is unchanging and imperishable, but beyond this, Simplicius notes that that “the will of God supplies the goods not to this and that at random but to those things that are suitably disposed.”<sup>160</sup> He argues that though the body of the sphere might be both finite and divisible, it need not therefore be destructible. As in the sublunary realm the matter of the actuality is a potential for certain forms, such as the familiar example of the mother's menses, which is a suitable form being actualized as a human being, but not, for instance, a house. Likewise, if we consider the analogy of the

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means to consider the unmoved movers, rather than the object of the study themselves, suggests that what we *need* to know about them can also be found in the sections dedicated to sensible substance, even if it is scant.

<sup>158</sup> This does not preclude that it is caused externally, only that this delineation cannot be alien to the sphere's nature.

<sup>159</sup> The stars are visibly distinct from each other.

<sup>160</sup> Simplicius, 124. Alexander of Aphrodisias makes a similar point in his *Quaestiones*, that the whole world could not be preserved in existence by God if it were not possible for it to be imperishable in its own nature. (Alexander of Aphrodisias, *Quaestiones 1.1-2.15*, 66.)

general, so long as the men and the general were both immortal, there is nothing to prevent the army itself from existing eternally.

The proper motion of a sphere, caused by an unmoved mover, is its actuality, but not all motions are identical with a form. This is what Beere argues for by preserving a distinct *per se* cause of motion for each sphere, against motions imparted by another sphere. Whereas spheres move each other through some kind of contact,<sup>161</sup> an unmoved mover does not move by contact. It cannot move by contact since, as described in the *De Caelo*, an unmoved mover is “of such a nature as not to occupy any place, nor does time age it; nor is there any change in any of the things which lie beyond the outermost motion; they continue through their entire duration unalterable and unmodified, living the best and most self-sufficient of lives.”<sup>162</sup> The motion imparted from one sphere to another is not only between two bodies, which the unmoved movers are not, but it is imparted through change of place in the agent—regular, perpetual change, but change nonetheless. The principle which expresses this is given in the seventh chapter: “[the unmoved mover] moves as being loved, but all other things move being moved themselves.”<sup>163</sup> The unmoved movers cause motion in some other way, which Aristotle describes as moving by being desired.

How the unmoved movers move causes difficulties of interpretation, allowing for at least two possibilities: 1) the unmoved mover causes motion by effecting motion in some way besides contact, seemingly in contrast to the principle above; or 2) the unmoved movers

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<sup>161</sup> It may not be friction, as Beere argues, but it must be through some kind of contact, since motions are transferred between spheres that touch each other. They must touch each other because nature is continuous (Aristotle, *De Caelo*, 280a19-22; cf. 279a15-17). This contact is noticeably different from terrestrial contact because only one of the bodies in contact, the lower, is affected. Moreover, if the spheres did exert a kinetic influence upon each other over a distance, there would be a vast multiplication of motions downwards, since the spheres do impart their whole component motion. If every sphere imparted its whole component motion to every sphere below it, the moon should display dazzling mobility.

<sup>162</sup> Ibid, 279a19-23; cf. 1072

<sup>163</sup> 1072b2. “κινεῖ δὴ ὡς ἐρώμενον, κινούμενα δὲ τᾶλλα κινεῖ.” This kind of final cause is described just before as for the sake of something (or of an action in Ross’ translation) rather than *for* something.

stands as an end of motion, but the spheres are the agents of their own motion, and are really self-movers. This difficult is solved, I propose, by conceiving of the unmoved movers as the cause of the spheres' natures, which are directed back towards the unmoved movers as an end,<sup>164</sup> just as the general orders his army towards his own end. This solution, it shall be seen, accommodates both claims about the way the unmoved movers move, as a final cause and as an efficient cause.

### 3.2.3 THE UNMOVED MOVERS CORRESPOND TO THE GENERAL IN THE ANALOGY OF THE GENERAL AND THE ARMY

We have established the way in which the heavenly substances are dependent upon the first movers. The proper motion caused by each unmoved mover constitutes the actuality of a sphere.<sup>165</sup> Final, efficient and even formal causality are attributable to the unmoved movers as the causes of the spheres,<sup>166</sup> but each must be understood carefully, lest we expect causality to function exactly as it does in the sublunary realm. The unmoved movers cannot be final causes as contingent objects of desire or rational will, nor can they be efficient causes as if they were moving the spheres for some objective.<sup>167</sup> Moreover, if formal causality is to be attributed to the unmoved movers, it cannot be as an immanent formal

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<sup>164</sup> Aristotle, *De Anima* II, 415a30-b2.

<sup>165</sup> 1075a12-14.

<sup>166</sup> Aquinas, *Summa Theologica*, I.I, Q.44, art. 1-4. Aquinas associates efficient, exemplary and final causality with God. It is not impossible to attribute the same to Aristotle's unmoved movers or God. Where Aquinas speaks of exemplary causality he speaks of the way in which one being is the pattern of another, "...for the production of anything an exemplar is necessary, it is in order that the effect may receive a determinate form" (art. 3). We will keep this threefold causality in mind throughout the following section. In the same section Aquinas also attributes the creation of prime matter to God, however whether this too is applicable to Aristotle's theory is a more difficult question. Whether Aristotle has subscribed to a theory of prime matter is a point of controversy. Nevertheless, since Aristotle says all things depend upon God, we cannot avoid some comment on just how they are dependent.

<sup>167</sup> Alexander of Aphrodisias, *Quaestiones 1.1-2.15*, 102. Alexander of Aphrodisias rightly points out that God does not have a function, but is a pure actuality that does not achieve anything.

cause, for they would *be* the spheres that they move and the separated substances would move themselves accidentally.<sup>168</sup> These caveats aside, as with the army, which would not even exist without the general giving it order (an order which makes it an army of such a sort for his own end), the spheres are *entirely* dependent upon the unmoved movers. The very actuality of the spheres, and not just local motion, depends upon these movers, and it is in this sense that, as we shall soon see, that we call the movers *κινητικόν* and *ποιητικόν*,<sup>169</sup> i.e., agents which move and actualize another substance.

### 3.2.4 EACH UNMOVED MOVER IS THE UNIQUE CAUSE OF A SPHERE

The nature of this agency is best understood by the relationship between the unmoved mover and the sphere. The relationship exists in virtue of the unmoved mover rather than in virtue of the sphere. The relationship is a part of its nature.<sup>170</sup> We read in Λ.10 that “the general does not exist because of the order [of the army], but the order is because of [the general].”<sup>171</sup> If the unmoved movers were merely final causes in the sense that they were only objects of contemplation or desire, upon which the heavenly spheres pattern their motion, as if choosing between a higher and lesser good, we would have to establish why it is that each sphere has one mover as its final cause rather than another.<sup>172</sup> Another cause to make this determination would be needed; otherwise the relationships between the spheres

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<sup>168</sup> This is not possible of the separate substances, which cannot be moved, even accidentally.

<sup>169</sup> 1071b12.

<sup>170</sup> Especially so if it has the unmoved mover as its final cause, i.e. has that end in virtue of its nature as a sphere.

<sup>171</sup> 1075a15. “οὐ γὰρ οὗτος διὰ τὴν τάξιν ἀλλ’ ἐκείνη διὰ τοῦτόν ἐστιν.”

<sup>172</sup> Cf. Bodnár, 266-270.



and their unmoved movers will not be governed by necessity.<sup>173</sup> We would invalidate the presupposition that Aristotle uses to make astronomy describe the number of unmoved movers, that each distinct motion has its own cause, immutably and eternally. Moreover, if there were no principle binding one sphere to a particular unmoved mover they might all have one unmoved mover as their end as an object of imitation,<sup>174</sup> and each sphere would move differently on account of its own nature rather than as caused by distinct unmoved mover, e.g. according to its place in the heavens. That Aristotle does not endorse this is a strong suggestion that this kind of final causality, either with regards to one or many unmoved movers, is not what Aristotle holds to be the principle of motion (and actuality) for the heavenly bodies.<sup>175</sup>

On the assumption that what we have said is true, the identification of the distinct movements of the heavens with particular unmoved movers is not arbitrary. Each unmoved mover is a *per se* cause of a motion in the heavens, which Beere admirably defends. Each mover is the cause of only *one* motion; the complex motions are caused by the spheres' interactions with each other. From the perspective of the heavenly bodies, this effected motion, and their own actuality, is necessary on account of the eternal and perfect actuality of the unmoved movers, the cause of a unique and immutable relationship between a sphere and its unmoved mover.

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<sup>173</sup> I don't mean to suggest that it would be mutable, but only that there is no intrinsic relationship between a sphere and its mover, which would undermine Aristotle's attempt to number the unmoved movers based upon the motion of the spheres.

<sup>174</sup> Berti, 187; cf. Broadie, 375-411.

<sup>175</sup> Elders, 239. Elders points to Alexander, as referenced by Simplicius, as one who suggests that if the first unmoved mover is a final cause it should move many worlds, but that it does not implies that the *passus* at 1074a31-8 presents a God as an efficient cause.

### 3.2.5 THE UNMOVED MOVERS AS EFFICIENT CAUSES

The unmoved movers' actualization of the spheres is not a production in time, but according to the priority of the actuality of separate substances over the (qualified) potentiality of the spheres. Attributing productivity to the unmoved movers, as the cause of the sphere's *actuality*, is not the most common interpretation, as we shall see below. The text of *Metaphysics* Λ does indeed associate final causality with the unmoved movers in two places: 1) insofar as it distinguishes how *they* cause motion from how *moved* movers cause motion;<sup>176</sup> and 2) as something which moves as loved, while everything else causes motion by already being in motion.<sup>177</sup> We are concerned with the first because it likens the movement (i.e. setting in motion) of an unmoved mover to things that are *not* efficient causes. The second, however, distinguishes the unmoved mover from *all* other things, and therefore does not deny that it is also efficient. In the first passage, the mover of the first heaven is described at 1072a26 as moving “as [ὄδε] desirable and intelligible objects [do]; they move without being moved.”<sup>178</sup> Λ.9 does consider the noetic nature of separated substance, but in the context of separated substance *in se*, not as the cause of other beings. 1072a26 involves an important ambiguity: does an unmoved mover cause motion because it is desirable and intelligible, and thus unmoved, or does it cause motion as desirable and intelligible things cause motion without, i.e, without being in motion itself. The first has the support of Joseph Owens and Elders,<sup>179</sup> both of whom deny that any of the unmoved movers are efficient causes, since as objects of desire, they cannot be efficient. Indeed, if such a

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<sup>176</sup> 1072a23-25.

<sup>177</sup> 1072b4. “κινεῖ δὴ ὡς ἐρώμενον, κινούμενα δὲ τὰλλα κινεῖ.”

<sup>178</sup> 1072a26. “κινεῖ δὲ ὄδε τὸ ὀρεκτὸν καὶ τὸ νοητὸν: κινεῖ οὐ κινούμενα.”

<sup>179</sup> Owens, 286; Elders, 68.

cause were to be efficient in the way that the moved movers are, its “work” would never be complete, though it could remain perpetually the same. It would be *directed* towards some action outside of itself, a final cause outside of itself, which is a position untenable for that which is complete actuality in itself, as Alexander observes.<sup>180</sup> Relative to itself, an unmoved mover needs nothing to be actualized.<sup>181</sup>

We ought, however, to reject this first position for three reasons in favour of the latter position, that it moves but without undergoing any change. First, if the unmoved mover moved *only* as desired, it would be passive and would move as being a part of a whole system of causes, and depend upon the nature of the moved as capable of desiring and knowing. Second, the latter half of 1072a26 gives κινεῖ οὐ κινούμενα, a plural, indicating that the previous τὸ ὀρεκτὸν καὶ τὸ νοητὸν are two examples of a way of moving unmoved, but not descriptors of the unmoved mover.<sup>182</sup> Third, there are positive reasons in the text which indicate that the unmoved mover must be considered κινητικὸν and ποιητικὸν, without ever undergoing change itself.

Owens and Elders, would be hard-pressed to deny that these unmoved movers do cause an effect, the actualization of a potentiality, motion, in the heavenly substances. If not, whatever effects this motion towards a final cause will be their efficient cause, since all things in potential cannot come to be “as if *out of night*”, i.e. without an actualizing principle.<sup>183</sup> In no way can a causal series continue to infinity, but only as far as that which possess complete actuality.<sup>184</sup> Λ.6 gives us Aristotle’s reason for defining his unmoved

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<sup>180</sup> Alexander, *Quaestiones 1.1-2.15*, 102. “That thing [the first, the Unmoved Mover], is not one of those things that have a function, if by function [Aristotle] means an activity that is its end [*telos*], But [God] has no end. For his being is [itself] activity; it is not that he is first something else and *then* activity.”

<sup>181</sup> 1071b21.

<sup>182</sup> Berti, 203.

<sup>183</sup> 1071b27.

<sup>184</sup> *Ibid*, 21.

movers as agents and the first (or last) member of a series of causality. He states that any suitable first principle must be capable of causing change, and that even if it is κινητικόν or ποιητικόν<sup>185</sup> it must not merely possess these attributes potentiality, but as always in act. Should we go so far as to attribute κινητικόν *and* ποιητικόν univocally to the separate substances directly, or limit these terms to examples of how the unmoved movers move, as we did with τὸ ὄρεκτον and τὸ νοητόν?<sup>186</sup> One might argue that these terms only refer to the necessity of being entirely and eternally in act, rather than ascribing real efficiency, and that while they are principles of change they are not necessarily efficient. Aristotle, however, is arguing *for* an agent separate substance against the Platonists' Forms. A separate Form cannot explain the how another substance possesses a form even in Plato's own system, and Aristotle looks to avoid the same problem. The Greek is clear on this point:<sup>187</sup> such eternal substances would be just like the Forms, "unless a principle (δυναμένη) capable of causing change is in it."<sup>188</sup> It must be capable of change, not in the sense that the presence of a final cause allows for a change as an end, but in the sense that *without* an agent no change will be

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<sup>185</sup> Ibid, 12.

<sup>186</sup> Berti, 186-7. In his contribution to the tenth *Symposium Aristotelicum*, argues that the unmoved movers *are* efficient causes and acknowledges others who share this position, including Kosman and Broadie.

<sup>187</sup> 1071b14-16. "οὐθὲν ἄρα ὄφελος οὐδ' ἐὰν οὐσίας ποιήσωμεν αἰδίους, ὥσπερ οἱ τὰ εἶδη, εἰ μὴ τις δυναμένη ἐνέσται ἀρχὴ μεταβάλλειν: οὐ τοίνυν οὐδ' αὕτη ἰκανή, οὐδ' ἄλλη οὐσία παρὰ τὰ εἶδη."

<sup>188</sup> 1071b16. Rendering "δυναμένη" in English is a little awkward, but affirms that there must be a capability of making a change, and would permit the application of κινητικόν and ποιητικόν. Aquinas attributes them to the unmoved mover, and has no qualms about a mover which would hypothetically bring the world into existence, in Aristotle's scheme, if the world were not eternal (Aquinas, §2493, 2498). Elders takes this passage to refer to the necessity of a being that is completely actual, but does not make any significant remarks about whether this indicates a divine *efficiency*. He does, however, point out Aristotle's reference to Anaxagoras as an argument for the need of an efficient cause. Later on, Elders refers to the activity of the first mover as *radiating* its ever-same activity, which in conjunction with the natural motion of the spheres and elementary bodies, causes eternal variety (Elders, 143-5, 158). Hence even Elders, who resists calling the unmoved movers efficient, cannot do so entirely. Berti adds two helpful points, that κινητικόν or ποιητικόν grammatically imply a capability, and that *both* apply to unmoved movers, and not just κινητικόν (as if Aristotle introduced one or the other), since Aristotle criticizes the Platonists for not having either attribute in their principles and thus implies that "his own principle is both." (Berti, 186-7).

effected. Aristotle gives a number of examples from nature showing that an actual agent cause must precede its effect in actuality:

For how will it be moved unless there is a cause in actuality? For wood itself will indeed not move itself, but carpentry will [move it], nor will the menstrual blood or the earth [move themselves], but the semen and the seeds will move them.<sup>189</sup>

In a like way, the first unmoved mover must actualize everything dependent upon it. Unlike these natural examples, however, the spheres are never independent from their agent, as the statue is not always being made. Nor are the spheres *being made*, but the dependent relationship is ever the same, both in the order of substance and time. Hence, three major points are raised in Λ.6: separate substance must be eternal and unchanging (i.e. having no potential), and consequently if it is efficient it is *eternally* efficient. Actuality and efficiency are thus linked in Λ.6, hence the first mover, and the other movers, must be eternally actual and so eternally agents.<sup>190</sup>

It might be objected that the unmoved movers need only be causes of kinetic change, given the formulation κινητικὸν ἢ ποιητικόν at 1071b12, as if it were one or the other. Enrico Berti points out that Λ.10 criticizes those who make contraries principles because “they are not kinetic *and* productive” (emphasis mine).<sup>191</sup> Whatever its status as final cause is, the first

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<sup>189</sup> 1071b30-2. One might argue that since the spheres are always in actuality they may fulfill the requirements that these examples give even if the unmoved movers are only final causes. In this case, the spheres themselves will have to be the efficient cause and their motion will still “come out of night”. If the spheres are final causes they must also be productive of their motion. We will examine how these two kinds of causality need not exclude each other below.

<sup>190</sup> Berti notes that the seeming potentiality expressed in the passages above need not put them in opposition to the complete actuality of the substance to which they belong, because they are part of the thinking about *what* such a first principle must be, not necessarily its final definition (Ibid,190). I take Berti to be implying that in a perfect definition the efficiency of these causes would remain, but any suggestion of their potentiality would be carefully pruned.

<sup>191</sup> Berti, 197; 1075b31. “ἀλλὰ μὴν οὐδὲν γ’ ἔσται τῶν ἐναντίων ὅπερ καὶ ποιητικὸν καὶ κινητικόν;”

unmoved mover and all the other separated substances are agents of actuality, especially of all those things through which their existence is inferred, e.g. the distinct motions of the heavens. The general not only commands an army, but causes its actuality by ordering it, without which the army would be a horde. Although the unmoved mover causes the actuality of the sphere without any beginning and of necessity, so that the spheres are also necessary,<sup>192</sup> which is unlike agency in the sublunary realm, it is no less an efficient cause. It is an extrinsic cause of actuality and motion in another substance.

### 3.2.6 THE UNMOVED MOVERS AS EXEMPLARY CAUSES

The unmoved movers do not depend on the spheres which they move, but rather, those spheres depend on the unmoved movers for their existence. The efficient cause of a substance does not cause just anything, but actualizes a specific potentiality, as we saw in the case of art and reproduction in the sublunary realm. On account of this some have suggested that these movers may be the souls of the spheres, which would serve as a formal cause of the ungenerated spheres.<sup>193</sup> There are two related difficulties with this view: 1) the movers would then be *accidentally* moved movers since they would be immanent principles of the spheres; and 2), if they were the souls of the spheres, the unmoved movers would not really be separate immaterial and immobile substances, but would have a body, since a soul is the

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<sup>192</sup> Aquinas, *Summa Theologica*, I.I, Q.44, Art 1, ad. 2. Aquinas reminds us that efficient causality can be attributed even to necessary things, pointing to Aristotle distinction between kinds of necessity. Efficient causality does indeed belong to those beings which are necessary because of their cause, rather than themselves. The spheres, as we have seen above, are such beings.

<sup>193</sup> Berti, 187-8; Kosman, "Aristotle's Prime Mover", 135-54. Berti resists likening the first unmoved mover to a soul, preferring the comparison with an art. He does cite Kosman as one who likens the first mover to a soul, who calls it a "psychic principle", albeit entirely transcendent.

“first entelechy of an instrumental natural body”.<sup>194</sup> To be a soul is to be the entelechy of a *body*, and thus exists for the sake of being a living body. The body and soul are one substance.<sup>195</sup> Thus while both the unmoved movers and souls are immaterial in themselves, their relationship to bodies differs. A soul is a formal cause, but the unmoved mover must be the cause of the form, i.e. making the form what it is. It is the exemplary cause, an external cause upon which the forms of the spheres are a likeness, insofar as they share in the divine life.

The sphere’s essence or nature, its actuality *as* a sphere, is caused by an unmoved mover, but the unmoved mover is not that sphere. As the general actualizes the army *as an army*, so do the unmoved movers cause the spheres to be (but not *to come* to be) and *to be spheres*. The unmoved movers cause the eternal motion which belongs to a sphere and distinguishes each sphere from the others. As above, we must acknowledge that this is not arbitrary, but that the unmoved mover is the cause of the relationship which exists between the unmoved mover and the sphere, i.e. *that* a certain sphere is be moved by a certain mover, as either loved or otherwise. Hence, when Aristotle discusses how the nature of the whole has its good in itself and in another, as explicated by the analogy of the general and the army, he says that the cause of nature’s order is the order itself, as an immanent formal cause, *and* that agent which causes the order to be in a substance. Such an agent must also possess the form in some way.<sup>196</sup> It is similar to reproduction, in which the parent causes the form in another without becoming the instantiation of its offspring. As per Λ.5, in one sense forms

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<sup>194</sup> Aristotle, *De Anima*, 412b5. “...ἐντελέχεια ἡ πρώτη σώματος φυσικοῦ ὀργανικοῦ.”

<sup>195</sup> Ibid. 412a20-23.

<sup>196</sup> Cf. 1070a5. The causes of things share a name with what they cause. Lions beget lions, shoemakers make shoes. This is not, in virtue of the name itself, but the name is in virtue of the actuality and power one has, especially in the case of the arts, e.g. *shoemaker*. The unmoved movers are not the spheres themselves, but they are of such an essence as to be able to order the spheres as eternally moving, loving substances.

are particular, so that my form and yours are not the same, even if they are of the same species.<sup>197</sup> It is in this sense that the parent or agent is *not* the formal cause of what it causes, but it does not prevent the parent or agent from being the cause of essence in something else. Aquinas calls God the exemplary cause of all things, rather than the formal cause. In his estimation God is an exemplary cause in two ways, as containing the divine ideas, and as being that of which all created things are a likeness.<sup>198</sup> Aristotle's unmoved movers correspond to the second way of being exemplars.

Aquinas' notion of God as an exemplar which all things approach as much as they are able is in agreement with *De Anima* II.4's claim that all substances imitate divine eternity as far as they are able.<sup>199</sup> II.4 refers to the divine, and whether one or many separated substance are meant, it is applicable to the other separate substances besides the first because they are all of "such a kind" and described as "loved" in  $\Lambda$ .7. If what is loved is a likeness to their movers in the spheres themselves, then this second kind of exemplarity is present belongs to the unmoved movers.

The unmoved movers are also the causes of the essence of the spheres. It is the very nature of the spheres and the stars to be in motion eternally, and as we noted above each is distinguished by a different motion and their motion's dependence upon a particular separated substance. *Metaphysics*  $\Delta$  establishes that the nature of a thing is the source of its primary motion.<sup>200</sup> For the spheres, this primary motion is the proper motion of each that is *ontologically* prior to any other received motions. The motion that  $\Delta$ .4 calls primary is that which belongs to a substance in virtue of being such a substance, the most basic instance of

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<sup>197</sup> 1071a26-30.

<sup>198</sup> Aquinas, *Summa Theologica*, I.I, Q. 44, Art. 3.

<sup>199</sup> Aristotle, *De Anima*, 415a30-b2.

<sup>200</sup> 1015a13-15.



which is growth.<sup>201</sup> Growth, i.e. maturation, is none other than the motion of a sublunary living substance achieving its perfection. It is a motion intimately united with the substance to which it belongs, such that its form is the cause of this growth. The primary motions of the spheres possess just such a unity with the nature of the spheres themselves. The unmoved movers do not need to move the heavenly substances by an impulse, but by imparting a nature, as Averroes says in his *Epitome*, "...it is clear that [the unmoved movers] not only move the celestial bodies but also provide them with their forms through which they are what they are."<sup>202</sup> Like the general of an army, the nature that is caused is not unrelated to the unmoved movers, but in accordance with them. As the army is, in a way an instantiation of the general singular will in a thing made of parts, the eternal motion of these eternal substances is a likeness of the eternal divine life which is described in  $\Lambda$ .7 through the constant, but regular, change of place.<sup>203</sup>

### 3.2.7 THE UNMOVED MOVERS AS FINAL CAUSES

It remains for us to consider precisely how the unmoved movers are final causes in the context of also being efficient and final causes understood as imparting an actualized form or nature to the spheres. The late appearance of final causality in the text of  $\Lambda$  is itself worth considering. It is not counted in the list of the list of causes in the first half of *Metaphysics*  $\Lambda$ . Instead, privation is taken as the fourth cause, in order to more fully explain all of the aspects of change. As early as  $\Lambda$ .3, however, final causality begins to appear, not

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<sup>201</sup> 1014b16-20.

<sup>202</sup> Averroes, 152.

<sup>203</sup> Cf. 1072b26. "εἰ δὲ μᾶλλον, ἔτι θαυμασιώτερον"; the difference between divine life and the various degrees of natural life is more than a matter of duration. Cf. *De Caelo* 279a30.

alone, but in conjunction with the formal cause, as the perfection, or good, of a form or nature.<sup>204</sup> In the case of mortal living substances,<sup>205</sup> which are most properly substances in the sublunary realm, their final cause, to possess their nature as fully grown, is the cause of their primary intrinsic motion or activity,<sup>206</sup> to preserve their own life and species. Indeed, we are told that a nature is the end of growth, e.g. the oak to the acorn.<sup>207</sup> The sublunary substances are, therefore, moved by their final cause, which is in one sense properly the form of an individual, its soul, in another, the species universally. A living substance is also the efficient cause of its daily activities (working upon its body as an instrument, ὄργανον) and of the generation of similar substances for the sake of this final cause, which is its own good or perfection. Thus, as Owens remarks, “efficient and final causes seem...to be reduced to the formal cause as to their primary instance.”<sup>208</sup> In one sense the final cause for natural sublunary substances, as entelechies, is the perfect actualization of their own form. In another, God, or divine goodness, as Aquinas calls it, is the final cause of all things, in so far as such an actualization approaches pure and eternal actuality.<sup>209</sup> Do the spheres share divine life as an end in just the same way all the other natural substances do? I suggest not, but rather, that Aristotle attributes more to the unmoved movers as the final causes of the spheres than Aquinas’ general desire for divine goodness. In Λ.4’s discussion of the four causes, he notes that there is another cause still *besides* these, the first cause which moves all things in virtue of being first. As we indicated above, final causality is reduced to the formal cause,

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<sup>204</sup> 1070a11.

<sup>205</sup> We might include all natural substances, insofar as the nature of the elements causes like elements to come to be, e.g. as fire heats and dries the other elements, or water cools and moistens them (Aristotle, *On Generation and Corruption*, 331a25-331b1).

<sup>206</sup> 1014b20. The end of growth is the possession of such a nature, which includes the capability to cause others to grow in a similar manner.

<sup>207</sup> 1070a12. A nature is both a nature as such and a ἔξις for that nature. The possession of the perfection of the nature is the final cause.

<sup>208</sup> Owens, 286.

<sup>209</sup> Aquinas, *Summa Theologica*, I.I, Q.44, Art. 4.

and each of the spheres is caused *immediately* by one of the unmoved movers. Like sublunary substances, the spheres have their own perfection as their end, but this perfection is *the* approximation of divine life in a natural substance, which describes what the stars are in themselves. They do not merely serve the eternity of a species, but possess eternal actuality for themselves. In this way divine substance is the proximate final cause of the spheres, rather than a further end achieved in virtue of a proximate end.

Is this likeness to the divine a to only one of the unmoved movers or is it to the *first* unmoved mover? One possible interpretation of Λ.8 that Elders considers, but does not adopt, distinguishes the unmoved movers as *efficient* from the first mover of Λ.7 as *final*.<sup>210</sup> The text of Λ does not, however, provide support for the thesis that some movers are efficient, *rather than* final, causes. When Aristotle moves to the eighth chapter he says “we must inquire whether there many or one of such substance (τοιούτην οὐσίαν),”<sup>211</sup> the τοιούτην οὐσίαν being nothing other than God as described in Λ.7. Aristotle does not give us a reason to consider *kinds* of unmoved mover; he gives no principle by which we can exclude some of the attributes listed in chapters Λ.6, 7 and 9, except perhaps one. Λ.7 calls the first mover that upon which nature and heaven hang or depend (as in Ross).<sup>212</sup> This first mover does have a certain significance that distinguishes it from the other unmoved movers.<sup>213</sup> It is likely that this difference gives an apparent basis for those who are wont to make the other movers strictly efficient to do so, knowing that the first unmoved mover fulfills the role of final cause while efficiency is emphasized elsewhere.<sup>214</sup> This solution does not, however,

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<sup>210</sup> Elders, 65.

<sup>211</sup> 1073a14. “πότερον δὲ μίαν θετέον τὴν τοιούτην οὐσίαν ἢ πλείους;”

<sup>212</sup> 1072b14. ἐκ τοιαύτης ἄρα ἀρχῆς ἤρτηται ὁ οὐρανὸς καὶ ἡ φύσις.

<sup>213</sup> Cf. 1076a4. The conclusion of the whole work rejects the rule of many as good.

<sup>214</sup> Doubts about the authenticity of Λ.8 as a part of *Metaphysics* Λ appear on the point, as noted above, since its doctrine seems to jar with the single separate substance taught in Λ.7,9 and 10 (Elders, 60-63). Elders holds that many of the point of doctrine of the *Metaphysics* are contained in Λ.8, e.g. the necessity of an eternal mover and

explain how the unmoved movers are to be efficient as exclusive of final causality. One need not move from “metaphysics to mechanics”,<sup>215</sup> in order to make sense of this efficient causality. Instead, if we follow the text we must admit that the unmoved movers are both final and efficient causes, and that each kind of causality sheds light on each other, especially in light of the reduction of both to formal, if we take it to mean exemplary, causality.

If each unmoved mover is a final cause, one must confront the claim that the motions are for the sake of the stars.<sup>216</sup> Just as the spheres do not *choose* an unmoved mover as their final cause, we should not consider the unmoved movers as *choosing* to move a certain star, since the movers cannot exist for an end external to them, as this would be in contradiction to their perfection, as noted above. Any confusion that this passage might stir up about whether final causality belongs properly to the stars or to the unmoved movers can be cleared up by recognizing the distinction Aristotle makes about the way things can be an end. An end may be either the recipient of some action or as something achieved or perfected.<sup>217</sup> Aquinas points out that this claim is made to refute the possibility that there should be other movers besides those Aristotle has already numbered:

For one could say that there are many more motions in the heavens than have been counted, but that these cannot be perceived because they produce no diversity in motion of one of the celestial bodies which are perceived by the sense of sight and are called stars.<sup>218</sup>

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its priority to what it moves, but goes on to say that “in spite of these numerous points on which there is agreement in doctrine and formulation between chapter eight and other parts of the *Corpus*, there are serious difficulties which make it doubtful whether the chapter, as it is now, was written by Aristotle himself” (ibid, 65). He concludes that though containing Aristotelian doctrines, it isn’t written by Aristotle. Plurality and efficiency are the difficulties. I hope to show, at least, that efficiency need not be.

<sup>215</sup> This is a criticism Elders levels against A.8 generally.

<sup>216</sup> 1074a25.

<sup>217</sup> Lloyd and Elders both make this point, applying the distinction made at 1072b2: ὅτι δ’ ἔστι τὸ οὗ ἕνεκα ἐν τοῖς ἀκινήτοις, ἢ διαίρεσις δηλοῖ: ἔστι γὰρ τινὶ τὸ οὗ ἕνεκα καὶ τινός, ὧν τὸ μὲν ἔστι τὸ δ’ οὐκ ἔστι.” It is in virtue of attaining some good that a the good of another is achieved (Elders, 234; Lloyd, 264-5).

<sup>218</sup> Aquinas, §2590.

If so, it would not necessarily be the case that the movement of these imperceptible spheres lack a *per se* relationship with their mover, but it would undermine the possibility of astronomy aiding philosophy in counting the separate substance. Aristotle thus introduces this principle of the stars as an end of motion to avoid this, as Aquinas explains:

And in order to reject this he had already said that there can be no celestial motion which is not connected with the motion of some star. His words here are that there cannot be other motions in the heavens besides those which produce the diversity in the motions of the stars...This can be taken as a probable conclusion from the bodies which are moved; for if every mover exists for the sake of something moved, and every motion belongs to something which is moved, there can be no motion which exists for itself or merely for the sake of another motion, but all must be for the stars...Now since an infinite regress is impossible, it follows that the end of every motion is one of the celestial bodies, as the stars.<sup>219</sup>

As Aquinas explains, Aristotle's point is that there is no act of moving which does not move *something*, i.e. a substance. Thus there is no substance which moves without moving something; to be a mover one must move something, even as a doctor doctors himself as *other*.<sup>220</sup> There can be no motion of a sphere which does not contribute motion to another through contact, and since, if there is a mover it must move something (and spheres are direct recipients of such motion in the heavens), its effect must be discernable in the motion of the stars. It is in this manner that the unmoved movers are for the sake of the stars, i.e. as moving them, but moving them not their *purpose*. It is only in relation to the spheres and stars that they are called 'movers', because they accord with the substances that are moved, and

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<sup>219</sup> Ibid, §2592.

<sup>220</sup> Aristotle, *Physics* II, 199b30.

movements are for the sake of substances rather than other movements. This principle prevents a proliferation of other unmoved movers, and reaffirms Aristotle's conviction that each motion in the heavens, i.e. each moving sphere, has a substantial cause.

The unmoved movers move as final causes, but in conjunction with being efficient and exemplary causes. Averroes presents the integration of these three kinds causality succinctly: the nature that each unmoved mover causes is a nature ordered back towards the very same unmoved mover.<sup>221</sup> This is quite like the general, who orders the army to his own end, but remains apart.<sup>222</sup> The general provides the army with its existence, order and purpose, i.e. its good and perfection, a purpose which shares in the general's purpose. The unmoved movers, as Alexander remarked, do not have an end, and thus have no external purpose. The analogy stands, nevertheless, as the army shares in the life of the general, each of spheres shares very closely in the life of its unmoved mover. The unmoved movers cause the nature of the spheres and cause it to be oriented towards themselves so that this nature itself takes the spheres as the object of desire. They do not merely imitate the eternity of the separated substances, but they exhibit pure actuality as far as they are able, since as they are without potentiality, except in the sense of "whence and whither" in their motion<sup>223</sup> and, we should add, qualifiedly as dependent upon the unmoved movers. As we learn in  $\Theta$ , the heavenly substances never tire or labour, their actuality is unchanging, and pleasurable.<sup>224</sup> As

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<sup>221</sup> Averroes, 2010, 152: "Consequently these [movers] are, from this point of view, in a certain way the efficient causes of the substance of the [celestial bodies], since it is the efficient [cause] which provides the substance of a thing, no matter, no matter whether it acts eternally or discontinuously (to act eternally is [of course] better). Meanwhile they are from another point of view, formal [causes] for them, for the forms of the celestial bodies are nothing else than that which the [celestial bodies] think of these [movers]. And [finally] they are also final [causes] for them because the [celestial bodies] are moved by them by way of desire..."

<sup>222</sup> Aquinas, §2630.

<sup>223</sup> *Metaphysics*,  $\Theta$  1050b24.

<sup>224</sup> 1050b24-27. Cf. 1072b16.

Aristotle writes in  $\Lambda.7$ , “a life such as the best (i.e. the divine life) is ours for a short time”,<sup>225</sup> and in a similar way the spheres have such a life, but imperishably. As nearest to the divine separate substances in their share of divine life, their actuality is the greatest of all natural substances. The simplicity of their existence is like that of their causes, the unmoved movers. Their efficient, formal, final and causes of each sphere come together as one, as Owens noted. The *essence* of the unmoved mover is such that it causes and orders another towards itself in virtue of simply being itself.<sup>226</sup> That these causes coincide<sup>227</sup> is fitting. As the unmoved movers are simple their causality should be equally simple, the effect of pure actuality upon potentiality a potentiality.

### 3.3 CONCLUDING SUMMARY

We have now examined the principles and causes of the sensible substances, both perishable and eternal. They do indeed share, analogically,<sup>228</sup> the intrinsic causes, form, matter and privation, and an extrinsic cause, the agent or efficient cause. Form is the very actuality of a substance, and it applies to both perishable and eternal sensible substances univocally. Matter and privation depend upon form, or actuality, and describe changeableness, of substance (and all other accidents) in the case of sublunary substances, but only of place in the case of the heavenly substances. The most important are the agent and the form, since matter depends upon these. The analogy of general and the army explains the relationship of form and agent. As the relationship between the army and the general is

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<sup>225</sup> 1072b15. “...οἷα ἡ ἀρίστη μικρὸν χρόνον ἡμῖν.”

<sup>226</sup> Berti, 203. “As we see later...this subject is the unmoved mover itself, and moves the heaven having itself as its aim, i.e. the same unmoved mover”.

<sup>227</sup> Lloyd, 264; Berti, 206. Both agree that it is reasonable for these causes to coincide.

<sup>228</sup> Cf. 1070a32-33.

not at all arbitrary, neither is the relationship between form and the agent. Indeed, the agent, which is prior in actuality, *determines* the form of the substance dependent upon it in virtue of its own activity. The agent is an actuality which effects another actuality. This relationship is visible in the natural sublunary (and even artificial) substances, which effect the cycles of change in the natural world, especially in reproduction or art, where all the causes are ordered to the end of an agent in virtue of its nature, but it is clearest in the case of the heavenly spheres. In the heavens the relationship between perfect actuality and what it causes is perpetually preserved. Indeed, the unmoved movers cause the spheres, not in time, but eternally. The unmoved movers cause the existence and nature of the spheres, a nature which is ordered towards the very same movers as the exemplar of perfect actuality. The pure actuality of the unmoved movers exhibits all final, formal (extrinsically) and final causality by virtue of simply being actual. The spheres are utterly dependent upon their particular movers, but by no means at the cost of their own individual actuality—they are distinct substances, as distinct as the general is from his army. He is not a part of the battle-line, but without him it will collapse. Aristotle's claim that the good exists in both the external cause of a substance and the substance itself is an affirmation of the reality of the sensible substances, without a denial of their dependence on transcendent causes. We must now turn to these transcendent causes, the invisible substances, to complete our sketch of principles of substance in *Metaphysics* Λ and determine how this analogy of the general and the army, of the power of one actuality to actualize another, applies to the highest of beings.



## CHAPTER 4 CONCLUSION

Three tasks remain: 1) to examine the how the causes and principles of the separate substances are related to the common principles of sensible substance through the analogy of the general and the army; 2) to show that the causes and principles of individual substances, shown to be analogically alike through the analogy of the general and the army, are also the common principles of the cosmos considered as a whole; and 3) that the principles of the whole cosmos are the causes and origin of the causes and principles of all the sensible substances. Completing these tasks so provides the ground for understanding how this analogical unity of substances really describes the common principles of all substances. Furthermore it will be shown that by considering separate substance in itself, the theology of *Metaphysics*  $\Lambda$  illuminates our understanding of the causes and principles of all substances, since separate substance, as described by the analogy of the general and the army, becomes the prototypical instance of all causality and actuality. This theology is an account of the first principle of all substances, it also belongs to first philosophy.

### 4.1 THE LIMITS OF THE ANALOGY APPLIED TO SEPARATE SUBSTANCE

When the analogy of the general and the army is applied to the heavenly bodies, the heavenly bodies, like the sublunary substances, are able to take both the position of the general, insofar as they affect or even effect other substances, and the position of the army, insofar as they are caused by the unmoved movers. But in the case of the first unmoved mover, there is neither potentiality nor dependence upon a prior, external cause. Unlike both eternal and perishable sensible substances, the first unmoved mover cannot take the role of

the army. The only way the analogy applies to the first unmoved mover is as cause, or general, of the outermost sphere, as the good of the cosmos. The first unmoved mover is uncaused, and hence has no extrinsic cause. It has no cause or principle beside itself, but is the cause of its own actuality.

Aristotle does not, however, refrain from describing this divine actuality. It is not bare “being”, but life best and eternal<sup>229</sup> and also a thinking.<sup>230</sup> This description of divine blessedness does not describe principles of God’s being, but rather, what God’s actuality is. It may seem problematic to describe God through a relational structure when God’s blessed actuality is already described as not depending upon anything else. In light of God’s complete priority as the first unmoved mover, the first actuality and the first substance, any attempt to explain why God is as he is by other principles would be an empty investigation. Without considering God relative to God’s effects, the only description which remains is simply the fact of God’s own actuality. By looking at God’s effects in a relational structure, however, one gains an insight into God’s actuality. Averroes notes that being a cause of other substances is a part of the divine nature: “For it is impossible that any of these noble principles exists without activity, as it is impossible that no ignition originates from the essence of fire. These principles are by nature active [principles], just as the Sun generates light by its nature.”<sup>231</sup> God’s life and excellence are not known immediately, but through that which they cause, the life of the heavenly bodies. All substances must take the role of the general or the army, even the separate substances, since they cause motion necessarily. It is

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<sup>229</sup> 1072b27-29. “καὶ ζωὴ δὲ γε ὑπάρχει: ἢ γὰρ νοῦ ἐνέργεια ζωὴ, ἐκεῖνος δὲ ἢ ἐνέργεια: ἐνέργεια δὲ ἢ καθ’ αὐτὴν ἐκείνου ζωὴ ἀρίστη καὶ ἀίδιος.”

<sup>230</sup> 1072b26-27.

<sup>231</sup> Averroes, 149.

not a mistake to describe God as the general, but rather, it best describes God's actuality in relation to what it effects in virtue of itself.

Any other attempt to apply the analogy of the general and the army to separate substances is tenuous. If it does apply to some of the separate substances, it will be to some but not all. In that case, it must describe some kind of dependence of the *numerous* separated substances of  $\Lambda.8$  upon the first unmoved mover. A number of commentators who have tried to work out the relationship between the many unmoved movers of  $\Lambda.8$  and the first mover of  $\Lambda.6$  and  $7$  have suggested there may be some kind of dependence between them. Avicenna's position is that the unmoved movers are intelligences and emanations of from the Supreme Mind, which is their cause.<sup>232</sup> Aquinas, likewise, makes them angels, created by God.<sup>233</sup> Kraemer adopts a different route, and suggests that the fifty-five unmoved movers are essences contained in the unmoved mover as thoughts, but not existing separately from the first mover.<sup>234</sup> Averroes says that the first mover is the cause all other movers, not differing in species, but only in virtue.<sup>235</sup> Lang says that there is only one unmoved mover, both in number and definition.<sup>236</sup> None of these interpretations, it seems to me, is necessitated by the text itself, which remains frustratingly silent on the matter, besides its clear recognition that the rule of one is best.<sup>237</sup> Deciding this ambiguous point, however, is not essential to the question about the how the analogy of the general and the army applies to the separated substance. If it can apply to separate substance as it does to the sensible substances, this would only be in the case of those separated substances which are dependent upon another

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<sup>232</sup> See Elders, 59.

<sup>233</sup> Ibid.

<sup>234</sup> Ibid, 63.

<sup>235</sup> Averroes, 154-5.

<sup>236</sup> Lang, 267.

<sup>237</sup> 1076a4.

separated substance. Like the spheres, as eternal they will not exhibit any potentiality for *existence*. In this chapter, however, we must consider a separate substance which is not caused in *any* way.

There is another possibility to be considered: that the analogy does not apply within the unmoved mover. The simplicity of the first mover prevents this, since it is without parts. There is no relationship *in* the first mover which can be the subject of analogy. 1073a6 attests to this point in saying that the first mover is without magnitude, parts or divisibility. Thus it has no sensible parts, nor logical parts, and cannot be divided. It is wholly one. Many take  $\Lambda.9$  to explain the nature of the first unmoved mover's simplicity, and also to clarify the nature of the divine as a thinker.<sup>238</sup> This has been, of course, one of the most common interpretations, although the Aristotelian corpus does not suggest this in every case.<sup>239</sup> In  $\Lambda.9$  Aristotle shows that if God is  $\nu\omicron\delta\varsigma$ , such  $\nu\omicron\delta\varsigma$  will be simple by being both the knower and its own object (if it must think the noblest of objects).<sup>240</sup> On the other hand, if the association of  $\nu\omicron\delta\varsigma$  and God is not meant, except as an *image* of simplicity, God is simply *pure actuality* without qualification.<sup>241</sup> Pure actuality does not admit of difference, since it is without magnitude, and does not have intelligible parts, being indivisible and without potentiality. As Alexander reaffirms, God is simple.<sup>242</sup> In God there is neither priority nor potentiality, but only one actuality. God is simple, not a whole, and cannot be treated by the analogy as such.

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<sup>238</sup> Elders, 248; Ross, 397; Aquinas, §2600.

<sup>239</sup> Aristotle, *Eudemian Ethics*, 1248a26-29.

<sup>240</sup> Aquinas, §2542-3; 1072b19-20.

<sup>241</sup> Kosman, *Metaphysics*  $\Lambda.9$ : *Divine Thought*, 311; Lang, 270-3. Kosman thinks that  $\nu\omicron\delta\varsigma$  reflects something about substance as pure actuality. Lang, on the other hand does not think that the examination of  $\nu\omicron\delta\varsigma$  has to do with substance *per se* but relates to a question raised about mind in the course of the discussion about substance about the nature of mind. Aquinas' interpretation certainly takes the position that this study clarifies something about divine substance *in se*, since according to his reading the nature of the first mover is an intellect which *is* pure actuality.

<sup>242</sup> Alexander of Aphrodisias, *Quaestiones 1.1-2.15*, 102.

## 4.2 GOD, ACTUALITY AND POTENTIALITY

One should not shrink from applying the analogy of the general and the army to God. God appears in the original use of the analogy, although the analogy is meant to uncover how the nature of the whole possesses its good. The conclusion the analogy leads to, however, indicates another manner in which we might read the analogy. The investigation at the beginning of  $\Lambda$ .10 determines that the good and perfection of the cosmos, its order or nature, really does belong to the cosmos as something distinct from the first mover, but *depends* on the first mover. God is actually the primary cause of the substance, even more so than the imminent form in the caused substance. The conclusion of the chapter, especially the quotation from Homer, makes the point that the world is, in fact, governed, not badly by many rulers, but well by one ruler. On one hand we draw conclusions about the cosmos: it is ruled well and depends upon something outside of it—conclusions that remain true about sensible substances, and perhaps *some* separate substances, but not *all* substances. We can also invert the perspective of the analogy, so that the general, God, is the substance in question. We thus draw other conclusions: God, the first mover and substance, is of such a nature that it is the eternal cause of the cosmos, simply in virtue of being a pure actuality. In the first substance, being actual and actualizing another substance are not distinct actions.<sup>243</sup> God's pure actuality exists for itself and is productive in virtue of this actuality.

When the analogy of the general and the army focused upon the general it loses none of its explanatory force. In the analogy the general exists alongside the army, but is prior to it by virtue of being its cause—efficiently, exemplarily, and finally. The general is not,

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<sup>243</sup> We might recall what Aquinas says about divine knowing and knowing all other things in this, and translate it to the divine actuality, so that the actuality of God and the actualizing of other things are not distinct, but one is through the other.

however, the general *in virtue* of the army. Armies do not find generals, but generals cause armies. Nor is he a general without the army. As God does not exist without the cosmos existing, nor does the general exist as a general without his army. The general pursues some end for himself, but not for the army. Likewise God does not seek an external end, and neither does the general: he exists to do things a general does. The analogy should not be pushed too far, however, a few important points can be noted: 1) both the general and God are actual prior to that which they cause, not in time but in the order of causation; 2) both cause something in virtue of their actuality, not *in addition* to their actuality; 3) both exist alongside their effects, which they necessarily effect, and can be known through them. Since these points describe both God and the general, we may state with confidence that the analogy does describe the transcendent substance in the analogy as well as the caused substance without changing the nature of the analogy.

It is clear that applying the analogy of the general and the army to separated uncaused substance is possible, but within certain limits. Whereas the caused substances can stand in both positions, either that of the army or the general, an uncaused substance can only hold the position of the general. Does change in focus indicate that there must be two sciences of substance, one from the perspective of caused substances and one from the perspective of uncaused substances? Not necessarily. There is nothing to say that the general's side of the analogy is necessarily uncaused, but only relative to what it causes, in the same way that  $\Lambda.3$  informs us in the process of change that matter and form never come to be, nor the agent, but only substance which is generated.<sup>244</sup> In themselves, they may have very well come to be, or they may not have, but in a causal relationship, which the analogy of the army and the

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<sup>244</sup> 1069b35-1070a2.

general describes, they have not come to be.<sup>245</sup> Generals themselves do come to be, and even die, but not the generalship relative to the army. All substances, likewise, exhibit both actuality and a capacity to have effects according their actuality. To examine actuality, which properly belongs to all substances, is considering what is universal to substances. Considering caused substances in themselves however only studies one aspect of substance, and insofar as all substances approximate the divine life, it would be the less important aspect.

The relationship between the first mover and the cosmos, represented by the analogy of the general and the army is the most perfect example of the relationship of cause and caused. It is a distillation of that relationship which belongs to all substances, and even all beings, since there is no substance which either has no effect or is not caused.<sup>246</sup> It is a distillation because it has none of the attributes, such as time or appearance, which disguise the relationship, e.g. as in the order of becoming when potentiality seems to precede actuality. In the case of the first mover we can see quite clearly that a perfect actuality precedes a caused actuality. Moreover, we also see that potentiality *qua* potential is also dependent upon actuality, since without God, the cosmos could not be. And finally, we also see that what is caused is not just *anything*, but conformed to its cause (for without this causality would not be reasonable, but entirely random), since the eternal cause also effects something eternal and like itself, and as Alexander says, it could not be otherwise since their eternity does not only come from the eternity of their cause, but of the nature which is caused.<sup>247</sup> These attributes of the relationship between causing substance and caused

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<sup>245</sup> 1069b35.

<sup>246</sup> All pure actualities have an effect, the whole cosmos or the individual spheres, and all others beings are caused in one way or another, both the substances and the categories which are predicated of them.

<sup>247</sup> Alexander, *Quaestiones 1.1-2.15*, 66.

substance, or a prior actuality, potentiality and a caused actuality are universal. These are the causes and principles of every varied case of causation.

God and his effects are explicable by the same analogy that describes the relationship of any agent actualizing another substance to that substance which it actualizes. Matter and privation, is not present in God's actuality, but they are, nevertheless, directly related to God's actualizing power. The analogy of the general and the army, representing the analogically common principles of substance, describes the causal relationship between God's actuality and all substances, e.g. the first heaven, dependent upon it. The same framework of causes and principles that applies to the perishable sensible substances is also able to describe the relationship between God, who has no external cause, and either the whole cosmos, as per  $\Lambda.10$ , or the first heaven as per  $\Lambda.7$ . The same structure can be applied to all: a perfect, uncaused<sup>248</sup> actuality causes another actuality out of some potentiality. In the case of the heavenly bodies they have a matter with a capacity for motion. They do not come to be, but are caused by an eternal and necessary substance, upon which they depend. In this way, all substances are described in the framework of the army's relation to the general, representing the relation of something ordered to an ordering substance.

### **4.3 THE UNITY OF THE COSMOS**

We have seen that the applicability of the general and the army analogy is a fitting description of the principles of all the kinds of substances. The analogy applies, however,

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<sup>248</sup> The agent is never caused in the course of causing, as Aristotle explains in  $\Lambda.3$ . This does not preclude the agent *could* have been caused in another relationship of causality, as we explained in the first chapter.



first of all to God<sup>249</sup> and the *whole*, i.e., the natural world.<sup>250</sup> It distinguishes the whole world from its extrinsic cause of goodness, which is *order* in the analogy, specifically the order or arrangement of the army. This order has not been absent in the previous chapters. The investigation of the sublunary substances shows that the heavenly bodies, through the Sun, effect generation in the sublunary realm. Likewise, the heavenly bodies depend upon the separate substances. I will now show that this cosmic order, which is described by the analogy of the general and the army, also orders individual substances just as it is ordered. The principles of the world as a whole and of individual substances explain how causes and principles of all substances share analogically like causes.

The majority of the descriptions of cosmic unity are found in Λ.10. The first is the simple fact that Aristotle acknowledges the possibility that the whole has a nature. By asking: “how the nature of the whole possesses the good and the best?”<sup>251</sup> The second states that individual substances of the same kind (i.e. sensible perishable substance), fish, birds, etc... are also ordered together.<sup>252</sup> Third, Aristotle provides another analogy to describe the order in the whole, the analogy of the household and its members, which describes how different parts of the whole contribute hierarchically<sup>253</sup> to its good (the immanent good, the order *in* the army).<sup>254</sup> Λ.5 informs us that the Sun is one of the causes of change in the sublunary

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<sup>249</sup> Recalling along with Lang, Ross, Aquinas and others that the good referred to in Λ.10 is referring to the First Unmoved Mover, i.e. God.

<sup>250</sup> Where the others unmoved movers belong is a difficult question. Do they belong on the side of God, as all sharing in “such a substance”, i.e. divine (1073a14-15). Aristotle does not indicate an answer to the question. The claim at the end of the chapter that there must be one ruler, one external principle of the good of the whole suggests that they must be subordinate to the first somehow.

<sup>251</sup> 1075a11. “...ποτέρωσ ἔχει ἢ τοῦ ὅλου φύσις τὸ ἀγαθὸν καὶ τὸ ἄριστον...”

<sup>252</sup> 1075a16. “πάντα δὲ συντέτακται πως, ἀλλ’ οὐχ ὁμοίως, καὶ πλωτὰ καὶ πτηνὰ καὶ φυτὰ...”

<sup>253</sup> Aristotle does not use the “hierarchy” himself, which emerges in later Greek writers, nevertheless he does recognize that some substances are more perfect than others, at that each contributes to the whole according to its perfection.

<sup>254</sup> Ibid. 19. “πρὸς μὲν γὰρ ἐν ἅπαντα συντέτακται, ἀλλ’ ὥσπερ ἐν οἰκίᾳ...”

realm as an efficient cause.<sup>255</sup> Λ.6, 7, and particularly 8<sup>256</sup> show that the separate substances are the causes of the motion and actuality of the heavenly spheres, and that these spheres form a whole system. Finally, Λ.4, 5, and 7<sup>257</sup> attest that God is not only the first mover of the outermost sphere, but even of all sensible substances. An account of cosmic order in Λ must come out of, and conform to, these passages.

#### 4.3.1 THE TWO DIMENSIONS OF COSMIC UNITY

The cosmic order includes what I will call a vertical dimension as well as a horizontal dimension. In the vertical dimension, a higher, more perfect *kind* of substance orders a lower kind. There are two general cases of this: 1) the unmoved movers as the efficient, exemplary and final causes of the heavenly spheres; 2) the motion of the heavens, particularly, the Sun in its ecliptic orbit, which is neither “matter, form, nor privation [of what it causes], nor of the same form, but is a moving cause.”<sup>258</sup> The unmoved movers are the immediate causes of the spheres, but the Sun’s changing position on the ecliptic is a remote efficient cause, unlike the father or artist, which are proximate efficient causes. The Sun’s orbit on the ecliptic is associated with the cycle of the seasons,<sup>259</sup> and so described as κινῶν in the broader sense of causing change. This seasonal change governs the substantial changes of the natural substances in the sublunary realm, their generation and destruction, albeit, in a remote

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<sup>255</sup> 1071a16-17. κινούντα.”

<sup>256</sup> 1071b18-19; 1072b7-10; 1073a32-34.

<sup>257</sup> 1070b35; 1071a36; 1072b14.

<sup>258</sup> 1071a16-17.” και παρὰ ταῦτα ὁ ἥλιος και ὁ λοξὸς κύκλος, οὔτε ὕλη ὄντα οὔτ’ εἶδος οὔτε στέρησις οὔτε ὁμοειδὲς ἀλλὰ κινούντα.”

<sup>259</sup> Aristotle, *On Generation and Corruption*, 336b16-20; Ross, 365.

manner. It does not cause any single substance to come to be immediately, but does cause the eternal cycle of generation and destruction in the sublunary realm, as Simplicius explains:

And [how much better] on the other hand [to say] that the sublunary [region], which came to be through eternal and eternally moving things created by him, possesses parts that come to be and pass away, in order that even the remotest thing of the world be generated through the creator's goodness. But he who always exists produced it, and it is eternal too because the destruction of one thing is the generation of another, since he has made generation perpetual.<sup>260</sup>

The Sun is the source of the order, even the existence,<sup>261</sup> which is manifest in the generation and destruction of the sublunary realm. The Sun's own cycle is the cause of the cycle below it, a cycle which involves many substances.

The horizontal dimension of the order is expressed in the description of the interactions within the kinds of substances: the interactions of the sublunary substances and the interaction of the heavenly spheres with each other. The heavenly and sublunary realms each constitute a whole, a system in which the activity of all the parts contribute to an eternal order. The heavens are arranged so that the motions of the planets in their spheres do not disturb each other. The system of revolving and counter-revolving spheres, which we discussed in the previous chapter, indicates that all the parts must be perfectly balanced, lest one exert an excessive influence.<sup>262</sup> The perfect rotation of all the spheres and stars is the result of the movement of all of the parts of the heavens *ordered together*. Similarly, the sublunary substances are also ordered together (*συντέτακται*), as Aristotle describes:

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<sup>260</sup> Simplicius, 116.

<sup>261</sup> In the same manner the unmoved movers cause the spheres by eternally actualizing a capacity.

<sup>262</sup> Bodnár, 268. Changing the conditions of even one of the spheres would produce a radically different appearance of motion in the heavens. The revolving spheres prevent proliferation of motion in the heavens, e.g. all the motions of one star being superadded to the motions of the star below it through the interaction of the spheres which move each of these stars.

“Everything is ordered together as fish and birds and plants are, but not all in the same way. Nor does it hold that one thing is unrelated to another, but there is [a relationship].”<sup>263</sup> Aristotle completes his description of this order by describing it as an order towards one thing, like a household. How *all* substances are ordered will be considered below, but for now it is enough to note that Aristotle regards the living creatures in the sublunary realm, in their variety of species and genera, as ordered together in some way. Within a species it is easy to see that there is an order, since the species reproduces itself. Furthermore, the whole cycle of life and death involves a relationship between *all* the species. Some animals eat others, others eat plants, and some help plants grow.<sup>264</sup> The spheres and the species in the sublunary realm<sup>265</sup> are thus ordered together in a similar way. Each species, including all of its members, is ordered to the good of the whole, which includes the preservation of every other species, both by preserving itself and serving another species. Thus the ecosystem of the sublunary realm is preserved eternally.<sup>266</sup> Likewise each sphere in the heavens contributes some motion so that the motion of the heavens is the eternal and regular, and this is accomplished through the interactions of the spheres with each other.

Both the sublunary realm and the heavens are ordered towards an eternal order, which exists in them, but also on account of an external, eternal cause. The unmoved movers are causes of the eternal motion which characterizes the heavens. Similarly, the Sun is the cause of eternal generation which characterizes the sublunary ecosystem’s persistence, and so is a

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<sup>263</sup> 1075a16-18. “πάντα δὲ συντέτακται πῶς, ἀλλ’ οὐχ ὁμοίως, καὶ πλωτὰ καὶ πτηνὰ καὶ φυτὰ: καὶ οὐχ οὕτως ἔχει ὥστε μὴ εἶναι θατέρω πρὸς θάτερον μηδέν, ἀλλ’ ἔστι τι.”

<sup>264</sup> Cf. Aquinas, §2632. We should not find this notion of an ecosystem surprising, given his remarkable effort as a biologist.

<sup>265</sup> The species must be seen as taking up the elements too, since they are also natural bodies. What role can be assigned to the products of art is debatable. As composed of natural parts, they are not outside the system. As distinct substances, however, they may be seen as subordinate to human life. Political life is not discussed here, but it too could be subordinated to the eternal continuation of the human species.

<sup>266</sup> Cf. Aristotle, *De Anima*, 415a30-b2; Cf. Simplicius, 116.

cause of every single sublunary substance. The sublunary realm and the heavens are not merely ordered towards themselves, but towards a likeness of that which causes them. Recall the general and the army. The army is not ordered together for itself, but for the general. This is the second aspect of the vertical dimension. Whereas the first is the relationship of an efficient cause causing another substance, the second is the ordering of what is caused towards that which caused it and stands above it. This recalls Aristotle's description of the generation of living beings: the substance that is generated is ordered towards the same form as the substance which generated it.<sup>267</sup> Likewise, every substance *within* the sublunary realm or in the heavens is ordered together towards a whole beyond themselves. Aristotle explains how all things are ordered together:

Everything is ordered together to one [end], but just as in a house there is little done at random by the freemen, for them most everything is already ordered, but for the slaves and the beasts, who contribute little to what is common, there is much to be done at random: for the [governing] principle of each of these is his nature. I say such, that is indeed necessary for everything to come to its dissolution, but also that everything also shares in contributing to the whole.<sup>268</sup>

The household is greater than any of its members, even the highest of its members.<sup>269</sup> The whole has its own nature,<sup>270</sup> a position which Aristotle takes at the beginning of *Λ.10*'s

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<sup>267</sup> Cf. 1070a27-29.

<sup>268</sup> 1075a19-25. “πρὸς μὲν γὰρ ἐν ἅπαντα συντέτακται, ἀλλ’ ὥσπερ ἐν οἰκίᾳ τοῖς ἐλευθέροις ἥκιστα ἐξεστὶν ὃ τι ἔτυχε ποιεῖν, ἀλλὰ πάντα ἢ τὰ πλεῖστα τέτακται, τοῖς δὲ ἀνδραπόδοις καὶ τοῖς θηρίοις μικρὸν τὸ εἰς τὸ κοινόν, τὸ δὲ πολὺ ὃ τι ἔτυχεν: τοιαύτη γὰρ ἐκάστου ἀρχὴ αὐτῶν ἢ φύσις ἐστίν. λέγω δ’ οἷον εἰς γε τὸ διακριθῆναι ἀνάγκη ἅπασιν ἔλθεῖν, καὶ ἄλλα οὕτως ἔστιν ὧν κοινωνεῖ ἅπαντα εἰς τὸ ὅλον.”

<sup>269</sup> It is worthwhile noting here that the freemen are not in the same position of the general. The freemen serve the whole house, and while they are the best members, and perhaps benefit from and to the household the most, they are still ordered by it. We might later consider the similar role played by the outermost sphere of the heavens, as the first principle order *within* the household, ordered *and* ordering, rather than simply ordered.

<sup>270</sup> The definition of nature in *Metaphysics* Δ.4, and the concept of nature in *Λ.3* suggest that the attribution of a nature to the whole is not to be taken lightly. The whole has real existence, and even a priority over the particulars, just as the nature has priority of the parts of a body.

investigation and never relinquishes. The common nature of the sublunary realm outlasts any single one of its members, and even directs the continuation of all the species. In the case of the heavens the motion of the whole is distinct from the motion of any one of its spheres. In each case all the members of a whole contribute something distinct from every other member, not by compulsion, but by their nature. The nature of the whole is seen in the interaction of the multiplicity of natures within the whole. The order of the whole does not exist by constraining the individual substances within it, but recalling Aristotle's definition of nature as that which has the source of motion and rest in itself,<sup>271</sup> it exists *through* the freedom of all of its members. Just as the shared form exists through each of its members and is thus both contemporaneous and also prior to it, so the nature of a whole is to all of its members.

The sublunary realm and the heavens make up the whole cosmos, and as such constitute the whole Aristotle is discussing in  $\Lambda$ .10. These two halves both have an extrinsic cause and immanent cause of their eternal actuality, i.e. the nature of each of these two wholes. The extrinsic cause of the sublunary realm's unity, the Sun, is a member of the heavens; the Sun depends on the whole heavenly system. The nature of the whole heavens is the cause of the Sun's activity, which in turn is the cause of the eternal actuality (through change) in the sublunary realm. A chain of causality, beginning with the first unmoved mover, as noted by Simplicius in the passage cited above, causes even the most remote thing to be produced. Even the least substance, however, has a role in the eternal actuality and motion exhibited by the whole. The analogy of the household from  $\Lambda$ .10 describes this hierarchy by stating that some members, the freemen, are highly ordered and do little randomly, while the slaves and beasts contribute little to whole and do much at random. The

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<sup>271</sup> Aristotle, *Physics* II, 192b15.

heavenly bodies' regular motion is not only highly ordered, they are the cause of the generation, and therefore the actuality, of the sublunary substances; substances which are, individually, both contingent and ephemeral. The heavenly bodies, especially the outermost ones, insofar as they are causes of motion in the whole cosmos,<sup>272</sup> contribute to the actuality of the sublunary bodies in virtue of their own eternal actuality. The sublunary bodies, however, contribute nothing to the heavens. Their role is to be a part of the eternity of actuality in the sublunary by being involved through constant generation and destruction. Each substance contributes to the actuality of all whole in all of its parts, but in degrees according to the perfection of each. This perfection is measured against the first cause, which is the cause of actuality in *all* substances.<sup>273</sup>

#### 4.3.2 GOD AS THE EFFICIENT CAUSE OF ALL SUBSTANCES

God, the first mover, is regarded as the extrinsic cause of the good of this whole. As I have shown in the previous chapters, this good is nothing less than the possession of actuality and perfection. Aristotle asks of the good of the *nature* of the whole whether it is the order (τάξις) or the extrinsic, separate cause of that same order (κεχωρισμένον).<sup>274</sup> The order should not be thought to be something distinct from the nature of the whole, for the whole is not merely its parts, but as we have seen above, its very nature is its wonderful arrangement,

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<sup>272</sup> 1072a15. According to Λ.6 the first heaven is a cause of regular motion in the heavens. The revolving spheres seem to contradict this claim. Averroes recognizes this difficulty: "Such [is their number] when we suppose that there is [only] one mover for the diurnal motion of all spheres [together]. But when we regard this motion in such a way that every single sphere has its [own] peculiar mover for this [diurnal motion], the number of [celestial] movers will amount to forty-five. *Prima facie*, this seems to be what Aristotle teaches. However, Alexander [of Aphrodisias] states explicitly a different view in his treatise known as *On the Principles of the Cosmos* [where] he considers [only] one mover for these diurnal motions of all spheres [together]. And indeed, it is an unsettled question which of the two views is more appropriate and suitable" (Averroes, 147).

<sup>273</sup> 1071a36.

<sup>274</sup> 1075a13.

through which it and all its parts (or species) exist and even live eternally. Likewise, an army is not yet an army if it is not ordered for warfare. It needs officers and divisions and all the other arrangements that make it a fighting force able to carry out the commands of its general. As the general is to the army, and even the Sun to the sublunary realm, so is the first unmoved mover, God, to the whole cosmos. God is the ruler which rules the cosmos well,<sup>275</sup> through which the cosmos has its order in itself, which makes it what it is.

God is the cause of the actuality of the whole. Λ.5 notes that God is “first in actuality”, and as such is the common cause of all substances.<sup>276</sup> God is not, however, the proximate cause of the actuality of every substance. God, as the first unmoved mover, is the cause of the first moved mover, and also the cause of the whole. We are also told that God is that which moves all things, and that God moves by being loved.<sup>277</sup> These three ways in which God is a cause are connected. God causes a dependent actuality, the outermost sphere. The outermost sphere approximates God’s life as far as it is able, and in turn it also influences the motion of the whole of the heavens, which as a whole also shares this eternal life and actuality as far as possible.

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<sup>275</sup> 1076a4. “οὐκ ἀγαθὸν πολυκοιρανίη: εἷς κοίρανος ἔστω.”

<sup>276</sup> 1071a35. “ἔτι τὸ πρῶτον ἐντελεχεία”. Elders takes this phrase to mean that God is first in actuality, but offers no suggestion why ἐντελεχεία is used rather than ἐνέργεια. (Elders, 136) Aquinas reads the phrase differently, and takes it to mean that “[all] principles are ‘complete reality’, i.e. actuality and potentiality.” (Aquinas, §2484) Aquinas seems to be taking “complete reality” to mean, everything that is, both actually and potentially. Aquinas difficulty may stem from his Latin text, perhaps obscuring the meaning of ἐντελεχεία, which refers to an actuality (although one entelechy may be the potential for another). “τὸ πρῶτον ἐντελεχεία” refers to a particular being. If it were read as being the first actuality like the soul in each thing it could not be the same for all substances. This specific entelechy must be a cause of all things, and God is the only such particular entelechy.

<sup>277</sup> 1070b35; 1072b3-4.



### 4.3.3 GOD AS THE EXEMPLARY CAUSE OF ALL SUBSTANCES

God, being both uncaused and perfect, is both a proximate and remote cause. What God causes immediately, the outermost sphere, approximates God's perfection as far as possible. Its actuality is in being a sensible likeness of the first of the separate substances.<sup>278</sup> Similar to the generation of the sublunary realm, there is a likeness between cause and caused, and what is caused depends upon its cause. The other unmoved movers cause the rest of the spheres, but these spheres are subordinate to the sphere caused by the first unmoved mover (as movers subordinate to the first mover), their order and actuality is in reference to its invariable motion. Each sphere approximates the perfection of its unmoved mover, but most are also moved by the spheres above. The principles that explain the interaction between spheres are analogous to the principles of their existence. Whereas the unmoved movers are the cause of the motion which constitutes the essence of each sphere in virtue of its actuality as separate substance, for which the spheres have potential,<sup>279</sup> each sphere effects motion in the sphere below it in virtue of its own actuality as a sphere with a certain motion. The principles in each case are a prior actuality, a caused actuality and a potential for this caused actuality. The principles of the sphere's interactions exist in virtue of the principles of the sphere's existence. The unmoved movers cause the spheres to move as they do and the spheres interact accordingly. Moreover, the spheres also have the power to order the substances below them, much like the unmoved movers order the spheres.

A similar relationship exists between the heavens and the sublunary realm, insofar as the heavens are a cause of the actuality of the sublunary substances. The principles of

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<sup>278</sup> Kosman, "Aristotle's Prime Mover", 151.

<sup>279</sup> Charles, 91. This potential is the matter for motion, which is, following Charles, not a matter for accidental change, but the matter for what the spheres *are*. It is analogous to the matter for generation in the sublunary substances.

sublunary substances, which are also a prior actuality, a potential and a caused actuality (expressed in the four principles, where privation describes one side of the substantial change) are caused by the heavens, particularly mediated through the motions of the Sun. Each sublunary substance is caused by a substance already possessing its perfection, either an adult or a something with the capacity to effect change, and out of some potential in another substance. Each species exists without beginning or end in time because of this relationship, but it has its origin in the motion of the heavens, which also goes through cycles, albeit without destruction.

The actuality of the whole can be traced back to the first unmoved mover, in more than one way. While God is not the proximate cause of every substance, God is the first of all substances (and even of the unmoved movers, although how they are subordinate to God remains a question, whether it be some kind of dependence or not), and is the cause of the first of the sensible substances. Insofar as the other unmoved movers are subordinate to God, each of the other caused spheres also has God as a remote cause. The actuality of the heavens, thus, depends upon God. The sublunary realm, insofar as it depends upon the heavens, also has God as a remote cause of its actuality. Apart from God no substance would exist.

Besides this, the principles which explain God's actuality and effects are found in all the substances dependent upon God. Hence, not only do all substances depend upon God, but their interaction with each other is governed by like principles present in all of them. The cause causes something like itself in virtue of itself, and so like principles describe each substance, if somewhat differently in each case. In this sense God is the cause of the interaction between substances, albeit, often mediated through other substances.

#### 4.3.4 GOD AS THE FINAL CAUSE OF ALL SUBSTANCES

The third way in which God is the cause of all substances is as a final cause, i.e. by being desired. Not every substance is capable of “desire” strictly, but this is mitigated if we consider what is “desired.” God is identified with that which is desirable in itself,<sup>280</sup> and God is also described as actuality, life best and eternal.<sup>281</sup> This actuality, which is something *divine*, is what is desired. Substances desire their own actuality, this is what they preserve, as far as they can. In the sensible substances change and motion approximates simple actuality by being directed towards some changeless form. God is a final cause not in addition to the distinct final causes of every natural substance, but *in* that final cause itself. Every substance loves in itself what God is in God’s own self. In this way the actuality which all substances have because of God is also directed towards God in the way we just described. Some substances - perhaps the spheres and humans - may be *aware* of this relationship, and even *think* of God as an end, or share in this perfect actuality by thought,<sup>282</sup> but all substance are ordered towards being as much like the divine as possible, insofar as they share something divine in virtue of their actuality and its causes. The whole cosmos is ordered to achieve this, both in its parts and as a whole.

It is not difficult to see how this understanding of God as a final cause explains how God orders the universe as described in the conclusion of Λ. God does not constrain the cosmos with some order, but is the cause of its natural ordering towards its own eternal actuality. Just as the army exists for achieving the end of its general, so does the cosmos exist to approximate God’s actuality. This is what nature’s order is for, and why its order is good.

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<sup>280</sup> 1072a34-35.

<sup>281</sup> 1072b28-30. “ἐνέργεια δὲ ἡ καθ’ αὐτὴν ἐκείνου ζωὴ ἀρίστη καὶ αἰδίου. φαμὲν δὴ τὸν θεὸν εἶναι ζῶον αἰδίου ἄριστον, ὥστε ζωὴ καὶ αἰὼν συνεχῆς καὶ αἰδίου ὑπάρχει τῷ θεῷ: τοῦτο γὰρ ὁ θεός.”

<sup>282</sup> 1072b15. “διαγωγὴ δ’ ἐστὶν οἷα ἡ ἀρίστη μικρὸν χρόνον ἡμῖν...”

As the army could not achieve its purpose without its order, neither could the cosmos have eternal actuality without *its order*.

#### **4.4 CONCLUSION**

All substances have a common origin of their actuality, and therefore, also their causes and principles. Our examination of actuality, both as causing and caused, has shown that the analogy of the general and army which expresses this relationship, applies to all substances, although the details vary from substance to substance. Common to all three kinds of substance is the structure of one substance causing another like it in some degree, in virtue of itself out of some potency, whether logical or temporal. This includes all substances, even those which are uncaused, (even if this ultimately is only the fits the unique instance of the unmoved mover). All substances have God as a common principle, as the cause of the actuality of the whole, and more than this, as the cause for the shared principles. The principles described by the analogy of the general and the army are thus present in all three kinds of substance, as well as in their relation to each other. Since there are indeed principles common to separate and sensible substance there is no need to exclude sensible substances from the science that also investigates separate substance.<sup>283</sup> It is, therefore, possible to have a science of substance *qua* substance, a genuine “περὶ τῆς οὐσίας ἡ θεωρία”<sup>284</sup> that accounts for a universal order in the cosmos and recognize that individuals are substances.

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<sup>283</sup> Cf. 1069b1.

<sup>284</sup> 1069a1.

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