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Jonathan S. Coppe
Letter from the Editor

It has been a great pleasure and privilege that we can present our academic community with a revitalized project presented as the 16th volume of The Hemlock Papers. We want to recognize and display exemplary philosophical work offered by undergraduates in this collection. Our purpose is to further the academic work, scholarship, and achievement in the philosophical field. Our topic for this journal is Ancient Philosophy. Though this topic is broad, we are excited to present papers that connect to this topic while actively engaging with the nature and subject of the paper. We are pleased to present the six papers that make up this journal, which range from Montana to Rhode Island and to Ireland.

I want to give special thanks to all of the members of the society for engaging and reviewing our submissions. I want to also thank the Department Chair of the Politics and Philosophy department, and Chapter Advisor Graham Hubbs; as well as the administrative assistant Omni Francetich for their support through this process. Lastly, to Frank Brown for instilling the idea of this journal in us all to execute it successfully.

We would like to offer and encourage any suggestions or comments on this journal, which can be submitted to phisigmatau@uidaho.edu.

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Plato and Mathematics

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ABSTRACT: There is a dispute about the role that mathematics plays in Book VII of Plato’s Republic. In this paper I extract the education proposed by the character Socrates. I argue that while Socrates values mathematics as training for the dialectic, he also sees it as part of the Good. I evaluate Myles Burnyeat’s argument that mathematics is intrinsically good, as well as the objections to Burnyeat’s position made by Levi Tenen. Although I agree with Burnyeat’s conclusion, his argument is susceptible to objections. Ultimately, I also place mathematics in the realm of the Good due to its independence from physical reality and observation, which distinguishes it from studies outside of mathematics and the dialectic.

1. Introduction

Commonly debated by students and teachers alike is the value of theoretical knowledge vs practical knowledge. This is often brought up when studying mathematics, a subject that the Socrates of the Republic believes every philosophical ruler should study. Socrates argues that these rulers should study mathematics as training to understand the dialectic and eventually the Good. In this paper, I will present Socrates’ arguments for studying the various fields of mathematics. I will then present my argument for the claim that Socrates believes that mathematics is part of the Good. I will also present and evaluate Myles Burnyeat’s arguments for mathematics as part of the Good and some of Levi Tenen’s objections against the claims made throughout some of Burnyeat’s arguments. Ultimately, I will argue that Socrates believes that mathematics is part of the good and that he is right in believing so.
2. Mathematical Education in Plato’s Republic

Plato begins Book VII of the Republic with Socrates telling Glaucon a story about a cave, a metaphor for the education that the philosophical rulers will need.¹ Shortly after this story, Socrates and Glaucon discuss what subjects the rulers should pursue in their studies after music, poetry, and physical training, which they had discussed in Book VI. They decide that the subject should guide the students to truth, and it should be useful to “warlike men”.²

Socrates suggests calculation as the next subject of study, but he does so with some interesting specifications. He states:

Then it would be appropriate, Glaucon, to legislate this subject for those who are going to share in the highest offices in the city and to persuade them to turn to calculation and take it up, not as laymen do, but staying with it until they reach the study of the nature of the numbers by means of understanding itself, nor like tradesmen and retailers, for the sake of buying and selling, but for the sake of war and for ease in turning the soul around, away from becoming and towards truth and being.³

The first specification Socrates makes is that these philosophical rulers should study calculation much longer than the normal person does. They should study it until they gain knowledge of theoretical arithmetic that is no way grounded in the realm of “becoming”. He claims that this is beneficial, as it forces the soul upward and instigates a way of thinking that is not in any way anchored in what humans observe to be reality. The second is that they should not use it to gain wealth or knowledge of the practicalities of business but only for the practical use of war and the knowledge to turn their souls

². Ibid, 521ce.
³. Ibid, 525bc.
towards truth. He also gives two other benefits of studying calculation. He states that it generally helps individuals to learn other subjects and that calculation is capable of being inherently difficult, which is ideal for the education of these rulers.\(^4\)

To many, these conditions may seem strange. Most people just study arithmetic until they believe it is no longer useful to them within the social or physical world, and many people do not study it even to that point. While knowledge of war is important for any political leader, Socrates states that war is the only practical application of mathematics with which the candidate rulers should concern themselves, other than using arithmetic as a catalyst for mastering other subjects. Socrates justifies this quickly. Socrates states: “one practices it for the sake of knowing rather than trading.”\(^5\) He expresses this further when he admits that war requires only a little geometry or calculation.\(^6\)

After calculation, Socrates suggests the candidate guardians should study plane geometry, three dimensional geometry, and astronomy with the condition that the latter be studied with problems like those in geometry and not with respect to the sky.\(^7\) By suggesting this, Socrates removes astronomy from the physical world completely. Following astronomy, he suggests the study of harmonics with a similar restriction. The third subject he presents, three dimensional geometry, is believed to have no valuable purpose.\(^8\) Three dimensional geometry was not well developed at the time, which makes it more difficult to pursue. Because of the lack of interest in the subject, there are much less teachers. This does, however, give the candidate rulers the opportunity to learn purely through discovery, which could be beneficial. It is possible that, by removing astronomy from the physical world, Socrates is alluding to

\(^4\) Ibid, 526bc.
\(^5\) Ibid, 525d.
\(^6\) Ibid, 526d.
\(^7\) Ibid, 526c-528e.
\(^8\) Ibid, 528b.
something like what we now refer to as ‘calculus’. The derivatives and integrals of calculus can describe motion and can easily be studied without observation of the physical world. Of course, the current rules and notation of calculus had not yet be invented, but the ideas were present long before Newton and Leibniz. It is unclear if this is exactly what Socrates is speaking of, but it seems probable. He continues by removing the physical aspect from harmonics. This could be what is now referred to as ‘trigonometry’. Trigonometric functions and relations describe waves, with the help of plane geometry, without the need of anything audible or visible.

Socrates attributes practical use to only two subjects, and one of them is achieved quickly upon study. The allegory of the cave at the beginning of Book VII explains what the nature of Socrates’ argument is. Socrates describes a prisoner being freed from the cave while the others stay. The prisoner is shown that everything that he had observed in his former dwelling was caused by everything above. Socrates states that these future philosophical rulers should be compelled to ascend and see the Good, much like the freed man ascends and sees the truth of reality. Of course, once they have found the Good, they must return to the city (cave) and use their knowledge to govern. Socrates claims that individuals learn the nature of the Good by leaving the cave, and the successful ascent from the cave describes the education of these rulers. This education consists of ten years of math\(^9\), so it must be the case that either (1) mathematics is part of the Good or (2) mathematics is merely a prerequisite to obtaining knowledge of the Good that is not part of the Good itself.

It is important to note that the rulers are to study mathematics for ten years, but they study the dialectic for only five.\(^{10}\) This might suggest that the mathematics serves as more than just prerequisite training for acquiring knowledge of the Good. This is Myles Burnyeat’s initial hypothesis when approaching this topic in

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10. Ibid, 539de.
his article “Plato on Why Mathematics is Good for the Soul”. However, Levi Tenen, in his article “The Value of Mathematics within the ‘Republic’”, claims that the length of the training does not establish whether it is intrinsically valuable or not. It is true that the ten years of math does seem long when compared to the five years of the dialectic, but the counterexample that Tenen supplies may pose a possible problem for any insight derived from Burnyeat’s initial hypothesis. An athlete in a specific event, such as the shotput, will train in many ways (weight training, aerobics, etc.). His actual time throwing the metal ball would be much shorter than the time he uses to train in other ways. If this applies to the situation Socrates describes, then the amount of time spent on prerequisite subjects should not be considered when discussing whether they are intrinsically valuable or part of the Good. However, training in some other sports/events (such as soccer and track) consists mostly of practicing that specific sport or event. It is unclear which metaphor, if either, can be accurately applied to Socrates’ proposed training.

To determine which of these two cases Socrates is arguing for, his reasoning for this program of study must be examined. He states that mathematics is a prelude to the song of the dialectic and later refers to it as preliminary education. This strongly suggests that mathematics is training, but it says nothing about whether it is solely training. He also states that it must be learned in a way that

13. Plato, 531d.
differs from the music, poetry, and physical training discussed in Book VI; mathematics should not be forced upon any of the citizens. Socrates states: “no free person should learn anything like a slave… nothing taught by force stays in the soul.”\(^{15}\) By saying this, Socrates gives more value to math than mere training.

Returning to the cave metaphor, consider when the moment of separation between the candidate rulers and the rest of the citizens occurs. It must be when the rulers leave the cave. With regards to the city, the separation occurs after their physical training.\(^{16}\) This parallel suggests that math is not a means to leave the cave but instead constitutes some of the knowledge that is acquired after the ascent. Some may think that mathematical inquiry represents the journey out of the cave after being freed, but the freed prisoner is forced to the surface; Socrates believes the education at this point should not be compulsory. This means that mathematics exists in the same realm, the realm of being, as the dialectic.

3. **The Relationship Between Mathematics and the Good in Plato’s Republic**

It should then be questioned whether or not the dialectic and math are distinguishable within this realm. Socrates seems to believe that math is part of the Good, much like virtue. It is different from virtue, however, in that it can be easily distinguished from virtue: mathematics does not seem (necessarily) to require knowledge of the Good. Virtue, on the other hand, either consists of parts that are difficult to define and distinguish or is a unity that is referred to by different names. If these Forms, mathematical entities and the virtues, can be distinguished within the cave, like how almost all people can easily distinguish mathematics from courage or justice, then it seems likely that they can be studied separately upon leaving the cave. Burnyeat claims that in the allegory of the cave, the Forms and everything related to the dialectic are the animals and other originals, while mathematics represents the reflections of the outside world and

\(^{15}\) Ibid, 536e.

\(^{16}\) Ibid, 537b.
the puppets used to create the shadows within the cave (Burnyeat 43). This, to some extent, describes mathematics’ property of being a prerequisite for studying the dialectic, as the reflections are a way to begin to observe the sun (the Good) without observing the sun directly. The role it might play as puppets is unclear. The puppeteer knowingly deceives the prisoners, so it seems to suggest that mathematics can be utilized as a tool of deception, which I do not think Socrates intends to express.

If Socrates believes mathematics is both a training and an intrinsic good wholly distinct from the dialectic, then Socrates must have a reason for putting mathematics in the same realm as the dialectic. The justification is from Socrates’ reason for studying arithmetic. He states he wants these candidate rulers to observe “the realm of what is”. This realm is the home of the Good and the Forms, and likely the home of all necessary truths. It is a realm that does not rely on sensory perception to be understood. Recall one of Socrates’ conditions for studying arithmetic: The rulers should study it until they study the nature of numbers only with their understanding. If numbers and math can be studied purely with understanding, then it seems likely that they belong in the realm of “what is”. Even so, it may seem strange that mathematics would be with the virtues, as the virtues are often seen to be inseparable. Although people do not confuse one and two as they might sophrosyne and justice, numbers are, in some sense, inseparable; each number is essentially related to every other, and no number can be completely isolated from the others.

Burnyeat suggests that mathematics has more in common with justice, and therefore virtue, than is immediately apparent. A few early books of the Republic, Books II-IV, describe justice as harmony between the different classes within the city. This harmony creates a unity within the city. Socrates extends this “harmonious” account of justice to the soul. Burnyeat states that math has a unity

17. Myles Burnyeat, 43.
18. Plato, 521d.
similar to that of justice.\textsuperscript{19} Likewise, he states that the Good is a unity, just as justice is.\textsuperscript{20} This allows for an indirect comparison between the Good and mathematics. To show the similarity between math and justice, Burnyeat turns to Euclid’s idea of the unit.\textsuperscript{21} He states that Euclid’s ‘unit’ refers to the same concept as Socrates’ ‘one’.\textsuperscript{22} It is a length or number that is considered to be a singularity. Arithmetic has this unit as its foundation. Therefore, according to Burnyeat, mathematics is founded on the concept of unity, similar to justice and the Good as a whole.

Tenen has two objections against this line of argumentation. The first is that Burnyeat does not address the vagueness of the word ‘unity’. The definition of the word ‘unity’ that describes justice is referred to by Tenen as “functional unity”. This is a whole that consists of parts acting in harmony. It is true that Burnyeat seems to suggest this of math, but he does not address the statement that Socrates makes at 526a, where he describes numbers as “containing no internal parts”.\textsuperscript{23} Socrates describes a number as a different unity here, one that Tenen refers to as a “metaphysical unity”. In this case, unity refers to something that lacks parts.\textsuperscript{24} Mathematics and justice may both have unity, but this may be an instance of equivocation. Burnyeat’s comparison to justice does not seem as strong unless both concepts share functional unity. While someone may enjoy a functional unity in her soul and enjoy justice because of that unity, Socrates describes justice as one of the Forms. It is an unchanging, abstract, potential object of knowledge by which all just things can be identified. It may seem apparent that math utilizes functional unity in that all of its parts exist in harmony, but this harmony is, in a sense, static. The numbers stand in necessary

\textsuperscript{19} Myles Burnyeat, 75-76.
\textsuperscript{20} Ibid, 74-75.
\textsuperscript{21} Ibid, 30-31.
\textsuperscript{22} Ibid, 31.
\textsuperscript{23} Plato, 526a.
\textsuperscript{24} Levi Tenen, 210.
relations to each other, but none of them acts as the parts of the city or soul do. Another distinction to be made is that mathematics cannot exist in discord in the same way a soul can. If the relations between numbers should be considered a harmony, that harmony must be different from the one present in a just soul.

Another problem is that Burnyeat may be mistaken about mathematics having a metaphysical unity as foundation. It is true that most numbers can be thought of both as a single, independent entity and as a whole that can be described in terms of multiple parts (such as their factors), but this might not be the case for the infinitesimal of calculus. The infinitesimal, I think, is the closest thing to a metaphysical unit in mathematics. Despite this, other numbers in arithmetic are not derived from the infinitesimal. There is no acceptable metaphysical unit for arithmetic in the real numbers, so not all domains for arithmetic have a foundation of unity.

Tenen’s second objection is that Burnyeat cannot assume the Good to be a unity simply because justice is one. Tenen argues that Socrates believes that everything should be derived from the knowledge of the Good. Socrates does state that the unhypothetical first principle of everything, the Good, should be used to draw other conclusions. However, Socrates acknowledges that knowledge of the Good must first be reached by utilizing hypotheses in the dialectic. It may be the case that attributing certain qualities of the Good’s parts to the Good as a whole utilizes the wrong method, as Socrates describes using knowledge of the Good to define the Forms (the parts of the Good), but whether or not this specific objection poses problems for Burnyeat’s position is unclear. It could be the case that this attribute of unity is a true hypothesis for studying the Good.

4. Conclusion

Mathematics is something to be appreciated both as a means and an end. Its consequences are valued much more highly by

25. Ibid, 211.
most people, especially those who do not specialize in math, but it is difficult to deny math as necessary truth. G.H. Hardy provides a scenario in his essay “A Mathematician’s Apology” that illustrates this. Imagine that a strange physical phenomenon occurs while observing a lecture involving the proof of theorems. Everything becomes slightly but undoubtedly distorted. Do the theorems that were proven still hold? Of course.\textsuperscript{27} Even if this change is dramatic (a change in gravity, the nature of atoms, the physical composition of the universe, etc.), these theorems will still hold. This knowledge is distinct from other kinds in that it is true within every conceivable reality. In this regard, math should not be utilized just for the consequences it has in business, science, and everyday life; it should also be pursued and appreciated because of the indisputable truth that it offers. The knowledge mathematics holds may help with more esoteric problems and subjects, which is why Socrates endorses it. Thoroughly studying mathematics, as well as logic, can help people become accustomed to understanding what cannot be observed. It is likely that the philosophical Forms (including the form of the Good), as well as all of their properties and relations to each other, can only be understood once the mind has been introduced to the world of necessary truth by mathematical and logical knowledge. Then mathematics is a necessary prerequisite for study of the Good, and its necessary truth makes it a part of the Good, an element of the realm of what is.

Bibliography


A SYMPOSIAL CONVERSATION

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ABSTRACT: Among the ancient philosophers, Aristotle stands as a giant whose interests and writings spanned an enormous breadth of thought. His ideas held sway for centuries, and while some were superseded, some are with us still. Welcome to a symposium (with apologies to Plato) where we explore ideas arising from Aristotle’s *Nichomachean Ethics*, and inspired by the writings and thoughts on Aristotle by Bertrand Russell, Martha Nussbaum, Massimo Pigliucci, and Michael Huemer. The scene is a holiday panel discussion with four students voicing these philosopher’s parts while mixing in some of their own ideas. The topic: whether or not Aristotle’s ethics still offer meaningful guidelines for the conduct of our lives.

Host: Welcome to tonight’s student symposium. Before the heavy drinking begins, let’s attend a panel discussion concerning the question of whether or not Aristotle’s virtue ethics as presented in the *Nichomachean Ethics* still offers reasonable guidelines as to the conduct of our lives, or is it a culturally and temporally insightfully useless document? We have here four student commentators on Aristotle’s *Ethics* whose avatars will be Bertrand Russell (*The History of Western Philosophy*), Martha Nussbaum (*Aristotle*, an interview with Bryan Magee on BBC television), Massimo Pigliucci (*Answers for Aristotle*), and Prof. Michael Huemer, University of Colorado (*An Examination of Aristotle’s Ethics*). We might engage in
a broader, deeper, and varied analysis, but this presentation should suffice to bring several views and ideas to the surface in the time before inebriation sets in; but, hey, Bertie, is that the teapot?

Bertie: No. Often I find tea not readily available at these gatherings, so I brought my own. I’ll just need some hot water, in which I suspect some of us will soon be.

Host: Not to worry, Bertie. Massimo, I thought yours perhaps the most detailed and balanced work, could you perhaps begin by summarizing virtue ethics in contrast to some other main ethical theories?

Massimo: Sure. I see virtue ethics, which seems to have gained more interest in the past few decades, mainly contrasted with deontological approaches, such as sets of rules to live by, in some cases absolute as in Kantian categorical imperatives and certain Christian ethics, both seen as duty; and Utilitarianism, as formulated by Bentham and Mills, maximizing the good for the greatest number, although weaker versions such as espoused by Peter Singer are also practiced. Virtue ethics mainly strives to provide a basis for living the good life through performing moral acts in consideration of the virtue inherent in those actions. For Aristotle, these virtuous acts are learned and acquired, a skill almost. For Aristotle, virtue is a state by which we achieve happiness; it is an activity and a goal. However, as we’ll undoubtedly discuss, there are limitations to each individual approach.

Host: Other comments? Martha?

Martha: It’s my view that Aristotle was one of the most thoughtful ethical philosophers. Rather than beginning by setting the moral sphere apart from all the rest of human life as do many others, Aristotle begins by asking what it is to live the good human life, what are its components, and how do they all fit together to produce
Eudaimonia. For him, the central idea is happiness, but of a certain sort, and one that is consistent with the higher achievements of the good life. For Aristotle, contrary to Plato, the good life is an active human endeavor; virtues are a means to an end, and not ends in themselves.

Host: Bertie?

Bertie: While I can appreciate Aristotle’s work in general, especially his work on logic, and the application of virtue to moral problems, it seems to me that his approach of the Golden Mean is not applicable in all cases. The gap between extremes of many virtue categories is so broad that there is an insufficient basis in some cases for determining moral decisions. His ethics reflects the Athens of his time, and of aristocratic gentlemen that generally disdained the masses. Additionally he seems to accept that if something is apparently true, he needs supply no further rationale. I’ve written that I feel that the Ethics in general is limited to certain classes of Athenian citizens, and that his use of language seems very ascetic and lacking in feeling. In my Conquest of Happiness, I noted that the good life has a very vibrant emotional content, something I find lacking in the Ethics and in Aristotle in general.

Host: Michael, care to add to the opening statements?

Michael: Sure. In my early paper I argue from the perspective that there are philosophical inconsistencies in the Ethics. I think in some parts he expresses himself poorly, but his explanations are, in some cases, only first steps at expressing these concepts. In all, I think I would agree with much of what he says if certain ideas were expressed more precisely and in accord with what I think he was driving at. I’ll have more to say about that later.
Host: What about the charge that the *Ethics* is temporally and culturally stilted? Martha, I think you had some comments on this in your discussion with Bryan Magee.

Martha: Yes, I felt, and still feel, that there were a few problems related to his vision of politics and that mankind is a political animal. While he extolled political activity to bring about the best conditions for producing the good life, Athenian citizenship was limited, and women and slaves not included. Also, his approach is basically aristocratic with a belief that some citizens are better than others, as reflected in his measure of their virtue of character. To his credit, he also believed that collectively the greater number of the masses would lead them to support their city-state more vigorously than the aristocrats. However, studies have shown that we all generally evaluate ourselves as above average in just about everything. How do we scale virtue – just who is the ‘just and virtuous person’?

Host: But wasn’t that simply the nature of the times – what everyone felt to be true?

Martha: No, not really. There had been movements in Athens to abandon slavery as immoral. Aristotle in his aristocratic outlook believed there were natural slaves. Indeed, conquered people from the south made better slaves as they were more docile than those from the north. For him some slavery was natural, and, in addition, provided the leisure time necessary for contemplation for its own sake. He did hold, however, that other Greeks should not be treated as slaves as he advised the Macedonians when they overwhelmed the Greek city-states. Aristotle’s ideas on the virtue status of women represented a regression from Plato’s acknowledgment that some women displayed sufficient virtue to serve as guardians and should receive the same training as men. Further, his views on the contribution of women to offspring were in conflict with the more enlightened views of the times.
Bertie: Yes, I think that many of us would find these kinds of views “repugnant”. There seems to be a subordination of personal relationships to a kind of political hierarchy. For example, he likens the relationship of father to son as a kind of kingship, and that of husband to wife as a kind of aristocracy. These also intrude into his discussions of friendship. I think that the more the state is assigned a moral role, the more restrictive freedom becomes. I feel, as do others, including Karl Popper, that in Plato’s *Republic* and *Laws*, for example, they result in tyranny.

Michael: I think Aristotle really doesn’t recognize these as problems. He doesn’t even provide much of a supporting argument that the good is what all things aim at. “.. it is logically possible that all things should have, for example, aimed at unhappiness, and in this case unhappiness would still not be good.” Someone reading the *Ethics* would have no way of discerning whether or not his actions were virtuous or not depending on the virtue of his/her role model. Here the specter of relativism raises its ugly head.

Host: Well, what about friendship? Friendship takes up two whole books in the *Ethics*. What can we say about his views on that? Bertie, you’ve said strong stuff about that.

Bertie: Well, I was not particularly impressed. He states that friendship is practically a basic need for the good life, and certainly deconstructs it per differing goals, as friendships of utility, pleasure, and complete friendship, as you are undoubtedly aware. However, so much of the permitted behaviors of so-called friends are, to him, dictated by some balance sheet of virtues, wealth, and social status. He admits that there can be relatively few complete friendships, and even in these, there seems to be some holding back – one must not show weakness or pain to close friends so as not to distress them. This seems to deprive friends of the best way in which they can actually help each other. There is so much pride involved that this so-called Aristotelian virtue actually seems to get in the way of
meaningful friendship. He goes so far as to say that due to the great difference in virtue, that God could never love man. Christians would have to find a way around that one.

Massimo: In my book I write “that the effect of friendship on happiness has nothing to do with how many friends you have and everything to do with the perceived quality of your relationships. In particular, what makes for a good happiness-enhancing friendship is the degree of companionship … and of self-validation. … Everything else seems to be icing on the cake, so to speak.”3 While Aristotle has many good things to say about friendship, I think there are some problems both in the politicized structure of those friendships, but also that even in this so-called complete friendship there might occur instances when one finds in another person more and better of those characteristics one sought in a friend and be willing to abandon the one for the other.

Host: What about Plato’s or Socrates’s idea that no one would choose to do something bad? Doesn’t this give rise to what Aristotle termed incontinence?

Massimo: I guess my response to that is related to the concept of will power. Will power, as studies have shown, is in most people a limited and readily depleted power. One cute episode of Brain Games has some young children seated at a table on which a treat such as a cupcake with frosting is placed. They are told that if they can leave it alone for 10 minutes, they can have twice as much when the researcher returns. The researcher leaves the room and the children’s antics as they try to resist temptation are recorded. Some succumb almost immediately, some turn their backs to the treat or retreat to the distant portions of the room, some sing or recite to distract themselves, but some just can’t hold out. Certainly Aristotle recognizes that there are some weak-willed persons that cannot make the correct moral choice, but that this is a matter for training to increase will power; it is another instance of learning how to be
virtuous. These kinds of thoughts also lead us to examine the nature of what we call will power or even free will.

Host: What can we say about the relative merits of virtue ethics as compared to the other two paths, i.e., deontology and utilitarianism? Thoughts? Martha?

Martha: Yes. I think Aristotle’s ideas afford a certain flexibility that neither of the other two provides. In his virtue ethics, he’s relying on the ability of the moral person to assess what may be a very morally complex problem that may have no precedent and decide it based on considerations of his/her own moral character as developed through experience and contemplation. It is, however, an active approach, as is all ethics for Aristotle—these are problems of social and interpersonal interaction. The other important facet is that Aristotle recognizes that environment, outside goods, and moral luck all play a part in the acquisition of virtues and even the opportunity to express them at times, contrary to Plato.

Massimo: If I might add to that. As to problems, Kantian absolutism leaves us standing outside our humanity; for example, we could not sacrifice the one for the many as most people would do when faced with the trolley problem, and searching through a list of rules to select an appropriate one to cover some unusual problem. Would you tell the truth if it meant an innocent life? Utilitarianism, on the other hand, may be subject to excessive denial of the rights of the individual when compared to the common good. There was a cartoon in Philosophy Now that showed the reincarnated body of Jeremy Bentham out murdering people to harvest organs for transplants. Obviously this benefit for the many resulted in a blatant regard for the personal integrity of the victim, a Kantian no-no. Similarly, as virtue ethics does not supply rules, but proposes the golden mean between extremes, the gap between extremes, as Bertie noted, can be large, leaving us with no clear idea of the appropriate level of response to some moral issues. I think a better approach, as
presented in my book, is to utilize science to investigate many of the social, psychological, and physiological factors involved in our decision making which are then informed by philosophical thought (or equally the other way around). The two working together in what I call “sci-phi” provide us with the best basis for making moral or other decisions. Take the best of philosophical thought and don’t be locked into any one way to approach problems.

Host: Thanks. Michael, you said earlier that you had some problems with the way in which Aristotle presented his ideas. Could you give us a couple of examples?

Michael: OK. For one, I think that “Aristotle appears to be confusing the idea of what all things aim at with that of what all things ought to aim at, for it is much more plausible that the latter is what he meant by the good.” In another instance, I point out that he falls victim to the naturalist fallacy to “… confuse the way things go with the way things should go. That Aristotle should have fallen prey to this confusion is no surprise, particularly given his frequent use of teleological concepts, which are all halfway-normative, halfway descriptive concepts.” It is also instructive to realize that at the end, Aristotle finds the greatest pleasure in exercising the intellect. Other features of human life are left in the dust, which may be why Bertie also has problems with the Ethics.

Host: This has all been entertaining and I hope pleasing to the participants and the audience. One last question to wrap things up. Do you find Aristotle’s Nichomachean Ethics relevant to us today?

Martha: As you probably know, I do feel there is much in the Ethics that is relevant to us today. First we need to exorcise its anachronistic and aristocratic elements, relax the emphasis on politics, and expand on other facets to make it more in accord with our time and culture. This means redefining or adding some virtues to this set and
determining which spheres of activity we wish to apply them to. To me, virtue ethics represents the more flexible and pertinent way we have for resolving complex moral situations while preserving the integrity of the individual.

Bertie: I guess I would not be as positive, but I do feel that there are aspects of the *Ethics* that I could accept, given the alterations that Martha suggested. However, I do wish that his presentation had not been so devoid of emotional content as emotion is one of the key features that makes us human and he seems to suppress this, perhaps in an effort to appear ‘noble’ and ‘virtuous’.

Michael: I would echo these sentiments, and do believe that with proper adjustments in the language Aristotle used, there might have emerged a more coherent work in the philosophical details. Virtue applied properly asks us to better ourselves and our relationships with others, and that can’t be a bad thing.

Massimo: I would agree that there are certainly positive elements in the *Ethics*. But we have available to us science to bear on the causes and explanations for some of our conscious and subconscious behaviors. These do not have to be the mysteries they were to the ancients, and the rate at which we are gaining this knowledge is truly amazing (buy my book). All kidding aside, Aristotle was one of the outstanding and influential minds of all time, but as Bertie has often said, we cannot just stand in awe. There is life to be lived and that has changed so much since the days of Plato and Aristotle; our philosophy must change with it.

Host: Thanks, everyone. Cheers, happy holidays, and remember the virtue of moderation.
Notes


4. Pigliucci, 174-175.


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How is Aristotle’s Sexual Hierarchy Justified?

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ABSTRACT: Aristotle’s writings about women have inspired a diverse body of philosophical scholarly work, its primary contributors being feminist authors. There is no unanimous interpretation of these controversial writings, even within the feminist framework. One resounding issue is the uncertainty of whether to accept his biological theory of sex differences outlined in *De Generatione Animalium* as a presupposition to the power dynamics between men and women in *Politics*. No matter how we interpret Aristotle’s account of women, he is not ultimately successful in showing why women should hold a subordinate position in society. Aristotle’s emphasis on teleology and the influence of his Greek contemporaries were the most likely contributors to his biased assignment of a passive societal role to women.

“Again, the relation of male to female is naturally that of the superior to the inferior, of the ruling to the ruled. This general principle must similarly hold good of all human beings generally.”

This excerpt from Aristotle’s *Politics* has undergone rigorous scrutiny, evaluation, and criticism by feminist scholars over the last 30-40 years. Although the question of whether Aristotle had sexist views is up for debate, it can be said with confidence that “The

Philosopher” wrote some statements about women in multiple works that are problematic. Taken out of context, some passages seem to intrinsically attribute subordination to women. Scholars and commentators disagree upon what ways he was able to justify his claims about female inferiority, or whether he was able to sufficiently justify them at all. Some feminist scholars believe his claims were based primarily in his theory about physical biology of sex differences; the arguments of some others rely on his vaguely construed differences between the physiological processes of the sexes. I argue that to accept his biological sex differences theory as an explanation of the subordination of women — an intuitively appealing interpretation in the feminist philosophical framework — is to accept a pseudo-explanation; it is not one we could accept as a sufficient explanation in itself.

Scholars who examine Aristotle’s corpus generally agree that his philosophical doctrines are teleological in nature; he explains aspects of the world in terms of the relative purposes they serve. This has implications for the roles of various living things, and humans are no exception, as we will see. His entire corpus is established upon teleological foundations. It can be argued his teleology is in fact the backbone of the present controversy; from the view that everything plays a role in Nature relative to its true purpose, Aristotle is able to imply that Nature assigns a subordinate role to women. If this is true, then there is a clear need for a social hierarchy in the Aristotelian conception of Nature, such that men and women fulfill their purposes as a function of their different places in society. How Aristotle was able to justify that men and women have unequal places in society is the looming question I hope to address, and one upon which feminist scholars cannot seem to agree. In an effort to shed light onto this uncertainty, I think it necessary first to explain some key features of the Aristotelian ideal civil society.

A hierarchy of humans from which the different social relationships arise is described succinctly in Politics: “The relation of ruler and ruled is one of those things which are not only necessary,
but also beneficial; and there are species in which a distinction is marked, immediately at birth, between those of its members who are intended for being ruled and those who are intended to rule.”

The reason Aristotle believed in natural hierarchy is made clearer by summarizing his account of the *polis*, or political association. Aristotle’s polis is the most natural and perfect out of all the different social associations. It is formed from the collection of nearby villages, which come to be from the collection of households, resulting from the natural unification of men and women. It is the conclusion of all these former associations. For the reason that the conclusion of things is understood as their nature, to Aristotle, it is therefore a natural desire of all people to be a part of the polis.

Man has a need for self-sufficiency; it is his conduit to achieving his *telos*, or ultimate goal. He can do nothing productive (getting from point A to B, as it were) without first having the ability to set goals into motion. The formation of the polis is the final step in cultivating the correct environment for the achievement of citizens’ end goals: “[The polis] may be said to have reached the height of full self-sufficiency...the end, or final cause, is the best and self-sufficiency is both the end, and the best.”

Scholar Maria Fememias writes that in *Politics*, the partnerships, villages, and households can be analogized to the different faculties operating within an organism. Each part operates to serve the purpose of the correct and most perfect functioning of the organism; the existence of the part is aimless without the whole. In this analogy, the relationships people cultivate and the structures they build in close proximity to each other are the parts, and the resulting polis is the whole. Citizens are differentiated from each other in terms of their allocated functions in preserving the polis. It’s

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mandatory they have different responsibilities, just as a human body must contain a variety of organs, each with predisposed functions.

“...A city cannot be composed of those who are like one another.”\(^8\) Teleology determines who they are: “All things derive their essential character from their function and their capacity…”\(^9\) So, the citizens of the polis have different functions, and they collaborate together in pursuit of “the good life.” We have already seen that Aristotle declared the ruler/ruled relationship as a natural social dynamic. The implications for the status of women in this conceptualization of end-goal-directed society are controversial and frustratingly inconclusive, but we have some decent starting points. In his discussion of the natural occurrence of the ruler/ruled relationships, he says: “The rule of the freeman over the slave is one kind of rule; that of the male over the female another…”\(^{10}\) Aristotle also tells us the only time men are not naturally gifted to rule better than women is when there is some kind of departure from Nature.\(^{11}\) In the same passage, the man’s command over the wife in the house is “permanently that in which the statesman stands to his fellow citizens.”\(^{12}\) Contrary to a feminist interpretation of this passage, it is worth noting that some scholars, such as Darrell Dobbs, think Aristotle did not give the status of household leader (statesman) to the husband because of some birth-given superiority of virtue, but rather because he thought a position of household authority is better

10. Aristotle, 1260a11-12.
suited to the functional gender role males assume in nature, relative to females’ gender role; this is a position in general alignment with the overall theme of Politics.

The book indeed tells us the sexes have different roles to abide by within the oikos, or household. The oikos is natural — households are an integral ingredient to the polis, serving as the foundational environment in which citizens will be able to prosper toward their telos. Following this reasoning, household roles are also natural: “The function of man in the household is different from that of the woman: it is the function of one to acquire, and the other to keep.” In Oeconomica, it is written that women exercise more caution as a result of their natural fear; men are more naturally courageous, and so are better equipped to handle physical threats. Aristotle firmly believes these inherent differences are advantageous and, indeed, mandatory for a well-run society. “[Women and men] are distinguished in that the powers which they possess are applicable to purposes in all cases identical, but in some respects their functions are opposed to one another though they all tend to the same end.” It’s hard to accept as coincidence that Aristotle gave men the more active task of acquisition and women the more passive task of maintaining; still, this section of Oeconimica does seem to indicate that The Philosopher genuinely thought this power dynamic was in the best interest of both parties and, most importantly, the smooth running of the polis.

15. The author of Book I of Oeconomica is not thought to be Aristotle himself; more likely, the author was a follower of his. See the preface in Aristotle, Oeconimica, trans. Edward Seymour Forster (Oxford: Clarendon Press, 1920), 9, https://archive.org/details/oeconomica01arisuoft/page/n9
There is a great deal of disagreement among scholars regarding whether Aristotle forbade women from having access to the political sphere. Thanassis Samaras explicitly argues that the household being natural in origin and the gender roles that are attached to it necessitate that women are not allowed a place in the public political arena.\(^{18}\) However, it seems that the delegation of tasks in *Politics* is not proof Aristotle endorsed political restrictions on women. It does not necessarily follow that assigning the task of acquisition to the man and maintenance to the woman results in a confinement of women to the household across all cases. An unequal power dynamic is likely at play here — that theme is not unlike the rest of the content on hierarchies in *Politics*. Nonetheless, Aristotle does not write that women should be confined exclusively to the household. While Thanassis Samaras does acknowledge it as a mere implication, it would not be unreasonable to suspect he would in fact make the notion clear in a chapter dedicated to proper household management — a topic being in the best interest of Aristotle to explicate for his audience, rather than burdening them with the task of deciphering implications. Still, the question remains: what inherent faculties varied between men and women that Aristotle thought resulted in “weakness” and “strongness,” and corresponded to the responsibility of different tasks? It will be helpful to elaborate on some of the prominent answers proposed thus far.

One interpretation presents an underlying, all-encompassing principle that seeps out into the roots of the Aristotelian corpus. According to Judith Green in her 1992 essay, Aristotle implicitly proposes a core principle in his book *Physics* she

\(^{17}\) Aristotle, 1343b28–30.

coins “the principle of necessary verticality.” This fundamental law governs the grand operation of Nature. The naturally-occurring opposites in the world, under the principle’s rule, “are systematically organized into principle-bundles; that is, activity tends to go with up-ness, heat, and form-making…whereas passivity tends to go with down-ness, cold, and form-receiving.”\textsuperscript{19} According to Green, Aristotle believed the substances that humans are composed of can be deconstructed into their “principle-bundles.” Whichever bundle of characteristics their individual substances belongs to determines where their role in society rests.\textsuperscript{20} Under the covert principle, close interaction between opposites (up-ness and down-ness) is necessary for living things to attain their telos of embodying up-ness and resembling the circular motions of the celestial entities. In Green’s view, no single being can enter this process of growth and renewal by their individual agency.\textsuperscript{21} The reason humans are made up of different substances (form vs. matter) is because opposites are needed for humans to occupy different, contrasting roles. Regarding people, the principle’s purpose is “to direct their development upward toward this ultimate telos.”\textsuperscript{22}

To Green, this principle is implicit in Aristotle’s works mainly because of the numerous references he makes to the critical importance of opposites: the roles of up-ness and down-ness in \textit{Physics} as that which is fire and light move up, that which is earthy and heavy move down, and the proper places that bodies go being relative to their up-ness or down-ness; the opposite relationship of master and slave in \textit{Categories}; that which can heat and that which is heated in \textit{Metaphysics}; the wife and husband, and more on the master

\textsuperscript{20} Green, 74.
\textsuperscript{21} Green, 76.
\textsuperscript{22} Green, 76.
and slave in *Nicomachean Ethics*. The element to the principle of necessary verticality that Green argues is the basis for designating women to subordination is the *proper places of bodies based on up-ness or down-ness*. Aristotle assigns men, based on their substances, to the principle-bundle that embodies heat, form-making, and up-ness, while women are assigned the principle-bundle that embodies coldness, form-receiving, and down-ness. Being given the downward principle-bundle determines women’s place in society and is necessary to balance the opposite upward bundle embodied by males. Besides being difficult to grasp conceptually, Green’s theory is met with criticism. Author Iddo Landau informs us that in Aristotle’s *Physics*, in his discussion of basic elements of Nature, he never decided on only two complementary, gendered principles. Green argues that Aristotle did not have to explicitly declare the principle-bundles as either “masculine” or “feminine” to make the dynamic clear; Landau nonetheless asserts that principle-bundles are not what Aristotle had in mind. The mention he does make of up-ness and down-ness in things is not satisfactory to make the claim that Aristotle associated males and females, respectively, with them. Landau also points out that Aristotle never claimed anything to be “general principles of nature,” as they are chiseled out to be by Green.

With these points in mind, I think by reiterating that Aristotle did not formally address such an important guiding principle, it is perhaps misunderstanding what Judith Green is telling us about his tendency for favoring hierarchies. Green in fact acknowledges the gap in textual evidence before delving into most of

23. Green, 77.
26. See note 19 above.
her analysis.\textsuperscript{28} Despite this gap, attributing the crucial interplay between opposites to a “principle of necessary verticality” would nonetheless assist us in understanding both the puzzling assumptions made in Aristotle’s writings about women and the basis for the specific societal role he assigns them. Aristotle’s biological theory has been interpreted as the foundation of his sex hierarchy by other scholars within feminist philosophical discourse. While there is quality evidence his sex biology theory from \textit{De Generatione Animalium} is biased toward men, it is a separate question of whether or not the theory is supposed to be considered a presupposition to the principles about the sex differences described in \textit{Politics} and elsewhere. In Linda Lange’s 1983 essay, she argues the theory must be taken as a presupposition. This author supplies us with a bountiful amount of textual evidence to support her claim that to Aristotle, “the final cause of the female individual, \textit{qua} deficient human, was quite literally outside herself, and was that of being instrumental to the reproduction of male humans.”\textsuperscript{29} In Lange’s interpretation, Aristotle regarded the woman as necessary in Nature only to the extent she provided the physical material for the man to unleash his form-making “movement” onto. This was her participation in an ultimate goal of eternal life humans achieve only by passing on their genetics — an abstract immortality that can be reached only by procreating.

So why are females only valuable to this telos insofar as they are the male’s tool by which he ideally produces another male?\textsuperscript{30}

\textsuperscript{28} See note 19 above.
\textsuperscript{30} Lange, 11.
Lange invokes a passage in *De Gen.* where Aristotle discusses how offspring may become “monstrosities” of Nature. Offspring being formed as female and not male is among one of the first ways this can occur. According to Lange, this belief sheds light onto which humans, to Aristotle, can truly achieve eternal life through procreation of a child “like themself.” If female offspring are a monstrosity of Nature, then clearly it is not the woman’s telos to produce a child like herself. According to Lange, it follows that the ultimate goal of creating a child like yourself must only belong to that telos of a man.

Dobbs thinks feminist scholars are unwarranted in claiming Aristotle referred to female offspring as monstrosities; in fact, to do so is an “utterly fallacious allegation.” To Dobbs, since Aristotle thought the formation of female offspring was natural, this necessarily means he thought she was not monstrous, and that Aristotle’s description of the female could be understood as “the phenotypic realization of a recessive genotype.” Dobbs concludes there is no inequality implied in the comparison. I think we can easily gather if the recessive gene is equated by Aristotle to the female sex as a whole, then she should be taken to be fundamentally inferior. Indeed, Aristotle tells us in *De Gen.* that a “well-concocted” menstrual fluid will result in a male offspring when the “motive

36. See note 34 above.
37. See note 34 above.
agent” (sperm) comes into contact with it. The implication is that a “poorly-concocted” menstrual fluid produces a female. Taking this at face value, the status of the female being herself the byproduct of an inferior substance does not particularly seem to suggest gender equality (at least in a presentist conception of the term).

Lange uses numerous other passages from De Generatione Animalium to illustrate the sex hierarchy: “That which by nature has a smaller share of heat is weaker; and the female answer to this description.” Following that up, she quotes, “Noblest of all are those whose blood is hot.” Therefore, according to De Gen., males by their nature possess more heat, and are nobler and stronger than females. The mechanism that enables men to naturally contain greater heat is not clear, but may be connected to the attribution of males as the “active” sexual partner, possessing form-giving sperm; females are the “passive” counterpart, possessing form-receiving catamenia. (We detect echoes here of active nous from De Anima: “For what acts is always superior to what is affected, as too the first principle is to the matter.”) Aristotle wrote men are naturally gifted to rule better than women, the only exception being when there is some kind of corruption of Nature. An exception to the principle raises an inconsistency in the theory of Aristotle’s woman being inferior in virtue of her sex alone. If females are always inferior simply because they are female, it is puzzling how Aristotle could allow for exceptions, albeit corruptions, in Nature in which women could theoretically be more fit to rule than men. Aristotle tells us the soul manifests itself in different ways, depending on if the person is born a

41. Aristotle, 729a34-40.
man, woman, slave, or child. Women have a deliberative faculty, although it lacks authority, and slaves are completely devoid of one at all. It is remains painfully unclear what Aristotle meant by “deliberative faculty,” (elaboration on that subject begets its own separate paper entirely) but it can be crudely conceptualized as the ability to make rational means-ends decisions. If Aristotle’s sex differences theory implied the complete subordination of women, he would not be able to subjugate slaves below women in terms of their “deliberative faculties,” since male slaves should be at a level higher than free women in the sex hierarchy. This invalidates Lange’s claim that “greater warmth (of the blood) is an indication of greater faculties of soul,” since then male slaves, with more masculine vital heat, would have a greater faculty of soul than women.

The notion of slaves’ inferior deliberative faculties is only consistent in the context of Lange’s theory if Aristotle did not allow the natural slave the possession of genders. That is patently false. Aristotle used gendered grammar for slaves in the cases wherein he referred to them as humans and not tools. The sex differences theory only makes sense in the realm of free women and men, disregarding the dilemma of manifestation of soul in slaves per Aristotle. The latter topic should not be conveniently cast aside.

43. Aristotle, Politics, 1260a13-17.
There exists a curious criticism of the biological explanation for Aristotelian male superiority. Thanassis Samaras thinks in the context of what can be found in *Politics*, Aristotle “not bothering” to explain the unequal differences between male and female participation in the formation of their offspring is “clear evidence” it was not his intention to have these differences serve as the basis for his gendered beliefs in other extant works. I disagree this is clear evidence, simply because it is perhaps encouraged by Aristotle himself to take his biological theory as a precursor to his political theory: “So the political man, also, should not regard as irrelevant the inquiry that makes clear not only the *that* but also the *why*. For that way of proceeding is the philosopher’s, in every discipline...” To be clear, in this passage, the “*that*” can be understood as “biology,” and the “*why*” can be understood as “politics.” Aristotle did not need to spell out his ideas of sexual differences in *Politics* because he elaborated on them in *De Generatione Animalium*. Therefore, the lack of elaboration in *Politics* does not invalidate the possibility that his unequal biological sex attributions had direct implications for his politics. I would like to point out that the uncertainty surrounding the chronology of Aristotle’s corpus makes this point difficult to advance further with confidence. Nevertheless, the qualities of production characteristic of active *nous* and qualities of coming-to-be characteristic of passive *nous* as described in *De Anima* seem to “carry over” into *De Gen.* with the explicit assignment of the “active” and “passive” parent being assigned to the father and mother,

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respectively. Thus it is not unthinkable that these pivotal principles carried over into *Politics*, albeit with subtlety.

The stubborn problem with Aristotle’s account of men and women’s natural roles is this: even a teleology that necessitates men and women taking on different roles for the betterment of society *does not logically entail* them differing in mental faculties. Thanassis Samaras agrees: “Although it would go against the deeply embedded prejudices of Greek males, such a [gender-egalitarian] household is actually conceivable.”[^48] They could just as easily possess all the same capacities, yet choose to disperse tasks in a way they see fit, while still getting the same amount of work done as if the sexes were somehow preordained by Nature to do only this or only that.

What we have been given, then, is a pseudo-explanation for sex differences. Linda Lange and Judith Green agree the sex differences per Aristotle were fundamentally unequal. They disagree, however, on the extent to which the ancient Greek conventions could be to blame. Lange remarks: “...Aristotle simply accepted the ‘observation’ of his time and place that women are inferior, although he did not accept the explanations for it that had thus far been developed”[^49] and that he was so willing to accept these observations because “...he did not regard their determination as involving any difficulty, other than the practical.”[^50] Conversely, Green does not think an attribution of sexual hierarchy to conventions is so straightforward, nor is it satisfactory. I concur; it does not suffice to say Aristotle merely saw a subordinate position of women as fitting


[^50]: See note 49 above.
succinctly within a typical framework — one that did not present any practical challenges to the way old Greek society operated. It is beyond the scope of this paper to do so, but to fully understand the basis of Aristotle’s writings about women, it is more insightful to continue to question why and how these conventions came to be at their conception. The answer to this question, according to Green, “...is a key to understanding many problems of central theoretical concern to feminist critics of Western culture.”

The idea Aristotle was able to support his gendered claims outlined in *Politics* through the male and female principles he proposes in *De Generatione Animalium* seems to be the most coherent explanation, given the textual evidence. However, I have shown it is not fully satisfactory as a stand-alone explanation. If we choose to take the gendered ideas in *Politics* against the biological framework of *De Gen.*., we also must accept the textual inconsistencies that it introduces, such as the status of male slaves relative to free women, as well as Aristotle’s allowance of a theoretical female better suited to command than a male. The sex biology explanation is nonetheless more coherent than a theory about relative up-ness and down-ness originating from and relying on meager lines from *Physics*. The naturalness of the oikos necessitating an inferior private housewife is difficult to accept, too. The housewife in this interpretation of *Politics* (III.4) has a social status essentially equivalent to that of a slave — a conflation Aristotle thought only barbarians made.

Perhaps there is some cognitive dissonance that has accumulated in the mind of an individual who finds The Philosopher’s overall corpus extraordinary and remarkable, yet also

finds his writings about women morally repugnant. His attribution of a sex hierarchy to the rules of Nature highlights a powerful influence of Greek conventions; however, emphasizing importance in the textual evidence, it is difficult to know if he believed this hierarchy had direct implications for his politics. In terms of how Aristotle justified the hierarchy, it is reasonable to conclude he attributed inequalities between the sexes to a demand for certain positions in Nature, specifically in the polis, to be fulfilled and carried out in order to achieve their telos.

The argument suffers a significant defect: failure to explain why a propensity for activity *must* be inherent in the male and passivity inherent in the female, in order for the crucial responsibilities attached to their gender role to be executed. The oppressive tendencies, problematic as they are, manufactured by Aristotle’s hierarchy of sexes were seen by him as simply mandatory for the perfect polis. However, I am not convinced the power dynamics he wrote of were stemming from a personal, vehement contempt toward women. I believe they originated from a combination of his hallmark teleological philosophy and the steadfast influence of a society that endorsed gendered biases with such massive staying power, we can easily see parallels between the stereotypes of women in 4th century B.C. and likewise in our present day.
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Knowing Where to Start: Seeing the Goal of the Four-Seven Debate in Chosŏn Korea

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ABSTRACT: This paper provides an analysis of the Four-Seven Debate; one of the most contested themes in Korean philosophical history. It serves as an introduction to the foundational concerns of the debate for those unfamiliar with the subject – namely, the relationship between li (principle) and qi (material force), and the tension between innate human purity and human moral failings. However, this paper presents the goal of the debate as its most crucial, and often neglected, feature. The relentless hammering at ontological minutiae was essential to understanding appropriate moral action in the real world, because in Neo-Confucian philosophy, morality was subject to natural laws. Morality was therefore a live-and-dangerous ontological concern. The Four-Seven Debate might be viewed as a protracted and seemingly esoteric morass of concept and theory, but this paper emphasises that at stake was the correct cultivation of human virtue and an ideal society in practical terms.

Introduction

The Four-Seven Debate crystallised within the Korean intellectual elite of the Chosŏn dynasty (1392-1910). It centred on a series of letters written by T’oegye (Yi Hwang, 1501-1570) and Yulgok (Yi I, 1536-1584), between each scholar-official and their respective counterparts; Kobong (Ki Taesung, 1527-1572) and Ugye (Sŏng Hon, 1535-1598). The debate was situated well within the confines of Neo-Confucian philosophical tradition, adhering resolutely to the teachings of the Ch’eng-Chu school, but in these letters differences in T’oegye and Yulgok’s interpretations of the li-qi relationship were
drawn out. *Li* can be understood as the innate purity of existence, and *qi* the particularity of matter and circumstance which gave existence its form. Of concern was their relational composition. T’oegye can be seen to advocate a dualistic, idealistic position which prioritises *li* as the focus of attention. Yulgok can be seen to present a non-dualistic (though also non-monist) realist position, with emphasis on the role of *qi*.

However, such simple dichotomising of their respective interpretations would commit the same error which lies at the heart of *li*-*qi* misunderstandings; that of attempting to separate the inseparable, or create stark contrast between complementary elements. By operating within the same rich and hegemonic intellectual tradition, T’oegye and Yulgok were able to polish core theoretical issues to a fine grain through years of conceptual analysis and dialectical reasoning, but they retained fundamental Neo-Confucian philosophical assumptions. In particular, they assumed an ontological parallel between the metaphysical and the ethical, and a crucial link between theory and practice.¹ Further, their common aim was to present the clearest possible description of the relationship between *li* and *qi* so that people could act upon that understanding and practice self-improvement in their daily relationships. Both T’oegye and Y’ulgok’s contributions to the Four-Seven Debate served the goal of Neo-Confucian philosophy in theory and the Chosŏn dynasty in practice; finding the best way to promote appropriate moral behaviour among real people, to achieve the ideal moral society which stood in harmony with the cosmos.²


² Michael C. Kalton, et. al., *The Four-Seven Debate: An annotated translation of the most famous controversy in Korean Neo-Confucian*
Four Beginnings & Seven Feelings: The groundwork for the Four-Seven Debate

The Four-Seven Debate gets its name from the Four Beginnings and the Seven Feelings; two ideas which came from different sources and were brought together during the founding of Neo-Confucian thought by Chu-Hsi (1130-1200) to confront a previously unaddressed and pressing concern; if human nature is naturally good, why do humans do bad things? The tension between innate purity and the slips and failings of human moral life required an explanatory framework so that the very human work of self-cultivation could proceed with this tension understood.³

The Four Beginnings were introduced by Mencius in support of his claim that human nature was inherently good; humanity, righteousness, propriety and wisdom were the four primal feelings of pure human nature, from which the nature was manifested.⁴ Because of their purity, in Neo-Confucian philosophy they came to represent li, the pure principle or Supreme Ultimate which lay unperturbable at the root of the human mind. Yet humans clearly did not always act or react directly from these pure feelings. Humans might err, offend, steal, lie, lash out, and could be chaotic and unpredictable in their emotional responses. To explain this, Neo-Confucian philosophy referred to the Seven Feelings, laid out explicitly in the Book of Rites as joy, anger, grief, fear, love, hate, and desire.⁵ These feelings were aroused by qi, the material force which dictated circumstance and

³ Kalton, et. al., The Four-Seven Debate, xvi.
⁴ ibid., xxvii.
⁵ ibid.

particularity. The Seven Feelings and the Four Beginnings were all part of the same human mind, but while the Four Beginnings were innately pure, the Seven Feelings were subject to the matter and motion of the real world, and therefore subject to negative influence; depending on circumstance and particularity, the feelings which were aroused might or might not be morally correct. Thus the impact of *qi* explained how badness could come from purity. This clarified the goal of self-cultivation; one sought to reflect upon one’s own feelings, consider their source, and practice the cultivation of appropriate emotions and moral behaviour.

What made certain feelings and moral behaviour ‘appropriate’ was their correspondence with the natural order. *Li* was not only an ontological fundamental; it encompassed human moral life, and therefore human morality was subject to natural laws. Appropriate moral behaviour relied on an understanding of ontology because morality was part of the cosmos. This union of metaphysics and ethics undergirded Neo-Confucian thought in general, and the Four-Seven Debate in particular. If the relationship between *li* and *qi* as elements in the cosmos was improperly judged, then people would not understand the appropriateness of their moral actions. For this reason the composition and structure of the *li*- *qi* relationship became of critical importance in Chosŏn Korea. The differences in interpretation exemplified by T’oegye and Yulgok (elaborated in the following two sections) show the intensity of the analysis, and the importance of the issue in practical terms.

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7 ibid., 52-54.
“From whence to the feelings of commiseration, shame and dislike, yielding and deference, and right and wrong issue? They issue from the nature, which is composed of humanity, righteousness, propriety, and wisdom. And from whence do feelings of joy, anger, sorrow, fear, love, hatred, and desire issue? They are occasioned by circumstantial conditions when external things contact one’s form and cause the movement internally.”

T’oegye, ‘T’oegye’s Reply to Kobong’s Critique’, Section 6.8

T’oegye’s interpretation of the compositional relationship of li and qi is known as the thesis of mutual issuance: Certain feelings issued directly from li, and as such, were pure and correct. Other feelings issued from qi, the embodied, socially and materially situated reality of the individual, and were therefore subject to dissonance. With this second set of feelings, reflection and practice was therefore required so that the individual could respond to the shifting particularities of qi in a way which generated the appropriate moral response. T’oegye was not attempting to separate li and qi entirely, but maintained emphatically that although they were inseparable, they were nonetheless distinct. A failure to recognise their distinctness might lead to “the calamity of thinking human desires were heavenly principles”9, leading to a failure to cultivate correct virtue and an inability to guard against (or even recognise) impropriety. Again, the goal of the seemingly esoteric metaphysical discussion was correct moral behaviour in the real world.

For this reason T’oegye emphasised a dualistic framework with li as the idealistic core. It provided the individual with something to work towards (li, the ideal) and something to work against (qi, the

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8 Kalton, et. al., The Four-Seven Debate, 52.
9 ibid., 14.
The focus of T’oegye’s dualism was not the sundering of *li* and *qi*; he repeatedly acknowledged their interdependence and essential unity. His focus was on providing a platform to enable practicable self-cultivation in real human social relations. The chaotic, unpredictable ‘circumstantial conditions’ and material forces from which harmful and negative feelings issued must be tamed and overcome by the judicious self-cultivator, focused on the ideal principle as a guiding norm. T’oegye’s *li*-focused insistence can perhaps be understood in the context of his own ‘circumstantial conditions’. Having lived through the bloody and paranoid literati purges at the beginning of the Chosŏn dynasty it is perhaps understandable that the emphasis of his interpretation was on the practical striving toward a pure, ideal society.\(^{11}\)

His thesis of mutual issuance was not a claim that the feelings within a single human psyche issue from two completely separate sources (the good issuing from the pure *li*; the bad from dissonant *qi*). No feelings are separable from *li* or *qi*, but some have *li* as their predominant factor; for other it is *qi*.\(^{12}\) However, T’oegye maintained that they have differing “points of origin”\(^{13}\), and it was this dualism which centred the disagreement between his and Y’ulgok’s interpretations.

*Y’ulgok*

“Principle is formless, and material force has form; therefore, principle pervades and material force delimits. Principle is non-active, and material force is active; therefore material force issues, and principle mounts it.”

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\(^{10}\) Kalton, et. al., *The Four-Seven Debate*, xxxiii.

\(^{11}\) ibid., xxi.

\(^{12}\) ibid., 53.

\(^{13}\) ibid.
Yulgok, ‘Letter on Principle and Material Force’ (reply to Ugye’s sixth letter)\textsuperscript{14}

Y’ulgok took great exception to T’oegye’s mutual issuance thesis, rejecting a compositional account whereby one set of feelings issue from within and another from without, and rejecting the very possibility of pure principle issuing anything.\textsuperscript{15} He argued that principle was a non-active, formless element which could neither move nor issue. How then could principle do anything, or get anywhere? His answer was that it pervaded material force. This indivisibility for Yulgok was both ontological and conceptual, and the separation of \textit{li} and \textit{qi}, which for T’oegye was a necessity to allow individuals to understand their moral composition, was for Yulgok an obstacle to that understanding. For him, “the formless is within that which has form”\textsuperscript{16}. \textit{Li} pervades - but with \textit{qi} as the only issuing force, moral learning and self-cultivation must start with \textit{qi}.

Yulgok’s perspective was informed by his conviction that a correct understanding of the cosmos provided a correct understanding of the person because the processes of the cosmos were “identical with” the processes of the human mind\textsuperscript{17}. The relationship between \textit{qi} and \textit{li} must be the same for humans as for the cosmos as a whole. Yulgok lamented that both Ugye (his correspondent in the second series of letters in the Four-Seven Debate) and T’oegye himself were insufficiently clear on “the Great Foundation”.\textsuperscript{18} This was a reference to the first chapter in \textit{The Doctrine of the Mean} which stated that “equilibrium is the great foundation of the universe”\textsuperscript{19}. This ‘Great Foundation’ was \textit{li} in its original form, when it was purely good. It

\textsuperscript{14}Kalton, et. al., \textit{The Four-Seven Debate}, 175.
\textsuperscript{15}ibid., 178.
\textsuperscript{16}ibid., 164.
\textsuperscript{17}Kalton, et. al., \textit{The Four-Seven Debate}, 132.
\textsuperscript{18}ibid., xxxiii; 120.
\textsuperscript{19}ibid.
was only when principle mounted or pervaded matter-in-motion (\(qi\); material force) that it became active and had material form which was differentiated in different ways. As matter-in-motion, humans existed as \(qi\) pervaded by \(li\), subject to stimulation and arousal by other material forces. Therefore Yulgok countered T’oegye’s dualistic mutual issuance thesis by explaining the human individual as an inseparable composition of material force pervaded by principle.

He further countered mutual issuance by asking how anything could issue solely from formless principle without the involvement of material force; “How in the world could there be feelings that proceed from within and issue of themselves with no stimulus?”.

On Yulgok’s account, only \(qi\) could play a causal role in the issuance of feelings. His insistence on this point maintained what he saw as the essential ontological continuity of humans and the cosmos. Something could not be compositionally true of humans which was not compositionally true of the cosmos as a whole. His position avoided fatalism as he maintained the Neo-Confucian focus on the cultivation of the self and society through the practice of appropriate moral behaviour. Through his recognition that material force was the sole dynamic force and the sole causal element in the \(li\)-\(qi\) composition of both humans and the cosmos, he reoriented the practice of self-cultivation away from the ideal realm and into the reality of the everyday. This meant that rather than practicing the suppression of the Seven Feelings, as would be the outcome of T’oegye’s dualism, the Seven Feelings were a natural part of human emotional life which should be harmonised with the Four

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20 ibid., 133.

Beginnings. The Four Beginnings acted as a moral norm for the Seven Feelings, and self-cultivation aimed to harmonise the Seven with the Four.

Yulgok’s interpretation was emphatically non-dualistic, but it was not a monist position. He did not deny the distinctiveness of li and qi. His perspective corresponded to fundamental yin-yang understandings in this regard; though yin and yang are distinct, they form an essential complementarity which constitutes the whole. His insistence on li and qi as a continuum in the composition of humans and of the cosmos was, for him, the crucial starting point when striving to understand feelings, emotions, and real-world moral behaviour. T’oegye’s interpretation of li and qi as dualistic and largely contradictory forces was for Yulgok ontologically incorrect, but he understood the need to make a conceptual distinction between the two elements when explaining the constitution and structure of physical and moral reality. The differences between T’oegye and Yulgok’s approaches are therefore not so cleanly opposable as might be preferred for argumentative simplicity. Certainly T’oegye prioritised li, and focused his account on a dualistic opposition between the good/pure/principle and the potentially bad/diluted/material force. Yulgok seemed to prioritise qi, with the Four Beginnings as the guiding norm for the Seven Feelings, but an insistence that only qi could cause anything to arise. The key disparity between their accounts could be the issue of causality; Yulgok insisting that only qi, as the active element, could cause the manifestation of feelings, and T’oegye asserting that li also, despite its formlessness, could cause feelings to issue.

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23 Kalton, et. al., *The Four-Seven Debate*, 131.
Seeing the goal of the Four-Seven Debate

There is much truth in framing the difference between T’oegye and Yulgok’s interpretations of the li-qi relationship as a conflict between dualism and non-dualism, or idealism and realism. Certainly those disagreements and differences in emphasis exist in their respective letters. However it is far from a clean dichotomy of interpretation. Despite their disagreement on significant causal and ontological details, T’oegye and Yulgok both maintained a great degree of ontological and conceptual unity. This is to be expected, as they were embedded within the same rich, dense, and hegemonic intellectual tradition; the study of Mencius, the Ch’eng brothers and Chu Hsi formed the architecture of their education, personal reflections, and professional qualifications. Their contributions to the Four-Seven Debate adhered to key Neo-Confucian assumptions regarding the parallel between moral and metaphysical reality, and the bridge between fine-grained theoretical considerations and the practical improvement of individuals and society.

These assumptions underlie the shared aim of T’oegye and Yulgok, and the goal of the Four-Seven Debate itself. The goal was not to hammer at philosophical minutiae for the sake of it, but rather to explicate how best to cultivate appropriate emotional responses and moral behaviour in the real world. Understanding the li-qi relationship meant knowing where to start when it came to practical self-cultivation. This detailed, protracted, and complex ontological argument was necessary because for Neo-Confucian philosophy morality was the primary concern, and morality was an ontological issue. In the esoteric morass of concept and theory it is important not

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25 Kim, ‘The Li-Qi structure of the Four Beginnings and the Seven Emotions and the aim of the Four-Seven Debate’, in Traditional Korean philosophy: problems and debates, 60.
to lose sight of the reason such discourse was necessary. Rather than an egotistical competition to arrive at a final proof, the Four-Seven Debate sought the best method to achieve the desired results in Chosŏn Korea; nothing less than the ideal moral society in practical terms.
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The Feminine Knowledge of the Pythagorean Women

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ABSTRACT: In this essay I argue that knowledge was distinctively gendered in ancient Greece as evidenced by a collection of five Pythagorean letters attributed to women authors that date back to roughly the second century CE. By reading these letters, one gains a glimpse into the gendered presuppositions concerning the nature of knowledge in ancient Greece. One notices that while the knowledge of men was critical and dynamical such that it led to continual revolution in thought (i.e. that which one typically thinks of as philosophical); the knowledge that was given (or allowed) to women was primarily conservative and static, serving merely to reproduce the status quo of marital relations and maintain the stability of the household. The contrast between the dynamic/progressive knowledge of men and the static/conservative knowledge of women reveals a number of fundamental presuppositions about the nature of the social in ancient Greece.

In this essay I argue that knowledge was distinctively gendered in ancient Greece as evidenced by Annette Bourland Huizenga in her book, Moral Education for Women in the Pastoral and Pythagorean Letters. This book contains, among other sources, a collection of five Pythagorean letters that date back to roughly the second century CE.¹ By reading these letters, one gains a glimpse into the gendered presuppositions concerning the nature of knowledge in ancient Greece. One notices that the knowledge of men

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was critical and dynamical such that it led to continual revolution in thought (i.e. that which one typically thinks of as the content of philosophy); by contrast the knowledge that was given (or allowed) to women was mostly conservative and static, serving to merely reproduce the status quo of marital relations and maintain the stability of the household. The contrast between the dynamic/progressive knowledge of men and the static/conservative knowledge of women reveals a number of fundamental presuppositions about the nature of the social in ancient Greece.

What is immediately striking about the letters is their shared format. Each is a letter of advice, written from a place of authority (often explicitly from the position of an older woman to a younger one), giving council on such issues as how to select a wet nurse, why to avoid spoiling one’s children, what to do with a runaway husband, and how to manage one’s female slaves. All of these are practical issues that a woman would conceivably encounter over the course of her life as a wife in charge of a household. Because of this, we do not see mention of women’s souls as the source or sites of λόγος [lógos], the capacity for reason that sets us above the lesser beasts, nor do we find any discussion of metaphysics or logic. The writing of women was reserved only for that which was directly related to the household, which was a “private sphere” coded as female space, and hence, under feminine rule. The role of the home as a “feminine space” may have some power to explain why these letters—which were in fact probably written by men\(^2\)—were attributed to women. A man would seem to need to speak in the voice of a woman in order to be authoritative when discussing what are “feminine matters” that would be otherwise either outside his domain, or perhaps not even worth his serious reflection. Another explanation may be that, since the texts function almost like guidebooks for moral behavior, presenting the assumed female reader

\(^2\) Moral Education for Women in the Pastoral and Pythagorean Letters, 44.
A central theme running through all of the letters is the inculcation of σωφροσύνη \( \text{sōphrosynē} \), or feminine virtue characterized by temperance and obedience to one’s husband, and how properly sōphrōne behavior is required to fulfill the duties of a virtuous woman. Also notable are themes of harmony and balance, characteristic of Pythagorean philosophy. The presence of these themes may explain why these letters are ascribed to specifically Pythagorean women, why Theano, wife of Pythagoras, and Myia, daughter of Pythagoras, are among the letters’ ascribed authors.

The first letter, addressed from Melissa\(^3\) to Kleareta,\(^4\) works as a sort of paradigm case demonstrating the narrow bounds of what was considered the appropriate intellectual domain of women. In it, Melissa, as an older woman of much experience, gives general advice to the young wife Kleareta concerning proper wifely behavior. Melissa opens the letter by saying that Kleareta’s earnest desire to learn how to properly perform her duties “offers a good hope that [she is] going to grow old in accordance with virtue.”\(^5\) This suggests that in the (feminine) culture of ancient Greece, older women were regarded as bearers of wisdom when it came to issues of the household and that they played an important role in transferring that knowledge to younger women, either orally or through letters like this one. This idea of intergenerational communication of knowledge

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\( ^3 \) From the Greek, μέλισσα [mélissa], meaning “bee” and hence suggesting structure and order, further supports the idea that fictitious women were constructed to act as role models for their women readers.

\( ^4 \) The name Kleareta might come from κλέος [kleos] and ἀρετή [aretē], which mean “glory” and “virtue” respectively, again supporting this “role model” theory.

\( ^5 \) Moral Education for Women in the Pastoral and Pythagorean Letters, 59.
between women is revisited in the last letter, from Theano to Kallisto, when Theano writes that control over the female slaves is the “first rule women have over the household” and that teaching “ought to come from the older women because they are forever giving advice about household management.”\(^6\) This relation between older women and new wives may be a sort of feminine parallel to the moral and political mentorship that occurred between men and young boys in the more public Forum.

Continuing in the first letter, Melissa goes on to discuss the importance for a wife to dress cleanly and moderately for her husband, reasoning that she ought to be occupied not with her appearance but solely with managing the household, as it is through her management of the home that her husband reaps the advantage of having a wife and hence the reason for his continued love for her. The desires of the husband are said to be an “unwritten law for the decorous woman, according to which she must live.”\(^7\) It is clear that the wife is in a subordinate position to the husband and that the virtuous woman is virtuous only insofar as she is properly performing the duties of a wife. The letter ends with a word of advice, advising against taking pleasure in material appearance and possessions, as they are ephemeral. A wife should concern herself with maintaining a good “soul,” as that is “present in good order even to the point of death.”\(^8\) These passages suggest another parallel with typical Greek (read masculine) virtues such as the avoidance of earthly pleasures in preference to the nobler, more permanent, things of the intelligible realm. But, more ominously, we may also read this passage as justification for the subjugation of the wife. It seems as though the only way for a woman to attain that which is truly good (i.e. a good

\(^6\) Moral Education for Women in the Pastoral and Pythagorean Letters, 73.
\(^7\) Moral Education for Women in the Pastoral and Pythagorean Letters, 61.
\(^8\) Moral Education for Women in the Pastoral and Pythagorean Letters, 61.
soul) is through total commitment to her husband. The reciprocal relation does not seem to hold.

The letter from Myia to Phyllis is more narrow in scope than the first letter, describing what one ought to look for in a wet nurse. Myia suggests it is best that a wet nurse be chosen who exhibits a sōphrōn nature. This is not surprising; as well tempered obedience is thought to be the ideal state for all women. In effect, this means that the ideal wet nurse orients her life around the (assumedly male) child, sleeping when it sleeps, feeding it when it is hungry. In addition, the wet nurse must provide the optimum environment for the child, keeping the home neither too hot nor too cold, bedding neither too hard nor too soft. Here one can see an introduction of the Pythagorean notion of harmony between extremes when Myia says that “nature desires what suits it, but not what is extravagant.” The relation between the wet nurse and (male) child can be read as a reproduction of the relation between wife and husband. The wet nurse is virtuous, that is, she is the best, most knowing wet nurse she can be, only when she is entirely subservient to the child, ever respondent to the unwritten law of his desires. It is only through the conservative and static knowledge of women that the progressive and dynamic knowledge of men is made possible.

Continuing the theme of child rearing, perhaps the most traditionally afforded area of feminine expertise, the letter from Theano to Euboule warns a young mother against the dangers of raising a child in luxury. This letter is in its essence a defense of harmony and moderation with regards to the moral development of a child. If the child is given too rich food, he will become gluttonous and picky; if he is shielded from all harm, he will become morally and physically weak; if he is never censured, he will not respect authority. In this way, the role of the mother is to provide “guidance

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9 Moral Education for Women in the Pastoral and Pythagorean Letters, 64.
to the moderate [way of life].”

A mother must allow her child to experience some necessary hardship so that virtue will cling to them as dye to wool. Again in this letter, there is the unspoken supposition that the child being reared is male. This invariably invites the question; how would this guidance be different were the child female? How ought the moral education of girls differ from that of boys? In these letters it is not shown. It could be the case that, given that the education of girls (i.e. how to manage the home and raise male children) seems to occur after marriage through oral or written transmission from their female elders, proper rearing is not as much a concern.

In ancient Greece, the only knowledge that was allowed to a woman was that knowledge relevant to the managing of the home and the rearing of male children. Because of this, it can be said that the sole aim of her knowledge acquisition was to reproduce the ideal home and husband as described in the traditional, conservative corpus of feminine knowledge passed down to her by older women. The wife’s sole aim in raising the male child was to produce the future husband of another woman who will then aim to raise another male child. In this way, the practice of child rearing and home management served to perpetuate the wife’s position in the home and hence explains why she would be permitted (and encouraged) to possess that knowledge in the first place, as that knowledge is “safe” insofar as it does not threaten the status quo, and, in fact, is necessary for maintaining it.

The letter from Theano to Nikostrate provides the most direct example of women being excluded from taking an active role in their interpersonal and intellectual lives. In the letter, Theano tells Nikostrate what to do with her cheating husband who has left her for an ἑταίρα [hetaria]. In ancient Greece, an hetaria was no common

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10 Moral Education for Women in the Pastoral and Pythagorean Letters, 65.
sex-worker, but often had very few clients, or a single client, and provided intellectual as well as physical stimulation.\textsuperscript{12} Rather than acting out against her husband, Nikostrate is encouraged to carry on in her household duties. The husband is characterized as having fallen prey to a certain madness, unable to resist the \textit{hetaria’s} feminine wiles. Because of this, any blame that could be placed on the husband is transferred either to the \textit{hetaria} for encouraging the infidelity or to the wife, were she to disrupt her relationship with husband merely on account of him taking up a mistress. It is in this letter that the texts’ probable male authorship is most legible.

Any attempts to censure the husband, Theano says, would only be stoking the coals of the problem. Theano seems to be advising against Nikostrate using a philosophical-rhetorical approach to criticizing her husband’s behavior.\textsuperscript{13} Any action on the part of Nikostrate that would result in real change is strongly discouraged upon threat of retribution by the husband, or even worse, a resulting divorce. The letter suggests that the proper course of action for a woman to take is a passive, rather than active one. Neither language nor reason are considered to be part of a woman’s toolbox; critique is not an option for her, leaving only recourse to the authority of tradition. This assignment of woman to the passive position is a recurring theme in Greek philosophy, such as in Aristotle’s \textit{On the Generation of Animals}, where the female animal is thought to contribute the cold, passive matter in the reproductive process. Theano’s advice makes it clear that it is only appropriate for a woman to use her “intellect” if it is in service of managing the household or achieving the aims of the husband.

Throughout these letters one sees women speak as experts, albeit over the very specific domain of domestic life. It is therefore not out of the question that these women who wrote these letters, or

\textsuperscript{12} \textit{Moral Education for Women in the Pastoral and Pythagorean Letters}, 68 n.198.

\textsuperscript{13} \textit{Moral Education for Women in the Pastoral and Pythagorean Letters}, 69 n.205.
rather, their historical counterparts, could have been viewed as “intellectuals” if one understands that to mean that they were masters of what it meant to be a woman in Greek society. On the other hand, the position of subservience advocated by these letters would seem to leave little room for women to learn about and engage with subjects not directly related to the management of the home. Further, possessing mastery of household management is not the same as possessing a set of critical thinking skills. In becoming the virtuous wife, a woman will never question her relation to her husband or to society at large but will merely perpetuate her subservient status. The knowledge allowed to and designated for women in ancient Greek society was knowledge for the sake of some goal, namely, the perpetuation of the husband’s house and lineage. Men’s knowledge was an end in itself, free to experiment and contradict past thinkers. While an “intellectual” man in ancient Greece would strive to create new knowledge that may change his world, an “intellectual” woman ought only to follow the rules so that she may keep her world the same and his afloat.

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Essence and Ontological Dependence in Aristotle’s

*Metaphysics*

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ABSTRACT: *This paper examines the role that essence plays within the project of Aristotle’s Metaphysics. The Metaphysics is, of course, concerned with articulating the most fundamental nature of being itself—the foundations of all beings, what being is, and what maintains beings in existence and makes them the kinds of things they are. Of great importance to such a discussion is, of course, essence: the “What it is to be a thing.” The essences of things define them and make them one in themselves. Importantly, Aristotle singles out essence as one of the candidates for the “substance of substance,” that is, the core foundation of what it is for a being to be. This paper shall argue, closely following several remarks in the Metaphysics and the Posterior Analytics, that essence is such an ontological foundation and should be considered the substance of substance.*

1 Introductory Remarks and Topics

Essence is one of the most fundamental concepts in Aristotelian philosophy and its descendants. Upon it rests our capacity to understand the things of the world; or, rather, knowledge of essences just is knowledge of the world. Essence as such is, therefore, in itself deserving of study. Over and above this, however, is its place in Aristotle’s highly dialectical and often exceedingly abstruse *Metaphysics*. The *Metaphysics* attempts to establish a science of being qua being, and, as the chiefest element of this, attempts to determine the substance of substance itself. This is for obvious reasons. A substance, whatever exactly it might be, clearly seems to be the unit of Aristotelian ontology. To be a substance is to be the sort of thing that exists in itself and independently to at least some
degree\(^1\) and it is to be a thing or a being in the primary sense of the term. It is therefore of obvious importance for the project of the *Metaphysics* to give an account of just what a substance is, since knowledge of the being of substance will be almost tantamount to the study of being qua being.

Aristotle writes in *Met. Z*.3 that "separability and individuality belong especially to substance"; a substance will be something that can be pulled out and exist 'on its own' as something identifiable.\(^2\) And, in *Met. Δ*.6, he notes that accidents exist only because those things of which they are predicated, i.e. substances, exist.\(^3\) Therefore, it should be clear that in order to thoroughly investigate the question of the substance of substance, it is necessary to investigate the question of ontological dependence, that is, whether something has its own being or whether it’s being is derived from something else. It is here in particular that the essence of a thing is deserving of attention, as one of the candidates for the substance of substance that Aristotle puts forward in Z.3 1028b 33-36. Therefore, this paper will discuss the meaning and characteristics of essence and the meaning of definition as the expression of the essence, and will examine various possible positions about the ontological dependency of essence, particularly with a view to how this state of dependence influences generation. I will conclude, ultimately, that essence is ontologically independent and ontologically (though not temporally) prior to each thing that possesses it *qua* the thing it is,\(^4\) and then

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\(^1\) Although to what degree is contested in the scholastic tradition


\(^3\) Ibid., 1017a 20-23.

\(^4\) To put this another way, the existence of the essence is more fundamental than the being of the thing; the thing’s existence depends upon the existence of the essence.
attempt to address certain problems that may be raised against this view.

2 Essence in *Metaphysics*

The Greek phrase which is rendered into English as "essence" is τὸ τί ἦν εἶναι which means, roughly, 'what it is to be something.' For example, what it is to be human is to be a rational animal, and so rational animal is the essence of a human being. Joan Kung notes that, "This phrase [essence] is used by Aristotle for the elements in things expressed in their complete specific definitions ... and is frequently identified with form and formal cause."\(^5\) *Met.* Z.4 1029b 13-23 offers some enlightening remarks on the meaning of essence. In it, Aristotle asserts that,

The essence of each thing is that which it is said to be per se ... Your essence, then, is that which you are said to be of your own nature. But not even all of this is the essence; for essence is not that which is said to be per se in the sense that whiteness is said to belong to a surface, because "being a surface" is not "being white" ... Hence the formula of the essence of each thing is that which defines the term but does not contain it.

What Aristotle apparently means by this is that the essence of a thing is the combination of those per se attributes which determine what a thing is but not of those which necessarily arise from the kind of thing it is. Aristotle himself gives an example of what I mean by this and corroborates this interpretation, writing that 'Accident' has also another sense, namely, whatever belongs to each thing in virtue of itself, but is not in the essence; e.g. as having the sum of its angles.

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equal to two right angles belongs to the triangle."\(^6\) I am also aided in this interpretation of essence by Kung, who notes that, "Aristotle's remarks about ... per se attributes at An. Post. A.4.73a38f. suggest that disjunctive properties which belong always and in every instance to their subjects and whose definitions mention their subjects also belong necessarily to their subjects, but they are clearly not included in the what-it-is-to-be of their subjects, e.g. being odd or even is a necessary property of number."\(^7\) Therefore, essence is made up of certain per se, and therefore necessary, attributes of a thing, which make the thing what it is but among which are not included those per se attributes of a thing that result from its being what it is but fail in some other respect to define it. Certain phenomena are isolated when we pick out an object and define its essence, but others, which may nonetheless be per se attributes, fall outside these and we regard them as inessential, just as it is essential to a triangle to be a polygon of three sides (since this is the definition), but it is not essential that its angles sum to \(\pi\), even though a triangle's angles must sum to this.

It is also worth noting that, for the Aristotle of the \textit{Metaphysics}, "essence will belong to nothing except species of a genus, but to these only."\(^8\) Properly speaking, only a species has an essence; a genus has no essence, nor does any attribute itself. This is also somewhat intuitive, given that we often regard the differentia specifica as particularly essential to a thing. For example, when we give the human person the definition "rational animal," it is the differentia, "rational," that receives pride of place, since "animal" tells us relatively little, with there being in the world almost countless kinds of animals. Further, we do not find genera or accidents instantiated in things apart from a specied substance, and so it makes little sense to speak of the essences of these if essence is to be a

\(^{6}\) Aristotle, \textit{Metaphysics}, \(\Delta\.30\) 1025a 30-33, emphasis added.  
\(^{8}\) Aristotle, \textit{Metaphysics}, \(Z.4\) 1030a 12.
candidate for the substance of substance, since substance truly exists separably and independently, as noted above.

3 Definition and essence in *Metaphysics* and *Posterior Analytics*

Definition, however, plays the most crucial role in a working understanding of essence, because definition is the expression of the formula of the essence. Aristotle expresses this in another section of *Met. Z.* 4. He there discusses definition as being a particular kind of account of something, saying, "We have a definition, not if the name and the account signify the same (for then all accounts would be definitions; because any account can have a name, so that even the Iliad will be a definition), but if the account is of something primary." 9 The argument put forward here is that a definition cannot merely be the content of a named account of something, because you can give a name to any account, even if that account is clearly not a definition. A definition, rather, will be an account of the "primary," or essential, elements of a thing. 10 We can be certain that the term "essential" is properly used here, because, as already mentioned, Aristotle claims that "the formula of the essence of each thing is that which defines the term." 11 Thus, a definition is an account which gives the formula of the essence, or, simply put, is the expression of that formula. If, further, "formula" is taken simply to mean an expression or enumeration of a thing's parts, rather than the combination of the actual parts themselves (just as a chemical formula lists the needed chemicals for a reaction but is not composed of those chemicals), then in that case ‘definition’ may be defined simply as the formula of the essence. If a definition is a good one,

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10 A thing which is, as we have seen, a substance.

then whatever is in the essence will be enumerated in the definition, and whatever is in the definition will be essential to the thing.

Beyond this basic analysis, there is a twofold account of definition given in *Posterior Analytics* B.8-10 which will also be useful here. Aristotle relates, "Since a definition is said to be an account of what a thing is, it is evident that one type [of definition] will be an account of what the name, or a different name-like account, signifies ... Thus one definition of definition will be the one stated; another definition is an account which makes clear why a thing is."\(^\text{12}\) So Aristotle bifurcates between two types of definition, one which is *semantic* in character, that indicates just what we have in mind when we ordinarily use the term in question, and another that is *causal* or *explicative*, that describes the causes of the phenomenon captured in (or referred to by) the semantic definition.

Definition is, of course, expressive of essence, and so, *mutatis mutandis*, Aristotle articulates here that if one is to know what a thing is—i.e. its essence—one must know two things: first, those per se attributes by which we first come to identify the thing—i.e. what it is in perception—and, second, the explanation\(^\text{13}\) for the thing, an explanation of how those attributes came to be and to be together. To use Aristotle's own example of thunder, one can know what it is in the first way by knowing that it is a kind of noise in the clouds, and in the second way by knowing that it is the extinction of fire in a cloud.\(^\text{14}\) This interpretation is also suggested strongly by J.L. Ackrill, who writes that

Aristotle is certainly claiming in these chapters that the definitions of some items may be expressed or made

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\(^\text{13}\) Or, alternately, cause—for the Greek αἴτιον.

\(^\text{14}\) At least, so it was to Aristotle.
clear in appropriate demonstrative syllogisms, even though they are not demonstrated in or by them. The items in question are those which have a cause or explanation (αἰτιον) different from themselves, and whose nature can be fully revealed only when the cause is indicated.\(^{15}\)

Ackrill, however, wants to strongly separate the phenomenon from its cause—the sound (we would consider it as a physical wave) from the extinction (the energy emittance that causes the wave). It is not clear that this is the best reading. It seems that in one sense that the thing, thunder, is the result of the explanation, as the noise is the result of the extinction, but in another sense it seems that it is the explanation, e.g. the extinction of fire, itself. The initially identified semantic content and the immediate causal conditions attendant on it are, after all, simply two sides of the same coin. It is just when such-and-such causal conditions obtain that the identified reality obtains, and when the identified reality obtains one can be assured that the causal conditions have also obtained. It is a single phenomenon—thunder—in which obtains in every instance both attributes and explanation, which occur contemporaneously as a single entity. And this at least seems to be Aristotle’s own view in situating both as types of definition, as accounts of what a thing is.

What’s more, these two elements—primary attributes and explanation—can be combined together to constitute an exhaustive definition of a thing, as in Aristotle's articulation at Post. An. B.10

94a 5, "[Thunder is] a noise of fire being extinguished in the clouds." And since definition is the formula of the essence, it follows that an essence must also contain the substance of this bi-partite division into attribute and explanation. The essence of a thing will consist both of what it phenomenally is and of the deeper causes inherent in it which explain (or cause) these appearances. I should also point out that this is quite intuitive, not only in the context of Aristotelian philosophy but also, latently, in the mind of what I assume to be the average person, since those who we often consider to be the most knowledgeable about a subject are not simply those who can describe it well but those who understand its causes.16

4 Generation

One more significant topic must be fleshed out before the proper argument of this paper can begin, and that is an argument Aristotle gives concerning generation and its implications on matter and form. I will, therefore, give it here. Aristotle articulates it most concisely in Z.8 1033a 25 - 1033b 20, where he says,

Now since that which is generated is generated by something ... and from something ... and becomes something, just as the craftsman does not produce the bronze, so neither does he produce the sphere, except accidentally, inasmuch as the bronze sphere is a sphere, and he makes the former ... For if we make the form, we must make it out of something else; for this has been assumed ... and the process of generation will continue on to infinity. It is therefore obvious that the form ... is not generated—generation does not apply to it—nor is the essence generated.

This is a classic argument from infinite regress. The basic line of his argument is as follows. (1) All things which are generated are generated from something else. (2) The things from which other things are generated are matter and form. (3) Therefore, if form is generated it will be generated from other matter and form. (4) However, if form is generated from other form, then this form will in turn need to be generated from other form, and so on to infinity. (5) But this is impossible. (6) Therefore, form and (for reasons less clear) essence are not generated, since saying they are so leads to impossibility. In other words, in order for generation to take place, matter and form must be prior to what comes from them.

5 Non-primary ontological statuses

5.1 Essence qua universal non-existent?

To now begin, at length, to pursue the question of what kind or degree of ontological dependence essence has, we might ask whether essences really exist at all. Perhaps, indeed, they do not. Now, it would seem, at a cursory glance, that there could be some support for this notion in the *Metaphysics*, for Aristotle argues, Z.16 1040b 23-28, that, "Nothing ... that is common is a substance; for substance belongs to nothing except itself and that which contains it and of which it is the substance ... but that which is common is present in many things at the same time. Hence it is clear that no universal exists in separation apart from particulars." The premise to which Aristotle is implicitly appealing is that in order for something to be a substance, it must have oneness and independent being, the former being a prerequisite for the latter. Since universals, which by definition are common to many things, thus cannot have oneness, they also cannot have independent being. Further, since it seems clear that many things share the same essence, then essence falls under the

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17 Which, hereafter, will be the only text quoted, unless expressly noted otherwise.
scope of Aristotle's argument and so it would seem, perhaps, that essence does not have being.

This conclusion, however, does not actually give the desired outcome, namely that essences do not exist, but only that they do not exist, "in separation apart from particulars." And this is a useful observation, since it corroborates what was said about essence in §3 above, by pointing out that essence is a concrete bundle of existent elements. There is also a serious difficulty that this view of essence as a universal brings about. This difficulty is that, if essence is a universal then particular things will not have essence, for if the "what it is to be the thing" is a universal, then for a thing to be that thing it must be universal or, which amounts to as much, be composed from a universal, and therefore not be a particular, but this is obviously false both by definition (since then essence will cease to reside in many particulars and so will cease to be a universal) and by virtue of the fact that, in this abolition of particulars, all things in a class are in this way made one, and this also is absurd. Aristotle's thought—and this should surprise no one—simply does not support a system in which essences do not in any real way exist. This first possibility, then, may be dismissed.

5.2 The next option: essences have dependent existence

Since there is no place in the *Metaphysics* for essences lacking real existence, a new question must be examined, that is, whether essences derive their being from the being of some other thing which exists primarily. The two candidates for this primary thing are matter and substance. The latter option also seems reasonable, since it is certain that substances exist, whereas it would be problematic for essences to exist uninstantiated for the reasons from Z.16 just discussed above. However, if it is substance that is the primary thing, then other issues shall be raised about the nature of essences and generation. If it is matter, then many of the problems just raised will return.
When distinguishing the different ways in which the term "being" is used, Aristotle argues that, "'Not-white' is said to 'be,' because the subject of which 'not-white' is an accident, is. These, then, are the senses in which things are said to 'be' accidentally: either because both predicates belong to the same subject, which is; or because the predicate belongs to the subject, which is; or because the subject to which belongs that of which it is itself predicated itself is."\(^{18}\) He refers to this state, wherein something predicated only exists because that of which it is predicated exists, as "accidental being." This state perfectly describes the ontological state of essences if we take them to be ontologically dependent. This, however, should unsettle us, since if essences have accidental being it seems that there is nothing to distinguish them from accidents, which is impossible, since accidents, by definition, are not necessary for a thing to be what it is.

Now, to further elucidate this problem if, as Kung notes, "A man can change in certain respects ... but he cannot lose a property that belongs to him essentially without ceasing to exist,"\(^{19}\) then for Aristotle the existence of the essential attributes of a thing are necessary to that thing's existence. If, however, the existence of essential attributes is also dependent on the existence of the thing, then we arrive at an impossible scenario—an impossible state of mutual dependence—wherein the attributes depend upon the existence of the thing, and the thing cannot be without the existence of the attributes, and so nothing can come to be, nor is there any kind of ontological backstop upon which being can rest.

To put this another way, the result of essences only having dependent being is that a thing (namely, either substance or matter) must be a something prior to its possessing essence, since its being is

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\(^{19}\) Kung, “Aristotle on Essence and Explanation,” 392.
prior to that of essence. This, however, is untenable, because essence is, by definition, "what it is to be something," and so that which lacks essence cannot be a thing, and therefore something both must be a thing and must not be a thing in order to be a thing, and this is absurd.

While the issue above should be sufficient to discount dependent being in essences, there are other problems which may be raised in addition. Perhaps one might like to say that it is only the combination of matter and form that exists in its own right and imparts being. Such a view, however, creates problems. Now, matter and form clearly exist before some substance into which they are shaped (as said in §4 above). However, if neither matter nor form has existence in itself, as must be the case if the matter-form composite is that which most fundamentally exists, then how can it be said that some composite of the two comes to be, since it will not be generated from anything? The reason for this is that, if the composite does not exist, then neither will its form and matter, which depend on it, but the form and matter must exist in order for the composite to come to be, as just stated. Hence, Aristotle is right in rejecting the composite on ground of posteriority.20 To conclude all our prior arguments, then, essences, for Aristotle, both exist and have independent being, since any other option is either textually insupportable or untenable in some other way.

6 The final option: essences are ontologically independent

6.1 Problems
But haste is not the ally of thought. The conclusion that essences are ontologically independent is not without its problems. For instance, if essences have independent being, what keeps them from existing entirely apart from substances and material things? They cannot exist in that way however, given our argument about universals above. If

20 Cf. Aristotle, Metaphysics 1029a 30-33
they existed in that way, further, they would seem to be the same as Plato's Forms, which Aristotle rejects. Further, if essences exist independently, they would seem to be individual entities, and so substance and essence will be two things rather than one, and there will be no account of how they come to be one thing, and it would seem that we will end up, even if they do come to be into one thing, with a substance "composed of substances," a possibility which Aristotle denies.21 Besides this, if essences are ontologically prior to things, how will parts of a thing which are not in the formula of the essence come to be in things?

6.2 Two entities? Accounting for essence.

It is clear that a substance and its essence cannot form two entities. Would it even be tenable to suppose that both essences and substances have being in their own right, but are separate beings? If so, how could they come together to form a single thing? They could not. As Aristotle articulates in Z.7 1033a 17-23, in any generation, "that from which a thing is generated should not persist, but be changed," and, just as a person who becomes healthy ceases to be an invalid, "so in [another] case the statue is not called wood, but is called by a verbal change not wood, but wooden; not bronze, but made of bronze," etc. Hence, as an essence would take part in generating the thing which possesses it, the essence would be annihilated as such just as the wood was annihilated as such and hence the resulting substance will not possess its own essence as such and will not be the very thing which it is, which is absurd. Further, if both substances and essences can have separate being, what will a substance even be if it lacks essence? (If substance is truly ontologically separable from essence, then it must be able to exist without it.) If substance lacks an essence, however, is it ever possible to ask "what" something is? For the word "what" presupposes some

21 Aristotle, *Metaphysics*, 1041a 5
definite kind of thing, which only essence could impart. It would not be, and so all knowledge and even thought would be impossible. More fundamentally, however, if there are substances existing totally apart from essences, then there will be things which exist but are not things, since essence is what it is to be a thing, and so lacking essence causes that which lacks it to be indeterminate, all of which is inadmissible. But how can such a problem be avoided?

All of this is suggestive of the a conception of essence which has been, at least latently, implied throughout the whole paper, and so the discussion from earlier will be of particular use. Now a definition is expression of the formula of an essence, as we have said, and this reality sheds light on the deeper meaning of essence and the solution to our problem contained in it. When we speak of formulas, we refer to them as objects apart from the things which they define, represent, and express, as, for instance, a blueprint may exist apart from a house or a chemical formula may exist apart from the chemicals and chemical reactions to which it refers; the items referenced are their own entities. However, just as definition is the formula of the essence, so the essence is not that formula, nor an attribute of a substance that it possess the items in a formula, but is those elements themselves which the formula expresses "but does not contain." Essence, therefore, truly considered must be more fundamentally bound up within a thing than a totally separable formula, and, since essence is not simply the same as matter, it must be the actual arrangement of the parts of the thing to make that thing what they are; it must contain—indeed, it must be—the objects which the formula only signifies, so configured as to form what we have identified. Therefore, essence is not a thing distinct from substance or another substance in itself, but is, of its nature, the combination of those elements which, taken together, form a thing. Moreover, this seems consistent with Aristotle's claim that, "each individual thing is

22 Aristotle, *Metaphysics*, 1029b 23, as above.
one and the same with its essence."\(^{23}\) Therefore, essence can have an existence not dependent upon the existence of other, prior, primary things without becoming a Platonic Form or its own irreconcilable entity. Where the essence is, there also is the substance.

### 6.3 The deeper meaning of an object-inclusive essence

The reader of this essay may now justifiably ask, "What does it mean to say that an essence contains the objects of its formula? How exactly is this intelligible in terms of the concrete world?" I hope to address that issue now.

Again, I make an appeal to Aristotle's account of the connectedness of definition and essence, since I believe that looking at the bi-partite division of definition and essence from §3 sheds a great deal of light on the issue at hand. As noted earlier, any definition can be offered under two aspects, (i) per se attributes or (ii) explanation, which together are meant to constitute a sufficient account of the essence. As also noted, the essential per se attributes proceed from the explanation as its (causal) results.\(^ {24}\) To get a grip on the concept of an object-inclusive essence, which I am offering here, it is useful to imagine these objects as being those contained within the explanation. For instance, one might imagine the object-inclusive existence of the essence of a lunar eclipse as being the particular arrangement of the sun, moon, and earth such that the earth blocks the light of the sun, with the sun, moon, earth, and their arrangement being the objects in the essence. Thus, what it is to be an eclipse is to be an effect of light on the moon resulting from a particular

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\(^{23}\) Ibid., 1031b 19–21.

\(^{24}\) We must put geometrical (and, perhaps, all mathematical) entities to one side here, in a certain sense, since in them the causal elements would be precisely those which would be given in an articulation of the primary attributes. For instance, the causal elements of a triangle would just be the three rectilinear lines which are implicit in the descriptive definition three-sided polygon.
arrangement of the heavenly bodies, by whose movement this essence becomes instantiated.

Finally, this conclusion does not destroy generation, because the essences of things are only prior to things qua the things they are. Since Aristotle notes, as said above, that in order for a thing to be generated, it must be generated from something else which has certain attributes of its own, it is not necessary that the essence of the thing be prior to the material, since the material is a different kind of thing before the generation, as just stated, and so it is possible for something to be generated from both matter and form. Put another way, essence makes a thing what it is, but it does not need to make the things from which a thing is made what they are, and their attributes may remain although they are not contained in the essence of the thing generated.

In addition to this, it may seem easy to raise the question of how it is that, if essences are truly ontologically independent and things seem to come to be through them (as the noise in the clouds came to be through the extinction of fire, or the redness of the moon came to be through planetary motion), anything other than essential properties come to be in them. Where, in other words, do non-essential attributes come from, if the thing seems to come to be through its essence? However, there is not great difficulty in answering this question, since, on the one hand, some non-essential attributes come to be in a thing through natural effects in the matter from which a thing is formed, as, for instance, a statue might be brown if it is carved out of wood, or white if out of marble, although neither such attributes is essential to it. One could include in this, to a certain extent, bodily and physical forms as well. Organic beings come from organic matter (flesh, bones, plant stems, etc., and DNA beneath those) which is reproduced and grown by the self-motion of the organism, and the natural structures (or deficiencies and flaws) of this organic matter will supply certain non-essential attributes, such as hair-color, to living things in the course of their generation and
development. Besides the attributes just mentioned, other nonessential attributes, as said above, come about as a natural and necessary result of the essence, like a triangle's angles summing to two right angles, or an integer's needing to be either odd or even. Between matter and essence, therefore, one can in fact get a rather complete picture of substances and their generation even with an ontologically independent, object-inclusive essence.

7 Conclusion

Although it is difficult—perhaps impossible—to arrange the whole corpus of the *Metaphysics* into a single centralized set of arguments and theses, nonetheless, there undoubtedly are sustained philosophical arguments of coherence and weight that can be coaxed out of it. I hope I have presented some of these. It is here worth recalling what was said at the beginning, which is that one of Aristotle’s major aims in the *Metaphysics* is to ascertain the substance of substance, the ultimate ground of the being of beings properly so-called. The arguments I have presented form a strong case both that the best candidate for this ground is essence, and also that to assert such a thesis—alongside its clear intuitive advantages—does not reduce Aristotelian doctrine to a kind of Platonism or to a reductionist ontology.
Bibliography


