Distribution Agreement

In presenting this thesis or dissertation as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis or dissertation in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this thesis or dissertation. I retain all ownership rights to the copyright of the thesis or dissertation. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation.

Signature:

_____

Craig Henchey

Date:_____

Approval Sheet

Happiness as a Natural and Ethical Goal in Aristotle

By

Craig Henchey

Doctor of Philosophy

Philosophy

_____ Richard Patterson
Advisor

_____ Ann Hartle
Committee Member

_____ Marta Jimenez
Committee Member

_____ Timothy O'Keefe
Committee Member

_____ Harald Thorsrud
Committee Member

Accepted:

_____ Lisa A. Tedesco, Ph.D.
Dean of the James T. Laney School of Graduate Studies

_____
Date

Abstract Cover Page

Happiness as a Natural and Ethical Goal in Aristotle

By

Craig Henchey
MA, Emory University
BA, Vassar College

Advisor: Richard Patterson, Ph.D.

An abstract of
A dissertation submitted to the Faculty of the
James T. Laney School of Graduate Studies of Emory University
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy
in Philosophy
2016

Abstract

Happiness as a Natural and Ethical Goal in Aristotle

By Craig Henchey

It has become common to separate Aristotle's ethical views from his natural science, both in scholarship and in efforts to adapt his ethical theories for contemporary use. Against those interpretations, I argue that Aristotle uses a consistent theory of natural goals that applies to both his biological analysis in terms of organisms' goods and his ethical treatment of the human good. Recognizing this continuity between his natural science and ethics helps to understand both halves better. It highlights the way organisms aim at a certain quality of life rather than mere survival, and it clarifies the principles Aristotle uses to identify the highest good for humans, while also showing that this good has both a descriptive and normative role.

In the first three chapters, I argue that Aristotle does not view biological goals solely in terms of survival and reproduction, as modern evolutionary theories tend to do; rather, he thinks that organisms aim at the highest quality of life available to their kind. As evidence, I show that Aristotle defines the highest goal of animals in terms of using their sensitive capacities, which allows them to achieve a better life than plants can. In doing so, he applies a teleological hierarchy that makes all other functions in animals subordinate to the sensitive ones.

In the last two chapters, I argue that Aristotle appeals to the same principles of teleological hierarchy that he uses to understand the ends of plants and animals to explain what human happiness is. Identifying these principles is useful for explaining why there is a tension in Aristotle's ethics between an account of happiness that is solely constituted by intellectual activity and an account that also includes exercising the character virtues as constituents of happiness, as I discuss in Chapter 4. Additionally, noticing that Aristotle's biological goals play both descriptive and normative roles clarifies the way in which happiness is the highest goal for all humans. As I show in Chapter 5, real happiness plays a role in both explaining and evaluating everyone's actual behavior, rather than merely identifying what the best behavior would be.

Cover Page

Happiness as a Natural and Ethical Goal in Aristotle

By

Craig Henchey, M.A.

Advisor: Richard Patterson, Ph.D.

A dissertation submitted to the Faculty of the
James T. Laney School of Graduate Studies of Emory University
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy
in Philosophy
2016

Acknowledgements

I would like to thank my committee for their support and encouragement throughout the process. I am grateful to Richard for providing detailed comments on every chapter. Marta was especially helpful when I was formulating my project in the early stages and when I was figuring out how to situate my work in relation to existing scholarship. Tim provided valuable suggestions for improving my writing and arguments, especially in the last two chapters. Thank you Hal for being excited to look at my work before even joining my committee, and thank you Ann for continuing with my project after retirement.

Table of Contents

Introduction

From explaining why plants grow roots, to why animals have teeth, to why humans form friendships, Aristotle appeals to the goals and the goods of those organisms. Aristotle is famous for arguing that nature must be understood in terms of ends, because a natural process can only be explained by reference to that for the sake of which the process occurs. At the same time, Aristotle's ethics is also structured around ends, in so far as he posits eudaimonia as the end for humans and offers ethical advice about how to achieve such an end. Moreover, in both his ethics and natural science Aristotle uses similar analogies with the crafts to explain the nature of natural and ethical goals. Is the same conception of end being used in these different cases? Contrary to interpretations that separate Aristotle's ethics from his biology, I argue that Aristotle does use a consistent theory of natural goals that applies to both his biological analysis in terms of organisms' goods and his ethical treatment of the human good.

When Aristotle posits a natural goal for something, the goal plays an descriptive role in accounting for what that thing does, it plays a role in evaluating the success of those actions, and achieving that goal defines the good of that thing. I focus on these three general features of natural goals and show that goals have a similar status and role to play in both his ethics and biology. This approach allows for a better understanding of how Aristotle analyzes what is good for organisms in terms of their highest goal in general and how it applies to humans in particular. Thereby, I also reveal the unity of Aristotle's thinking across apparently disparate domains.

In Aristotle's scientific works, ends combine two different roles that we normally find sharply separated in contemporary philosophy. For Aristotle, ends offer explanations of what has actually happened, and they also provide standards by which to evaluate whether something is good or successful. The first role is essentially a descriptive one of assigning causes to account for what has actually happened, while the second role is normative, because it states what would be better or best. By allowing an individual end to play both of these roles, Aristotle does not accept a strong fact-value distinction, since he takes what is good for an organism to be a fact about that organism that needs to be known in order to understand that organism and what it does. In his influential book *Teleology,* Andrew Woodfield makes a similar observation about Aristotle's teleological explanations. He claims that Aristotle rightly believed that all teleological explanations are claims that something happened "because it is good," which is achieved by "welding a causal element and an evaluative element to yield an explanatory device."[1] By combining causation and evaluation, teleology both accounts for what has actually happened and provides standards for evaluating whether or not something was good.

The paradigm subjects for teleological explanations are organisms. Aristotle explains why plants and animals grow and develop the way they do by pointing to the fully-grown adult as the goal of the seed or immature organism. He explains why they have the parts they do by describing the kind of life that organism lives and showing how each part performs a function that is beneficial or necessary for achieving that life. Furthermore, Aristotle explains not only their growth and physical structures in terms of these goals, but also their behavior. For instance, he repeatedly explains why animals

[1] Woodfield, (1976), 205-6; this passage is also cited by Cooper (1982), 197; and Freeland (1994), 41-42.

reproduce in terms of aiming at the eternal and divine (e.g. *DA*, 415a 25 – 415b2 and *PA* 656a 3-8). Since animals mate by voluntary movements, this means that even voluntary behavior is subject to explanations that appeal to natural goals.[2]

Since humans are organisms who act voluntarily, Aristotle's treatment of other animals' behavior should be compatible with his analysis of human actions—or at least, that this cannot be ruled out by the voluntariness of human action. If Aristotle explains why animals do what they do by appealing to their natural goal, then we have a reason to think that he might do so for humans. We find support for this view when Aristotle defines the human good in terms of the human function, *ergon*, in *Nichomachean Ethics* I.7, since Aristotle regularly links natural ends and functions in his biology. This suggests that what we do voluntarily is heavily influenced by the fact that we are born human. The difficulty with this view is that natural goals are fixed by the kind of things we are born as, but we often think of humans as being able to set their own goals without having their goals determined independent of their conscious thought and voluntary actions.

Some scholars have argued against the idea that the content of the human good is fixed by human nature, as goods are fixed for other organisms, because they think that the ability of humans to set their own goals is incompatible with having a goal set by nature. Some philosophers claim that Aristotle did appeal to a fixed human nature to identify a goal shared by all humans, but they are critical of that move, while still being sympathetic to other aspects of Aristotle's ethics. For instance, Bernard Williams has argued that it is no longer plausible to believe that humans have a goal set by a universal

---

[2] Animals' mating requires locomotion, which Aristotle consistently describes as voluntary, even if animals lack choice, e.g. *NE* 1111b 6-10. Aristotle suggests that sexual arousal itself may not be voluntary, but the movements animals perform based on a desire to mate must be voluntary since they involve desire and imagination (*DM,* 703b 4-10).

or biological teleology.[3] Similarly, Alasdair MacIntyre in *After Virtue* argues that appeals to metaphysical conceptions of nature and biology are not plausible grounds for ethics any more, and he proposes a revised version of Aristotelianism that appeals to traditions and social roles as a basis for ethics rather than nature.[4]

Some Aristotle scholars have argued that these critiques of the plausibility of Aristotle's ethics are unwarranted, denying that Aristotle himself bases his ethics on natural teleology or a metaphysical biology. This means his approach is compatible with most contemporary approaches to ethics. For instance, Julia Annas defends Aristotle's views on the human good by denying that Aristotle's biological teleology sets ethical ends, and by denying that Aristotle establishes humans' place in nature through any universal teleology.[5] She maintains that Aristotle's biological studies of teleology are focused on how animal parts are adapted to ends, rather than how whole organisms are adapted to ends, and since his biology does not set ends for organisms as a whole, biology has no bearing on what the human end is. Additionally, she claims that the ends found in Aristotle's science are distinctly biological rather than ethical. Similarly, Martha Nussbaum denies that Aristotle appeals to a practice of attributing functions and ends to whole organisms in his biology as a way of supporting a particular conception of the human good and human nature in his ethics.[6] She suggests that Aristotle's approach to the human good is actually closer to the sort of approach advocated by John Rawls in *A Theory of Justice*, featuring rational discourse and reflective equilibrium, rather than nature as the source of distinctively human ends.

---

[3] Williams (1985), 43-44.
[4] MacIntyre (2007), xi, 173, 229.
[5] Annas (1993) 139.
[6] Nussbaum (1978) 81-85.

These scholars represent a common view that there is something valuable in Aristotle's ethics, which already is or needs to be disconnected from Aristotle's biological views, both because ethics should be divorced from biology and because his biology is outdated and implausible. Counter to this approach, I argue that there is something interesting and plausible about Aristotle's teleological approach to the goods of organisms in general, and about his application of this same approach to the human case in particular.

My view is that Aristotle's biology analyzes other animals' morphology and behavior in terms of their overall ends and functions, and his ethics applies this general approach to understanding the good of an organism to the human case. As a result, the human good is analogous to the goods of other organisms, according to Aristotle. I take this to be a highly plausible result, and it is in consonance with many contemporary naturalist intuitions.[7] Recognizing this continuity between his natural science and ethics is key to understanding how Aristotle's teleological principles apply consistently in both fields. My analysis highlights the way organisms aim at a certain quality of life rather than mere survival, and it clarifies the principles Aristotle uses to identify the content of human happiness, while also showing that this good has both an descriptive and normative role.

---

[7] Rolston, III (1998) argues that we need to naturalize our conception of values by recognizing that every organism has things that are beneficial to it and harmful to it. Hursthouse (1999) and Foot (2001) are examples of philosophers who have defended this kind of naturalistic Aristotelianism, which emphasizes the role of belonging to a species, as a current view in meta-ethics. While not inspired by Aristotle, Jackson (1998) defends a moral naturalism that considers moral properties to supervene on descriptive properties, and the effort to connect ethical norms with description complements the view of Aristotle I advocate.

The first three chapters analyze Aristotle's discussions of goals in his texts on natural science. I show that Aristotle does not view biological goals solely in terms of survival and reproduction, as modern evolutionary theory tends to do; rather, he thinks that organisms aim at the highest quality of life available to their kind. This means scientific explanations of certain animal behaviors and parts require citing the improvement of an organism's quality of life, rather than how it would help to merely keep it alive to leave offspring.

It is common for scholars of Aristotle's biology to define his biological goals in terms of survival and reproduction, which does bring his conception of teleology closer to contemporary views of biological functioning and end directedness.[8] However, defining the goals this way has disadvantages. First, it makes it difficult to see why achieving the goals would determine what is good for the organisms, what is beneficial to an organism is not exhausted by merely staying alive and leaving offspring. Second, this approach makes it much harder to see how natural goals could be ethically relevant, because what is ethically correct (according to almost any account) is not the same as what leaves the most offspring and keeps oneself alive as long as possible. Finally, taking the ultimate goal to be survival and reproduction makes it harder to explain Aristotle's belief that animal lives are superior to plant lives. As I argue, Aristotle's discussion of the purposes of animals' sensitive capacities and their role in improving the lives of animals in

[8] The following are examples of scholars who argue that teleological explanations of animals must place survival and reproduction as their ultimate goal: Johnson (2005) 171-178. Furley (1996) explains natural teleology in terms of contribution to survival and reproduction. Gotthelf (1988) argues that all teleology is oriented towards the continuation of life. Leunissen (2010) 59 argues that all the higher capacities are limited to contributing to the goals set by the lower ones, namely, survival and reproduction. Nagel (1972) 116-118 describes animals in this way in contrast to humans who have their ultimate goal set by reason, instead of survival and reproduction.

comparison to plants provides one of the clearest examples of Aristotle appealing to quality of life, rather than mere survival and reproduction, as setting the biological goal. Aristotle measures this quality of life primarily in terms of proximity to the eternal and divine. Although survival and reproduction do play an important role in setting biological goals according to Aristotle, I show that they do not determine the highest goal for animals. As a result, one would expect Aristotle's ethical treatment of happiness as a goal to be influenced by his biology, pace Annas, since Aristotle's biological treatment of ends already includes aiming at a high quality of life.

The last two chapters examine Aristotle's treatment of happiness as the highest human goal in light of his biological understanding of goals. I argue that Aristotle appeals to the same principles of teleological hierarchy that he uses to understand the ends of plants and animals when he comes to explain what human happiness is. As with animals, Aristotle appeals to humans' characteristic function and to a hierarchy of capacities set by proximity to the divine. Recognizing the ethical roles of teleological hierarchy and characteristic functions from the biological works helps us to diagnose the source of tension in Aristotle's account of the constituents of happiness: an inclusive version of happiness that encompasses both practical and political activities, on the one hand, and a purely intellectual conception of happiness as contemplation, on the other.[9]

---

[9] Thus I will offer a new diagnosis for a long-recognized tension within Aristotle's ethics between an inclusive conception of happiness, which includes using the character virtues as apart of happiness, and a purely intellectual one, which claims happiness is contemplation alone. For scholars who defend an inclusivist interpretation of happiness, see: Ackrill (1975), Whiting (1986). For the intellectualist reading see: Nagel (1972), Kraut (1989), Richardson Lear (2004), especially the chapter "The Finality Criterion," Reeve (1992) Chapter Three. Cooper (1975), Chapter Three, argues that Aristotle articulates the inclusivist view in the *Eudemian Ethics* and parts of the *Nicomachean Ethics*, but replaced that view with the *intellectualist* view in NE X. Also see Cooper

My analysis of how Aristotle uses goals in the biological works for both descriptive and evaluative purposes also sheds light on Aristotle's view of how humans aim at happiness. Aristotle's biological discussion of goal directedness makes it clear that being goal directed does not depend on having awareness of that goal or a distinct desire for it, and the goals by which organisms are evaluated are the goals that they are in fact directed towards. This form of goal directedness provides a model for understanding the way in which all humans in fact aim at real happiness. Happiness may be achieved less reliably than many other natural goals, but this does not show that it is not a natural goal. There are many cases of goal directedness in nature that fail to attain their goal--due, for example, to unfavorable environmental conditions. I suggest that in Aristotle's view the capacity of wish makes all humans aim at real happiness, because the purpose of that capacity is to wish for what is really good, even if there are many ways humans can go wrong in this process.

My approach brings to light also the importance of quality of life in Aristotle's biological accounts of goals, as is evidenced by central place of sensation in determining animals' goals. In relation to his ethics, comparing happiness to the goods of other organisms highlights the role that the teleological hierarchies found in his natural science play in determining the content of the human good. It also shows that real happiness, not just people's conceptions of happiness, has an importance part to play in understanding what humans actually do in addition to determining what they should do.

(1987b) for a reconsideration of his position. Thorsrud (2015) argues that Aristotle recognizes a genuine tension in human nature that leads to these two different conceptions of human happiness. Charles and Scott (1999) offer a discussion of the way in which contemplation is the primary sense of happiness.

Chapter Outline

In Chapter One I develop an account of what it means for something to be for the sake of a goal, according to Aristotle's natural science. I argue that Aristotle does not view material necessitation as a threat to a process being for the sake of an end, as some interpretations hold.[10] Instead, I show that Aristotle takes goal directedness to be something readily observable, when there is a regularly occurring benefit. Because he takes it to be absurd that these reliable benefits would be a chance occurrence, Aristotle assumes that benefit must play a role in explaining why the processes occurs that way it does; hence the process is for the sake of what is beneficial.

Chapter Two turns to Aristotle's analysis of animals' morphology and behavior in terms of goals. I defend the view that Aristotle assigns functions and goals to organisms as wholes, and not just to their parts. I then argue that the overall goal of an organism, that for the sake of which the rest of its parts exist and processes happen, is not mere survival, but the highest quality of life available to it. Animals make this more obvious than plants do, because animals have their goal defined by the use of their sensitive capacities rather than by reference to the capacities for nutrition and reproduction.

Chapter Three gives more concrete content to my claim that an animal's goal is to use its sensitive capacities. I show that Aristotle treats engaging in locomotion, desiring, and imagining as sensitive activities. Accordingly, using these capacities is a way of fulfilling their highest goal, even if they are filling the basic survival needs at the same time. The main way animals fulfill their highest goal is by attending to their basic needs

---

[10] Cooper (1987a), Gotthelf (1976). Also see, Waterlow (1982) 90-92.

in a way that is enriched by sensation, which provides a basic form of knowledge and the ability to make evaluations.

I shift to examining Aristotle's ethical works in light of this analysis of natural goals in Chapter Four. I argue that Aristotle's teleological approach to the human good involves two different ways of thinking about the highest good. One is relative to the human species, as exemplified in the function argument, and it favors an inclusive understanding of happiness, which includes practical activities that are unique to humans. The other approach starts from what is best in the cosmos and asks how close humans can come to that, and it favors an intellectual account of happiness, since intellectual contemplation is closest to the best activities of the gods. I conclude that this second approach is more fundamental within Aristotle's thought, since the species relative approach depends on the non-relative one to explain why doing what is characteristic of a species is beneficial to the member of that species.

In Chapter Five I specify the way in which all humans aim at happiness as their goal. First, I establish that Aristotle does believe all humans aim at real happiness in addition to the more widely accepted claim that he believes all humans *should* aim at real happiness. There are several cases of human behavior that prima facie seem to contradict the idea that everyone aims at real happiness, especially *akrasia* or weakness of will. Second, I show how these cases can be seen as instances of aiming at happiness and failing to achieve it, which allows Aristotle to accommodate these cases without contradiction. I conclude that Aristotle thinks that human capacity of wish has the purpose of wishing accurately for what is really good, which gives all humans that goal, even if they are not aware of it. This means that happiness has a role to play in

understanding all actual human behavior in addition to determining what humans should do.

Chapter One: Ends, Necessity, and Chance

Aristotle's idea that natural things act for the sake of something (*heneka tinos*) is central to his natural philosophy, but, as other authors have noted, "acting for the sake of something" is not a concept that he analyses directly or defines.[11] Aristotle's most sustained and direct discussions of this concept occur in *Physics* II.8 and *Parts of Animals* I.1, but he tends to use this phrase and its synonyms as if the meaning of them were already clear. Because Aristotle does not provide a clear definition of this key concept, we have to infer its precise meaning by looking at how he uses it, and how he defends its applicability. Aristotle defends natural teleology, the idea that natural things act for the sake of something, against a rival materialist theory, based on Empedocles, Anaxagoras, and Democritus. In Aristotle's amalgamation of these rivals' views, they deny that nature acts for the sake of something and instead insist that these phenomena simply result from necessitating material causes, and that any benefits which might look like a goal are only the result of chance or coincidence (198a 16-32). Since Aristotle contrasts his natural teleology against this materialist position, a careful study of why he rejects this position provides a good way to understand what is entailed in the claim that nature acts for the sake of something. The need to take this indirect approach in order to

[11] Cf. Gotthelf (1976) 226. Aristotle does distinguish two sense of being for the sake of something in *De Anima*, which Gotthelf does not address (415b 2-3, and 20-1). However, distinguishing the aim from the beneficiary, does not amount to defining what it is to have that aim, which is the primary meaning in question.

understand what is implied by Aristotle's teleology has created a great deal of debate about what exactly makes something teleological, however.

In this chapter, I argue that Aristotle's defense of natural teleology does not depend on a denial of necessitating material causes, and, accordingly, Aristotle takes being for the sake of something to be compatible with material necessitation. Instead, his defense of natural teleology depends on denying that organisms, their parts, and biological processes can be attributed to chance. I first examine Aristotle's defense of teleology in *Physics* II.8 in order to show that Aristotle views chance as the real challenge to his teleological theory, not necessitation. I then show that Aristotle takes teleology to be compatible with necessitation by material properties. To do so, I also explain why passages that might appear to deny material causation do not actually deny that material properties are sufficient to necessitate the result. Lastly, since I deny that Aristotle identifies processes as teleological in virtue of deficient determination of the result by matter, I discuss what factors Aristotle does use to identify a process as teleological.

I find that Aristotle takes cases of goal directedness to be fairly conspicuous, and he thinks that we can identify them by noticing when a process regularly occurs in a way that is beneficial for the one causing the process to occur. He assumes that it would be absurd for this benefit to regularly come about by chance, and thus it must play some role in explaining the process. Rather than concluding that a process is goal directed after a thorough investigation that shows material causation is insufficient to make that process occur, identifying the process as goal directed is often the starting point of Aristotle's scientific investigations. After seeing the benefit of a process, Aristotle establishes that it

must be goal directed, and he examines the material and efficient causes to explain more fully how the goals are brought about.

1. The Materialist Challenge: the Rain and Teeth Example

The central passage for Aristotle's defense of natural teleology is a response to a possible objection to his theory that nature acts for the sake of something in *Physics* II.8. Aristotle names Empedocles as a representative of the view that biological development could occur without being for the sake of an end, just as rain can occur without an end:

> A difficulty presents itself: why should not nature work, not for the sake of something, nor because it is better so, but just as the sky rains, not in order to make the corn grow, but of necessity [ἀνάγκης]? (What is drawn up must cool, and what has been cooled must become water and descend, the result of this being that the corn grows.) [. . .] Why then should it not be the same with the parts in nature, e.g. that our teeth should come up of necessity – the front teeth sharp, fitted for tearing, the molars broad and useful for grinding down the food – since they did not arise for this end but it was merely a coincident result [συμπεσεῖν]; and so with the other parts if we suppose that there is purpose? Wherever then all the parts came about just what they would have been if they had come to be for an end, such things survived, being organized spontaneously [ἀπὸ τοῦ αὐτομάτου] in a fitting way; whereas those which grew otherwise perished and continued to perish, as Empedocles says his 'man-faced oxprogeny' did. (198b 16-32)[12]

The challenger makes two important claims about how animal parts come about without being directed towards a goal in their development: they come about from necessity, and the supposed end of their development merely occurs by coincidence or spontaneously. Since these are the two main claims of the opponent's position, Aristotle must take one or both of them to be incompatible with his view of teleology. The range of debate over how to understand Aristotle's teleology can be mapped out according to which part or parts of the challenger's position Aristotle rejects and his reasons for the rejection.

[12] All translations are the Revised Oxford Translations from Barnes (1984) with some modifications, unless otherwise noted.

Many scholars have taken necessary causation to be the main challenge to Aristotle's teleology. The description of necessary causation in the passage (i.e. where vapor is cooled, becomes water, and must fall) suggests that necessary causation is causation that can be fully accounted by the properties of matter in motion, especially the properties of the elements: earth, air, water, and fire. In these cases the properties of the matter ensure that the result will happen since the matter only acts in one way in a given set of circumstances. Balme argued that Aristotle held natural teleology to be completely incompatible with necessary causation on this basis.[13] On this view, processes that occur for the sake of an end cannot involve any necessary causation, so that the properties of water alone, such as its tendency to fall, could not bring about an end. Instead, processes involving ends would come about by "hypothetical necessity," which Aristotle defines in *Physics* II.9 as something being necessary to achieve an end. However, this interpretation's assertion of complete incompatibility between necessary causation and being for an end has largely been rejected. Cooper has rightly shown that hypothetical necessity presupposes strict necessity, since the materials involved in an end-directed process must be selected for an end based on the appropriateness of their inherent tendencies exhibited through necessary causation, such as the hardness of bronze or iron that makes it suitable material for crafting a saw.[14] Balme himself has also since rejected this view.[15]

If we reject strict incompatibility between necessary causation and being for an end, a weaker claim of incompatibility is available and more popular in Aristotle

[13] Balme (1972) 76-84.
[14] Cooper (1987a) 262-264 in Gotthelf and Lennox (1987).
[15] Balme (1987).

scholarship. On this view, Aristotle again takes necessary causation to be the threat to processes happening for an end, but it is only if necessary causal factors alone are sufficient to make the process occur that being for an end is threatened. In other words, a process that is for the sake of an end can involve necessitating causes, but it cannot be entirely determined by them without ceasing to be genuinely for the sake of that end. Cooper and Gotthelf are the two scholars who most clearly and forcefully argue for this position.[16] Both of these authors argue that what is distinctive about teleological processes is that they are not reducible to the necessitating causal powers of matter, which are the tendencies and properties of the elements. This position has plausibility because it allows for properties of matter to play a role in an end-directed process, but it still preserves a straightforward sense in which we can claim that the process came about *because* it was for the sake of that end, since there is no account of sufficient causes that does not mention the end.[17] They tend to focus on animals' ability to reproduce true to type and to grow to adulthood as the primary examples of natural teleology, such that no account of the matter of an embryo and sperm could account for the creation of an animal or its subsequent growth. They also claim that necessary, material causes would be inadequate to grow teeth, the specific example raised by the materialist opponents in *Physics* II.8.[18]

---

[16] Cooper (1987a), Gotthelf (1976). Also see, Waterlow (1982) 90-92.

[17] Bradie and Miller (1984) offer one other version of the incompatibility thesis. They argue that Aristotle held teleology to be incompatible with necessitating material causes, but only as articulated by his contemporaries, and not in principle. This would allow Aristotle to accept a more sophisticated theory of necessitating causes, such as modern theories about DNA.

[18] Cooper and Gotthelf seem to argue that material causes could not produce even one tooth, but I will defend the view that Aristotle thinks they could produce a tooth by chance but not *reliably*.

Another group of scholars have argued that Aristotle does not take natural teleology to be incompatible with the result of a process being fully determined by material, necessitating causes. This group tends to focus on teleology's ability to explain from an epistemological perspective, where teleological concepts are warranted because they help us understand, and they have predictive value. Wieland has taken the most extreme version of this approach, claiming that Aristotle's teleology is only a Kantian "as if" teleology, but Nussbaum and Sorabji offer more moderated versions that do not take teleology to be fictional.[19] If teleology is wholly compatible with necessitating causes, then it remains to be determined how Aristotle's own position differs from that which he opposes in *Physics* II.8.

Aristotle also makes reference to coincidence and spontaneity in the materialist challenge in addition to necessitating causes, which could also be the factor that is incompatible with teleology. Meyer has made a convincing case that Aristotle did not take teleology to be incompatible with necessary causation, but rather natural teleology is incompatible with happening accidentally or by chance.[20] Opposing teleology to chance rather than material necessitation also shifts Aristotle's position away from an anti-reductionist position, since the existence of ends is not defended on the grounds that they cannot be reduced to material causation. This reading takes Aristotle to be arguing against eliminativism of ends in *Physics* II.8, where his opponents are denying that the ends exist at all. We can see the difference between these two conceptions of the

[19] Wieland (1970, 1975 English translation); Nussbaum (1978) Essay 1; Sorabji (1980) Part III.
[20] Meyer (1992). Leuinissen (2010) 22-25; and Johnson (2005) 98-99 both side with Meyer's reading on this point, as well as her claim that Aristotle was responding to eliminativism of what he viewed as substances, rather than reduction.

opponent in another example. Someone denying that witches ever existed would be an eliminativist about witches, and he would think that any sentence referring to witches would not be picking out any part of reality. However, someone else might say witches were real, but they were just young women who had certain rituals. This person would be a reductivist, who claims that "witches" picks out a real category of people, but who denies that those people have anything magical about them. He instead asserts that witches can be defined in naturalistic terms. Thus, it is possible to disagree with someone who denies the existence of something (e.g., ends in nature), without asserting that the thing cannot be described in other terms (such as physical necessitating causes).

I think an examination of Aristotle's reply to his rival in II.8 does show that it is spontaneity and coincidence that prevent a process from being for the sake of an end. I will thus turn to Aristotle's reply to make this case. However, if Aristotle takes necessitating causation to imply that the results of the process come about spontaneously or to be coincidences, then it would imply he still holds teleology to be incompatible with determination by necessitating causes. I will consider whether this implication holds, according to Aristotle, after showing that his main disagreement with his rival is over the role of chance.

Aristotle's response to the challenger focuses on chance, spontaneity, and coincidence, rather than necessary causation:

> Yet it is impossible that this should be the true view. For teeth and all other natural things either invariably or for the most part [ὡς ἐπὶ τὸ πολύ] come about in a given way; but of not one of the results of chance [τύχης] or spontaneity [αὐτομάτου] is this true. We do not ascribe to chance or mere coincidence [συμπτώματος] the frequency of rain in winter, but to frequent rain in summer we do; nor heat in summer but only if we have it in winter. If then, it is agreed that

> things are either the result of coincidence or for the sake of something, and these cannot be the result of coincidence or spontaneity, it follows that they must be for the sake of something; and that such things are all due to nature even the champions of the theory which is before us would agree. Therefore action for an end is present in things which come to be and are by nature. (198b 34-199a 8)

The main problem with the rival's theory is that it presents regular occurrences as results of chance, which Aristotle thinks must be irregular. It is appropriate that this argument follows his discussion of chance and spontaneity, which concludes that they are not causes strictly speaking, since they are only accidental causes (198a 5-10). Importantly, Aristotle highlights problems with the role of chance in the rival theory, rather than necessity, because the same charges would not clearly hold against the claims of necessary causation. For example, the rival theory claims that rain is the result of necessity and gives an explanation of how this happens that fits well within Aristotle's own theory. The necessity that what goes up must cool and that what cools turns into water appears to be capable of explaining the regularity of the water cycle that makes it rain. This rival's explanation is nearly identical to Aristotle's own in the *Posterior Analytics* and *Meteorology,* where the soaked earth necessarily makes steam, steam necessarily makes a cloud, and the cloud necessarily makes water that soaks the earth (*Po. Ana.* 96a 2-7, *Mete*. I.9). Unlike accidental causation, necessary causation does appear to have regular and predictable results.

While it is clear that Aristotle attacks the role of chance in explaining regular biological developments, his argument is problematic and has some dubious premises. The heart of the argument is a disjunctive syllogism, in which he claims that the things in question must be either the result of coincidence or for the sake of something. Since the natural cases he considers are regular, they are not the result of chance, and therefore they

are for the sake of something. However, for this disjunction to be true, it looks like Aristotle must deny that there are any non-coincidental results that are not for the sake of something. Looking at Aristotle's examples, it makes sense that he would claim that teeth do not come about by coincidence and that they are for the sake of something, but rainfall looks like it could be a counter example to the disjunction. It would be strange for rain to be for the sake of something, but Aristotle also denies that the regular, seasonal patterns of rainfall can be mere coincidence. If Aristotle is not presenting a counter example to his main argument in defense of natural teleology within that very argument, then he must take patterns of rainfall to be for the sake of something.[21] Many scholars do not think that Aristotle held that rain is for the sake of something, because they think that his teleology is confined within organisms or substances, but if rain were not for the sake of something it would undermine his own argument.[22]

For the sake of what could rain be? Aristotle notes that it is usually warm and dry in the summer, while it is cool and rainy in the winter, and he thinks the exceptions to this rule are chance or coincidence. This weather pattern could be for the sake of growing crops, since this is exactly the goal that is denied by the rival thesis. This reading would suggest that Aristotle's natural teleology is actually anthropocentric, since it implies that seasonal cycles and by extension probably many other aspects of the world are organized for the benefit of human beings. Sedley has defended such an anthropocentric reading, where natural processes and animals exist for the sake of humans, and this passage

[21] Other scholars have made this argument, including: Furley (1985), Sedley (1991), Scharle (2008a) 147-150, and Leunissen (2010) 22-32.
[22] Nussbaum (1978) "Aristotle on Teleological Explanations," Gotthelf (1976), and Blame (1987) deny that rainfall is for the sake of something according to Aristotle.

provides his best evidence found in Aristotle's scientific works.[23] This reading is highly controversial, however, since most of Aristotle's explanations of animal parts, growth, and behavior present the animal in question as the beneficiary in the explanations, rather than humans. I will thus treat the anthropomorphic reading as a last resort if another more plausible reading is not available.

There are two alternative ways of explaining how seasonal rain could be for the sake of something in a non-anthropomorphic way, and thus do not break Aristotle's usual pattern of not appealing to the benefit of humans in explanations of natural phenomena other than in the case of humans themselves. The first argues that rain acts for an end in virtue of the nature of water by moving towards its natural place.[24] This reading avoids attributing anthropocentrism to Aristotle, and denies that rainfall is for the sake of growing crops, as the passage suggests. Instead, it shows that rainfall is a part of the natural motions of the elements, which act for the sake of their functions or motions. This makes rainfall teleologically explicable, in terms of the teleology of the individual elements, but denies that rain has crop growth as a goal.

The second option is to consider the role of human crafts, in this case farming. Farmers can recognize the regularity of seasonal rains and temperatures, and use that to their best advantage when growing crops. In this way, they treat nature *as if* it were for the sake of humans, and the role the craft of farming plays prevents the beneficial results of the weather from being mere coincidence, because the craft determines the best times

---

[23] Sedley (1991). Sedley's other best evidence comes from the *Politics* I.8, where Aristotle suggests that animals exist for the sake of humans.

[24] Scharle (2008a) 167-181. Johnson (2005) 145-158 has a similar reading in terms of the nature of water, but he denies that rain itself is for the sake of something, while Scharle argues that winter rain can be seen as being for the sake of something based on the natural movements of water.

for planting and harvesting.[25] On this craft reading, the existence of seasonal weather is not actually being explained by the benefit it causes, since the weather exists and then humans use it to their advantage, but it does prevent a regularly occurring benefit from coming about by chance.

Since one of the readings is appealing to teleology to explain the weather patterns, while the other explains the connection between those weather patterns and the regular benefit it provides to humans, these two readings do not actually conflict. They could both be right. For the purposes of making sense of this passage, however, I think the craft reading is more promising. In this passage, Aristotle needs to explain why there is a regular benefit, and only the craft explanation states why humans benefit from the rain, which is the only end suggested by the passage. The appeal to the natural teleology of the elements, while it explains their regularity, does not explain the benefit to humans, and Aristotle needs to deny that this benefit is a chance one for his premises to hold. I find it quite plausible that Aristotle believed in elemental teleology, but I do not need to determine that here. In either case, I have shown that Aristotle can consistently deny that the regular benefit derived from the rain is a result of chance and hold that it is for the sake of something in the sense that it regularly serves some purpose.

All three of these readings show Aristotle's main concern in this passage is to deny that there can be regularly occurring processes that provide a benefit by chance. The quality of Aristotle's actual argument may be suspect, but I think if we take note of Aristotle's focus on denying regular chance benefits, we can make his disjunctive

[25] Leunissen (2010) 25-48.

argument look more plausible.[26] Hardie and Gaye's translation "things are either the result of coincidence or for the sake of something" of "ἢ ἀπὸ συμπτώματος δοκεῖ ἢ ἕνεκά του εἶναι," while not wrong, makes the claim sound more general than it needs to be (199a 3-4). There is no word in the Greek corresponding to "things," but we must provide some word to make it into an English sentence. Providing "things" makes sense, but it does make the claim sound as if it must apply to all things, which is dubious. However, Aristotle only needs the disjunction to apply to the set of things in question (i.e., things that provide regular benefits), and the rest of the sentence explicitly applies to the examples in question, not all things, by using "ταῦτ'" (these). The rest of the argument discusses these sorts of things (τοιαῦτα). What appears to be distinctive about these sorts of things is that they provide beneficial results, and if the disjunction only has to hold for these cases it is much more plausible, since it does not imply that *everything* which is not due to chance is for the sake of something.

The Greek text allows us to restrict the scope of the disjunction to regular beneficial results, because it is only when there is some benefit to something that there could be a case of teleology, and the discussion only has to apply to the cases where the presence of teleology is debated. Aristotle's analysis of chance, also, suggests that it is appropriate to limit the scope of the disjunction. In *Physics* II.4-6 Aristotle gives his own analysis of chance (τύχη), spontaneity (αὐτόματον), and coincidence (συμπτώματος). In these sections leading up to his defense of teleology in II.8, Aristotle defines chance and spontaneity and clarifies in what sense they are causes and in what sense they are not. Aristotle does distinguish between chance and spontaneity, but in this section, II.8, he

[26] Shields (2007) 76-78. Shields discusses the problems with taking this disjunction to be exhaustive, but he does not see any other way to read this premise.

appears to use them interchangeably, since he switches between them in the different premises of the argument. Even when he does distinguish between them more carefully, Aristotle takes both chance and spontaneity to apply only "to events which belong to the general class of things that may come to pass for the sake of something, when they come to pass not for the sake of what actually results" (197b 18-20). In other words, Aristotle does not think chance or spontaneity is applicable to something that could not even appear to be for the sake of an end. There needs to be some kind of beneficial result that could have been achieved on purpose, either by nature or thought. A stone falling to the ground is not even a chance event for Aristotle, nor a spontaneous one, but a stone that hits someone in the head is, because it could have been another person's goal to hit that person, as in combat (197b 29-32).[27] Only results that would make sense as goals of the processes leading up to them, but which are not actually the goals of the processes, can be examples of chance or spontaneity.[28]

Since Aristotle's argument depends on a disjunction between something that appears to be for the sake of something, but is not, and something that is genuinely for the sake of something, there is no need to take the disjunction to apply to every possible event. The disjunction makes the most sense if it only applies to events that have beneficial results that would make sense as a goal, since then it would be a matter of determining whether that process leading up to the result actually had that result as its goal. This reading of Aristotle's argument makes his premises more plausible, but it does

[27] For a similar observation see, Hankinson (1998) 136-137.
[28] Aristotle's discussion of the accidental (συμβεβηκός) and the coincidencal (συμπτώματος) in *Metaphysics* VI does include random facts and events that could not even appear to be a goal. I take this to imply that the accidental is a broader category that includes but is not limited to what happens by chance (τύχη) or spontaneity (αὐτόματον).

rely on presupposing more of his own theory, since it requires using some of his analysis of chance and spontaneity. Aristotle does not try to use a neutral theory of chance, or that of his opponents (as opposed to his own), but this should not be too surprising given that Aristotle has just argued for his own conception of chance prior to making this defense of teleology.

2. Chance and Intrinsic Causes

I have shown that it is chance, spontaneity, and coincidence that provide the real threat to teleology on Aristotle's view, rather than necessity. However, it remains to be shown that he does not take necessary causation to imply chance, spontaneity, or coincidence, since if necessitating causes implied chance, then they would indirectly be incompatible with teleology. There are two main reasons for thinking that Aristotle did not think that necessary causation implied chance. First, there are several passages where Aristotle explicitly states that something can come about for an end and from necessity. If necessitating causes and being for an end are compatible, but being for an end is incompatible with resulting from chance, then necessitating causes cannot imply resulting from chance. Second, an examination of Aristotle's theory of causation and chance will show that being materially necessitated does not entail that the results are chance results, as Aristotle himself uses these terms. Aristotle's views on causation, chance, and explanation may be different than his opponents, but for the purpose of figuring out whether his own theory of teleology is compatible with his own theory material necessity, his views on the relevant concepts are what counts.

In the *Posterior Analytics,* Aristotle states that it is possible for something to come about both by necessity and for the sake of an end:

> It is possible for the same thing to be the case both with some aim and from necessity – e.g. the light through the lantern; for the finer body passes through the larger pores both from necessity (if light comes about by passing through), and with some aim (in order that we shan't stumble). (94b 23-26)

Aristotle does not use a natural example here, as was being debated, but he clearly shows that he does not think explanations from necessity are incompatible with explanations in terms of an aim. That the light passes through the pores for some aim depends on human arts arranging the materials for that end, while cases of natural teleology should not depend on humans. However, he does also use a natural example following this one, where thunder sounds from necessity, and also for the purpose of threatening those in Hell, but this relies on a theory of Hell that he does not endorse (94b 32-34). In his lantern example, Aristotle is also clearly appealing to the same kind of necessitating causes that are based on the property of matter, since he explains it in terms of pores and body size necessarily leading to a result of passing through. Even if the craftsman made the pores larger because that was hypothetically necessary for the lantern to serve its purpose, when Aristotle cites the fact that finer bodies necessarily pass through larger pores, he is not referring to hypothetical necessity, but rather the material necessity of what makes the light pass through. There is also no sign that Aristotle thinks that this material necessity is somehow insufficient to bring the light about, and he adds, "by chance nothing comes about with any aim" (95a 8-9). Thus, in this section Aristotle explicitly states that being for an end is compatible with material necessity and incompatible with chance. In order for this to be the case, there must be cases of necessitating causes that do not bring about chance results. This implies that necessitating causes do not imply chance or spontaneous results.

It could be objected that the previous two examples depend on intentions (of humans or gods) in a way that Aristotle's natural teleology does not, but Aristotle also indicates that necessitating causes and being for an end are compatible in his biological works. In his methodological remarks in *Parts of Animals* I.1 Aristotle provides an example, albeit a brief and somewhat obscure one:

> In dealing with respiration we must show that it takes place for such or such a final object; and we must also show that this and that part of the process is necessitated by this and that other stage of it. By necessity we shall sometimes mean that the requisite antecedents must be there, if the final end is to reached; and sometimes that things are thus and so by nature. For the alternate discharge and reentrance or heat and the inflow of air are necessary – that is necessary; and as the internal heat resists in the process of cooling, the entrance and exit of the external air occur. (642a 31 – 642b 2)

Aristotle's method starts by specifying the end for which the process occurs, but then goes on to specify how the process occurs in more material terms. The example appeals to two different conceptions of necessity. One is hypothetical necessity, where some part of the process is necessary if the end is to be achieved. The other is referred to as what happens by nature, which is ambiguous on its own, but it is contrasted with hypothetical necessity. The type of necessity described in the process of heating and cooling of air causing air to enter and exit the lungs looks to be exactly the kind of necessity Aristotle associated with Empedocles in *Physics* II.8. That means that Aristotle thinks respiration occurs both from material necessity and for the sake of an end. This example suggests that the process of respiration can be described as a sequence of heating and cooling that causes air to enter and exit the lungs without any causal gaps that need to be filled by an irreducible nature or potential for form. Additionally, the fact that the nature of the materials involved in respiration are sufficient to bring about the process does not prevent it from being for the sake of an end, according to Aristotle.

Those who argue that the material natures must be insufficient to bring about a biological process that is teleological tend to think that the final cause would become redundant or otiose if the material natures were sufficient to determine the process. However, Aristotle does not think of causes as merely being sufficient conditions to bring about an effect, and an analysis of his theory of intrinsic Causes (αἴτια καθ' αὐτό) can also show that necessitating causes do not imply chance, nor do they threaten teleology.

Aristotle's discussion of chance (τύχη) and spontaneity (αὐτόματον), where he distinguishes between accidental (αἴτια κατὰ συμβεβηκός) and intrinsic causes (αἴτια καθ' αὐτό), provides another argument that the rivals' thesis of necessity does not entail their claim that animal growth and reproduction occur by chance. Meyer first presented a version of this argument, and I will draw on and add to her analysis in this section.[29] Aristotle's analysis of chance and spontaneity comes right before his defense of teleology in *Physics* II.4-6, which is only fitting if chance is the main competitor with teleology. His main purpose in these sections is to show that chance and spontaneity do exist, but that they should not be counted as causes along with the four causes he has introduced in II.3. Distinguishing them from proper causes, Aristotle defines chance (τύχη) and spontaneity (αὐτόματον) as accidental causes (αἴτια κατὰ συμβεβηκός) "in the sphere of things which are capable of coming to pass not simply nor for the most part and with reference to such of these as might come to pass for the sake of something" (197a 32-35). Something that comes about from chance or spontaneity is a result that could have been a goal brought about by an agent or process aiming at that goal, but in fact did not come from a process working for the sake of that goal or an agent aiming at it.

[29] Meyer (1992) 798-805.

Chance and spontaneity share most of the same features, including that they are accidental causes and have a result that could be a goal, and Aristotle uses them interchangeably in *Physics* II.8 among other places, so I treat them together in this section. However, it should be noted that Aristotle marks off chance as a subset of the more general category, spontaneity. Aristotle restricts chance (τύχη), sometimes translated as "luck," to events that happen as a result of human actions and choice (197a 36 – 197b 2). Both spontaneous and chance events can happen to humans, but if the event is caused by a person's action that was aiming at a different result, then it is specifically a chance event. Animals and inanimate objects can only do things spontaneously, since they lack the human ability for choice (προαίρεσιν) (197b 5-11). Still at other times Aristotle uses τύχη more loosely such that it is interchangeable with αὐτόματον, as in the rainfall passage from *Physics* II.8 (198b 34-199a 8). In the primary cases of natural teleology choice will not play a role in bringing about the result, even though Aristotle refers to τύχη in these contexts, so I will focus on what τύχη and αὐτόματον have in common.

Aristotle defines chance and spontaneity as kinds of accidental causes, and he illustrates several ways in which something can be an accidental cause through his use of examples. Aristotle's first example is that of a man who is musical, pale and a house builder building a house (196b 24-29). The house builder is the intrinsic cause of the house, while the pale one and the musical one are accidental causes. In this case, the house builder is the intrinsic cause, because it was in virtue of being a house builder that the person built the house, and that this person had the other qualities is merely accidental to making the house. The coincidence that the house builder was also pale and musical

makes it a result of chance that a pale person or musical one built the house. To generalize from this example, something can be an accidental cause of a result, if it is a property of the causal agent that is not relevant to bringing about the result. If the description of the causal agent does not pick out the causal feature relevant to bringing about the result, then the description is of an accidental cause. In these cases the causal agent has two properties, one of which is the intrinsic cause of the result and the other is merely coincidentally joined with it in that agent, making it an accidental cause.

However, Aristotle does not always think that there will always be an intrinsic cause of a given effect that we can reveal by describing the agent differently. Aristotle illustrates this point in *Metaphysics* VI: "a confectioner (ὀψοποιὸς), aiming at giving pleasure, may make something wholesome, but not in virtue of the confectioner's art; and therefore we say it was an accident (διὸ συνέβη), and while there was some sense in which he makes it, in the full sense he does not" (1027a 2-5). As in Plato's *Gorgias*, Aristotle takes the confectioner to aim at pleasure without concern for the healthiness of his food, but it is possible that the confectioner will occasionally produce something healthy. In that case, there is not another art that the confectioner possesses under a different description that would be the intrinsic cause of making healthy food; the confectioner is not also a doctor. Instead, there is no intrinsic cause of his producing something healthy, only an accidental one, which makes it a result of chance.[30] Since there is no art to account for the food's being healthy, it is just the result of coincidence

[30] This is an example of τύχη in the strict sense as well as the looser sense, since the healthy food is a product of purposive human action that aimed at another goal, tasty food.

or accident (διὸ συνέβη), and it just so happened that the ingredients were healthy when combined.

It should be noted that the confectioner's case of accidental causation still presupposes that there is some intrinsic causation at work. There is an intrinsic cause of the food being tasty in this case, if not of being healthy. While we could find intrinsic and accidental causation at work in the case of the builder by looking at a different properties of the causal *agent*, in the confectioner's case we have to look at a different property of the *effect*. In both cases there is nothing linking these properties together in the causal agent or in the effect, since being a builder has no connection with being musical, nor does being tasty ensure that something is healthy. Accidental causation in both of these cases is a result of accidental unities in the causal agent or in the effect that results.

Aristotle adds a third kind of accidental causation to these two (coincidence in the agent or effect): the convergence of independent processes. In one example, two men happen to walk to the same place, each on independent errands, but the first was owed money by the second, and manages to collect his money by the chance meeting (196b 33 – 197a 5). In another, someone goes to the well because he is thirsty after eating some spicy food, but he runs into ruffians who want to kill him who are also at the well, so he dies (1027a 1-5). In these examples there are two independent processes, each of which has an intrinsic cause, but their conjunction does not, and the result of that conjunction does not. In both cases of these people meeting, we can give a perfectly good explanation of why each person went to the meeting spot, but we lack a similar explanation for why they went at the same time. We can say that the thirst from spicy food caused the person to go to the well, but there is no one cause that made him and the ruffians go to the well

at the same time. The result of their meeting, furthermore, has no connection to what caused them to go to the place they met. Thus, something can be accidentally caused if it is the result of the chance coincidence of two independent processes, each of which may have an intrinsic cause on its own.

In addition to these three types of coincidences, Aristotle adds that exceptions to for the most part (ὡς ἐπὶ τὸ πολύ) rules are examples of what is accidental and lacking an intrinsic cause.[31] Aristotle gives the example a cold day in the dog days of the summer, as an accident, while a hot day in the summer would not be (1026b 33-35). I can explain why it is hot by citing the fact that it is summer, since in the summer it is hot for the most part. However, there is no similar explanation for a cold day in the summer. This case also bears a close resemblance to Aristotle's examples from II.8 of frequent rain in summer being merely chance or coincidental, unlike frequent rain in the winter.

Unlike the previous cases, the cold day example is an accident because something that usually has the same result fails to have that result. By contrast, in the other examples of accidents, the intrinsic causes not only brought about their usual results but also resulted in something else. The builder did make the house; the confectioner did make something tasty; thirst did make the person go for a drink. In these cases of intrinsic causation, the intrinsic cause did bring about the result that it does for the most part. Aristotle's treatment of exceptions to for the most part rules suggests that if the confectioner failed to make something tasty, that would also be a result of chance or accident. Perhaps the oven thermometer was broken, for example, and the cookies were burnt as a result. In such a case the intrinsic cause, the confectioner's art, would fail to

[31] See O'Keefe (1997) 250-251 for a discussion of this example and others.

bring about its usual results, tasty food, because of some chance circumstances. Aristotle extends this principle to nature explicitly by saying that "when anything comes to be contrary to nature" we attribute it to "spontaneity" (197b 32-34). When nature fails to reach the end that it acts for, Aristotle attributes that failure to spontaneity.

These examples of failed intrinsic causation once again presuppose the normal operation of intrinsic causes. Since chance and spontaneity depend upon the existence of intrinsic causes, Aristotle concludes, "no accidental cause can be prior to an intrinsic cause" and "spontaneity and chance, therefore, are posterior to intelligence and nature" (198a 8-10). Aristotle thinks that coincidences can only happen if intrinsic causation, as found in nature and intelligence, are already at work.

With some examples in place, it is time make a more formal distinction between accidental and intrinsic causes. To start, it is important to notice that this distinction is not about whether or not there were sufficient conditions to bring about the result, since both accidental and intrinsic causes are sufficient to bring about the result. Accidental causes, even if they bring about the result, are somehow deficient in terms of explaining the result. In all of the cases Aristotle cites, the intrinsic causes are able to bring about their results reliably, always or for the most part, whereas the accidental causes do not bring about the result in any reliable way, even if they do so on occasion. Aristotle also contrasts the accidental with what happens always and for the most part in the *Metaphysics* when explaining why there can be no scientific treatment of it (1027a 15-28).

Meyer has described this ability of intrinsic causes to reliably bring about their results always or for the most part as being "overdetermined," such that the cause would

be able to bring about the results in different circumstances, rather than merely being sufficient to do so in this one case.[32] The term "overdetermined" works well to capture the idea that intrinsic causes are more than merely sufficient to bring about a result, but it is problematic insofar as it is usually used to describe a situation in which multiple causes bring about an effect, where each of them independently would have been sufficient to bring it about. For example, a firing squad of seven people might all kill a man at the same instant, but any one of them would be sufficient. Meyer's usage of the term would require that "overdetermined" apply to only one cause, rather than a collection of sufficient causes, which would make the normal usage of the term misleading. Intrinsic causation does not differ from accidental causation in the same way as having five confectioners make a tasty treat is different from having one confectioner make a tasty treat. Rather than multiple sufficient conditions, intrinsic causation points to some sort of strong connection between the cause and the effect.

We find some help understanding what this connection between an intrinsic (καθ' αὑτό) cause and its effect is in the *Posterior Analytics*, when Aristotle explains how a relation can be καθ' αὑτό in terms of causation.[33]

> Again, in another way what belongs to something because of itself (δι' αὑτὸ) belongs (ὑπάρχον) to it in itself (καθ' αὑτό), and what does not belong because of itself is accidental (συμβεβηκός) – e.g. if it lightened when he was walking, that was accidental; for it was not because of his walking that it lightened, but that we say, was accidental. But if because of itself, then in itself – e.g. if something died while being sacrificed, it died in the sacrifice since it died because of being

[32] Meyer (1992) 802.

[33] Aristotle's discussion of καθ' αὑτό relations and causes bears an interesting resemblance to Plato's discussion of the cause of tallness in the *Phaedo* 100d-101e and hot and fire 103b-103e. While their theories are certainly not the same, Aristotle's requirements for causation and explanation may have been influenced by Plato's discussion.

> sacrificed, and it was not accidental that it died while being sacrificed. (73b 10-16)

This passages explains that two things can have a καθ' αὐτό relation if one causes the other because of what it (the cause) is. For example, being sacrificed has a καθ' αὐτό relation with dying, because on account of being sacrificed one dies. In this case, dying is even logically required by the definition of sacrificing. While this passage is used to explain καθ' αὐτό relations, it also tells us a great deal about how Aristotle understands καθ' αὐτό causation, since the relevant causation needs to be the kind that can support a καθ' αὐτό relation. There has to be something about the nature of the causal agent that supports an objective relation with the effect, and that relation must be strong enough to hold in scientific demonstrations, since a καθ' αὐτό belonging of the predicate to the subject is a requirement of the premises for demonstrations.

In the *Metaphysics* Aristotle also explains causes in terms of predication or belonging (ὑπάρχον) more generally.[34] He suggests that why questions always have the form: "Because of what does one thing belong to another (διὰ τί ἄλλο ἄλλῳ τινὶ ὑπάρχε)?" (1041a 11). To answer this question, he thinks it is plain that we are seeking the cause (τὸ αἴτιον) (1041a 27-28). For something to be any sort of cause, it has to answer why one predicate belongs to some subject. Intrinsic causes will be the ones that do this so as to support a καθ' αὐτό connection between the subject and predicate, but accidental causes cannot do this. For example, we could say that a musical man built that house, and in a way we are saying why the predicate "house," or the property of being a house, belongs to that stuff. However, there is no καθ' αὐτό connection between

[34] Stein (2011) provides an argument that explaining predication is what all four causes have in common, and that is it what prevents them from being merely homonymously related to one another.

musicality or being a man and a house, but there is one between the art of building and the house, since the art of building is organized so as to make houses. Similarly with the confectioner, whose art has a καθ' αὑτό connection with tasty food, but does not with healthy food. There is a degree of circularity here, because cases of intrinsic causation can be identified by whether they support καθ' αὑτό relations, and the reason for the καθ' αὑτό relation holding is the instance of intrinsic causation. However, being able to define these in terms of each other is not necessarily a bad thing, if some details can be flushed out, and it is not merely empty.[35]

If B belongs to A καθ' αὑτό because A causes B, and that cause is non-accidental, then A must cause B consistently. Aristotle's conception of these intrinsic causal relations looks very similar to his understanding of nature as a principle that moves continuously "towards the same end if there is no impediment" (199b 15-18). Aristotle introduces the idea of a cause bringing about the same end unless it is impeded in relation to nature, but he also suggests that art works in a very similar way: "art [τέχνη] does not deliberate. If the shipbuilding art were in the wood, it would produce the same results by nature [τῇ φύσει]" (199b 28-29). Aristotle thinks of arts as powers that produce certain ends almost automatically (since they do not require deliberation), unless they are impeded somehow. The majority of Aristotle's examples of intrinsic causation are from the arts as well, with the art of building and confectionery being two of the clearest examples.

This suggests that A is an intrinsic cause of B if it brings about B, as long as something does not intervene. As a result, A possesses an intrinsic relation with B, and A

[35] Freeland (1991) offers an analysis of Aristotle's theory of causation in terms of καθ' αὑτό relations.

will bring about B “always or for the most part” (assuming there are not too many interventions!) (199b 24). The earlier examples suggest that an intrinsic cause would bring about the same results in varying circumstances short of some major impediment. The builder would still be able to make a suitable house in differing weather, or with stone instead of wood, or in a different location. However, if the builder were killed while making the house, he would certainly not finish the job, or an earthquake might prevent this as well. Given a different set of ingredients, the confectioner would still be able to make something tasty, unless the confectioner only had dirt and leaves to work with. Year after year, despite all the changes, summer reliably brings about hot days, but occasionally something interrupts the heat. Intrinsic causes, the only proper causes for Aristotle, are not merely sufficient to bring about a result, but they do so reliably, even in differing conditions, barring some major impediment.

By contrast, a slight change in the conditions leading up the result of an accidental cause, would likely change the result. For example, the confectioner might have made something healthy only because she lacked the ingredients that normally make her food unhealthy, such as butter and sugar, while having an abundance of carrots. In such a case, a slight change in the available ingredients would lead her to make unhealthy food as she frequently does. In the carrot case, there is nothing about the confectioner that leads her to produce healthy food; it was just mere chance that the ingredients in one case were healthy ones. Again, there is nothing about being musical that leads one to build a house, but having the art of building does. As a result it will be rare that musical people build houses. If the thirsty person had eaten his spicy food an hour earlier or encountered a roadblock on the way to the well, he would have ended up at the well at a different time

than did his killers. What is the result of accident or chance, then, has no cause that can bring about the same result always or for the most part, because their causes have no connection to their effect in virtue of what the cause is. Accordingly, there can be no scientific explanations of them, since science deals with what is always or for the most part (1027a 19-22). As a result, Aristotle calls chance "unstable" (ἀβέβαιος), since small changes in the circumstances can bring about different results, while intrinsic causes bring about the same results always or for the most part their results can be the subjects of scientific explanations.

With this distinction in place we can return to the question of whether natural processes occurring from necessity implies that they occur by chance, since Aristotle's defense of natural teleology denies either that the natural processes occur by chance, or by necessity, or by both. If the natural processes occurring by necessity implied that the processes beneficial results happened by chance, then natural teleology would be incompatible with necessitation, since I have already shown that it is incompatible with the beneficial results occurring by chance. To take the case of animal growth and development, occurring by necessity amounts to the material properties being sufficient to make the processes occur, such as teeth coming in. The claim that these beneficial results occur by chance is a denial that these results were produced by a cause that had an intrinsic connection to the effect in virtue of what it is, and which could reliably bring about those results in different circumstances, unless it was hindered. Matter being sufficient to bring about the result in a particular case does not imply that the result was not also brought about by such an intrinsic cause. Thus, a process being causally determined by matter does not imply that the result of that process comes about by

chance. Accordingly, a process being for the sake of something is compatible with the material properties involved in the process being sufficient to bring about the result of that process.[36] Since something can be the result of necessitating causes without occurring by chance, and since Aristotle states that something can occur both from necessity and for the sake of something, it is safe to conclude that Aristotle did not view necessitating causes as a threat to teleology.

3. Material Causation

Still, there are other passages where Aristotle appears to deny that matter can cause the results of biological processes. These passages, which are often used to argue against the version of compatibility I support, fall into two categories. In the first group, the passages come from Aristotle's biological works and are used by Gotthelf to argue that an organism's potential for form cannot be reduced to elemental potentials.[37] The second group are based around Aristotle's discussion of hypothetical necessity, and Cooper provides the most sustained argument claiming that these passages deny that material necessitation is sufficient to bring about the end of a teleological process.[38] I argue that neither of these groups of passages implies that a process being for the sake of something is incompatible with its result's being materially determined.

---

[36] Meyer (1992), 804. Meyer makes this argument as well in terms of "overdetermination." While it is useful to have a shorthand way to refer to the way intrinsic causes have a connection to their effect and can bring them about reliably, "overdetermination" in its normal usage does not have the right implications for this status, as pointed out above.

[37] Gotthelf (1987). Waterlow also cites Gotthelf in agreement that Aristotle's teleology depends upon material components being insufficient to being about the processes: Waterlow (1982) 90-91.

[38] Cooper (1987a). For similar arguments, also see Waterlow (1982) 66-70; Hankison (1998) 144-146. Waterlow views material necessitation as a threat to Aristotle's theory of unified substances, which serve as a principle of change.

The main evidence Gotthelf gathers to argue that a teleological process cannot be determined materially comes from three passages in *Generation of Animals* and *De Anima*. Two passages from *Generation of Animals* deny that heat and cold can be the principle by which flesh or bone are what they are, nor can fire be the principle that transforms the matter in the womb into an organism (734b28 – 735a4, 736b27-737a7). Additionally, a passage from *De Anima* denies that fire is the principle cause of nutrition and growth (416a 5-18). Gotthelf takes these three passages as his main support for the claim that Aristotle's teleology is defined by "a potential for form, a potential *distinct from* and *not reducible to* any sum of qualitative and locomotive potentials."[39] Gotthelf usually glosses the sum of qualitative and locomotive potentials as elemental or material potentials, and he takes irreducibility to imply that these material powers are not sufficient to produce biological parts and processes. I will argue that these three passages do not require teleology to be incompatible with the results' being materially necessitated and determined as Gotthelf concludes.

The first passage distinguishes the movement and principle of natural production from material causes of natural products by an analogy with art:

> And just as we should not say that an axe or other instrument or organ was made by fire alone, so neither shall we say that foot or hand were made by heat alone. The same applies to flesh, for this too has a function. While, then, we may allow that hardness and softness, stickiness and brittleness, and whatever other qualities are found in the parts that have life and soul, may be caused by mere heat and cold, yet, when we come to the principle in virtue of which flesh is flesh and bone is bone, that is no longer so; what makes them is the movement set up by the male parent, who is in actuality what that out of which the offspring is made is in potentiality. This is what we find in the products of art; heat and cold may make the iron soft and hard, but what makes a sword is the movement of the tools

[39] Gotthelf (1987) 217.

> employed, this movement containing the principle of the art. For art is the starting point and form of the product; only it exists in something else, whereas the movement of nature exists in the product itself, issuing from another nature, which has the form in actuality. (734b28 – 735a4)

Aristotle presents us with an analogy between a father creating an offspring and a smith creating a sword. The movement of the smith's tools is analogous to the movement of the father's sperm, since those movements shape the matter and imparts form to it. Gotthelf takes Aristotle's statement that "mere heat and cold" cannot be the principle by which something becomes flesh and bone as evidence that the motion of the semen is "different in kind" from "quality-generating motions of fire" and the semen's motion can only be defined by its outcome, the form.[40] He takes this difference in kind to indicate that no sum of qualitative and locomotive potentials can produce flesh, bone, or an organism. This in turn implies that there must be something else in addition to them, namely the irreducible potential for form, to give sufficient conditions for the creation of flesh and bone.

Gotthelf's argument rests on two assumptions that are subject to doubt. First, the assumption that denying X is the cause of Y implies that X is not sufficient to bring about Y. Second, that X is irreducible to Y if and only if Y is insufficient to bring about the effect that X causes. These assumptions lead him to argue that if the potential for flesh and bone were reducible, then the motion that produces the flesh and bone would also be reducible, and it could be specified in a "series of heatings, coolings, and movings around of material in the developing embryo" without reference to the form."[41] Instead, he holds that these components (heatings, coolings, motions, etc.) are insufficient to yield the

[40] Ibid.
[41] Gotthelf (1987) 219.

offspring, and thus are not the cause. Therefore, the true cause of the offspring is not reducible to the material factors. However, we have already seen that Aristotle's notion of what it is to be a cause of something requires more than being a sufficient condition for it, which challenges Gotthelf's first assumption. Aristotle need only be denying that the material components together are an intrinsic cause that reliably bring as about the same result, which is compatible with their being sufficient to bring about the effect in a particular case.

The second assumption's requirement for reducibility is also suspect, because "reducible" has many meanings that are hotly debated in philosophy of science. Gotthelf and other commentators who try to use the concept of irreducibility borrow the concept from these contemporary debates in order to try to understand Aristotle with familiar terms, since Aristotle himself does not explicitly discuss reducibility. While it would certainly be anachronistic and counterproductive to try to figure out Aristotle's position in terms of every recent distinction on reduction, I think one recent distinction is both clarifying and illuminating: type-type reduction and token-token reduction.[42]

Token-token reduction is the claim that a *particular* higher-level process is some *particular* lower-level process, and type-type reduction is the claim that every instance of some *type* of higher-level process is an instance of a certain *type* of lower-level process. Type-type reduction is a much stronger claim than the token version, since it implies that the higher-level kind can be defined by a lower-level kind, and every instance of the higher-level kind will be an instance of the lower-level one. The token-token reduction does not bind the higher-level kind/type to a specific lower-level kind/type, but merely

[42] For a discussion of this distinction see Fodor (1974).

claims that there must be some particular item (token) specifiable at the lower-level, to which a given particular item at the higher level is identical.

Aristotle's example of the sword can illustrate this distinction. Any particular iron sword could be token-token reducible to some particular bit of iron in a certain shape, but swords in general are not type-type reducible to iron in that shape. There will be other swords made of bronze, as well as swords with different shapes, such as curved ones or straight ones. The type-type reduction fails, because there are indefinitely many things that fit the type *sword* that do not fit the lower-level type *iron in a certain shape.* The type reduction could also fail if a piece of iron in that shape were not a sword, as we might be inclined to say if it were part of a statue instead of an actual weapon. Type-type reduction requires two types specified on different levels of analysis such that instances of one are always instances of the other, while token-token reduction only requires that each instance of one type of thing (at one level of analysis) be identical to some instance of a type on another level of analysis.[43]

Gotthelf appears to appeal to these two distinct meanings of reducibility (type-type and token-token) without distinguishing them. He refers to the potential for form in this passage as only being identifiable in terms of its form, because "the form or *logos* is an inescapable part of its very definition."[44] That a certain potential cannot be defined without reference to its form is an example of type-type irreducibility. A definition

[43] A common modern example is pain's reducibility to a physical brain state. Type-type reduction claims that every instance of pain is identical to a specific, physical brain-state, such as C-fibers firing, and pain can be defined in terms of that physical state. However, token-token reduction merely claims that each instance of pain will be identical to some physical state, but those physical states may be different in different instances of pain and do not define what pain is.

[44] Ibid.

should reveal what makes that thing what it is, which should be the same in each token of that type of thing. In the sword example, the form remains constant even if the material realization is variable, which means the form cannot be type-type reduced to the matter. I agree with Gotthelf that there is good reason to interpret this passage as supporting type-type irreducibility, but he mistakenly infers a version of token-token irreducibility from his evidence for type-type irreducibility. He argues that it follows from the form being an inescapable part of the definition that the potential has to be distinct from "any sum of qualitative and locomotive potentials" and that the motion carrying that potential cannot be a series of such qualitative and locomotive changes. However, as evidenced by the sword example, it is possible for type-type reduction to be false, while token-token reduction is true. [45]

Aristotle's analogy between fertilization and blacksmithing supports type-type irreducibility, but it does not support token-token irreducibility. He explains the sense in which heat and cold are not the principle of flesh and bone by appealing to the art of blacksmithing, where heat and cold are not what makes a sword. Instead, the movement of the tools makes the sword. Does this imply that the creation of a particular sword is not a specific sequence of material and efficient causes, such as heatings, coolings, and spatial rearrangements(i.e. qualitative and locomotive changes)? It would be strange to think so. To make a sword the smith must heat the sword to make it soft, hammer it into shape, and cool it to make it hard. The heating and cooling are integral steps to make a sword, and there is no reason to think that the amount of heating and cooling for a

[45] Nussbaum (1978) provides a functionalist reading of Aristotle, which denies that form or function can be reduced to material states, because a function cannot be defined materially. Nussbaum does not use the type-type vs. token-token distinction, but her arguments for irreducibility support token-token reduction and reject type-type reduction.

specific sword is unspecifiable without reference to the form of a sword. We may not be able to give a list of heatings and coolings that will specify *all* instances of sword makings, but that only supports irreducibility of type. Heating and cooling appear to be partially constitutive of the process of making a sword, rather than being different in kind from that realization of that potential, as Gotthelf's reading would suggest. This implies that there is no potential for the form of sword that is independent of the elemental potentials, and separate from a sum of the elemental or material ones. Instead, what makes iron potentially a sword is its potentials for being softened by heat, hardened by cold, and other such potentials when combined together. That potential to be a sword needs to be activated by the blacksmith who knows the form of the sword, but that activation of the potential occurs through a sequence of elemental potentials. The specific sequence of heating's and cooling that makes a specific sword can be specifiable without reference to the form, even if the process of making swords in general cannot.

This criticism of token-token irreducibility may seem to miss the mark, however, given that Gotthelf and others often take this irreducibility to be the mark of natural teleology, as distinct from the teleology in the arts. Perhaps there is not a potential for form that is separate from elemental potentials in the case of a sword, but there is in the case of an organism. However, this reply would undermine Aristotle's argument by analogy, because the analogy depends on both cases sharing the same sense in which they are not caused by hot and cold but by movements according to another principle. If heat is not the cause because one needs also some distinct, irreducible potential, then that would have to be true in both cases for the analogy to hold. Aristotle does mark a difference between the natural case and the artistic, but that difference is explained as a

difference with respect to where the actual form comes from. In the case of nature, it comes from an organism of the same type. By contrast, in art the form comes from something of a different kind, namely from the art within the craftsman. However, this difference does not change the fact that Aristotle claims, in both cases, that heat is not the principle that makes the product, and that he does so in the same way. The way that heat is not the principle in the case of the sword is best explained in terms of heat not yielding a general account of how swords are made or a definition of swords, while specific heatings and coolings are sufficient to make a specific sword. Thus, something similar should hold in the biological case.

Aristotle further examines the role of heat in the fertilization and development of the embryo in a way that distinguishes it from fire. Gotthelf takes this analysis to support his theory of irreducible potential for form and the causal insufficiency of matter:

> Now it is true that the faculty of all kinds of soul seems to have a connection with a matter different from and more divine than the so-called elements; but as one soul differs from another in honor and dishonor, so differs the nature of the corresponding matter. All have in their semen that which causes it to be productive; I mean what is called heat (θερμόν). This is not fire nor any such potential (δύναμίς), but it is the breath (πνεῦμα) included in the semen and the foam-like, and the natural principle in the breath, being analogous to the element of the stars. Hence, whereas fire generates no animal and we do not find any living thing forming in either solids or liquids under the influence of fire, the heat of the sun and that of animals does generate them. Not only is this true of the heat that works though the semen, but whatever other residue of the animal nature there may be, this also has still a vital principle (ζωτικὴν ἀρχήν) in it. From such considerations it is clear that the heat in animals neither is fire nor derives its principle (ἀρχὴν) from fire. (GA, 736b27-737a7 [translation modified]).

On one hand, Aristotle stresses the differences between the heat of fire and the heat of *pneuma*, which carries the potential for form of an organism. Gotthelf takes this

difference to be an indication of his irreducibility thesis.[46] On the other hand, this passage presents a material analysis of what carries this potential. Before this passage, Aristotle has already argued that semen is a compound of hot air and water (736a1). Gotthelf's irreducibility reading requires Aristotle to be distinguishing the kind of potential that makes an organism from material or elemental potentials, such that we appeal to the first instead of the second to explain organic development. However, in this passage we find Aristotle investigating what matter would be needed in order to do what we know semen does. In GA II.2 he considers how semen responds to heating and cooling, what make it thicken or thin, and it needs these various material properties in order to be able to do its work. In GA II.3 Aristotle then considers what kind of heat it must have, and rules out fire, because fire is never seen producing life. In place of fire he argues for the heat being hot air, which is more like the heat from the sun that warms the air, which he takes to be responsible for spontaneous generation. These requirements on the material nature of semen only make sense if the way in which it actualizes a potential for the form of an organism consists in material movements that require these properties. Suggesting that the heat in sperm must be more like the heat of the sun than that of fire, does not suggest any special immaterial quality of sperm. Instead, it is an empirical argument about which material sources of heat have been seen to generate life. Aristotle does not deny that the potential of a whole organism consists of lower-level material potentials; he argues that the principle of life cannot be fire alone, which amounts to denying one lower-level analysis in favor of another.[47]

---

[46] Gotthelf (1987) 218-219.

[47] Taking the higher-level potential for form of the animal to be composed of lower-level elemental potentials also makes spontaneous generation much easier to explain. In order

Probably the best support for the token-token irreducibility reading comes from a passage in *De Anima* that also distinguishes the true cause in living things from fire. The passage offers some support for thinking that the soul has causal powers independent of its material components, since it suggests the soul could be a "counteracting force" (τὸ κωλύον):

> If we are to distinguish and identify organs according to their functions, the roots of plants are analogous to the head in animals. Further, we must ask what is the force [τί τὸ συνέχον] that holds together the earth and the fire which tend to travel in contrary directions; if there is no counteracting force [τὸ κωλύον], they will be torn asunder; if there is, this must be the soul and the cause of nutrition and growth. By some the element of fire is held to be the cause of nutrition and growth, for it alone of the bodies or elements is observed to feed and increase itself. Hence the suggestion that in both plants and animals it is it which is the operative force [τὸ ἐργαζόμενον]. A concurrent cause [συναίτιον] in a sense it certainly is, but not the principle cause [ἁπλῶς γε αἴτιον]; that is rather the soul; for while the growth of fire goes on without limit so long as there is a supply of fuel, in the case of all complex wholes formed in the course of nature there is a limit or ratio which determines their size and increase, and limit and ratio [λόγος] are marks of soul but not of fire, and belong to the side of account [λόγου] rather than that of matter. (*DA,* 416a 5-18)

This passage can be read as suggesting that the soul is literally a force that holds the body of an organism together to counteract the tendencies of the elements to separate from each other. It is a response to Empedocles' theory that the fire in plants explains why certain parts grow upwards, while the earth in roots explains why they grow downwards. Aristotle argues that if these tendencies continued, then the organism would be destroyed.

---

to maintain that the creation of an organism cannot consist of actualizing elemental potentials, Gotthelf must argue that there is "a non-species specific irreducible potentiality," Gotthelf (1989) 184. However, I see no textual evidence for the idea that Aristotle believed in a non-specific potential for life (outside of the passages I have just argued against, at any rate). It is much more straight-forward to read Aristotle as suggesting that coincidentally the right materials and the right about of heat could come together and form an organism as an instance of accidental causation. The difference between normal generation and spontaneous generation is that spontaneous generation lack the intrinsic cause provided by the parent's form, but that makes the generation accidental (and thereby spontaneous) rather than impossible.

The same line of thinking also rules out the theory that the soul simply is fire, because fire increases without limit, but organisms do not. If the soul is actually a force in addition to the forces of the elements, then it certainly is a *dunamis* that is neither type-type nor token-token reducible to the elements, since it is something entirely different from them. Aristotle's repeated differentiation of fire from the soul also supports this reading.

However, this passage does not actually commit Aristotle to maintaining that the soul is a literal force that acts against the tendencies of the elements. We should note that although the word "force" appears three times in the Revised Oxford translation by J. A. Smith, cited above, there is no word in the Greek that corresponds to the English word. The first instance, "τί τὸ συνέχον", is more literally "what holds together." The second, "τὸ κωλύον" is "what hinders." The third, "τὸ ἐργαζόμενον," is simply "what is at work." Even though it is natural to think of hindering and holding together as occurring because of a force, it is not necessary to do so. We can easily speak of the organization of a whole keeping the whole together without that organization being an actual force that counters the tendencies of its parts. Instead, the divergent tendencies of fire and earth would be balanced by one another. This balancing is due to the organization, but the forces are still just those of fire and earth. We see something like this on a cosmic scale with Aristotle's cycle of the elements which prevents the universe from separating into rings of each element, as would happen if they all traveled to their natural places. If the soul is not actually an additional force, then we lose motivation to think of it as acting through a *dunamis* that is independent of any lower-level material constituents.

Do we have reason to think Aristotle thought of the soul as being the organization

of the whole rather than an additional force, though? There are a couple reasons to think so in this passage in addition to support from elsewhere. First, Aristotle names limit and ratio (πέρας καὶ λόγος) as belonging to soul. If soul is not the organization itself, then it is certainly responsible for it. However, if the soul is to avoid being immaterial, which he wants to avoid, based on his rejection of Plato's theory, then it should be closely tied to the organization itself. Second, Aristotle does not deny that the properties of fire are at work in the organism. Instead he calls fire a "concurrent cause" (συναίτιον), while the soul is the principle cause. Aristotle takes fire's tendency to grow and consume to be part of what explains how animals eat and grow, but fire is not enough on its own to do this. Fire's tendencies to consume and grow have to be used in the right ways, and stopped at the rights points for there to be an organism and not just a fire. Rather than being another force in addition to the forces of the elements, the soul is the ordering and limiting of the material components that makes a self-maintaining whole. Thus, a realization of a potential of the soul for a certain end will consist of the actualization of various potentials of the material components.

Aristotle's account of uniform biological parts in *Meteorology* supports my reading that the actualization of a higher-level potential consists of a series of actualizations of lower-level potentials. Aristotle explicitly attributes the formation of uniform biological parts such as flesh and bone to hot, cold, and their motions:

> Now heat and cold and the motions they set up as the bodies are solidified by the hot and the cold are sufficient to form all such parts as are the homogeneous bodies, flesh, bone, hair, sinew, and the rest. For they are all of them differentiated by the various qualities enumerated above, tension, ductility, fragmentability, hardness, softness, and the rest of them: all of which are derived from the hot and the cold and the mixture of their motions. (390c 2-9)

Aristotle takes biological matter to be produced by the right combination of material forces, such as heating and cooling. It is of course unlikely that the right combination of hot, cold, and their motions will just create flesh in a pond or field, but this passage suggests that the motions of sperm that create flesh and bone, etc. are composed of lower-level heatings and coolings and they can be analyzed at this lower-level. Hot and cold have the power to produce the qualities that define biological matter, but they themselves do not provide a principle that ensures they are used in the right order or right amount.

Following this passage Aristotle does challenge the idea that heatings and coolings could account for non-homogenous parts (390b 9-11). However, Aristotle again explains this by analogy to the arts, where "cold and heat and their motion would be admitted to account for the formation of copper and silver, but not that of a bowl, or a box," because "the cause is art" (390b 11-14). Since the cases of nature and art are parallel, this passage does not suggest that there is a special irreducibility in nature that is not present in art. Instead, this passage highlights the relativity of the matter-form relation, since Aristotle thinks that the elements are the matter of homogenous bodies, but the homogeneous bodies are in turn the matter for the non-homogenous bodies (cf. 646a 12-29). Aristotle generally restricts extending potentiality across too many levels of analysis. For example, Aristotle states, "earth is not yet potentially a statue, for it must change in order to become bronze" (1049a 16-17). Aristotle does not want to make his theory of potentiality meaningless by saying the elements are potentially everything, but there is a continuous series of potential-actual and matter-form relations from the lowest level to the highest level. A whole organism is composed of the elements via the intermediary steps of homogeneous parts and non-homogeneous parts.

Looking at these three passages as a whole, it is clear that Aristotle does not think fire is a cause without qualification (ἁπλῶς) of biological processes, whether embryonic development or digestion. However, his denials of fire as a cause, or of hot and cold, are only denials of intrinsic causation, and it is not surprising that fire is not an intrinsic cause of living things or their vital functions. Fire certainly does not reliably bring about digestion and animal growth on its own, nor does it reliably produce living organisms. Denying that individual material components of organisms are intrinsic causes does not amount to denying that collectively the material components are sufficient to bring about the result of a biological process.

Furthermore, maintaining that the soul is somehow irreducible to its material components does not actually require that the material components be insufficient to bring about biological processes. Something can be type-type irreducible without the presence of a gap in the chain of necessitating material efficient causes within a particular organism. Aristotle appears to require at least type-type irreducibility, since he thinks what a thing is is determined by its form and not its matter, and he gives a privileged status to individuals as substances, who could otherwise be seen as just a compound of more fundamental particles. However, type-type irreducibility is separable from the thesis that the material components are causally insufficient to bring about biological processes.

Rather than suggesting that the soul is some sort of force that fills the gap between what the materials can do and what an organism does, these three passages suggest that actualizations of the organisms' potentials consist of actualizations of the material potentials. Fire is a concurrent cause of digestion and growth, because its tendency to consume and grow is at work within an organism. Heating and cooling play

important parts in embryonic growth, as in making a sword. The material components do not appear to be lacking sufficient powers to bring about the results, but rather the results would be by chance without the soul or the art to explain how the result can come about reliably. The lower-level account would look like a chance coincidence without being understood in relation to the higher-level account, but that does not preclude that specific instances of higher-level process being identical to specific lower-level ones. The soul needs to account for what the art accounts for in blacksmithing: not difference between insufficient conditions and sufficient ones, but rather between sufficient ones and intrinsic, reliable ones that work always or for the most part.

Still, there is another line of argument for the incompatibility of material necessitation and being for the sake of an end, which is based on Aristotle's discussion of hypothetical necessity. In *Physics* II.9 and *Parts of Animals* I.1 Aristotle describes a kind of necessity that he contrasts with the material necessitation found in Democritus and Empedocles and with absolute necessity, which Aristotle reserves for what is eternal. This third kind of necessity is called "hypothetical necessity" (ἀνάγκης ἐξ ὑποθέσεως), and it describes when something is needed in order to achieve a goal. Aristotle suggests that we need to look to hypothetical necessity, rather than absolute necessity or material necessitation in order to understand what happens in biological examples. Cooper and others have interpreted these statements to imply that "however much certain particular stages in the formation of a living thing may be materially necessitated, the end product, the finished living thing, is never the result of such necessitation."[48] I argue that

[48] Cooper (1987a) 266-267.

Aristotle's discussion of hypothetical necessity need only deny that material necessity on its own provides an intrinsic cause, and thus natural teleology can be compatible with the results of individual natural processes being determined to occur by material necessitation.

Cooper's main textual support for his position comes from *Physics* II.9. Aristotle in keeping with his prioritization of ends does deny that matter causes the end: "Both causes must be stated by the student of nature, but especially the end; for that is the cause of the matter, not *vice versa*" (200a 33-34). How should we understand this denial of matter causing the end? I have already argued that when Aristotle denies causation without any qualifications it is usually a denial of intrinsic causation, and such a denial would be compatible with the result being a product of material necessitation.[49]

Does Aristotle deny material necessitation? In a way yes, and in a way no. In his illustrations of hypothetical necessity by analogy to the arts, Aristotle repeatedly denies that the end product is *due to* [διὰ] the matter. Aristotle takes it to be absurd to suppose that "the wall of a house necessarily comes to be because what is heavy is naturally carried downwards and what is light to the top… whereas, though the wall does not come to be *without* these, it is not *due* to these, except as it material cause: it comes to be for the sake of sheltering and guarding certain things" (200a1-7). It is absurd to think that a pile of building materials would assemble itself into a house merely because of the properties of wood and stone. Aristotle's denial that the house is due to these material properties is a claim that only specifying the building materials and their individual

[49] Meyer claims she can find no example of Aristotle denying causation that is not a denial of intrinsic causation, and I have yet to find a counter example to her claim. Meyer (1992) 818.

properties is insufficient to explain why the house is there. Those material properties are clearly necessary to make the house, however, which is why they are hypothetically necessary to make the house. It does seem to be possible, at least in principle, that materials could fall into an appropriate house shape by chance, but such a result would never be a regular or predictable occurrence.

Aristotle's point in this house example is very similar to the point he makes with his blacksmith example in *Generation of Animals*. The materials and their properties, considered on their own, lack organization, and organization is needed in order to produce the goal. Bricks, stones, and wood in a pile are no more than a house than an iron ingot is a sword. For this unorganized material to become the object that is the goal, it needs to be organized, and Aristotle understands this organization in terms of replicating a form. However, as I argued already, the replication of the form is carried out through material powers such as heating, cooling, hammering, etc. In the transformation of the pile of building materials into a house, there will be a sequence of material-efficient causes of these sorts that push and pull the materials into the right shape. However, this sequence would appear to be entirely accidental without any way to account for its order or conjunction, if the sequence is not viewed as the replication of a form in the mind of the builder. Since the builder possesses that art of building and knows the form of the house, he is able to ensure that the right material-efficient causes happen in the right order. This would mean that it is possible but highly unlikely that an unguided sequence of material-efficient causes could produce a house, but in such a case the house would lack a genuine cause and come about by chance instead.

Taking Aristotle's denial that matter causes the end to mean that the materials

could only bring about the end by chance unless guided by a final cause, rather than taking it as a denial of their causal sufficiency, allows us to make better sense of passages where Aristotle describes a processes occurring through both hypothetical *and* material necessity. As I discussed earlier, in *Parts of Animals* I.1 Aristotle provides a brief example of how an account should be given in terms of both hypothetical necessity and material necessity with respect to respiration (642a 31- 642b 2). In this passage Aristotle suggests that material necessitation is sufficient to account for the inflow and out-flow of air, since "as the internal heat resists in the process of cooling, the entrance and exit of the external air occur." This process is treated at greater length in *On Youth, Old Age, Life and Death, and Respiration*, where Aristotle gives a mechanical account of the lungs in comparison to the bellows: "as the increase of bulk causes the organ to dilate, so the diminution causes contraction, and when it collapses the air which entered must pass out" (480b1-4). Aristotle understands lungs to be for the sake of cooling, and they are hypothetically necessary for the animal to able to cool itself, but Aristotle also describes how the breathing process can occur entirely in terms of material necessitation. He only appeals to the necessary results of expansion, contraction, heating, and cooling. This implies that the matter and its properties can be sufficient to make a process occur, while it is still a process subject to hypothetical necessity, in so far as achieving the goal still requires certain material interactions, and teleology, in so far as those material interactions are for that goal.

Aristotle returns to the role of material necessity in natural teleology in his account of the development of teeth at the end of *Generation of Animals*. Aristotle criticizes Democritus for neglecting the final cause of teeth, but he also concedes that

Democritus was right about the development of the teeth happening of material necessity:

> Democritus, however, neglecting the final cause, reduces to necessity all the operations of nature. Now they are necessary, it is true, but yet they are also for a final cause and for the sake of what is best in each case. Thus nothing prevents the teeth from being formed and shed in this way; but it is not on account of these causes but on account of the end (οὐ διὰ ταῦτα ἀλλὰ διὰ τὸ τέλος); these are causes in the sense of being the moving and efficient instruments and the material. (789b 2-9).

Aristotle agrees with Democritus that teeth are formed by material necessity, but he disagrees over the question about what is explanatory. Stating the material conditions that necessitate the results does not fully state what the process was due to, or what it was on account of (διὰ). To fully account for the development and loss of teeth requires stating what purpose they have in that animal. In effect, that places the materially necessitating causes in a context that makes their conjunction not mere chance, because they are found in an animal organized to achieve certain ends, and those material causes have a role to play in bringing about those ends. It is because the teeth serve to tear and chew food in this type of animal, and because this particular animal is the offspring of another of the same type, that the material necessitating conditions are present. Aristotle thinks this is analogous to the way in which an artisan replicating a form to achieve a certain purpose explains why the necessitating movements of the tools occur as they do (789b9-15). In both cases, there can be materially necessitating causes sufficient to bring about the result of a teleological process, but their ordering and conjunction would only work by chance if they were not within, or guided by, an organism organized for a certain end.

In these examples, hypothetical necessity does not replace material necessity in the explanations of how something comes about. When Aristotle gives a temporal description of the processes, he does so in terms of the material necessitation, whether it

be hammering or the heating and cooling of air. Hypothetical necessity merely states that in order for a certain goal to be achieved, there must be something that can materially necessitate it. Rather than adding some new kind of necessity that can drive the process forward, hypothetical necessity states the need of something that can drive the process forward. Aristotle frequently states that there can be more than one thing that can fill this role, since both bronze and iron can make an axe that chops well (642a 10-12). Also, Aristotle describes lungs, gills and brains as all different organs that provide cooling for an organism. What is hypothetically necessary refers to what an organism needs to have happen for one of its goals, but Aristotle explains how the organism does this in material and efficient causal terms, specifying which of the multiple possible ways the goal was achieved.

4. Teleological Intrinsic Causes

So far, I have argued that Aristotle considered something happening from chance to be incompatible with it happening for the sake of something, because chance events lack an intrinsic cause, while cases of teleology have an intrinsic cause. However, Aristotle does not appear to think that all cases of intrinsic causation are teleological, so it remains to be shown what makes an intrinsic cause teleological.[50] Fire's ability to heat is a good example of what must be a case of intrinsic causation, since fire has an intrinsic connection to heat, being composed of the hot and the dry, and it reliably heats what comes near it. However, fire certainly does not act for the sake of warming soup, or the air around it, unless we consider it as it is being used by a human art. If it only warms for the sake of something in virtue of serving as an instrument in a human art, then that end

[50] I maintain that not all intrinsic causal relations are teleological, but it has been argued that all intrinsic causation is teleological. For this view see, Scharle (2008b), 37-42.

does not explain why it warms in the first place. Aristotle also takes an eclipse to be an example of something that has a non-accidental cause without being for the sake of anything. (*Meta.,* 1044b 8-15). The interposition of the earth between the sun and the moon consistently brings about the deprivation of the moon's light that is an eclipse in a non-accidental way, but it does not have any purpose or goal to make it teleological. Even though the majority of Aristotle's examples of intrinsic causation are teleological, such as the many examples from the arts, having an intrinsic cause does not imply having a final cause.

The presence of a goal that plays a role in explaining what occurs, unsurprisingly, is what distinguishes teleological instances of intrinsic causation from other non-teleological cases. But how does the goal play a role in explaining what happens? Denying that material necessitation is sufficient to make some process occur without the presence of a goal provides a straightforward way of seeing how the goal helps explain why it happens. However, I argued that there is good reason to reject this way of making goals explanatory. This way presents the goal as if it were in competition with other ways of describing the efficient causation, but Aristotle does not appear to see such a competition between causes. We have already seen examples where Aristotle does not have any reservations about citing multiple causes to explain one thing, and when he introduces the four causes, he argues "as things are called causes in many ways, it follows that there are several causes of the same thing (not merely accidentally)" (*Phys.,* 195a 3-5). It is easy to think of citing one cause as excluding the citation of another, but Aristotle does not think of causes that way. A full explanation will cite multiple causes that caused the occurrence in different ways.

Citing a goal as part of the explanation appears to amount to claiming that something is organized in such a way so as to bring about that goal. Arts are organized so as to bring about their products, which are their goals, and organisms are organized so as to grow to their mature form and make another of their kind. What makes these results goals and not merely results is that they are good or beneficial. Aristotle frequently switches between discussing an end and a good as if they were interchangeable and closely associates the two. For example, he describes final causes as "causes in the sense of the end or the good of the rest; for that for the sake of which tends to be what is best and the end of things that lead up to it" (195a 23-25). That the end is good is crucial for distinguishing ends from mere results.[51] For example, fire is organized in such a way as to consistently heat what is near it, and it does so continuously, but its activity is not a goal directed one, because the fire does not benefit from heating. Similarly, there is no good to be found in obscuring light in the case of the eclipse, so even if the motions of the moon lead up to that result, they are not for the sake of it.

In *De Anima* Aristotle distinguishes two senses of the phrase "for the sake of which," that also support the idea that Aristotle thinks of this phrase in terms of benefit or

[51] This point is largely agreed upon by scholars. For examples see: Cooper (1987a), Freeland (1994), Meyer (1992), and Johnson (2005). The main opponent to this thesis is Gotthelf (1987), who believes irreducible potential for form is prior to a sense of goodness. This claim has some plausibility in the biological cases, but potential for form certainly does not capture the way an action has a goal or how the crafts have a goal, since they do not become their goals. Even in biological cases there are examples of something being for the sake of something else that cannot be explained by describing one as having irreducible potential for the form of the other. For example, Aristotle claims the bones exist for the sake of the fleshy parts, because they benefit them by supporting them (652b 2 ff.). This certainly does not mean that the bones have an irreducible potential to become flesh, as Gotthelf's analysis of being for the sake of something would suggest. Many of these problems stem form Gotthelf missing Aristotle's use of the term "for the sake of" to refer to a beneficiary. I have also already argued against his interpretation in sections II and III.

goodness. He writes, "that for the sake of which has two senses, viz. the end to achieve which, and the being in whose interest, anything is or is done [διττῶς δὲ τὸ οὗ ἕνεκα, τό τε οὗ καὶ τὸ ᾧ]" (415b 20-21). "That for the sake of which" can refer to the goal itself, but the phrase can also indicate for whom the goal is achieved. It would be hard to make sense of the second meaning without some notion of benefiting, since the clearest way a something can be for a person is if it is done in order to benefit that person. For example, I might be building a fence for my neighbor, in which case there is a goal of building the fence, but that goal is also being done in order to benefit my neighbor. In cases of natural teleology the goal might be something like seeing, or digesting, and the clearest beneficiary is the organism that has those abilities. Aristotle tends to explain natural processes that are for the sake of something as having a certain aim that benefits the individual undergoing the process.[52]

Unfortunately, it is not clear in Aristotle's works how having this beneficial goal makes something happen. Scholars have tried to read something like natural selection into Aristotle's account, even though Aristotle's species are eternal. Their idea is that even if the species do not change, the beneficial nature of certain parts or behaviors of organisms allowed them to survive in the past and pass those parts on to the next generation, and thereby the benefits play a role in explaining the presence of those parts now.[53] This is a clear solution, but not one that has textual support, since Aristotle never

[52] I will not endeavor to provide a full-fledged defense of this reading here. Authors who read anthropocentrism of cosmic teleology into Aristotle would object to this point, because they would say that natural processes in an animal ultimately benefit humans rather than the animal itself. I will argue in Chapter Two that Aristotle analyses animals in terms of what benefits the individual. For a defense of a similar reading see Johnson (2005), 75-80 and 176-187.

[53] Cf. Furley (1996) and Myer (1992) 811-2.

makes any such argument, and it is not clear how it could account for the benefits of something like non-instrumental reason, which he holds in such high regard. As discussed earlier, Cooper has alternatively suggested that something happening because it is good requires that the matter alone is incapable of bringing it about, but I have already argued against that reading. I suspect that Aristotle did not develop an account of how things happen because they are good, because he took it to be obvious that things are acting for the sake of goals.

Following his argument against Empedocles in *Physics* II, Aristotle appeals to observational evidence for goal directedness in nature:

> By gradual advance in this direction we come to see clearly that in plants too that is produced which is conductive to the end – leaves, e.g. grow to provide shade for fruit. If then it is both by nature and for an end that the swallow makes its nest and the spider its web, and the plants grow leaves for the sake of fruit and send their roots down (not up) for the sake of nourishment, it is plain that this kind of cause is operative in nature. (199a 23-30).

Aristotle takes natural examples to be obviously acting for ends, and he shows no more doubt that the natural cases are acting for ends than he doubts that arts act for ends. He does not think it takes argument to see that a swallow acts for a goal when making its nest; instead, Aristotle is concerned to show that this happens as a result of nature rather than as a result of deliberation. The goal directedness of these cases is taken to be uncontroversial, as if we could almost just observe the ends by looking at these cases.

In *Parts of Animals* Aristotle also treats ends as the kind of thing that can be observed easily. In his methodological remarks at the beginning, he states, "Again, whenever there is plainly (φαίνηται) some final end to which motion tends, should nothing stand in the way, we always say that the one is for the sake of the other; and from this it is evident (φανερὸν) that there must be something of this kind, corresponding to

what we call nature" (641b 23-26). Aristotle treats ends as something manifestly observable, in part because change consistently moves towards them. For instance, he also refers to the reason that animals have mouths and stomachs as evident (φανερὸν) (674a 13). He starts his treatment of hair and teeth by stating that teeth are for the reduction of food and hair is for protection as if this should be obvious (658a 14 ff., 661b ff.).[54] In all of these cases, it is fairly easy to see that these come about regularly, and that Aristotle's descriptions of the purposes all describe something beneficial to the animal in some way. What is much less apparent than these purposes is how hair grows, or how teeth rise and fall out, or how digestion works in material and efficient causal terms. His discussion of respiration provides a good example of this approach, since Aristotle identifies the purpose of respiration as regulating body temperature by cooling and then explains the material, bellows-like, process that makes this cooling happen (*PA*, 642a 31 – 642b 2 and *On Youth…,* 480a 16 – 480b 30). Thus, Aristotle would often identify the end a process serves, and then give the material explanation of how the end is achieved.

When there is an apparent end with a clear beneficiary that occurs regularly, Aristotle thinks any explanation of the phenomenon will have to include that end. These explanations will be teleological because they start by recognizing an end, as Aristotle indicates in *Parts of Animals* I.1, but he does not deduce from the end what the cause must be, since there are usually multiple ways to meet the requirements of what is hypothetically necessary for that end. It is often assumed that because Aristotle treats ends as having a role in explaining why something is present or why it happens, and

[54] Bolton (1995) 18-19 discusses how examples like these indicate that Aristotle took goals to be fairly obvious to us, and explanations then show how those goals are achieved.

because Aristotle's account of explanation is deductive, that Aristotle must have thought we could somehow deduce what comes before from the end. However, a few scholars have made a promising alternative suggestion; namely that Aristotle generally treats ends as serving in the conclusions of scientific demonstrations as the major term, rather than the middle term.[55] If final causes appear as the major term rather than the middle term, then Aristotle would not be making deductive inference from the end to how it is brought about or what parts achieve it. Instead, demonstrative explanations would start by recognizing the end and then showing how it is brought about through the other causes, as examining Aristotle's discussion of demonstration and the end of health in *Posterior Analytics* II.11 will show.

Aristotle's main treatment of how ends relate to scientific demonstrations is in *Posterior Analytics* II.11, where he provides the concrete example of walking for the sake of health. The *Posterior Analytics* defines scientific knowledge as knowing both that something is the case and why it is the case. We can know why something is the case by means of a valid syllogism with a middle term that picks out the cause of a property inhering in a subject. These explanatory syllogisms are called demonstrations (ἀπόδειξις). Section II.11 discusses the role of causes as middle terms, and it lists four types of causal demonstrations:

> Since we think we understand when we know the explanation, and there are four types of explanation (one, what it is to be a thing; one, that if certain things hold it is necessary that this does; another, what initiated the change; and fourth, the aim), all these are proved through the middle term. (94a20-24)

Aristotle then proceeds to give examples of syllogisms for each of these kinds of explanation that are proved through the middle term. These four kinds of explanations

[55] Bolton (1995) and Leunissen (2010) ch. 6.

look like they should correspond to the four causes that Aristotle introduces in *Physics* II.3. This passage fairy clearly lists the formal, efficient, and final causes, but it is less clear that "if certain things hold it is necessary that this does" refers to or includes the material cause. Still, based on the clear reference to the other three causes, Aristotle's illustration of the cause in the examples, and his later reference to this cause as "that out of which," it is fairly well accepted that Aristotle is referring to the four causes of the *Physics* in this section.[56]

The introductory passage to II.11 leads one to expect Aristotle to show examples of syllogisms that use the four different causes as middle terms to show the four types of explanation, but Aristotle's example of explanation in terms of the final cause does not use the final cause as the middle term. In Aristotle's examples of material, formal, and efficient explanations, Aristotle uses the material, formal, and efficient causes, respectively, as the middle terms that explain why the major term belongs to the minor. For example, consider Aristotle's example of explanation by the efficient cause, which uses the following syllogism to explain why the Athenians were warred upon:

> (A) War belongs to (B) Launching an attack.
> (B) Launching an attack belongs to (C) The Athenians.
> Therefore, (A) War belongs to (C) the Athenians. (94a 36 – 94b 7)

Aristotle reframes the question in the form of why A belongs to C, and he is then able to answer it with a syllogism that cites the cause, B, of A's belonging to C. In this case the cause is the efficient cause, where the Athenians are in a war because of launching an

[56] Other scholars have provided good arguments that Aristotle is referring to the material cause in this passage, or at least to a type of causation that includes material causation. Aristotle seems to be referring to a broad sense of explanation in terms of "that out of which," which includes more standard material examples, as well as mathematical ones. See, Leunissen (2010) 177-186; and Johnson (2005) 49-51.

attack. Aristotle gives similar examples for the material and formal causes, where once again the middle term is the cause that explains why the major term belongs to the minor.[57]

When Aristotle gives an example of a demonstration where the end is explanatory, he does not use the end as the middle term, as in the other cases. In the example he gives, the aim of being healthy is supposed to explain why someone walks about after dinner. Aristotle starts with the question: "Why does he walk about?" and offers the following syllogism:[58]

> (B) Food not remaining on the surface belongs to (C) walking about
> (A) Healthy belongs to (B) food not remaining on the surface.
> Therefore, (A) healthy belongs to (C) walking about. (94b8 – 23)[59]

Aristotle says that he will show why the aim of being healthy is explanatory of walking, but he cites "food not remaining on the surface" as the middle term. He then states how this middle term is explanatory: "Why is B explanatory for C? Because this, being in such a state is what being healthy is" (94b 20-21). The middle term in this syllogism looks to be a material cause, rather than a final cause, since it gives the material conditions of health, or at least in this instance of health (there are certainly other material

---

[57] In *Posterior Analytics* II.11 uses a mathematical example of material cause to show that an angle inscribed in a semi-circle is a right angle. The middle term is "half of two right angles" which joins "right angle" and "angle in a semi-circle." As highlighted in the previous note his treatment of material causes is odd here. In this section Aristotle claims that formal cause has already been shown to be a middle term. An earlier example that uses a formal cause as the middle term is about thunder in II.8. He shows that the cloud thunders because "fire being quenched" belongs to thunder and cloud.

[58] Scholars have disagreed about how to formulate this syllogism, in part because they expect health to be the middle term. I think Leunissen and Johnson have shown that Aristotle's first formulation of the syllogism in this example is as I have formulated it. Leunissen (2010) 182-191. Johnson (2005) 52-53.

[59] If the premises are switched, this is a standard first figure syllogism. I have left the syllogism in the fourth figure based on the order in which Aristotle discusses the premises.

conditions of a healthy body). The syllogism shows that walking about after dinner is healthy, because walking makes food not stay on the surface of the stomach, which is healthy, presumably in so far as it promotes good digestion. This would make walking an efficient cause of health, since it promotes a healthy state of the stomach. Aristotle in fact provides us with a syllogistic account of how health is brought about by material and efficient causes, when he says instead that he will show how the aim is explanatory, which we expect to mean health will be the middle term.

Given this example we have two main interpretive options. Either Aristotle made a mistake, and he meant to provide a syllogism with the final cause as the middle term, or he thinks explanations in terms of final causality will not use the final cause as the middle term. The first option has enjoyed some popularity, because Aristotle's other examples of explanations in terms of different kinds of causes use that cause as the middle term. This reading takes its main support from Aristotle's mysterious statement that we must "change the *logous*, and in this way everything will be more evident" (94b 21-22). Johnson and others have interpreted this to mean that Aristotle recognizes that he made a mistake, and suggests that you need to rework the syllogism so that health will be the middle term.[60] This would amount to switching one of the premises with the conclusion. However, I find it unlikely that Aristotle would spend fifteen lines setting out and explaining his example without realizing he was making a mistake, and then not even provide a concise statement of the new syllogism. In a few letters he could have stated the syllogism he imagined in a compact form, but he does not. He only provides us with

[60] Johnson (2005) 53.

the syllogism with a material cause as the middle term, and he does so in some detail, which suggests he did so intentionally.

If we reject the idea that Aristotle envisioned an entirely different syllogism, with a different middle term and conclusion, then what could "changing the *logous"* mean? Leunissen has made a compelling argument that "μεταλαμβάνειν τοὺς λόγους" refers to substituting the terms, rather than reordering the whole syllogism with a different middle term.[61] She has found that μεταλαμβάνειν in the *Prior Analytics* and the *Topics* is consistently used as a technical term meaning "to substitute for."[62] If Aristotle is using the term consistently, as he usually does, then Aristotle should be suggesting that we need to replace some of the terms used in the syllogism. Why would that help? Aristotle does not consistently use the exact same phrasing for the terms A, B, and C when he sets out the example. For the A term, Aristotle uses "being healthy" (τὸ ὑγιαίνειν) and "healthy" (ὑγιεινόν), and for the B term he uses "the food not remaining on the surface" (τὸ μὴ ἐπιπολάζειν τὰ σιτία) and "making the food not remain on the surface" (τὸ ποιεῖν μὴ ἐπιπολάζειν τὰ σιτία) (94b8 – 23). It is not hard to use one of the options consistently, as is required in a syllogism, and as I did in my formalization, but Aristotle does not do so carefully when he sets out the example. Unlike creating a new syllogism it is a relatively simple task to use "health" consistently instead of switching between that and "being healthy," and Aristotle would not expect the reader to need him to set out the example again. While "μεταλαμβάνειν τοὺς λόγους" is still too ambiguous to determine if this is exactly the meaning that Aristotle had in mind, it is most likely that he was thinking of some process of substituting terms that would change the middle term or the

[61] Leunissen (2010) 191-194.
[62] Leunissen (2010) 192.

conclusion.[63] Alternatively, if he is not using μεταλαμβάνειν in such a strict sense, he could be referring to switching the syllogism to the first figure, since he presents the premises in the order of a non-standard fourth figure. Either of these alternatives allows us to avoid attributing the unlikely mistake that he did not use the right middle term without ever spelling out the correct one after recognizing the mistake.

What does it mean that Aristotle's example of teleological explanation using syllogisms does not use the final cause as a middle term? It suggests that syllogistic, teleological explanations are not teleological in virtue of using a final cause as the middle term, where the middle term links a subject with an attribute and shows why the major term belongs to the minor term. Instead, syllogistic, or demonstrative, teleological explanations show how the end is brought about. In the health example, the demonstration shows that walking is an efficient cause of health, because it leads to a material condition that is healthy. It shows how the goal of health is brought about in terms of material and efficient causes, and, by doing so, reveals an intrinsic causal connection between walking and health. While this demonstration is more an explanation of why walking is healthy than why the person is walking, which is the question the demonstration is supposed to answer, showing why walking is healthy still does help us understand why the person is walking. By placing the end in the conclusion, and using other causes as the middle terms, Aristotle can show how ends are brought about, and thereby reveal an intrinsic connection between the minor term (walking about) and the end (healthy) specified in the major term.

---

[63] Leunissen also suggests that Aristotle could also being referring to a process of substituting the definition for the term. This still would not make "health" the middle term, I find it less likely that Aristotle would make this suggestion without saying anything about the definitions he would substitute. Leunissen (2010) 193-4.

This use of ends as major terms in demonstrations fits well with the idea that ends will often be more apparent to us than the means by which they are brought about. Together these two features suggest that scientific explanations of teleological process begin by recognizing the relevant end. Once the end is recognized, the causes that bring about that end need to be specified. These other causes are ones that are hypothetically necessary to bring about the end, and they are also ones that can necessitate and entail the end. For example, it is hypothetically necessary to go for a walk in order to achieve the goal of healthy digestion, and walking results in healthy digestion. The way walking leads to this result looks to be a good candidate for the type of material necessitation discussed earlier, since it will jostle the food around to bring about the state of food not remaining on the surface. By showing how what is hypothetically necessary for a certain end can bring that end about, with a necessity strong enough to serve in a demonstration, Aristotle can explain why a certain process is for the sake of that end.

Aristotle treats goals as something fairly easy to recognize by just looking for beneficial results that are brought about in a reliable way. When he tries to explain how the processes that bring about these ends work, he does not see a conflict between giving an account in terms of material and efficient causes, and giving an account in terms of final causes. Instead, showing how an end is necessarily and reliably brought about by material and efficient causation is part of revealing the intrinsic connection between them and the end. Similarly, giving an account in terms of hypothetical necessity is not in conflict with material necessity, since one kind of matter's ability to necessitate an end can explain why it is hypothetically necessary in the first place. In other words, Aristotle

does not view explanations in terms of ends and hypothetical necessity to be in conflict with explanations in terms of matter and material necessity. Instead a full teleological explanation begins by recognizing the end and what is hypothetically necessary for it, but then explains how that end is brought about in terms of the other three causes, which is usually the harder part, and the part that requires more investigation. Sometimes Aristotle describes those three causes at a higher-level of analysis as the actualization of a certain potential for form, and sometimes he provides a lower-level analysis in terms of the materials at work in that actualization. However, one level of analysis does not exclude the other. This translates to his scientific demonstrations, where the final cause does not serve as a middle cause, while the other three causes do. Demonstrations involving final causes use one of the other three causes as a middle term to show how the end is brought about.

Chapter Two: Animal Ends and Functions

Within one organism there are many ongoing teleological processes, such as respiration for cooling, and parts with purposes, such as eyes for seeing. In order for the collection to be a unified whole, as Aristotle reasonably takes organisms to be, these parts and processes have to fit together somehow. Accordingly, some parts will be for the sake of other parts or processes, and some processes will be for the sake of others. The hierarchy within organisms is also reflected in Aristotle's hierarchal ranking between organisms, so his remarks on the ranking of species with different capacities will help illuminate the hierarchies within organisms that have those capacities. As I argued in Chapter One, a full explanation of how one of the highest ends in the hierarchy is brought about may appeal to causes and processes that are not defined by reference to that same end.

I argue that the processes within an organism fit together by being for the sake of an overall function and end, according to Aristotle. Reaching that end is performing that function well, which constitutes a good and successful life for that organism. As is the case with teleological explanations of processes, organisms as a whole are thus explained in terms of what is good or beneficial, specifically what is good or beneficial for them. The way Aristotle defines these ends of plants and animals mirrors the way he defines *eudaimonia* for humans in terms of a human function (*ergon*) in *Nicomachean Ethics* I.7. For plants, realizing their end consists of nutrition and reproduction, which are the

functions of the nutritive soul. Animal lives are also organized around nutrition and reproduction, but I argue that the addition of the sensitive soul gives animals a more complex and better function that allows animals to reach a superior end compared to plants. Scholars often underestimate the importance Aristotle places on the higher capacities of non-human animals in shaping their ends, by focusing on survival and reproduction as the governing ends in biology. But, animals' lives are oriented towards living in ways that are better than merely surviving and reproducing.[64] Non-human animals are constituted to pursue what is good for them, and what is good for them consists of using their sensitive capacities, rather than merely continuing life.

My argument that animals have an overall function and end, and that end is defined by the use of their sensitive capacities, consists of four main parts. Part one establishes that Aristotle does attribute functions and ends to organisms as a whole, and this end is what is good for an organism. Part two examines some of the key passages that describe what this end could be for animals, and they suggest that this end is the use of the sensitive capacities, rather than survival and reproduction, because they are what is best in the organism. Part three furthers my argument that animal ends are defined by sensation, based on Aristotle's discussion of hierarchies between species. In the discussions of these hierarchies Aristotle describes all living things as trying to participate in the eternal and the divine, which is beneficial to them, and animals are able

[64] The following are examples of scholars who argue that teleological explanations of animals must place survival and reproduction as their ultimate goal: Johnson (2005) 171-178. Furley (1996) explains natural teleology in terms of contribution to survival and reproduction. Gotthelf (1988) argues that all teleology is oriented towards the continuation of life. Leunissen (2010) 59 argues all the higher capacities are limited to contributing to the goals set by the lower ones, namely, survival and reproduction. Nagel (1972) 116-118 describes animals in this way in contrast to humans who have their ultimate goal set by reason, instead of survival and reproduction.

to do this better than plants because of their sensitive capacities. Part four explains how the nutritive soul, concerned with survival and reproduction, is for the sake of the sensitive soul, rather than the reverse, where the sensitive soul would simply contribute to the goals of the nutritive soul. All four of these parts show that Aristotle treated animals as having an ultimate end that goes beyond continuing existence by aiming at a better kind of life, and he used that end in his scientific explanations of animals. Accordingly, teleological explanations of animals must be made by reference to their own benefit in a way that cannot be defined merely in terms of ability to survive and reproduce. Instead, survival and reproduction are explained by their contribution to the well-being of animals, rather than determining what well-being is.

1. Ends and Functions of Whole Organisms

The question of whether there is a function of the animal as a whole or only of its parts frequently arises in connection with the human function argument in *Nicomachean Ethics* I.7. In this argument Aristotle defines the goal for humans, *eudaimonia*, in terms of their function, which he claims is rational. The presence of functions in Aristotle's biology has given rise to a debate over whether humans have their function the same way as other species have their own function. Some scholars argue that the function argument is appealing to Aristotle's normal practice of attributing functions to organisms, and this reading only makes sense if Aristotle does attribute functions to whole animals in his biological works.[65] By contrast, Nussbaum denies that Aristotle attributes functions to organisms as a whole in his biology, based on the idea that he only attributes functions to

[65] For example, the following discussions of the function argument take Aristotle to be examining humans as a specific case of an organism having a function, since organisms have functions generally: Whiting (1988), esp. 36; Achtenberg (1991) 64-68; Reeve (1992) 123-128.

the parts of organisms. [66] Accordingly, she concludes that the sense in which humans have a function must be unique and an exception to the rule that organisms in general do not have holistic functions, which implies that this use of a human function cannot be rooted in biology. Annas takes a similar position to Nussbaum on this matter in *Morality of Happiness*, which discusses appeals to nature in ancient Greek philosophy. She argues that Aristotle explains parts teleologically, because it makes sense to ask what a part is for, insofar as it is defined by a specific role it plays within the system of the organism. However, she claims that it does not make sense to ask what a species is for, since Aristotle does not define animals or plants in terms of their role within a larger system.[67] Denying that organisms have functions as a whole has a great impact on how to understand the function argument and the relation between Aristotle's science and ethics, because such a denial rules out the possibility that Aristotle is applying his general approach to organisms to the human case.

Functions and ends do clearly play some role in Aristotle's biology. Aristotle consistently connects ends, functions, and definitions in many of his works, so if each organism has some activity that is its function, that should have an important role in defining its end. The connections between these closely related concepts can be pieced together from remarks from Aristotle's metaphysical and scientific works. In *Meteorology* Aristotle explains, "What a thing is is always determined by its function (ἅπαντα δ' ἐστὶν ὡρισμένα τῷ ἔργῳ): a thing really is itself when it can perform its

[66] Nussbaum (1978) 81-85 and 100-106.
[67] Annas (1993) 138-139.

function; an eye, for instance, when it can see" (390a 10-12).[68] Aristotle implies in this universal statement that everything with a definition has a function, and the definition is in terms of that function. In other words, what something is is determined by the activity it performs. In *On The Heavens,* Aristotle also makes the universal claim, "Everything which has a function exists for that function" (Ἕκαστόν ἐστιν, ὧν ἐστιν ἔργον, ἕνεκα τοῦ ἔργου) (285a 8-9). Since that for sake of which something exists is its end, its end is performing its function. The function of something, thus, defines what something is, while at the same time determining what something's end is. Additionally, as I argued in Chapter One, something's end is always good for it and beneficial to it, so an organism's function will determine its good. Given these important roles of functions, having or not having a function would make a big difference in how we understand animals and humans.[69]

Does Aristotle actually analyze whole animals in terms of functions and ends in his biological works? Based on Aristotle's general discussion of functions, substances, and definitions, we would expect organisms to have a function, since organisms are substances; substances are supposed to have definitions more than anything else; and things are defined by their functions (*Meta.* VII, 1031a 11-14). It would be odd for organisms to be the exception, and in this section I show that Aristotle's biological texts do not make them the exception. Each organism as a whole, thus, should have a function that is connected to its definition, and the whole organism has the performance of that function as its end, for the sake of which all of its parts are.

---

[68] All translations are from the Revised Oxford Translations with some modifications, unless otherwise noted.

[69] For a discussion of these and similar passages in connection with the human function see Reeve (1992) 123-128.

Aristotle makes explicit references to the functions of plants and animals as a whole in more than one biological work. In *Generation of Animals* Aristotle assigns plants and animals as a whole the function of reproducing: "Now it is true that the function of most animals is, you may say, nothing else than to produce young, as the function of a plant is to produce seed and fruit [ἔστι δὲ τῶν μὲν πλείστων ζῴων ἔργον σχεδὸν οὐθὲν ἄλλο πλὴν ὥσπερ τῶν φυτῶν σπέρμα καὶ καρπός]". (717a 21-22). In this passage Aristotle labels one of the primary activities that plants and animals engage in as a function, and ascribes that function to the whole organism. For plants Aristotle quite explicitly identifies reproduction as *the* function of plants by means of creating seeds and fruit. He also implies that this is at least largely true of animals. However, I argue later that this is *only* mostly true, since animals do have a higher function, but reproduction is still an important function of animals. In *Parts of Animals* Aristotle states that variations in the parts of animals between species "must be held to be related to the substance and the functions of the several animals [τὰ δὲ πρὸς τὰ ἔργα καὶ τὴν οὐσίαν ἑκάστῳ τῶν ζῴων], or in other cases, to be matters of better or worse" (648a 15-16). Different animals have different versions of the same kind of part, because their functions require the parts to work in different ways. In other cases organisms might have the same functions, but one still be better than the other at achieving it. In both these cases, Aristotle ascribes functions to organisms as a whole, and he explains why the parts of the organisms exist in the way they do, based on those functions.

The previous two passages are not completely clear as to whether one organism has multiple functions belonging to it as a whole, or whether the organism has one

definitive function. However, the concluding remarks of *Parts of Animals* I suggests that Aristotle does ascribe one definitive function to each organism:

> As every instrument and every bodily member [ὄργανον] is for the sake of something, viz. some action [τὸ δ' οὗ ἕνεκα πρᾶξίς τις], so the whole body must evidently be for the sake of some complex action [πράξεώς τινος ἕνεκα πολυμεροῦς]. Thus, the saw is made for sawing, for sawing is the function [χρῆσις] of the saw, and not sawing for the saw. Similarly, the body too must somehow or other be made for the soul [τῆς ψυχῆς ἕνεκεν], and each part of it for some subordinate function [ἔργων], to which it is adapted. (645b 14-20)

Aristotle compares the whole body of an organism to organs and tools to explain how the whole body of an organism is aimed at a certain kind of activity (in this case that activity is the soul), and when one whole thing is for the sake of some activity, that activity is its function. It is possible to read this passage as being guilty of committing the compositional fallacy, where Aristotle has argued that since all the parts are for the sake of something, so the whole must be for the sake of something, as well.[70] However, Aristotle's inclusion of artificial tools along with the organs of the organism suggests that he is arguing by analogy with other things that have functions, rather than basing a conclusion about the properties of the whole based on the properties of the parts. He likely takes it to be absurd that all these other things would have functions, but not an organism. Additionally, Aristotle consistently asserts and defends the view that both artifacts and natural objects come to be for the sake of something. For example, in *Physics* Aristotle argues for the conclusion that "action for an end is present in the things which come to be and are in nature" (*Phys*. II, 199a 11-20, cf. 199b 26-33). If we grant

[70] This fallacy would be particularly notable, since Annas and Nussbaum maintain that only parts of a system can have a function, while it does not make sense to talk about the function of the whole, unless it fits into a larger system. Nussbaum explains the function of artifacts derivatively as extensions of an organism, which makes them like parts. Annas (1993) 139 and Nussbaum (1978) 81-85.

this additional premise, it would justify concluding that the whole body of an organism is for the sake of something, because the body is a natural thing.

In this passage, Aristotle is explicit that the functions of the parts are subordinate to the goal of the whole, and this means that each of the parts of an organism has a subordinate goal that contributes to the overall goal of the organism. This overall goal and these subordinate goals determine what materials are needed for the organs and how those materials have to be arranged, since they must be made in such a way as to fulfill their role (*PA,* 642a 11-13). The highest goal determines what the lower-level goals can be, since they must contribute to it. To take Aristotle's example, the parts of the saw each have a subordinate function that contributes to the overall goal of sawing. The handle provides something to grip, so that the saw may be moved back and forth. The teeth provide the sharp cutting points to remove small portions of the wood. The blade holds those teeth in a straight line. Together all these parts allow the whole saw to cut through a piece of wood in a straight line, and each of the lower-level parts has the goal it does for the sake of this. It is true that where may be more than one way to achieve the overall goal, making it impossible to deduce the lower-level goals from the overall goal. However, the overall goal still determines what needs to happen, even if there is variety in the ways it to do so. Contrary to Nussbaum's and Annas' claim that only the parts of a system have a function, Aristotle thinks the whole system needs to have a function in order for the parts to have functions, since the functions of the parts can only be defined by their contribution to the function of the whole.

2. Animals' Overall Goal

Having established that Aristotle does discuss over-all ends and functions of animals, it remains to be seen what those ends are. Among scholars that address the content of animals' goals, the most common view defines these ends in terms of survival and reproduction. However, I offer an alternative that defines them in terms of the use of their best capacity, sensation, which fits better with Aristotle's idea that lower capacities should exist for the sake of the higher ones.

Aristotle does often give teleological explanations in terms of what is needed for survival and reproduction. For example, Aristotle explains why animals that are capable of locomotion must have sense perception by claiming that without it they would die by failing to find nourishment (434a 30 – 434b1). This explanation gives sensation an instrumental role in finding food, where the goals of the nutritive soul, survival and reproduction, take priority, and it explains what powers animals have by reference to the need to fill the goals of that part of the soul. As previously noted, Aristotle names reproduction as the main function of plants and animals in *Generation of Animals (*717a 21-22). Based on examples like these, some scholars have taken all the other capacities and parts of animal's souls to be for the sake of fulfilling the goals of the nutritive soul, survival and reproduction.[71]

The following scholars have all argued that Aristotle's teleological explanations in biology are all ultimately directed toward the goal of survival and reproduction. Johnson in his study of Aristotelian teleology argues that scientific teleological explanations of animals' behavior and parts must place survival and reproduction as their

[71] Gotthelf (1988), Furley (1996), Johnson (2005) 174-5, Leunissen (2010) 59-63.

ultimate goal, even if higher capacities are more valuable.[72] Gotthelf similarly argues that all teleology is oriented towards the continuation of life, without reference to goodness or value, except in so far as something is valuable for maintaining that life.[73] He refers here to biological life (ζῆν) rather than the more complex mode of life (βίος) that would include characteristic activities of that species. This requires understanding all references to what is divine, better, good, and noble to be referring to a greater ability to preserve one's life and reproduce another like oneself.[74] Leunissen in her study of teleological explanations distinguishes explanations in terms of improving the quality of life from those in terms of what is necessary for life.[75] However, any improvement in the quality of life is still defined in terms of achieving survival and reproduction more effectively, and the additional, higher capacities of some animals serve to achieve the same goals of continuing life.[76] Accordingly, living well (εὖ ζῆν) in Aristotle's biological works would only refer to being good at fulfilling these goals of the nutritive soul.[77]

In addition to the frequency of Aristotle's teleological explanations that explain a part or behavior in terms of its need or usefulness for survival and reproduction, this reading has the advantage that it provides a clear way of understanding how teleological

---

[72] Johnson (2005) 171-178. Johnson is not entirely clear where he stands on this question. In his introduction he claims that the lower capacities exist for the higher and thus the lower and simpler parts are explained by being for the sake of the higher ones Johnson (2005) 9. However, in the chapter concerning teleology and organisms, he argues that teleological explanations of organisms and their parts should ultimately be made by reference to the goals of the nutritive soul, i.e. survival and reproduction Johnson (2005) 174-5. If all teleological explanations must ultimately be made by reference to the goals of the lowest part of soul, then the lower parts cannot be explained by how they are for the sake of a higher part, such as the sensitive.
[73] Gotthelf (1988)
[74] Gotthelf (1988) 117-118.
[75] Leunissen (2010) 74-5, 110-11.
[76] Leunissen (2010) 59.
[77] Leunissen 59-63. Also see, Gotthelf (1988) 117-118.

explanations work. For example, Furley argues that the way in which Aristotle's final cause is a cause in biological cases is that the previous usefulness of a part, capacity, or behavior allowed the previous generation to survive and pass it on to the next generation.[78] In this way the benefit something has provided, and continues to provide, explains its presence in the current organism.[79] On this explanation of final causation, no benefit that does not contribute to survival or reproduction can be a final cause or serve in a teleological explanation. Limiting the ultimate goals of animals that can serve in scientific explanation to survival and reproduction can, thus, make Aristotle's theory look closer to our own post-Darwinian, evolutionary theories.

I maintain that it is a mistake to think survival and reproduction define the ultimate goal for animals, however, because this wrongly places the lower capacities in the service of the higher capacities. Aristotle does not understand higher capacities such as sense perception to be merely instrumentally valuable for fulfilling the goals already present in the nutritive soul. Instead sensation, especially the ability to sense objects at a distance and the locomotion that comes with that ability, creates a better quality of life, and the way in which this life is better cannot be defined in terms of furthering the goals of survival and reproduction. Admittedly, Aristotle does note the value of sense perception and locomotion for finding food and mates, while avoiding prey, but these higher capacities are not *only* valuable for achieving the goals of lower capacities. In fact, the lower-level nutritive soul ultimately exists for the sake of the higher capacities,

---

[78] Furley (1996).
[79] Meyer (1992) 811-2 also describes this position as a possibility, but does not commit to it as the correct reading of Aristotle.

because both nourishment and reproduction aim at preserving a certain *kind* of life, and that kind of life is the one enabled by the higher-level capacities.[80]

Nutrition and reproduction are important functions for animals, but Aristotle distinguishes animals from plants by the presence of another function that has priority for them, sense perception:

> In all this nature acts as an intelligent workman. For to the essence of plants belongs no other function [ἔργον] or business [πρᾶξις] than the production of seed; since, then, this is brought about by the union of male and female, nature have mixed these and set them together in plants, so that the sexes are not divided in them. Plants, however, have been investigated elsewhere. But the function [ἔργον] of the animal is not only to generate (which is common to all living things), but they also participate in a kind of knowledge, some more and some less, and some very little indeed. For they have sense perception [αἴσθησιν], and this is a kind of knowledge [γνῶσίς]. (If we consider the value of this we find that it is of great importance [τίμιον] compared with the class of lifeless objects, but of little compared with the use of the intellect [φρόνησιν]. For against the latter the mere participation in touch and taste seems to be practically nothing, but beside plants and stones it seems most excellent [θαυμάσιον]; for it would seem a treasure to gain even this kind of knowledge rather that to lie in a state of death and non-existence.) Now it is by sense perception that an animal differs from those organisms which have only life. But since, if it is a living animal, it must also live; therefore, when it is necessary for it to accomplish the function of that which has life [τὸ τοῦ ζῶντος ἔργον], it unites and copulates, becoming like a plant, as we said before. (*GA,* 731a 24 - &31b 8)

Aristotle takes sense perception to be more valuable than merely surviving and reproducing, and his explanation of this depends on sense perception being a kind of knowledge. Knowledge (γνῶσις) in the passage has to be taken in a very broad sense, if it is to include touch and other such simple sensations. This kind of knowledge certainly falls short of scientific knowledge (ἐπιστήμη), which includes understanding why something is the case, and Aristotle clearly differentiates sensing from higher intellectual activity that one would find in humans. Still, sensation does provide information about

---

[80] For similar observations about preserving a kind of life rather than mere life, Polansky (2007) 217-219.

the surrounding world, which can be understood as a very basic kind of knowledge that marks a significant difference between plants and animals.

Animals have two main functions (ἔργα), reproduction and sensation, according to this passage, which raises questions about how these two functions are related to one another. On one hand, Aristotle presents knowledge and sense perception as being more valuable than nutrition and reproduction, which would suggest that in animals the nutritive and reproductive functions of the soul are for the sake of and subordinate to sensitive functions.[81] On the other hand, if we think more complex functions serve the more basic ones, sense perception could be for the sake of reproduction.[82] Since animals do not have male and female principles in each organism, they need to be able to detect other members of their species who are of the opposite sex. In many cases they will also need to move in order to unite, and sensation is needed for animals to move around (434a 30 – 434b 9). Alternatively, animals could have two independent functions, where neither is subordinate to the other. Aristotle sometimes describes humans in a similar way, when he describes them as having a split nature corresponding to the practical life and the theoretical life (1178a 20-24).[83] In this case, these two could be combined into one more

---

[81] Irwin (2007) 138 endorses this teleological hierarchy while discussing the human function argument and ethical naturalism, but he does not develop it with a study of the scientific works. Menn (2002) 120-122 also argues that the nutritive part of soul is subordinate to the sensitive part of soul based on Aristotle's discussion of the nutritive soul producing and nourishing the other parts in *De Anima*.

[82] I take this to be the dominant view on the over-all end for animals. Scholars tend to focus on Aristotle's teleological explanations that explain a part, capacity, or behavior by its necessity for survival and reproduction. Gotthelf (1988), Furley (1996), Johnson (2005) 171-178, Leunissen (2010) 59-63.

[83] I do not mean to endorse the view that Aristotle understands humans to have two distinct natures: one human and one divine. I merely intended to highlight a parallel between a duality in animals and humans, which holds regards of how the passages on human duality are interpreted.

complex function, or they could simply be independent of each other. If one function is for the sake of the other, the higher one should be the more fundamental and explanatory end, since it is the one that is not explained by reference to a further end. How we understand the relation between the functions of sense perception and reproduction will determine how we understand the end of the whole animal, which serves as the ultimate final cause in scientific explanations of that animal.

While this passage from *Generation of Animals* is primarily about reproduction, it actually favors taking sensation as the higher function in animals. Aristotle claims touch makes a life more valuable (τίμιον) and more remarkable (θαυμάσιον) than that of plants. Being more valuable and better is usually an indication of being higher up within a teleological hierarchy, and Aristotle suggests that reproducing is something an animal does only in so far as it is alive and out of necessity, which indicates reproduction is something that the animals must do, but which is less valuable than something else the animal accomplishes. Aristotle describes the animal as becoming like a plant when it reproduces, which has been described as less valuable than any form of life with sensation. This passage suggests that reproduction is necessary for animals, but the passage does not suggest that this is the end that other capacities are for the sake of. Instead, animals must survive and reproduce, which was the highest end for plants, but beyond that, they have a further end, which is exercising their capacity for sensation, since that is more valuable.

Aristotle reiterates the greater value of sensation and connects that value to its status as a goal, while discussing sleep: “But the waking state is the goal (τέλος), since the exercise of sense perception (αἰσθάνεσθαι) or of thought (φρονεῖν) is the goal for all

beings to which either of these appertains; inasmuch as these are the best (βέλτιστα), and the goal is what is best" (*Sens*. 455b 22-25). Aristotle explains why being awake is the goal of sleep by means of a further goal, to sense or to think, which can only be done while awake. Thus, being awake is the goal of sleep, because an animal must be awake in order to use its senses, and using its senses is its goal. Again, Aristotle emphasizes the value of sensation, and he explains that sensation is the goal, because it is best. Aristotle seems to take it as a general principle, or at least a rule of thumb, that one can identify what is the goal by looking for what is best (cf. *Physics* 195a 24-25, *Topics* 146b 9-10). This implies that in animals, since sensing is their best activity, its exercise is their goal. In humans, thinking is their best activity, and thinking will be their goal. Since reproducing, which is shared with plants, is not what is best in animals, it would violate Aristotle's general rule that the end is the best, if reproduction were the ultimate end of animals.

Aristotle's hierarchy of homogeneous parts also illustrates how parts can be subordinated to one another, and it suggests that animals have sensation as their end and function. Aristotle explains why flesh has priority over the other homogeneous parts in two ways. First, he shows the priority "logically" (κατὰ τὸν λόγον) by reference to the definition: "For an animal is by our definition something that has sensibility and chief of all the primary sensibility, which is that of touch; and it is flesh, or analogous substance, which is the organ of this sense" (*PA,* 653b 22-25). Sense perception is what distinguishes animals from other living things, and what defines them as animals, and Aristotle takes touch to be the most basic form of sensation, common to all animals. Being included in the definition makes sensation essential to being an animal, and since

flesh is the homogeneous part that is needed to have the primary power of sensation, touch, it has priority over the other homogeneous parts. Whatever is more closely connected to realizing what is definitive of an animal will thereby have greater priority for Aristotle, and this priority manifests itself when Aristotle explains parts by appealing to their necessity for realizing the definition of an organism (see *PA*, 653b 19-29, 666a 34-5, 678b1-6, 695b17-26).[84]

Second, Aristotle claims that observation reveals that the other parts exist for the sake of flesh:

> It is also obvious to sense [αἴσθησιν] that it is for the sake of this [flesh] that all other parts exist [πάντα τἆλλα τούτου χάριν ὄντα]. By the other parts I mean bones, the skin, the sinews, and the blood vessels, and again, the hair and the various kinds of nails, and anything else there may be of like character. Thus the bones are a contrivance to give security to the soft parts, to which purpose they are adapted by their hardness. (653b 30-35)

He takes it to be obvious that the other parts exist for the sake of flesh, and he thinks it should not need argument or a great deal of thought to realize, since it is supposed to be clear to the senses (αἴσθησιν) rather than any form of thinking. The other parts all serve flesh in some way and enable flesh to do its work or do it better, such as bones providing support and protection. This subordination of parts and Aristotle's remarks about the priority of flesh based on the definition of animals indicate that the parts which are more closely related to realizing what is in the definition will have the other parts exist for their sake. In animals the parts needed for them to use their sensitive powers are most essential, and Aristotle explains the roles of the other parts based on the direct role in enabling this ability or by supporting parts that enable it.

---

[84] Leunissen (2010) 136-139 provides a good discussion of this with many examples.

These passages show that Aristotle does attribute functions to whole organisms, and that performing its function is the goal of each organism, which is set by what is definitive of and essential to that organism. The goal and function correspond to what is best in the organism, and the various parts and behaviors of the organism can be explained by reference to their goal as a final cause. Moreover, while Aristotle does give teleological explanations of animals' parts and behaviors in terms of what is hypothetically necessary for survival and reproduction, I have shown several passages which indicate that Aristotle took sensation to be the highest, overall goal for animals. To further develop this argument that sensation is the main function and highest goal for animals, I will examine Aristotle's hierarchy of living beings and explain how survival and reproduction can be important goals of animals without being their highest or ultimate goal.

3. The Hierarchy of Species

Aristotle assigns each organism an ultimate goal that serves as the organizing principle for lower goals, functions, and powers in the organism, and this internal hierarchy is influenced by the way he ranks different species in relation to each other. In several places Aristotle describes a hierarchical ranking of the different kinds of living beings with plants at the bottom, then non-human animals, humans, and finally gods (*Phys.* 292b 1-22; *DA* 415a 25 – 415b3; *Sens.* 436b 18 - 437a 3; *HA* 588b4-22; *PA* 656a 3-8; *GA* 734b24-35; *EE* 1217a 23-29). The beings at the top of the list live better lives by having and using better capacities. To be able to make judgments like this, Aristotle needs to be able to compare the quality of life across species, which cannot rely merely on a conception of what is good for a member of that species. Instead, Aristotle needs

some conception of what is good that is not relative to a species in order to rank which species have better lives. This standard of goodness that is not relative to a species also serves to define what is good for members of each species by identifying what is best within them.[85]

One way this hierarchy of species is ordered is by sharing a common goal, which allows comparisons of how well different species achieve that goal. When discussing the nutritive soul in *De Anima*, Aristotle suggests that all living things have a common goal of partaking in the eternal and the divine, as much as possible:

> The acts [ἔργα] in which it manifests itself are reproduction and the use of food, because for any living thing that has reached its normal development and which is unmutilated, and whose mode of generation is not spontaneous, the most natural act is the production of another like itself, an animal producing an animal, a plant producing a plant, in order that [ἵνα], as far as nature allows, it may partake in [μετέχωσιν] the eternal and the divine. That is the goal to which all things strive, that for the sake of which [ἐκείνου ἕνεκα] they do what so ever their nature renders possible. (415a 25 – 415b2)

"That" in the beginning of the last sentence might be thought to refer to reproducing as the goal to which all things strive, but the previous sentence identifies reproduction as something done to achieve the goal of partaking in the eternal and the divine, so "that" must refer to "partaking." Accordingly, Aristotle explains the goal-directed functions of the nutritive soul (nutrition and reproduction) by reference to a further goal of partaking in the eternal and divine. The nutritive soul is what allows for both self-nutrition and

---

[85] This is closely related to a common objection to the function argument, which claims that Aristotle shows what makes a good human instead of what is good *for* humans, despite purporting to show the contrary. I think Aristotle does believe being a good specimen of a species is what is good for a member of that species. However, in the passages cited in this section Aristotle tends to argue that the use of what is best in an organism is best for that organism, rather than arguing that what makes it a good example of a species is what is good for it. For a good discussion of this objection and responses to it in connection with the human function argument see Whiting (1988), esp. 34-37.

reproduction, and both of these contribute to achieving a certain form of immortality. By eating food and gaining nourishment, each organism preserves its own life as long as possible. Although living forever is not possible for plants or animals, Aristotle thinks they achieve immortality and uninterrupted continuous existence in the closest way they can. By reproducing, the organisms do not achieve immortality as individuals, but rather as a species, which is the best they can do (415b 1-7). Thus, the individual's goal of participating in the eternal and divine has the result of preserving the species eternally.[86] Since plants and animals have a common goal with gods, continuous eternal existence, there is a fairly straight forward way of stating that the gods are better, since they are better able to achieve this goal. It is less clear whether plants and animals differ significantly in this respect, since they both achieve species immortality, even if one does this asexually and one does it sexually.[87]

While plants and animals may reproduce in different ways, this is not the main way in which Aristotle distinguishes the quality of their lives. Achieving species immortality is not the only way in which Aristotle describes living things trying to participate in the eternal and divine, as making survival and reproduction the ultimate goal for animals would require. Aiming at immortality is a transparent way of aiming to partake in the eternal, but that are more ways that animals can partake in the divine, even

---

[86] Cooper argues that organisms reproduce according to kind because preserving the eternal world order is good, but this passage suggests that the goals of the individual organisms explain why the species are eternal, rather than the eternality of the species explaining why the individuals reproduce. Cooper (1987a) 244-253. On this point I am in agreement with Kahn (1985) 198. For a discussion of the importance of this benefiting the individual see, Johnson (2005) 171-178.

[87] Modern biology does not consider plant reproduction to be asexual, but Aristotle understood plants to have both male and female principles in them, so that they did not need to be united sexually as in the case of most animals (731a 24 - &31b 8).

if they cannot achieve immortality more effectively.[88] In *Parts of Animals*, Aristotle describes sense perception as adding complexity and divinity beyond merely living:

> Animals, however, that not only live, but perceive [αἴσθησιν], present a greater multiformity of parts, and the diversity is greater in some animals than in others, being most varied in those to whose lot has fallen not mere life but life of high degree [εὖ ζῆν]. Now such an animal is man. For of all living beings with which we are acquainted man alone partakes of [μετέχει] the divine, or at any rate partakes of it in a fuller measure than the rest. (656a 3-8)

Aristotle treats the nutritive and reproductive functions shared with plants as a bare minimum required for life, but sense perception adds a greater complexity. The peak of that complexity also corresponds to the ability to live well, instead of merely living, which suggests that the added diversity provided by sensation improves the quality of life that animals enjoy compared to that of plants. Here Aristotle makes explicit the link between participating in the eternal and divine and living well, which suggests that participating more fully in the divine causes one to live better. Since reproduction is explained by an effort to participate in the eternal and divine, leaving an offspring is one way in which an organism pursues what is good for itself, but reproducing is not enough to really live well in the full sense.

At first glance this passage looks like it could limit living well and partaking of the divine to humans, but it actually leaves open the option that other animals also partake of the divine and living well, but to a lower degree than humans.[89] Other passages suggest that humans partaking of the divine in a greater measure, rather than exclusively,

---

[88] For example, Leunissen (2010) 63-66 explains the goal of reproduction as the result of striving to partake in the eternal and divine. She then interprets sense perception as being necessary for an animal's survival and to be an animal at all, and claims that sense perception is ultimately for the sake of gathering food to survive. She does not mention how sensation might contribute to the goal of participating in the divine.

[89] Lennox (1999) 6-7.

better reflects Aristotle's considered position (*De Caelo* 292b 17-22, *DA* 415a 25 – 415b3, *NE* 1153b 25-32). For example, in the previous passage from *De Anima* (415a 25 – 415b2) Aristotle even lists reproducing, common to all living things, as a way of participating in the eternal and divine. Since Aristotle correlates greater complexity, living well, and partaking of the divine in this passage, there is good reason to think that animals with basic senses like touch will have a lesser share of living well than those with all five senses, while still having a greater share than plants, who lack even touch. There is a continuum running from merely living to living well that corresponds to the increasing complexity in the organisms' capabilities (cf. *HA* 588b4-23).

Aristotle also describes this continuum in terms of increasing vitality (or life) and motion (ζωὴν καὶ κίνησιν):

> Nature proceeds little by little from things lifeless to animal life in such a way that it is impossible to determine the exact line of demarcation, nor on which side thereof an intermediate form should lie. Thus, next after lifeless things comes the plant, and of plants one will differ from another as to its amount of apparent vitality [ζωῆς]; and, in a word, the whole genus of plants, whilst it is devoid of life [ὥσπερ ἄψυχον] as compared with an animal, is endowed with life [ἔμψυχον] compared with other corporeal entities. Indeed, as we just remarked, there is a continuous scale of ascent towards the animal. . . . And so throughout the entire animal scale there is a graduated differentiation in amount of vitality [ζωὴν] and in capacity for motion [κίνησιν]. (*HA* 588b4-23)

Aristotle describes the same assent from the lifeless to plants through increasingly complex animals to humans, as in the previous passage, but here what increases is life itself (or vitality) and motion. We are used to seeing life used in a non-scalar fashion, where one does not have more or less of it, and in Aristotle it is usually something that one either has or does not. However, since Aristotle is describing the same scale as encompassing more and less life, as he does with partaking of the divine and living well, being more alive seems to correspond to living better. In a fairly commonsense way,

Animals who can sense and move around do show more signs of life and can make a patch of moss look more like dirt than another living thing. Animals can simply do more than plants, and they are more active, which Aristotle correlates with living better, partaking of a greater share of the divine, and having a greater capacity for movement.

This continuum represents a range of ability to achieve what is really good. When comparing the movements of the heavenly bodies to those of organisms in *De Caelo*, Aristotle explains differences in the amount of movement in terms of ability to achieve what is good:

> We must, then, think of the action [πρᾶξιν] of the stars as similar to that of animals and plants. For on our earth it is man that has the greatest variety of actions – for there are many goods that man can secure; hence his actions are various and directed towards ends beyond them – while the perfectly conditioned has no need of action, since it is itself the end, and action always requires two terms, ends and means. The lower animals have less variety of action than man; plants perhaps have little action and of one kind only. For either they have but one attainable good (as indeed man has), or, if several, each contributes directly to their ultimate good [πρὸς τὸ ἄριστον]. One thing then has and enjoys the ultimate good [ἀρίστου], other things attain to it, one immediately by few steps, another by many, while yet another does not even attempt to secure it but is satisfied to reach a point not far removed from that consummation. (*De Caelo* 292b 1-13)

Aristotle is trying to explain why planets move so much, while the earth and the stars do not, by comparing them to the motions found in plants, animals, and humans, but I will not focus on which celestial bodies are supposed to correspond to the terrestrial creatures.[90] The best position on scale of motion belongs to a human who is in the perfect state; and by being in this state, he does not need to do anything to achieve it.[91] After that there are humans who can reach that good, but still need to do many actions to do so.

---

[90] For an illuminating schematization and discussion of this passage, see Leunissen (2010) 165-168.

[91] While this is what Aristotle claims in this passage, it is misleading about Aristotle's considered account of human excellence and perfection, since the best life will require activity in addition to a perfected, virtuous state (cf. 1095b 29 – 1096a4).

Then there are other animals that cannot reach the true good, but they can come closer to it by means of a smaller variety of actions. Finally, plants are not close to this ultimate good, and have less ability to come closer, compared with animals. Once again, Aristotle presents a ranking of living things in terms of the variety of their actions and the degree to which they can attain what is good, where those creatures who have a greater capacity for action can attain a the good to a higher degree. Animals, because of their greater variety of actions, can come closer to attaining the ultimate good than plants.

On this scale of nature Aristotle posits both an end that is truly best and an end that is best for a certain kind of being, and he suggests that the ends for each species come as close as they can to the best end:

> For while it is clearly best for any being to achieve the real end, yet, if that cannot be, the nearer it is to the best the better will be its state. It is for this reason that the earth moves not at all and the bodies near to it with few movements. For they do not attain the final end, but only come as near to it as their share in the divine principle permits. (*De Caelo* 292b 17-22)

Those things that cannot actually achieve the best end will get as close as possible, but Aristotle does not take this to mean that they will hopelessly try to get what is impossible for them. Instead, he takes this to explain why the earth does not move at all, since being at rest fulfills its end and allows it to come as near to the best end as possible. Instead of struggling to do more, Aristotle seems to think there is no reason for the earth to move any more than it does, since it is not able to achieve anything better than it does by staying still. Plants, like the earth, also have very limited capacities for motion, and have no reason to try to perform more actions than needed to achieve the best that they can.

Likewise, animals should not be understood as hopelessly struggling to become wise, but rather when they reach what is best for them, they need not try to do any more.[92]

Aristotle repeatedly describes animals as doing much more than plants, and being much more active, but this increased activity is not strictly necessary for mere survival and reproduction, since plants can achieve that as well. Animals with only touch also can do it, so what are all the extra senses for? Aristotle indicates that organisms do not act more than is necessary to achieve their end in the previous passage, so what is all this increased activity for? Aristotle's short answer seems to be "for the sake of partaking in the divine." This surely is not a claim that organisms intentionally try to become like the prime mover, since Aristotle ascribes this goal to plants, which do not have intentional goals. Instead, by pursuing more tangible goals, such as self-nourishment and reproduction, organisms fulfill this more abstract goal without awareness that they are doing so.

Pursuing these subordinate goals that fulfill the higher goal of participating in the divine amounts to doing what benefits the individual organism itself, since they are pursuing what is good for them. In *De Anima* after describing how plants and animals reproduce for the sake of participating in the divine, Aristotle introduces his distinction between two meanings of "for the sake of": "The phrase 'for the sake of which' is ambiguous; it may mean either the end to which, or the being in whose interest, the act is done (τὸ μὲν οὗ, τὸ δὲ ᾧ)" (415b 2-3). Aristotle does not explain in any detail why he introduces this distinction after claiming that all things seek to participate in the divine,

[92] Leunissen (2010) 167-8. She also notes how limited access to the good is supposed to explain limited action, since there would no reason to try to get closer to the good than is possible.

but its location suggests it should apply to the sense in which things act for the sake of the divine. Participating in the divine as far as possible should either be a beneficiary (the one for whom the act is done) or an aim, according to the distinction. Since it does not make sense to have participation as a beneficiary, it must be the aim. Aristotle raises a question about who benefits from the pursuit of this goal by distinguishing the two meanings. Introducing the two meanings suggests that since the goal is good, it must be good for somebody. Reproduction could be for the sake of benefiting the divine, but that does not make much sense in Aristotle's system. The divine prime mover already enjoys his own continuous activity and is separate from sensible things (*Metaphysics* XII.7). It could also benefit the ecosystem or world as a whole, but Aristotle does not tend to treat them as individuals who could receive a benefit, and they are not mentioned in this passage. Instead, the best candidate for the beneficiary of this goal directed action is the organism that reproduces itself, since that allows the individual to achieve limited immortality and to partake of the divine.[93] Other typical goals of organisms also seem to benefit the organism that pursues them: eating, fleeing predators, growth, etc.

Animals, by means of perception and the increased movement enabled by it, are able to achieve higher goals than merely surviving and reproducing, since they are able to participate in the divine in other ways than preserving the species. They participate in a low-level form of knowledge, by way of sensing, and this increases their ability to act and move around as well, since locomotion requires sense perception (434a 30 – 434b 9).

---

[93] Johnson takes it to be central to Aristotle's account of natural teleology that the natural substances are beneficiaries of their own motions. Johnson (2005) esp. 64-80 and Chapter 6. Leunissen argues that that this second sense of "for the sake of which" is non-causal, but it hardly seems like a coincidence that goals organisms have are for their own benefit. Leunissen (2010) 55-57.

These higher and more complex activities do not simply make the animal's lives better on grounds that they make the animal more successful at surviving and reproducing. On Aristotle's account, all the plants and animals do this successfully when considered as a species, which is why the species are eternal. Instead, the greater activity and complexity allows animals to live well by participating in activities that are better and more divine than those available to plants.

4. Survival and Reproduction

Although I have argued for the priority of sensation in animals, the nutritive part of soul, which is responsible for nourishment, growth, and reproduction, does have an important role in Aristotle's biology. However, the nutritive soul can be basic and important, as others have argued, without being the highest end and, instead, exist for the sake of higher capacities. So far, my arguments for sensation as the highest end have not examined how the nutritive soul could act for the sake of the sensitive soul, but there are ways for the nutritive soul to do so.

The nutritive soul is the most basic part of soul, and it is the one part that is shared by all living things on earth. The only living things that do not have it are the immortal gods, who do not figure in Aristotle's biology and are only the intellectual part of soul. For all living mortals, all the other parts of soul presuppose the nutritive part of soul (415a 22-25).[94] Aristotle groups the different powers of the soul into five parts: nutritive, appetitive, perceptive, locomotive, and intellectual (414a 31-2). The other powers of the soul depend upon having the nutritive part, since it is the nutritive part that keeps that animal alive. Without being able to eat food and digest it, no organism could survive to

[94] Mathews (1992) provides a thorough discussion of how different powers of soul build upon and presuppose one another.

have any of the other powers. Without being able to reproduce the species would die off. The dependence of the other powers on the nutritive soul gives the nutritive soul a certain priority, since if its goals are not fulfilled, there will be no organism to use the other powers.

The nutritive soul's various functions all contribute to preserving its life. Consuming food for growth and maintenance are the most obvious cases of this, but Aristotle understands reproduction as an effort to preserve one's life as well. As discussed in the previous section, Aristotle takes reproduction to be an effort to partake in the eternal and the divine:

> Since no living thing is able to partake in what is eternal and divine by uninterrupted continuance (for nothing perishable can forever remain one and the same), it tries to achieve that end in the only way possible to it, and success is possible in varying degrees; so it remains [διαμένειν] not indeed as the self-same individual but continues its existence in something like itself [διαμένει οὐκ αὐτὸ ἀλλ' οἷον αὐτό] – not numerically but specifically one. (415b 3-7)

Aristotle describes reproduction as the best way an individual can continue *its own* existence, and he actually uses the same verb (διαμένειν) for continuing its existence as an individual and continuing its existence in its offspring. Reproduction thus stems from the same drive of the organism to continue its own existence, as consuming and digesting food. The functions of the nutritive soul can look rather varied and disparate, but they are all united by the common goal of continuing the organism's own existence.

Aristotle describes the nutritive soul's actions that continue the organism's existence as a kind of saving or preserving (σώζειν).[95] Aristotle explains that when food is not used for growth, "it saves the being of what is fed [σώζει γὰρ τὴν οὐσίαν], and that continues to be what it is so long as the process of nutrition continues" (416b 14-15).

---

[95] Polansky (2007) 217 offers a good discussion of this.

Aristotle describes the activity of eating not merely as something that keeps the organism alive but also as what keeps the organism as what it is. The activity of the nutritive soul preserves the organism's being (οὐσίαν), which could also be translated as "substance" or "essence." If the nutritive soul preserves an organism's essence, then it works to maintain the properties that are definitive of the organism, since a thing's essence is expressed by its definition (cf. 1031a 10-14). Aristotle defines animals by the capacity for sense perception, so each species of this genus must have sensation as something essential to it (cf. 434b 21-24, 653b 22-25). Accordingly, the nutritive capacity in animals works to preserve the sensitive capacities of animals, since they are essential to them, and the nutritive capacity preserves what is essential to the organism. This preservation or saving provides a straightforward sense in which the nutritive soul acts for the sake of the animals' higher capacity, sensation.

Aristotle also extends this activity of saving to the whole nutritive soul, rather than just the process of digestion. When summing up his discussion of the nutritive part of soul he offers the following as a definition, "With the result that such a sort of principle of soul is the sort of capacity for saving [σώζειν] that which receives it as such, food prepares it to operate; whence deprived of food it is unable to be" (416b 17-20, Trans. Polansky 2007). This definition makes saving the organism the primary function of this part of soul. This passage's place at the conclusion of his discussion suggests that he is referring to the whole nutritive soul, including reproduction, rather than just the narrower process of eating and digesting. That Aristotle is referring to the nutritive soul as a whole is confirmed a few lines later, "but since it is right to call things after the ends they realize, and the end of this soul is to generate another being like that in which it is,

the first soul ought to be named the reproductive soul" (416b 23-25). The same part of the soul that saves the organism by using food also produces another organism like itself. Since reproduction is a way of continuing the organism's own existence, both of these nutrition and reproduction work to preserve the being of the animal.

As Menn has pointed out, preserving the organism also includes making the organs for the other capacities, as well as an offspring with them.[96] The nutritive soul is responsible for the growth of the organism, and therefore must use food to make the organs of sensation, among others. Menn argues that the same kind of subordination follows from this as in the arts.[97] In the arts, when one art exists to make something for use by another art, the art of production is lower than and for the sake of the art that uses the product. For example, the art of bridle making makes bridles for use by the art of horsemanship, which uses the bridles to ride horses; therefore the art of horsemanship is better, and bridle making is for the sake of horsemanship (*NE* I.1 1094a 1-19). Since the nutritive soul is defined by the production of the other capacities, in both nourishment and reproduction, it is the lowest capacity, which exists for the sake of the higher and better ones.

The whole nutritive, or reproductive soul, works to preserve the organism and what characterizes that organism as what it is. In plants that will be simply a matter of preserving that plant's version of the nutritive soul, but in animals the nutritive soul will have to work to preserve the sensitive part, and in humans the nutritive soul will have the

[96] Menn (2002) 120-122.
[97] Ibid.

additional role of preserving the intellectual part of soul.[98] By being defined by its ability to preserve the capacities of the organism, the nutritive soul essentially works for the sake of other higher capacities when they are present in the organism.

In addition to indicating that the nutritive soul exists for the sake of preserving the higher capacities, Aristotle also describes the organs of the nutritive soul as being for the sake of the organs of the higher capacities. Aristotle provides a good example of this when discussing the midriff in *Parts of Animals*:

> The reason is that the midriff serves to divide the region of the heart from the region of the stomach, so that the center wherein abides the sensory soul may be undisturbed, and not overwhelmed, directly food is taken, by its up-steaming vapor and by the abundance of heat then superinduced. For it was to guard against this that nature made a division, constructing the midriff as a kind of partition-wall and fence, and so separated the nobler (τιμιώτερον) from the less noble (ἀτιμότερον) parts, in all cases where a separation of upper from lower is possible. *For the upper part is the better and that for the sake of which the rest exists; while the lower part exists for the sake of the upper and constitutes the necessary element in the body, in as much as it is the recipient of food*. (τὸ μὲν γὰρ ἄνω ἐστὶν οὗ ἕνεκεν καὶ βέλτιον, τὸ δὲ κάτω τὸ τούτου ἕνεκεν καὶ ἀναγκαῖον, τὸ τῆς τροφῆς δεκτικόν.) (672b 14-24, emphasis added)

Aristotle describes the midriff as a wall that divides the upper half of the body containing the heart from the lower half that contains the digestive parts. These digestive parts create heat and steam that could interrupt the heart in its role as the center of the sensory soul, but the midriff prevents this. The midriff thus has a role in helping the heart function without interruption, as well as a role in separating the better and more noble from the worse and less noble. Aristotle indicates that nature tries to separates these as much as possible by placing the better physically higher than the lower. The midriff provides an example of how a part can be for the sake of another part that performs a higher capacity,

---

[98] There may or may not be an exception with active intellect, but I will that question aside for now. Even with a reading that posits individual active intellects in each human, there are other parts of the intellect that depend on the nutritive part.

but the most interesting part of the passage claims that the digestive parts themselves, and not just the divider, are for the sake of the sensory parts.

Aristotle explicitly states that the lower part, which is concerned with digestion of food, is for the sake of the upper part, which is the heart and seat of the center of the senses. Consistent with his hierarchy of beings, Aristotle also labels the organ concerned with the senses as something better than the organs that are merely concerned with nutrition. Unfortunately, Aristotle does not elaborate or explain how the lower parts exist for the sake of the higher parts. If this relation is to hold, then the higher, sensitive parts will not exist primarily to help the organism fulfill the goals of nutrition and reproduction, even if they are useful for this. We have a hint as to why Aristotle thinks the lower parts are for the sake of the higher parts, because Aristotle thinks this is true of those parts insofar as they are the recipients of food. In *De Anima* Aristotle explains the use of food as a way of preserving the organism's being, as we just saw, and the heart is the center of the senses, which are essential to the animal. This suggests that the digestive part exists for the sake of the heart, because it preserves the heart by providing it with nutrition and preserving it. Providing nutrition is "necessary," because without it the animal would die, and the heart would not function either. However, the passage contrasts being necessary with being better. The better organ is the one that allows the organism to exercise a better capacity, while the lower parts are hypothetically necessary for life and for the functioning of the higher parts.

These higher capacities, such as sensation, can also be useful for achieving the lower goals of nutrition and reproduction, but this does not determine their value. For instance, the senses are very helpful for animals to find food (434a 30 – 434b1).

However, Aristotle does not define the senses in terms of their role in helping fulfill the nutritive soul, while he does define the nutritive soul in terms of preserving the whole organism including the sensitive soul (416b 14-15). He also explains the value of the senses in terms of coming closer to the divine by participating in a kind of knowledge, rather than as instrumental value to the nutritive soul (731a 24 - &31b 8). This strongly suggests that exercising the capacity of sensation has intrinsic value as well as instrumental value for achieving the goals of the nutritive soul.

The goals of survival and reproduction, which animals share with plants, remain important for animals, even if they are not the highest goals for animals. When discussing animals' lives in *History of Animals*, Aristotle classifies the activities of animals into two parts: "procreation and feeding; for on these two acts all their interests and life concentrate" (589a 2-5). This passage could appear to endorse the view that animals do everything for the sake of survival and reproduction, but I do not think it is necessary to read it this way. The majority of their time is preoccupied with the two main goals of the nutritive soul, but the different species have many ways of fulfilling these goals, as Aristotle's extended discussion of them attests. Without fulfilling these two goals, the animal's existence would end, and it would not be able to do anything at all. These two goals are "necessary" for the animal to fulfill, as Aristotle states (cf. 672b 14-24, 731a 24 - 731b 8). Animals must fulfill the goals of the nutritive soul before they are able to pursue any other goals, because the fulfillment of these two goals is a necessary prerequisite for any other activities. Accordingly, no other capacities or goals of the animals can conflict with the goals of the nutritive soul.[99]

[99] Johnson (2005) 177-8.

The nutritive soul is necessary for all mortal living things, because it is what allows the organism to continue its existence. Continued existence is good according to Aristotle, but merely perpetuating life is not the ultimate end of organisms, because the nutritive soul aims at continuing the specific kind of life that belongs to the organism. The major defining feature of animal life is sensation, while the different kinds of animals have more specific defining features in addition to this. This defining feature of animals is also what is best in them, and the functions of the nutritive soul are for the sake of preserving it. This higher end of participating in a sensitive life can also be useful for survival and reproduction, and animals' lives are largely organized around the eating and reproduction, but it is the exercise of their higher capacities that makes their lives better and constitutes their highest end.

5. Conclusion

As the highest end for animals, the exercise of the senses both defines what makes their lives good and serves to explain the animals' parts and behaviors. Aristotle describes and explains the other parts of animals as existing for the sake of the organs of sense, which are the higher and better organs, and he explains the activities of nourishment and reproduction as ultimately being for the sake of preserving the life of sensation. The sensitive capacity is what is best in each animal, definitive of it as an animal, and its function is the exercise of the of that capacity, which constitutes the best life available to it. The whole animal is organized for the sake of achieving this kind of life, and scientific explanations ultimately have to be made in terms of this as the animal's highest end.

As a consequence of recognizing that an animal's highest and definitive capacity defines its end and what is good for it, Aristotle's treatment of humans looks much more continuous with his treatment of other animals. If animals were to have their ends defined by survival and reproduction, then their ultimate end would not be determined by the use of their highest capacity, nor by their definitive capacity. This would question why the human end should be defined in terms of their best capacity, namely reason, instead of survival and reproduction. Aristotle defines the human end by the exercise of reason, which is what is best in them and definitive of them; but if not all organisms had ends determined in this way, the human case would be an unusual exception. Consistency and continuity alone would not be enough to establish my interpretation, but they are welcome results that do add further evidence.

Chapter Three: Animal Locomotion as a Sensitive Activity

From Aristotle's discussions of natural teleology and his biological studies of animals, it is fairly clear that he believes each animal has some overall end and function, and I have defended this view in Chapter Two. In the *Nicomachean Ethics* Aristotle denies that non-rational animals can achieve eudaimonia or have it as their goal (e.g. NE X.8, 1178b 24-32). However, they do seem to have an analogous goal that also defines what a good life is for that kind of animal (cf. NE, I.7 1097b 35 - 1098a 7). If we accept that each animal has some sort of overall goal for its life, according to Aristotle, then we might be surprised to see that his main discussions of animal self-motion in *De Anima* III, *De Motu,* and *Physics* VIII make no reference to this goal, and he explains their actions in terms of momentary desires with determinate objects that can be pursued or avoided. Additionally, since Aristotle denies that animals who lack reason can make conceptual generalizations, these animals have no way to consciously aim at an overall goal. However, it would be bizarre for Aristotle to hold that animals have overall goals in their lives, but their voluntary actions have no connection to those goals.[100] So, how does the pursuit of these determinate goals defined by momentary desires aim at and help animals achieve their overall goals?

I argue that animals are naturally directed towards their broader, objective goals without subjective awareness of them in two interconnected ways. First, the way animals

[100] Aristotle is clear that animals, like children, do act voluntarily (ἑκούσια), even though they lack choice (e.g. *NE*, 1111b 4-10). Aristotle also states that he is describing voluntary animal motion in *On the Movement of Animals* (703b 3-4).

are constituted makes them tend to find pleasant those things which they actually need, such as appropriate food and water. This allows animals to fulfill their basic needs with some reliability and without a conception of them.[101] Since sensation has instrumental value in its ability to help animals fulfill basic needs of survival and reproduction, we might think that this fact fully accounts for sensation's importance. However, there is a second way in which sensation helps animals fulfill their overall goal: by fulfilling these basic needs through the use of sense perception, imagination, and desire, they are exercising capacities that make their activities better and more worthwhile than fulfilling those needs without those capacities. When animals use these capacities to move themselves, they are pursuing an apparent good and using knowledge of their environment. This primitive awareness of value and knowledge are the main factors that make using sensation a higher goal than anything available to plants. We can group these capacities together as the sensitive ones to see that by fulfilling their basic needs through the use of sensitive capacities, animals simultaneously fulfill their highest goal of exercising and living according to sensation.

We may understand how each animal can fulfill its highest end (exercising sensation) while simultaneously fulfilling its basic needs by an analogy to the human case. In the *Nicomachean* and *Eudemian Ethics* Aristotle describes many virtues of character that are concerned with basic human needs. For example, by living temperately one is eating and drinking in a way that is good for one's bodily health, and by acting courageously one helps protect one's society and offspring. However, merely promoting

---

[101] The following articles offer explanations of how animal self-motion aims at objective goods in ways that are similar to what I am describing: Freeland (1994) and Corcilus (2013). Neither of them defends anything like my second way in which animals fulfill their overall goal.

their bodily health or protecting their group is not sufficient for the action to be virtuous, since non-human animals can also do this even though they are not capable of being virtuous as humans are. For the action to be virtuous and praiseworthy it has to be done in accord with reason and exercise the rational capacity, which is impossible for non-rational animals. Thus, it is in the *way* the low-level goals are achieved that makes them so valuable and praiseworthy, rather than merely the fact that the actions achieved those low-level goals.[102] To generalize, this example shows that merely because an action fulfills some basic need does not mean that the capacities used to fill it are merely instrumentally valuable, nor that the value of the action is exhausted by the fulfillment of that need.

In the parallel case of animals, fulfilling their basic needs can be done in multiple ways, but using and being guided by their best capacity, sensation, will make their activity more valuable. Aristotle observes on multiple occasions that most of non-rational animals' actions contribute to their basic goals of survival and reproduction (e.g. HA 589a 2-9, Sens. 443b 24 - 444a 4). These remarks suggest there are few cases of animals using sensation in a way that is not also instrumentally valuable for these basic goals, such as staying alive and producing offspring, which are shared by plants, animals, and humans. However, as I argue in Chapter Two, Aristotle indicates that animals are capable of more valuable actions and lives than plants are, just as he thinks that humans are

---

[102] For instance, in *Eudemian Ethics* VII.15 or VIII.3 Aristotle contrasts a person who consciously acts for the sake natural goods with the person who acts for the sake of the noble and obtains the natural goods by doing so. The first person does actions that might be noble but only accidentally and they lack nobility, because they do the actions in the wrong way. The second person does the actions in the right way and is noble because of it. Filling the low-level goals successfully may still have importance to the success of the action, however.

capable of a higher quality of life than non-rational animals. Animals might fulfill many of the same low-level goals as plants, which are determined by the nutritive soul, but many of the ways they do so involves the use of sensation, unlike plants. It is the use of sensation that makes these actions more valuable or divine (as he sometimes puts it) in a way that parallels how the human use of reason can also make an action that fulfills a basic need virtuous and praiseworthy. By showing that animals can be guided by sensation to fulfill their low-level goals of the nutritive soul, while at the same time the use of sensation makes their actions more valuable, I propose a way to reconcile Aristotle's claim that animal lives are predominately focused on fulfilling the goals of the nutritive soul with his view that the sensitive soul and its activities make animal lives better than plant lives. Showing how both goals can be fulfilled at once also provides more concrete content to flesh out what fulfilling the goal of exercising sensation looks like. Sensation successfully guides animals to do the particular actions and objects that they need to survive and reproduce, while also fulfilling their higher goal of exercising sensation.

The first important evidence for my view that self-motion fulfills animals' goal of exercising sensation comes from the previous chapter, where I defended the idea that in fact animals do have a function and highest goal that is defined by their sensitive capacities. The higher value of sensation motivates the idea that sensation is not merely instrumentally valuable. In the first section of this chapter, I examine the main texts, where Aristotle claims that all the capacities involved in locomotion are somehow the same as sensation but different in being. Seeing that Aristotle treats capacities other than sensation proper, such as *phantasia* and desire, as being the same as sensation provides a

way to see the voluntary actions of locomotion as sophisticated activities of sensation. The following sections will provide greater detail as to *how* the other capacities, especially *phantasia* and desire, can be considered sensitive in a broad sense. In the second section, I explain how sensation can successfully guide animals, through pleasure, pain, and the apparent good, to do actions that are appropriate for fulfilling their basic needs. This provides a concrete example of a sensitive activity that fulfills animals' highest goal, and of how the way that sensation does this helps explain why it is a more valuable way of filling the same basic needs that plants have. By presenting the object of desire as an apparent good and providing information about their surroundings, sensation gives animals a primitive awareness of value and their environment that improves the quality of animal lives. Third, I show how the other capacities involved in animal self-motion, namely *phantasia* and desire, are dependent on sensation, such that they are constituted by it. By showing how *phantasia* and desire get their powers from sensation and are inseparable from it, I further my argument that they are forms of sensation, such that locomotion is a type of sensitive activity.

Without treating voluntary self-motion or locomotion as a sensitive activity, it would be hard to point to any activities that animals do that would be examples of the them fulfilling their goal of exercising sensation. However, once it is established that all the capacities involved in locomotion are sensitive in a broad sense, that sensation directs locomotion, and that sensation is the best capacity in animals that defines their end, then we have good reason to see locomotion as a primary way in which animals fulfill their highest goal of exercising sensation. Identifying these other capacities as sensitive also removes them from competition with sensation for being the best and highest capacities

in animals, and the way sensation guides animal motion helps explain why Aristotle thinks it is a better way of fulfilling basic needs than is available to plants.

1. Locomotion and a Sensitive Life

To determine whether those capacities are the same in some way and how they could be, we first need a basic picture of what self-motion is and what capacities are involved. The main capacities involved in self-motion are sensation, desire, and *phantasia*, for non-rational animals who lack thought, and several passages claim that these capacities are the same but different in being. These passages provide the initial impetus for thinking that these capacities are all sensitive.

Physics VIII, *De Anima* III, and *De Motu a*ll break down self-motion into three main causal elements: an unmoved mover, a moved mover, and what is moved (e.g. *Phys*. 256b 16-20 *DA* 433b13-25, *DM* 700b 35-701a, 703a 4-6). *De Anima* and *De Motu* identify what these three factors are in the case of animal locomotion as follows:

> Here that which moves without itself being moved is the realizable good [τὸ πρακτὸν ἀγαθόν], that which at once moves and is moved is the faculty of desire [ὀρεκτικόν] (for that which is moved is moved insofar as it desires, and desire in the sense of actual desire *is* a kind of movement), while that which is in motion is the animal. (*DA* 433b 15-18, cf. *DM* 700b 35-701a)[103]

The general picture is that the animal has some goal that is achievable by its action, that goal moves the animal's desire without itself being moved, which in turn moves the animal. In this picture the goal is not altered by being desired, but it does alter desire by stimulating it and setting it in motion. For example, a cat might see a bowl of food across the room; eating that food is a practical good, which stimulates her desire to eat the food;

[103] All translations are from the Revised Oxford Translations with some modifications, unless otherwise noted. Nussabum's translation of *De Motu* was also used for passages from that text.

and as a result the whole cat moves across the room to the bowl. Aristotle considers this to be an example of self-motion because one part of the animal moves the rest of it, namely the desire.

The other capacities involved in self-motion enter the picture to explain how desire connects with its object, which serves as a goal or realizable good. In humans rational thought can have a role in connecting desire with an object, but non-rational animals only have *phantasia* and sensation to do that work:

> For whenever a creature is actually (ἐνεργήσῃ) using sense perception (αἰσθήσει) or *phantasia* or thought towards the things for the sake of which, he does at once what he desires. For the activity of the desire takes the place of questioning or thinking. "I have to drink" says appetite. "Here's drink" says sense perception or *phantasia* or thought. At once he drinks. This, then, is the way that animals are impelled to move and act: the proximate reason for movement is desire, and this comes either through sense perception or through *phantasia* and thought. With creatures that desire to act, it is sometimes from appetite or spiritedness and sometimes from [desire or] wish that they make or act. (701a 29- 701b 1)

Aristotle's description of animal self-motion suggests that a sensation or *phantasia*(imagination) of something and a desire for it provide the sufficient conditions for motion. Presumably, an animal will also need its limbs to work along with other physical necessities, but psychologically, the activity of sensation or *phantasia* towards a goal combined with the activity of desire for that goal immediately leads to locomotion. There is no intermediate step of forming an intention to act that then needs something else to realize that intention. This would imply that if an animal does not pursue an object that seems desirable, we must say either sensation, *phantasia*, or desire was not fully active. Together, sensation, *phantasia*, and desire are sufficient for the psychological component of animal self-motion.

Sensation's, *phantasia's*, and desires' activity towards the goal of motion are so closely intertwined that Aristotle sometimes claims that they are really all the same activity, faculty, or part (-τικόν). In *De Anima* Aristotle identifies pursuit and avoidance (locomotion) with desire, and both of those with sense perception:

1. [a]To perceive [αἰσθάνεσθαι] then is like bare asserting or thinking; but when the object is pleasant or painful, the soul makes a sort of affirmation or negation, and pursues or avoids the object. [b] To feel pleasure or pain is to act with the sensitive mean towards what is good or bad as such. [c] Both avoidance and desire when actual [κατ' ἐνέργειαν] are identical [ταὐτό] to this: the faculty of desire and avoidance [τὸ ὀρεκτικὸν καὶ τὸ φευκτικόν] are not different, either from one another or from the faculty of sense perception (τοῦ αἰσθητικοῦ); but their being is different [ἀλλὰ τὸ εἶναι ἄλλο]. (*DA*, 431a 8-14)

Aristotle adds *phantasia* to this list of identical capacities, when he summarizes his discussion of *phantasia* from *De Anima* in *On Dreams*:

2. But since we have, in our work on the soul, treated of *phantasia*, and the faculty of *phantasia* is identical [τὸ αὐτὸ] with that of sense perception, though the being of a faculty of *phantasia* is different from that of a faculty of sense perception [τὸ δ' εἶναι φανταστικῷ καὶ αἰσθητικῷ ἕτερον]; and since *phantasia* is the movement set up by a sensory faculty when actually discharging its function, while a dream appears to be an image [φάντασμά](for an image which occurs in sleep – whether simply or in some particular way – is what we call a dream): it manifestly follows that dreaming is an activity of the faculty of sense perception [τοῦ αἰσθητικοῦ], but belongs to this faculty qua the faculty of *phantasia* [φανταστικόν]. (*On Dreams*, 459a 14-22)

Taken together these two passages claim that locomotion (as pursuit and avoidance), desire, pleasure and pain, sense perception, and *phantasia* are all the same. He qualifies this claim of sameness by remarking that they are different in "being," but the claim that they are somehow the same is still a strong one. Jennifer Whiting has argued that these passages describe a closely unified part of soul that is distinct from the nutritive soul and

the rational soul, and I agree with her that these capacities are intimately connected.[104] Most of my arguments for the unity of these capacities are complementary to hers, but I argue that sensation unifies them, while she argues that all the capacities are unified by being for the sake of locomotion.

We can gain some clarity as to what Aristotle means by claiming that they are the same but different in being by examining other examples where he makes the same claim. In *Physics* III Aristotle provides two examples of things that are the same but different in being: teaching and learning; and the road from Thebes to Athens and the road from Athens to Thebes (*Physics* 202b 10-22). The road from Athens to Thebes is the same road as the one that goes from Thebes to Athens, and the distance from one end to the other is the same as the reverse. But, traveling on the road to Athens is not the same the same as taking it to Thebes, nor is being at one end of the road the same as being at the other end of the road. Aristotle highlights that there is one physical path that is a certain distance, but it can be defined by two different roles that it plays: taking people to Athens and taking people to Thebes. Because of these two roles, the road has two different definitions, depending on which role it is playing. Similarly teaching and learning both refer to one activity, but they are defined differently. Aristotle explains that teaching takes place if and only if learning takes place in the learner, so the actualization of teaching is the same as the actualization of learning. There is one activity that actualizes both teaching and learning, but that does not mean that teaching and learning cannot be distinguished. Teaching belongs to the person who brings about knowledge in the other, and learning belongs to the one who acquires the knowledge. Teaching and

[104] Whiting (2002), 141-142.

learning are defined differently and different people do them, even if they are two aspects of one activity. Accordingly, Aristotle explains the difference in being in these two examples as a difference in definition (ἕτερον τῷ λόγῳ) (202b 22).

Even though sense perception, *phantasia*, desire, and locomotion are the same, they can have separate definitions. Based on the previous two examples, these capacities should belong to the same thing or correspond to the same activity, defined in different ways. This means that we can talk about each one of them as something distinct and some statements will be true of some and not others. They can have different functions, just like the road to Athens has a different function than the one to Thebes. One of the clearest ways to make sense of them being the same thing is to say that they belong to the same part of soul. We find support for this idea in passage 2 on dreams (459a 14-22), which states that dreaming is an activity of what has the power of sense perception (τοῦ αἰσθητικοῦ), but it is an activity of it in virtue of *phantasia*. The sensitive thing, τοῦ αἰσθητικοῦ, is thus the same thing as what does the imagining: *phantasia*. This equivalence allows the activity of one to be defined as a type of activity of the other. Thus, one way to make sense of the claim that all these capacities are the same is to say that they are all powers of the same part of soul that have different definitions, but each of those powers can be understood as powers of sensation in a distinct way.

Passage 1 (*DA* 431a 8-14) presents desire, pursuit, and sensing something as pleasant as all having the same actualization, in a way that is similar to how teaching and learning have the same actualization. The passage introduces pleasure and pain as ways of acting towards what is good or bad in sentence (b), then identifies avoidance and desire with pleasure and pain, and finally claims all of these are the same as sense

perception in sentence (c). While Aristotle does not explicitly includes avoidance and desire in (b), it would be logical for pursuit to be implicit in (b), since (a) and (C) connect pain to avoidance and pleasure to pursuit. All of these are called the same "when actual" (κατ' ἐνέργειαν), which suggests that their actualizations are the same in the same way as in the case of teaching and learning. To take the example of a dog chasing a hare, the dog's finding the hare pleasant, desiring to eat it, and pursuing are all aspects of same action of chasing the hare, even though they are defined differently. When combined with passage 2 on dreams, it looks like Aristotle understands pleasure, pain, sense perception, *phantasia,* desire, pursuit, and avoidance, to share actualizations and to belong to the same part of soul.[105]

There is some support for this broad meaning of the sensitive part of soul that is made up by these different capacities in Aristotle's ethical works. For example, as one step of the function argument, Aristotle considers lives lived according to capacities other than reason, and the two other capacities that he considers are the sensitive and the nutritive (NE I.7, 1097b 30 – 1098a 5). After ruling out the life of nutrition and growth, because it is shared with even plants, he considers the life of perception, which is ruled out because it is shared with all animals. Without considering any other alternatives (*phantasia*, pleasure, desire, locomotion, etc.), he moves on to claim that what remains (λείπεται) is a life of reason (λόγον). Either these three contenders leave out many capacities in humans, or many of capacities are being grouped together under the broader heading of the sensitive. Aristotle repeats a three-part division of the soul when defining virtue as well, since he divides the soul into the completely non-rational part, the part that

[105] Whiting (2002) 172-174 also argues that these capacities area all one part of soul, based on their shared actualization in locomotion.

can obey reason, and the rational part (NE I.13). The non-rational part that cannot obey reason is the nutritive soul concerned with nourishment and growth (1102a 32 – 1102b2). This leaves sensation, desire, *phantasia*, and locomotion excluded from the completely non-rational part, but they are also clearly not part of the rational part. Aristotle picks out desire as the relevant feature of the non-rational part, since virtue makes a person desire the right things, and he does not mentioning the other non-rational capacities (1102b 29-33). In a recurring three-part division of the soul, one part is always the nutritive, another is rational, and the remaining capacities all get grouped together in the third, middle part. This third part contains the capacities that humans share with other animals, but which plants lack.

I think that all of these capacities fall under the category of the sensitive part of the soul, since sensation is the most fundamental of the capacities, and Aristotle defines animals' ends and functions in terms of sensation. If sensation sets the highest goal for the animal, as I maintain, then the rest of the animal should exist to enable it to perform all of these sensitive activities that make up a sensitive life. Locomotion, desiring, and feeling pleasure and pain all could threaten sensation's place at the top of the teleological hierarchy within an animal by introducing capacities that are not for the sake of sensation in any obvious sense. But, if these are all part of sensation, then they increase the complexity of the ways an animals can use sensation. Even if some of these activities benefit the nutritive soul, they need not derive their value and purpose from that fact. Meeting the needs of the nutritive soul is a necessary condition for an animal to exercise its higher capacities, since without meeting them it will die. This gives those needs a high

priority, but this priority comes from their necessity for maintaining its ability to live a sensitive life.

There is another closely related way to make sense of Aristotle's identification of these capacities, which has been defended by Jennifer Whiting. I agree with her about the capacities of sensation, desire, and *phantasia* forming a part of soul, but my reading differs from hers with respect to the teleological hierarchy of the capacities. She argues that sense perception (in addition to desire and *phantasia*) is *for the sake of* locomotion, and if sense perception were unable to move desire by presenting things as pleasant or painful, "perception would not play its primary teleological role in explaining animal's movements."[106] On her account, there is a teleological hierarchy within each animal, sense perception is for the sake of motion, and "they need to move in order to take in nourishment."[107] This is part of her larger argument that desire, perception, and imagination together constitute a single part of soul that she calls the *locomotive* part of soul. As a pieces of this part of soul, desire, sense perception, and imagination (*phantasia*), all work together and exist for the sake of moving the animal. On her reading, the part of soul that I have been calling the sensitive part is really united by being for the sake of locomotion, and locomotion is in turn for the sake of the basic needs of nutrition and reproduction.

I will admit there is some good evidence for this alternative position. Most of Aristotle's examples of animal locomotion focus on animals fulfilling the basic needs of the nutritive soul, and when Aristotle describes what animals find pleasant, he links it to these basic nutritive needs. For instance, in *History of Animals,* he explains that most of

---

[106] Whiting (2002) 172-3.
[107] Whiting (2002) 173.

what animals do is useful for survival and reproduction: “the life of animals, then may be divided into two parts, procreation and feeding; for on these two acts all their interests and life concentrate” (589a 2-5). Sensation is indeed useful for locomotion, which in turn allows animals to fulfill the needs of the nutritive soul, and Aristotle defends the necessity of sense perception for animals in *De Anima* on the basis that it is needed for animals that move to find their food (434a 27- 434b 8). He describes a similar purpose of the senses in *Sense and Sensiblia:*

> The senses which operate through external media, viz., smelling, hearing, seeing, are found in all animals which possess the faculty of locomotion. To all that possess them they are a means of preservation in order that, guided by antecedent perception, they may both pursue their food, and shun things that are bad or destructive. But in animals which have also intelligence [φρονήσεως] they serve for the attainment of a higher perfection [τοῦ εὖ ἕνεκα]. They bring in tidings of many distinctive qualities of things, from which knowledge of things both speculative and practical is generated in the soul. (436b 18- 437a 3)

Sensation certainly plays an important role in enabling animals to obtain food and escape dangers by guiding locomotion, since it provides information about the environment and ultimately it provides the source of motivation for desire. Aristotle acknowledges a higher purpose of sensation, but in these passages he limits it to animals that possess reason, which suggests it has no higher purpose in the lower animals.

However, if we understand the main way in which animals fulfill their goal of exercising sensation to be by using sensation to direct themselves toward filling their basic needs, then these passages are compatible with the idea that their ultimate goal is defined by sensation. While Whiting’s argument places sense perception lower in the teleological hierarchy than does my reading, , much of her argument that *phantasia* and desire are in some sense the same part of soul as sensation is compatible with my own understanding of these capacities. When she introduces this part of soul as the locomotive

part, she acknowledges that "Aristotle's canonical term for it is τὸ αἰσθητικόν," which means the sensitive part.[108] If Aristotle refers to this collection of capacities as sensitive, then locomotion would be an activity of the sensitive part of soul, taken in this broad sense. In turn, this would provide a way of avoiding the conclusion that sensation is for the sake of locomotion in a way that subordinates it, since locomotion would be one of the ways of exercising the sensitive capacity, taken in the broader sense. This need not conflict with locomotion being very useful for fulfilling basic needs, like obtaining food, since the same action can simultaneously be an intrinsically valuable exercise of sensation and a means of obtaining an external good. If obtaining food in a way that uses the animal's best capacity also fulfills the goal of exercising that capacity, then the fact that locomotion is useful for nutrition is not a threat to it also being for the sake of using sensation.

2. Sensation Guiding Animals Through Pleasure

The main source of sensation's instrumental value comes from its ability to help guide animals to what they need. So even though sensation has some non-instrumental value, it needs to be capable of directing animals to things that they actually need with some reliability. Since animals do not have an explicit conception of goodness, they need some alternative way to find things that are good for them. I suggest that pleasurable sensations provide the main way of connecting the voluntary actions of animals to goods and things that fill their needs. Pleasure looks like a strong candidate to guide animals to goods, because Aristotle describes pleasure as an apparent good (τὸ φαινόμενον ἀγαθόν) and a way of acting (τὸ ἐνεργεῖν) towards the good (e.g. DA 431a 8-14.,DA 433a 27-9

[108] Whiting (2002) 142.

and DM 700b 23-29). Under both descriptions, pleasure is closely connected with the object of desire, which moves the animal in locomotion, and with what is actually in fact good.

In the existing scholarship, I have found two main ways of explaining pleasure's connection to what is good. One is a "subjective" reading that takes these references to the apparent good and acting towards the good to refer to something psychological, which is a kind of evaluation of the pleasant or desired object as good. Moss has provided the most detailed argument for this kind of reading, which maintains that desiring requires an evaluation of what is desired as good and that what is desired is desired because it appears good.[109] Another reading takes an "objective" approach, which argues that these phrases do not imply a psychological evaluation of the desired or pleasant object as good, but rather that they refer to an objective relation that the animal need not be aware of. Corcilius provides a thorough argument for this reading that claims pleasure is an apparent good and that an animal acts towards the good because it generally coincides with what is actually good, not because it has made a psychological evaluation of some object as good.[110] On the objective reading, pleasure and the desire it instills guide the animal towards what is good for them, without the animal being aware pleasure does this, whereas, on the subjective reading the animal somehow takes the pleasant object to be good for it, and pursues it on that basis.

---

[109] Moss (2012). This is the central thesis of her book. For a concise statement see the introduction, xi-xv.

[110] Corcilius (2013), esp. 124-5 and 131-2. The terms "objective" and "subjective" to describe the types of readings are borrowed from his article. Moss (2012) 6-9 uses "intentional" and "extentional" to drawn the same contrast between possible interpretations.

We can see how sensation instrumentally guides animals to fulfill their basic needs in a more valuable way, if we notice that key points from both of these interpretations are actually compatible. First, the arguments for the objective reading provide good evidence that pleasure can be instrumentally successful at directing animals to obtain what they need. Second, the arguments for the subjective reading provide a reason for thinking that using sensation is a more valuable way of fulfilling these goals than is available to plants, since its ability to evaluate goals provides a primitive form of knowing value. By showing how the key points from both sides of this debate are compatible with each other, even though the two positions more broadly are contradictory, I offer a way of explaining how sensation can successfully guide animals to fulfill the basic needs of survival and reproduction. The instrumental success of sensation is important to establishing that it can do the job of keeping the animal alive to reproduce, but the subjective reading's emphasis on the apparent good helps show the value of sensation for providing some knowledge of the world, primitive awareness of value, and increased complexity of activity.

a. Instrumental Success of Pleasure

In order to show that sensation is capable of leading animals to obtain what they need and avoid what is harmful, I show that Aristotle understands animals to be constituted in such a way that for the most part they find what is actually good for them, in terms of filling basic needs, to be pleasant. Aristotle describes feeling pleasure as a way of acting towards what is good: "To feel pleasure or pain is to act with the sensitive mean [or actualize the sensitive mean] towards what is good or bad as such [τὸ ἐνεργεῖν τῇ αἰσθητικῇ μεσότητι πρὸς τὸ ἀγαθὸν ἢ κακόν, ᾗ τοιαῦτα]" (431a 10-11). This passage

is clear that feeling pleasure is a sensitive activity and that it has a connection with a good object, but is ambiguous as to whether this requires attributing a subjective evaluation of goodness, or whether it merely claims that feeling pleasure is objectively connected with things that are in fact good. Ultimately I think both claims are right: pleasure does have a relation to what is actually good that can be stated without referring to any subjective conception of goodness, and animals also have some subjective awareness of value, even if they lack a fully-fledged concept of goodness. However, I will first show that Aristotle's theory of pleasure supports the objective relation, obtaining always or for the most part, between the sensitive feeling of some object as pleasant and the objective goodness of that object for the sensing organism.

Aristotle repeatedly links pleasure with what is in agreement with or restorative of something's nature. In *History of Animals* Aristotle summarizes animals' lives in terms of their main activities and how they pursue them:

> The life of animals, then, may be divided into two parts, procreation and feeding; for on these two acts all their interests and life concentrate. Their food varies chiefly according to the matter of which they are severally constituted; for the source of their growth in all cases will be this substance. And whatsoever is in conformity with nature [κατὰ φύσιν] is pleasant, and all the animals pursue pleasure in keeping with their nature [κατὰ φύσιν]. (589a 2-9)

Animals' lives are predominantly spent doing what is necessary to sustain and preserve their life, obtaining nutrition, which keeps them alive, and reproducing, which preserves the species. In order to do this, different animals need to eat different food, since they are made out of different materials and need to consume different materials for nourishment and growth. Aristotle's remark that all animals pursue pleasure can sound disconnected from these initial observations, and the section ends immediately after this passage, so there are no further hints as to how it is connected procreation and feeding. However, the

preceding remarks about animals needing different foods based on their material composition raises a question about how animals can successfully pursue the different kinds of food they need. How does a cat 'know' to eat meat, or a cow to eat grasses? Aristotle's remarks on pleasure are perfectly suited to answer this type of question, since it states that all animals pursue pleasure, and what they find pleasant varies according to their natures. Accordingly, an animal whose nature, or material composition, requires it to eat meat, will find meat pleasant, while a cow, whose nature does not require meat, will not find meat pleasant.

Of the senses, taste is particularly important for animals because of its role in guiding them to the right kinds of food. In *Sense and Sensibilia* Aristotle explains why all animals have taste:

> But coming now to the special senses severally, we may say that touch and taste necessarily appertain to all animals, touch, for the reason given in *On the Soul*, and taste, because of nutrition. It is by taste that one distinguishes in food the pleasant from the unpleasant, so as to flee from the latter and pursue the former; and savor in general is an affection of the nutritive part. (436b 12-18)

Aristotle refers back to *De Anima* where he identifies touch as being necessary for an animal to be an animal, because animals are defined by having sensation, and because touch is the most basic form of sensation and necessary for survival (434b 10-25). Touch and taste are the two most basic senses. They are possessed by all animals, and they are so closely linked that Aristotle even calls taste a kind of touch (434b 18-22). Aristotle explains why all animals must have taste in terms of nutrition, since it is only by taste that animals can distinguish what they need to eat to maintain health and to grow. The mechanism by which the appropriate food is identified is pleasure. Thus, by psychologically pursuing pleasure (and avoiding pain), animals fulfill their basic needs of

nutrition and growth without needing to be aware of those basic needs. Simply because of the way animals are designed such that they find the appropriate food tasty, they can pursue what is good for them without necessarily being aware that it is good for them.

Aristotle does not limit the difference in what animals find pleasant to different foods. Aristotle's ethical works provide the most sustained discussions of pleasure, and some of his remarks pertain to non-human animals, as well. Aristotle links animals' pleasure to their proper activities and functions:

> Each animal is thought to have a proper pleasure [ἡδονὴ οἰκεία], as it has a proper function [ἔργον]; viz. that which corresponds to its activity [κατὰ τὴν ἐνέργειαν]. If we survey the species this will be evident; horse, dog, and man have different pleasures, as Heraclitus says 'asses would prefer sweepings to gold'; for food is pleasanter than gold to asses. (NE, 1176a3-8)

Once again food has an important place and serves as a good example, but the proper function and activity of an animal is by no account limited to eating. In Chapter Two, I argue that animals' proper functions are ultimately defined in terms of their use of their sensitive capacities, and in this chapter I suggest that the use of the sensitive capacities extends to include self-motion directed by sensation. However, even those who disagree with my specification of animals' function include, at a minimum, reproduction in addition to eating. Regardless of what animals' functions are exactly, the functions are defined in terms of doing certain activities, and animals have a certain pleasure associated with that activity. Since animals pursue pleasure, but non-human animals certainly do not think about their function, having a pleasure connected to their proper activities provides a way by which they can be guided toward that end without *knowing* what it is.

Aristotle does qualify his claim about a proper pleasure and function by expressing it in terms of "what is thought," rather than explicitly endorsing the view as

his own, but I do not think we should dismiss it for this reason. First, according to my analysis in Chapter Two, Aristotle himself does endorse the view that animals have functions in his scientific works, even if his discussion of the functions of their parts is more prominent than his discussion of the function of whole animals. Second, Aristotle shows no sign of rejecting this view in the surrounding text, and in fact goes on to defend the view that what is pleasant will vary according to whom is considered, as the view on proper pleasures implies. Third, linking pleasure to an activity, as the view on proper pleasures of animals does, is exactly the view of pleasure that Aristotle defends. Connecting pleasure to doing an activity rather than to filling a lack or having a sensation, is the view of pleasure Aristotle defends in *Nichomachean Ethics* X where the quote is found, and a similar view is defended in Book VII. This is a new view that is not represented in any of the opposing views of pleasure that Aristotle discusses. Accordingly, we have good reason to think that Aristotle is expressing his own view on the proper pleasure of animals, and not someone else's that he does not actually accept.

In addition to pleasure leading animals to do good things or to obtain what they need, Aristotle treats pleasure itself as a good. While Aristotle is not a hedonist, he does not deny that pleasure is good; for example:

> But further it is agreed that pain is bad and to be avoided; for some pain is without qualification bad, and other pain is bad because it is in some respect an impediment to us. The contrary of that which is to be avoided, qua something to be avoided and bad, is good. Pleasure, then, is necessarily a good. (1153b1-5)

This suggests that pleasure is not merely instrumentally good for animals. It has an important instrumental role to play, but additionally, just having pleasure is a good. Pleasure, then, benefits animals both in itself and also by leading them to perform good activities and to obtain objects that they need, such as food. Since pleasure is a sensation

and is good, experiencing pleasure is a component of the way sensation improves the quality of animals' lives.

One of the instrumental advantages of having self-motion guided by sensation is that it is able to respond appropriately in a much larger variety of contexts than are plants. Unlike growth, which is a teleological process that goes towards a pre-determined goal, and can thus be easily compared to the way an art regularly makes the same product, self-motion does not follow such an obvious plan.[111] For example, even though water is good for an animal when it is thirsty, it would not be good for an animal to walk to a stream and drink indefinitely. This is of course not what animals do, since they stop drinking when they are no longer thirsty, and Aristotle's model of pleasure can account for this responsiveness to the animals' current needs and the environmental changes.

Much of Aristotle's discussion of pleasure in *Nicomachean Ethics* Books VII and X is focused on showing the inadequacies of the previous models of pleasure, especially the restorative model. However, he does not actually deny that restorative pleasures exist, and in fact believes they have an important role in explaining how pleasure can guide animals to pursue objects when they need them and to not pursue them when they do not. Aristotle distinguishes two ways in which something can be pleasant:

> But the pleasures that do not involve pains do not admit of excess; and these are among the things pleasant by nature [φύσει] and not incidentally [κατὰ συμβεβηκός]. By things pleasant incidentally I mean those that act as cures (for because as a result people are cured, through some action of the part that remains healthy, for this reason the process is thought pleasant); things naturally pleasant are those that stimulate the action of the healthy nature [ἃ ποιεῖ πρᾶξιν τῆς τοιᾶσδε φύσεως]. (1154b 15-20)

[111] Corcilus (2013) 18-19 makes this observation about the difficulties of applying the art model to self-motion. This is not to say that arts cannot prescribe different actions in different contexts, but the variability of self-motion at least prima-facie presents challenges to a model based on a predetermined plan.

Pleasures in the strictest sense, those pleasant by nature, are those that do not admit of excess and do not have a painful contrary state. For example, Aristotle takes the pleasure of contemplation to be of this sort. It is neither possible to contemplate too much nor to take too much pleasure in it, since continuing to contemplate does not ruin its goodness, and the pleasure of contemplating does not arise from a contrary painful state. Instead, the pleasure of contemplation is closely tied to the activity of intellect in its healthy state (although books VII and X differ on the exact nature of this connection). This is the kind of pleasure that Aristotle ties to the activity of a healthy state, and it is the kind of pleasure that he thinks other philosophers have missed in their accounts. Instead, most people have focused on the pleasures that Aristotle thinks are only incidentally pleasant. These incidental pleasures are the good feelings that arise from returning to a healthy state, rather than from the exercise of a health state, and they involve the removal of a painful contrary state. For example, when I am hungry, I am in a painful state that is unhealthy because of a lack of food, and when I eat, I return to a healthy state and the pain is removed. However, I can also eat too much, which is why these incidental pleasures can admit of excess, and I will not find eating pleasant any longer if I am already full. Aristotle considers these pleasures to be only incidental, because the pleasure really comes from the activity of a healthy state. Additionally, the things that give rise to incidental pleasures are not always pleasurable, since their pleasantness depends on the animal's being in a state where they would restore that animal to a healthy state, unlike what is naturally pleasant.

For ethical purposes, Aristotle is most interested in the true, natural pleasures, but incidental pleasures are very useful in explaining why animals pursue certain things at

certain times. Incidental pleasures always arise from returning to a healthy state, which means animals will only pursue the sources of those pleasures when they need something in order to return to a healthy state. They eat when they are hungry, and drink when they are thirsty. And when they are full and have quenched their thirst, food and drink no longer appear so pleasant, and they cease to pursue them. Pursuing pleasure should generally lead animals to do what is healthy for them, since pleasure corresponds to what either restores what is natural and healthy or is the exercise of it. Pleasure, thus, has the ability to guide animal self-motion to what is good for them, as a result of pleasure arising from what is healthy for the animal, and animals can do this without having any sort of conception of what is good for them.

Of course, the pursuit of pleasure will sometimes lead animals to do things that are harmful for them, but this alone does not undermine pleasure's relation to what is good for the animal. Pleasure might lead an animal to overeat, just as it might do to humans, or it might lead a thirsty animal to drink water that is not actually potable. Pleasure is certainly not an infallible guide, but Aristotle does not generally expect relations to be without exception in biology. As I discuss in Chapter One, he expects many claims in natural science to hold only for the most part. For instance, Aristotle claims that there is scientific knowledge of what happens for the most part, unlike what happens by chance, in the *Posterior Analytics*, I. 30. In *Physics* Aristotle acknowledges that many causal relations only hold so long as there is no interference, which means that there are exceptions and mistakes (e.g. 199b 25). For instance, it is true that oak seeds grow into oaks, even though many seeds will fail to do this. Accordingly, it is still possible for pleasure to be "towards what is good," in an objective sense, even if pleasure

sometimes fails to lead animals to what is good (431a 10-11). What matters is that pleasure leads to what is good for the most part, and that when it fails to do so, that is the exception, rather than the rule. Accordingly, sensation is instrumentally successful at leading animals to what they need, and allows animals to be more flexible in how they obtain what they need than plants can be.

b. Pleasure as an Evaluation

With the instrumental success of sensation guiding self-motion through pleasure and pain established, I will explain why using sensation would be a more valuable way of obtaining these goods than doing so without. I have already pointed out that merely experiencing pleasure is itself a good and simply having pleasure can make the action better and improve animals' quality of life. Still there are other ways in which being guided by sensation can be considered a higher way of filling basic needs. Aristotle also refers to pleasure and the object of desire each as an "apparent good," and I do not see any plausible way to interpret these passages without some form of psychological awareness of goodness (e.g. *DA* 433a 27-9 and *DM* 700b 23-29). Aristotle's discussion of the apparent good in his account of animal motion requires an interpretation that ascribes to non-human animals some form of subjective or intentional evaluation of what is pleasant and desired as good. This evaluation may be simple or primitive, and far from a rational recognition of something as good, but Aristotle's account of self-motion requires such an evaluation in some form. If pleasure is a way for sensation to provide a basic form of evaluation, that helps make the case that using sensation to fulfill basic needs is not merely instrumentally valuable. After all, using reason to evaluate which actions to pursue is largely what makes an action virtuous for humans. Being able to subjectively

evaluate what they pursue is a large part of what makes animal actions more impressive to Aristotle than the way plants fulfill the same basic needs.

The following are the four most important passages in which Aristotle describes the object of desire or pleasure as an apparent good, and they suggest animals have some ability to evaluate in a basic way whether something is good.[112]

> 1) Now thought [νοῦς] is always right, but desire [ὄρεξις] and *phantasia* may be either right or wrong. That is why, though in any case it is the object of desire [τὸ ὀρεκτόν] which originates movement, this object may be either the real or the apparent good [τὸ ἀγαθὸν ἢ τὸ φαινόμενον ἀγαθόν]. To produce movement the object must be more than this: it must be good that can be brought into being by action [τὸ πρακτὸν ἀγαθόν]. (*DA*, 433a 26-29)

> 2) Wish [βούλησις] and spiritedness [θυμὸς] and appetite [ἐπιθυμία] are all desire [ὄρεξις], and choice [προαίρεσις] shares both in reasoning [διανοίας] and desire [ὀρέξεως]. So that the first mover is the object of desire and also of thought [τὸ ὀρεκτὸν καὶ τὸ διανοητόν]; not, however, every object of thought, but the end in the sphere of things that can be done [τὸ τῶν πρακτῶν τέλος]. So it is a good of this sort that imparts movement, not everything noble. For insofar as something else is done for this, and insofar as it is an end of things that are for the sake of something else, thus far it imparts movement. And we must suppose that the apparent good [τὸ φαινόμενον ἀγαθὸν] ranks as good, and so does the pleasant (since it is an apparent good). (*DM* 700b22-29)

> 3) The object of desire [τὸ ὀρεκτὸν] and the object of thought [τὸ νοητόν] move in this way; they move without being moved. The primary objects of desire and of thought are the same. For the apparent good [τὸ φαινόμενον καλόν] is the object of appetite [ἐπιθυμητὸν], and the real good is the primary object of wish [βουλητὸν]. But desire is consequent on opinion [ὀρεγόμεθα δὲ διότι δοκεῖ ὀρεγόμεθα δὲ διότι δοκεῖ] rather than opinion on desire; for the thinking [νόησις] is the starting point. And thought is moved by the object of thought. (*Meta*., 1072a 24-30)

> 4) The desired [ὀρεκτὸν] and the wished [βουλητὸν] for is either the good or the apparent good [τὸ φαινόμενον ἀγαθόν]. Now this is why [διὸ] the pleasant is desired, for [γάρ] it is an apparent good; for some think [δοκεῖ] it such, and to some it appears [φαίνεται] such, though they do not think so. For appearance

[112] Jessica Moss (2012), 4, also, notes these four passages as crucial to her interpretation, and she would add to this list a fifth passage: NE 1113a 23-4. However, Aristotle's reference to the apparent good in this passage is part of a dialectical argument, and as such it is not clearly endorsed by Aristotle as his own view.

> [φαντασία] and opinion [δόξα] do not reside in the same part of the soul. It is clear, then, that we love [φίλον] both the good and the pleasant. (*EE*, 1235b 25-29)

All four of these passages describe the object of desire as an apparent good (or a good), and passages 2 and 4 identify pleasure as one of the objects of desire that is an apparent good. Passages 3 and 4 go beyond claiming that the object of desire is an apparent good to add that what is desired is desired because it is good or appears good. These are the two main theses that Moss defends as an interpretation of Aristotle in her book: everything that is desired is taken to be good, and what is desired are desired because it is taken to be good.[113] If these claims are correct about Aristotle, as the passages at least prima facie support, then pleasure and non-rational desire will not only have an objective relation to what is good, but also a subjective one. If animals have a subjective relation to what is good, then they have an ability to evaluate what is good for them that is lacking in plants, who only behave in certain way that tends to bring about good results without any evaluation of what they should do.

However, not everyone agrees that these references to the apparent good actually describe subjective awareness or evaluation of goodness. Irwin has attempted such an interpretation by claiming that the "apparent good" can refer to the good's way of appearing to the animal. He claims that the phrase does not have to refer to something appearing good, but instead it can refer to how the good appears to animals, i.e. as pleasant.[114] Subjective evaluation of goodness is limited to humans, according to Irwin, because it requires a particular type of desire that has the good as its object: wish [βούλησις], and this desire is unique to rational beings. If only rational desire could have

---

[113] Moss (2012), 3-6.
[114] Irwin (1990) 331-32.

a subjective relation to goodness, then animals without wish and reason could not have something appear good to them. This would make the difference between plants and animals smaller, because neither of them would have an ability to evaluate what they should do. They would both simply be set up with certain patterns of behavior that work for the most part, which would justify animals and plants having an objective relation to goods without any subjective evaluation of goodness. Thus, if a passage attributes an apparent good to an animal without reason, this can be interpreted to only attribute an objective relation to the good, of which the animal has no awareness. The animal just pursues pleasure, and because it is something good that appears pleasant, it pursues what is good without an awareness of goodness, according to this interpretation.

Irwin's solution is strained, when we examine this set of passages, however. Passage 2 fits fairly well with Irwin's suggestion, since he expects the apparent good to "rank as good" or "hold the place of the good" by way of appearing pleasant. Passage 1 presents some real difficulties for Irwin's reading, however, since it introduces the apparent good as a way of explaining why animals can desire the wrong things, which are not actually good for them. The apparent good, unlike the good, may in fact be bad. We cannot explain particular actions only in terms of what is really good, since many actions are mistaken, and to explain these mistakes requires an appeal to what the actor took to be good, when it was not. Something that is not in fact good cannot be an apparent good in virtue of its being a real good appearing to animals in a certain way, as Irwin's interpretation would require. Instead, the passage makes sense when apparent good is interpreted to mean that something bad appeared to be good, which explains the

possibility of error by introducing a subjective appearance of goodness in contrast to the real good.

Corcilius recognizes the need to account for errors while maintaining the objective reading of non-rational pleasure and desire's relation to the good. He suggests that we can account for errors, because pleasure only needs to lead animals to what is good for the most part in order for an objective relation between pleasure and the apparent good to hold, as I already discussed.[115] To combine this with Irwin's reading, one could maintain that the good appears to animals as pleasure, but this relation only holds for the most part, so sometimes pleasure is not good. This combination is awkward, however, since claiming that the good appears as pleasure for the most part can easily explain why a good thing might fail to appear as pleasant, but the relation's failure does not explain why something not good appears as pleasant. To account for something not good appearing pleasant, there would have to be something else that has the power to appear as pleasant, in which case the good would not be unique in its ability to appear as such. If something other than goods could appear pleasant, then we would expect pleasure to be called an "apparent that thing" by the same logic that it is called an "apparent good," but Aristotle never describes pleasure as an "apparent anything else."

An analogical case of a for the most part relation can help clarify how this defense of Irwin's position is inadequate. Claiming that human children for the most part grow into human adults makes it expected that some children will fail to become adults, such as those who die. Saying that this relation is only for the most part accounts for these exceptions. However, maintaining that human babies for the most part grow into human

[115] Corcilius (2013), 140.

adults, would not help account for cases of baby monkeys or mice growing into human adults (which Aristotle thinks is imposible), since it makes no claims about what monkeys and mice can grow into. Similarly, saying good things for the most part appear pleasant, predicts that some good things will not appear pleasant, but it does not tell us anything about how bad things could appear pleasant. Thus, an appeal to for the most part relations does not save Irwin's theory of the good as it appears from its inability to explain mistakes and failures, where bad things are apparent goods.

Corcilius himself avoids these problems by focusing on pleasure's relation to the good, rather than the good's relation to the pleasant, in which case the exception to the for most part relation is something pleasant that is not good, rather than something good that is not pleasant. However, his account does not explain Aristotle's choice to describe the good as apparent or its broader association with *phantasia* and appearance. Aristotle's term for the apparent good, τὸ φαινόμενον ἀγαθόν, uses a participle from the verb φαίνειν, whose most basic meaning is to appear, and this is also the root of φαντασία, which is usually translated as "imagination," unless it is transliterated. We have to make sense of the apparent good as something that is appearing to the animal. The most natural way to do so is interpret it as something that appears good to the animal. The only other clear alternative is Irwin's idea of a good that appears as something to the animal, but I have already shown the shortcomings of this approach. Accordingly, Corcilius may be right about pleasure leading animals to what is good for them, but, on its own, this does not account for Aristotle's descriptions of pleasure as an apparent good.

If these references to the apparent good must be interpreted as something appearing good to the animal, one might still object that this only happens in rational

animals, since reason brings with it a conception of goodness that other animals lack. No one who argues for the objective interpretation of animal's relation to the good denies that humans can take something to be good, or have something appear to be good, whether it is good or not. Since it is uncontroversial that humans can and do have subjective or intentional experiences of something as good, do any of the above passages explicitly extend this beyond humans to non-rational animals? Passages 3 and 4 could reasonably be taken to only apply to humans. Passage 4 comes from the *Eudemian Ethics* and explains how humans can think something is bad, while it appears good. Passage 3 from *Metaphysics* explains how what we desire is influenced by what we think. Aristotle uses "δοκεῖ" to refer to what we think or opine, which could be taken to have a broader sense of how something appears to us, but his following explanation switches to "νόησις," which non-rational animals lack in either a broad or narrow meaning. It is at least reasonable then to take passages 3 and 4 to be statements that only apply to humans and not other animals.

Passages 1 and 2, however, look like they should apply to all animals, since they both come from texts that discuss human motion together with that of non-rational animals. *De Anima* is a treatment of the soul that applies to all animals, and *De Motu* discusses locomotion as it applies to all animals. Since they are supposed to be general treatments of locomotion and the soul, Aristotle's remarks should be taken to apply to all animals, unless he indicates otherwise. It is true that passage 1 mentions νοῦς which non-rational animals lack, which might indicates that it is only about humans. However, νοῦς is brought in as contrast to φαντασία in that νοῦς is always right, while φαντασία is not, and desire [ὄρεξις] can also be wrong. Though not entirely explicit, Aristotle implies that

the object of desire can be grasped by νοῦς or φαντασία, and since φαντασία can be wrong, so can desire. Aristotle then introduces the apparent good in addition to the real good to accommodate this possibility of error, which implies that not every desire will be for something that is actually good. This passage links νοῦς with the real good, rather than the apparent good, based on the lack of error. By contrast, the apparent good is connected to φαντασία and desire based on the possibility for error, and non-rational animals have both φαντασία and desire, along with the possibility of error. Accordingly, passage 1 suggests that non-rational animals may not have a desire for the good without qualification, because they lack νοῦς, but they do have desire for the apparent good.

Passage 2 similarly looks like it applies to all animals, even if it mentions capacities that only belong to rational ones. Wish and choice in this passage do not belong to non-rational animals, but appetite [ἐπιθυμία], one of three types of desire, certainly belongs to non-rational animals. The type of desire that does belong to non-rational animals is also the type most relevant to Aristotle's remark about the apparent good in this passage. Here Aristotle describes pleasure as an apparent good after describing what kinds of goods can motivate action, which are the ones that can be achieved by the animal, i.e. a practical good. The apparent good can stand in for a real good, and thus take the place of a real, practical good. Thus, calling pleasure an apparent good is a way of explaining how it can motivate an action by showing how it can play the same role as a real, achievable good. Appetite is the most relevant to this remark, because elsewhere Aristotle defines appetite by it having pleasure as its object (*Topics* 146b 5-12, *PA* 661a6-8). Accordingly, appetite can move animals because it aims at pleasure, pleasure is an apparent good, and that apparent good can take the place of a real practical

good. Aristotle's notion of an apparent good is thus the most important for explaining the type of desire that is common to rational and non-rational animals. Given that Aristotle does clearly describe non-rational animals as having an experience of the apparent good, his remarks about the apparent good that focus on humans elsewhere are still likely to shed light on non-rational animals in so far as the passages discuss capacities that are shared with non-rational animals.

Based on these four key passages and some supporting texts, we should conclude that non-rational animals and humans have a subjective experience of some things as good. The interpretations that try to avoid attributing this experience to animals other than humans cannot account for Aristotle's repeated references to appearances and goodness. However, we should also note that endorsing the view that animals do have subjective or intentional experiences of things as good does not require rejecting the objective relations argued for by the competing interpretation. For instance, there is nothing incompatible about holding both that pleasure is experienced as good by the animal and that pleasure serves as a reliable guide to getting what is good for it. In fact they fit together quite well. By accepting both parts we have a picture of how sensation directs animal motion, making it a sensitive activity, how sensation is useful for providing a flexible way of filling basic needs, and how there is something more valuable about filling them by means of sensation, because of sensation's ability to evaluate goals through pleasure as an apparent good. Unlike humans, animals do not have a way of identifying something as good independent of its pleasantness, which rules out cases of weakness of will or strength of will in animals. However, because finding things to be

pleasant is an example of having something appear good, animals have a greater ability to evaluate the goodness of something than plants, while still less than humans.

3. The Sensitive Nature of Desire and *Phantasia*

Aristotle analyses animal self-motion in terms of the interaction between sense perception, *phantasia*, and desire. In section one I examined several passages that suggested that these capacities are somehow all the same, and that this part of soul is the sensitive part. Section two provided evidence that sensation can successfully guide animals to obtain what they need by means of pleasure and pain. In this section, I provide a more detailed analysis of how these capacities interact, and strengthen the claim that locomotion is a sensitive activity by showing exactly how the other capacities involved, namely desire and imagination or *phantasia*, depend on sensation. A significant part of desire's and *phantasia's* dependence comes from the central role that pleasure and pain have in animal psychology of locomotion. The most basic form of desire, appetite, which guides the majority of animal actions, is constituted by the sensations of pleasure and pain. Meanwhile, *phantasia's* ability to move animals derives from its ability to reproduce something like previous pleasant or painful sensations.

I establish my understanding of *phantasia* and desire in contrast to a view about the role of *phantasia* in animal self-motion that is incompatible with my claim that the capacities involved in self-motion are really all sensitive. Martha Nussbaum defends a view that *phantasia* is necessary for self-motion because it provides the ability to see something *as* something, which allows the animal to connect its desire for a type of thing with the perception of a particular thing.[116] This view ascribes powers to *phantasia* that

[116] Nussbaum (1978) Essay 5

outstrip those of sensation, and it challenges the idea that *phantasia* could be the same as sensation in any meaningful sense. As a consequence it also challenges the idea that desire could be intimately entwined with sensation, because desire is for a type of thing, and sensation does not perceive types at all. In place of this kind of view, I defend a view where *phantasia* does not have any powers beyond reproducing past sensations and where appetitive desire is constituted by pleasurable sensation of an object. This dependence on sensation provides a way of understanding how the capacities are the same, yet different in being, since it presents desire and *phantasia* as complicated developments of sensation rather than completely independent powers.

Aristotle's basic picture of self-motion is one where sensation and *phantasia* provide the needed information to act, while desire provides motivation. In *De Anima* III and in *De Motu,* We can find thought, sense perception, *phantasia,* and desire in one example of getting a drink:

> For whenever a creature is actually using sense perception or *phantasia* or thought towards the things for the sake of which, he does at once what he desires. For the activity of the desire takes the place of questioning or thinking. "I have to drink" says appetite. "Here's drink" says sense perception or *phantasia* or thought. At once he drinks. This, then, is the way that animals are impelled to move and act: the proximate reason for movement is desire, and this comes either through [διὰ] sense perception or through *phantasia* and thought. With creatures that desire to act, it is sometimes from appetite or spiritedness and sometimes from [desire or] wish that they make or act. (701a 29- 701b 1)

In this example, a desire, as appetite, provides a general motivation towards drinking, but the animal needs information about a specific context where it can do that. That information, about the presence of a drink, is provided by one of three capacities, or possibly a combination of them: sense perception, *phantasia*, and thought. Having a desire and the information needed to realize it is sufficient to initiate the movement of the

animal. Aristotle takes desire to be what immediately causes the movement, but that desire cannot have any determinate object or course of action without the information provided by those three capacities. Since animals lack thought, their actions must be explained by sensation or *phantasia,* but we can take this to mean that either of them can do the work, or to mean that Aristotle has yet to determine which one does it.

Nussbaum, who argues that *phantasia* is necessary for self-motion because it brings necessary powers that are lacking in sensation, appeals to this second way of reading the disjunction. She appeals to further evidence that suggests *phantasia i*s necessary for self-motion, and then explains what would make it necessary.[117] One of the main pieces of evidence for thinking that *phantasia* is required for locomotion comes a little later in *De Motu*:

> That is why it is pretty much at the same time that the creature thinks it should move forward it moves, unless something impedes it. For the affections suitably prepare the organic parts, desire the affections, and *phantasia* the desire; and *phantasia* comes about either through thought or sense perception. (702a 15-19)

Nussbaum takes this passage to be a revision and improvement upon the one just before it (701a 29- 701b 1), and she interprets this passage as clarifying the roles of thought, sense perception, and *phantasia*.[118] On this revised account *phantasia* has a necessary role to play, rather than being one of three options, in causing animal self-motion. This role is some form of preparing desire. This formulation is remarkably vague, but based on passages like the earlier one (701a 29- 701b 1), this preparation is likely to be some form

---

[117] Nussbaum (1978) Essay 5 argues that *phantasia* is necessary for self-motion. Moss (2012), 60-64 also concludes Aristotle's considered view is that *phantasia* is necessary for self-motion, although he is not always consistent about this.
[118] Nussbaum (1978) 232-234.

of providing information about the context that allows the animals to see the situation as relevant to an existing desire or that sparks a new desire.

Treating *phantasia* as an additional necessary component for self-motion only threatens my reading if *phantasia* brings in completely new powers from those of sensation when it prepares desire and presents the object of desire. Nussbaum argues that desire cannot respond to mere sensations without any interpretation of them, because if I desire something of type X, then I need to recognize what I perceive as an X.[119] For example, in the case of desiring a drink, seeing something transparent, bluish, and odorless is not enough for an animal to realize it is looking at water that could satisfy its desire to drink. On Nussbaum's account, for the animal to act on its desire to drink, sense perception provides qualities like clear, bluish, etc, and then *phantasia* enables animals to see that group of qualities as something of a certain type. This interpretation of *phantasia* gives it a power that cannot be accounted for by looking to sensation, since *phantasia* can recognize something as member of a type, while sensation cannot. As a consequence it also disconnects desire from sensation, because on this view desire is for something of a certain type, and sensation provides no way of explaining how could have that as its object. Given this sharp break between the powers of sensation on one hand and sensation and desire on the other, I do not see how this reading would be reconciled with Aristotle's claims that the three capacities are all the same.

One way to try to reconcile the "seeing as" part of this reading with Aristotle's claim about the capacities' sameness would be to argue that sense perception is capable of this "seeing as," as well. It is arguable that sense perception has this role as well, based

[119] Nussbaum (1978) 261-262.

on Aristotle's treatment of incidental objects of perception in *De Anima*, where he discusses perceiving, at least in an extended sense of perceiving, "the son of Diares" (DA II.6). These comments in *De Anima* do not refute Nussbaum's restriction of seeing as to *phantasia*, but they do show that thinking that "seeing as" is what desire needs to act can be taken independently of the claims that *phantasia* is always necessary for desire to act and that it has completely new powers that outstrip sensation. However, I do not think the "seeing as" model of locomotion is ultimately worth trying to save in this way.

I defend an alternative model of how desire is moved that focuses on pleasure and pain, rather than "seeing as a type of thing." Several other scholars have argued that presenting an object in a pleasurable way is crucial to understanding how desire is moved, which in turn moves the animal.[120] On this interpretation, animals do not have to actually recognize an object as a certain type of thing. Instead, an animal could see what is in fact water, which brings to mind the pleasure it had drinking something that looked similar in the past, and the thought of that past pleasure causes the animal to go drink the water. In this example, it would be *phantasia's* role to bring to mind the pleasure that accompanied a similar visual experience in the past, which enables the animal to anticipate a future pleasure. Accordingly, *phantasia* is necessary to animal locomotion, based on this pleasure model, when the anticipation of future pleasures motivates the action. However, there may be cases where a pleasurable or painful sense perception alone might initiate locomotion without *phantasia* playing any intermediary role. Since

---

[120] E.g. Lorenz (1996) 130-137 analyses animal motions in terms of anticipatory pleasures that arises from "envisioning prospects." Whiting (2002) 173-174 Argues that that it is only by having pleasant and painful perceptions that animals can move themselves. Moss (2012) 62-64 explains self-motion in terms of pursuing pleasure and what is imagined will be pleasant. Corcilius (2013) 132-133 explains how non-rational desire is constituted by the perception of pleasure and pain.

Phantasia derives its powers from the power of past sensations, it would be plausible that sensation alone would sometimes initiate self-motion without *phantasia*. My interpretation maintains a close connection between *phantasia* and sensation on one hand, and desire one the other, since pleasurable sensations and memories of them make up appetitive desire.

The pleasure model has better textual support than Nussbaum's "seeing as" reading. Nussbaum's argument for the seeing as reading depends on citing passages that suggest *phantasia* is necessary for a desire to translate into an action, and then developing a plausible theory of why *phantasia* would be necessary. While Nussbuam's interpretive theory of *phantasia* may have philosophical appeal, Aristotle just does not refer to animals seeing things as something, nor does he normally assign *phantasia* an interpretive role. Nussbaum has to go to some lengths to argue that *phantasia* in the explanation of animal motion is different from *phantasia* in other contexts, where it is described as a preserved or decaying sense perception (e.g. in reference to explaining perceptual errors DA III.3, esp. 428b 30 – 429a 9, in reference to translating sensation into memory *On Memory* 1, in reference to past sensations creating dreams *On Dreams*, esp. 459a 14-22).[121] The interpretive role Nussbaum gives to *phantasia* in explaining action is, she admits, at odds with descriptions of *phantasia* in other contexts, where its contents are limited to what was once in sense perception.

A good interpretation should be able to make sense of Aristotle's claims that *phantasia* derives its powers from sense perception:

> And because *phantasiai* remain in the organs of sense and resemble sensations, animals in their actions are largely guided by them, some (i.e. the brute) because

[121] Nussbaum (1978) 221-231.

> of the non-existence in them of thought, others (i.e. men) because of the temporary eclipse in them of thought by feeling or disease or sleep. (*DA* 429a 4-8)
>
> For thought and *phantasia*, as we explained earlier, present that which produces the affections, in that they present the forms of the objects that produce them. (*DM* 703b 18-20)

The passage from *De Anima* claims that *phantasia's* ability to produce movement is based on the resemblance of its objects to those of sensation. This presupposes that sensations have the ability to cause animals to act, since it is only by reproducing or preserving something similar to sensations that *phantasia* can guide animals' actions.[122] The passage from *De Motu* reiterates this idea by claiming that *phantaisia* creates the same affections, which are needed to move the animal, as if the actual object were there to produce them, by presenting its form. Since Aristotle defines sensation as receiving the form without the matter of something that is present, this passage explains *phantasia's* ability to produce these alterations by simulating an experience of actual sensation (424a 17-25). *Phantasia's* power comes from resembling actual sense experience, which supports the idea that it is sensitive in a broad sense.

The pleasure model can make sense of *phantasia's* dependence on sensation for its power, and it has the advantage of continuity with *phantasia's* treatment in other contexts. If *phantasia's* role in explaining action can be explained with the same powers ascribed to it in other contexts, that explanation should be privileged over one that must bring in new powers that are discontinuous with the others. One of the main roles of *phantasia* is to act as an intermediary between sense perception and memory, and this role makes it suited to guiding animal actions. This role also provides a way of understanding why Aristotle claims that animals are guided by *phantasia* because its

---

[122] Schofield (2011) points out this presupposition.

objects resemble the objects of sense, as cited above (*DA* 429a 4-8). In this passage, as well as in his discussion of dreams, Aristotle indicates that the objects of *phantasia* are taken from actual sense perceptions: "the faculty of *phantasia* is identical with that of sense perception, though the being of a faculty of *phantasia* is different from that of a faculty of sense perception; and since *phantasia* is the movement set up by a sensory faculty when actually discharging its function" (459a 15-18). The way *phantasia* can preserve the contents of sense perception allows Aristotle to use it to account for dreams, but it also enables *phantasia* to help explain memory.

Aristotle claims the object of memory are the same as those of *phantasia*, which we have seen were once objects of sense:

> Accordingly, if asked, of which among the parts of the soul memory is a function, we reply: manifestly of that part to which *phantasia* also appertains; and all objects of which there is *phantasia* are in themselves objects of memory, while those which do not exist without *phantasia* are objects of memory incidentally. (Mem. 450a 22-25)

Memory and *phantasia* have the same objects and both of them get their objects from sense perception. Since *phantasia* gets its contents from sense perception, even if it is different in being able to preserve them and call them up at will, it is unlikely to explain actions by bringing in new content inaccessible to sense perception.

In addition dreams have a similar explanation as memory, since Aristotle explains dreams in terms of *phantasia* preserving sensations. Dreams are a "movement" that is created by sensation, when an organism actually senses something, which is then preserved in the same parts by *phantasia*, since Aristotle describes *phantasms* as remaining in the sensitive parts (429a 4-8). The same movements of the same parts make up the activity of sensing and dreaming, so dreaming is an activity of sensation, but it can

only be so because of *phantasia's* ability to preserve the movements of actual sensation. This suggests that *phantasia* and sensation are the same movements, but *phantasia* has domain over the ones that are not part of actual perception of things while they are present. *Phantasia* and sensation are then the same movements in the same parts, even though they have different roles to play and different definitions.

What *phantasia* can do, unlike sensation, is bring to mind content that is not currently being perceived, which helps explain how animals can act for something that is not present to sensation at the moment of initiating the action. Aristotle's discussion of sensations that are incidentally pleasurable provides a good example of how this can work. In *Sense and Sensibilia* Aristotle distinguishes two ways that a smell or odor can be pleasant: either incidentally [κατὰ συμβεβηκὸς] or intrinsically [καθ' αὑτὰς] (443b 19-444a 4). Flowers are an example of intrinsically pleasant odor, but Aristotle takes these kinds of pleasures to be peculiar [ἴδιον] to humans. Instead, other animals experience incidental pleasures from smells, based on the smell's connection to food:

> One class of odors, then, is that which runs parallel, as has been observed, to savors: to odors of this class their pleasantness or unpleasantness belongs incidentally. For owing to the fact that savors are qualities of nutrient matter, the odors connected with these are agreeable as long as animals have an appetite for the food, but they are not agreeable to them when sated and no longer in want of it; nor are they agreeable, either, to those animals that do not like the food itself which yields the odors. (443b 19-24)

Animals do experience pleasure from smelling their food, but they do so only because of the pleasure they take in eating that food. As a result, the smell of food is only pleasant when eating it would be pleasant, which is when the animals have an appetite for it. Since the pleasure from eating is itself a restorative pleasure, rather than something that is always pleasant, the pleasure of smelling that depends on it will also only be pleasant

when the animal is in need of restoration. What is unusual about these incidentally pleasant smells is that whether or not they are pleasant depends on whether or not something not currently being tasted would be pleasant. Thus, a current sensation gives pleasure based on whether a sensation that is not currently being perceived would give pleasure, and *phantasia* is the main capacity responsible for producing the likeness of sensations that are not present. This suggests that whether or not the odor leads an animal to eat by being pleasant depends on whether imagining eating the food with that smell is pleasant. Sense perception alone cannot perceive what eating the food would be like, since the food is still at a distance, but *phantasia* can produce a likeness of what eating a similar smelling food in the past was like.[123]

While discussing pleasure in the *Nicomachean Ethics,* Aristotle also provides examples of how a sight and hearing can be pleasant based on anticipation of the future pleasure from eating:[124]

> Nor is there in animals other than man any pleasure connected with these senses [vision, hearing, smell] except incidentally; For dogs do not delight in the scent of hares, but in the eating of them, but the scent told them the hares were there; nor does the lion delight in the lowing of the ox, but in eating it; but he perceived by the lowing that it was near, and therefore appears to delight in the lowing; and similarly he does not delight because he sees 'a stag or a wild goat', but because he is going to make a meal of it. (1118a 16-23)

This passage is even more explicit about denying animals any pleasure from sight, hearing, or smell that is not derived from the pleasure of eating. The dog and the lion in these examples are both hunting and detect their prey, and they show signs of pleasure

---

[123] Lorenz (2006) ch. 11 provides a detailed account of how *phantasia* is involved in creating associations and memories, based on *On Dreams* and *On Memory and Recollection,* with which I am largely in agreement. These associations allow animals to envision future pleasures that can guide their actions.

[124] My interpretation of this passage is similar to and benefited from Lorenz (2006), 131-132.

upon detecting the prey. However, Aristotle argues that the real source of the delight is not from the smell, sound, or sight itself, but rather the prospect of eating. This anticipated pleasure initiates the animal's action to chase and kill its prey, but once again it is a pleasure that is not yet available to actual sensation that motivates the action. However, this does not mean the animal does not feel pleasure until it eats. Instead, Aristotle's discussion of incidental pleasures suggest that the prospect of eating makes the animal feel pleasure while merely smelling or seeing what it will eat. *Phantasia* is well suited to enable the animal to experience something like the sensation of eating, when not actually eating, since it imagines the prospect of eating based on past actual sensations.

By enabling the animal to feel pleasure because of something that is not yet present to sensation, *phantasia* is able to make animals pursue or avoid something at a distance. Aristotle denies that animals have any pleasures based on seeing, hearing, and smelling, which means all pleasure the animal takes must be traced back to a pleasure derived from touch or taste (1118a 16-23). These two senses, unlike the other three, do not work at a distance, so they cannot detect anything that might be the goal of locomotion directly. *Phantasia* enables an animal to have pleasure when it senses something at a distance, and without this pleasure the animal would not pursue what it senses. As I discussed earlier, Aristotle identifies pursuit with taking something to be pleasant and acting towards it as good:

> But when the object is pleasant or painful, the soul makes a sort of affirmation or negation, and pursues or avoids the object. To feel pleasure or pain is to act with the sensitive mean towards what is good or bad as such. Both avoidance and appetite when actual are identical to this. (431 a 9-12)

This suggests that it is by making sights, sounds, and smells pleasant or painful, that *phantasia* is able to guide animals to goals that are at a distance. The animals do not need to consciously calculate a way to achieve a future pleasure, because it is a pleasure they feel at the moment that guides them towards a future pleasure.[125] They still need some awareness of the future pleasure to explain why they do not rest contented with the anticipatory pleasure, but animals do not have to calculate consciously how to achieve a future pleasure that is not yet itself pleasant to them. My account avoids this need to calculate, which gives it an advantage, because Aristotle does not discuss non-rational animals calculating means to ends. His discussion of such calculations is limited to rational animals who can deliberate (e.g. NE III.3, EE III.10).

Unlike the "seeing as" reading that gives *phantasia* interpretive powers, this reading does not need to give any powers to *phantasia* that Aristotle does not explicitly attribute to it. *Phantasia* can motivate an action for a future goal simply by picturing a future that is based on actual past sensations and associations with the present sensations it is having. What the animal currently senses can bring its attention to other sensations it has experienced in connection with the present ones, even if they are not present. This allows the content of *phantasia* to be restricted to what is provided by sense perception, and it shows how the resemblance of *phantasia's* objects to those of sense perception can explain why animals are guided by *phantasia* in their actions. On this interpretation the animal does not have to recognize its object of desire as the type of thing it is either, since it only needs to be motivated by the prospect of pleasure similar to ones it has

[125] Moss (2012) 57-64 also argues that *phantasia* moves the animal by being pleasurable or painful itself. This bypasses the need for an account of how animals would calculate the means to future pleasure, which Aristotle does not provide an account of. In fact it looks like he limits this to rational animals who can deliberate.

experienced before. By needing to attribute less to the animals who move, the pleasure model provides a more likely account for very simple organisms. Since a more limited version of *phantasia,* which also stays closer to Aristotle's remarks on it outside of its role in explaining action, can fill the role that the more complex "seeing as" version of *phantasia* is supposed to, the simpler version should be preferred.

The pleasure model of animal self-motion also helps to make sense of Aristotle's claims that the presence of sensation implies the presence of *phantasia* and desire:

> If any living thing has the sensory, it must also have the desiderative; for the desiderative is the genus of which appetite, passion, and wish are the species; now all animals have one sense at least, viz. touch, and whatever has a sense has the capacity for pleasure and pain and therefore has pleasant and painful objects present to it, and wherever these are present, there is appetite, for appetite is desire of what is pleasant. (414b 1-6, cf. 413b 21-24)

According to this, sensation implies desire, which implies pleasure and pain, which implies appetite (a type of desire). Aristotle's thought seems to be that animals would never have sensation without being able to feel pleasure and pain, and since appetite has pleasure as its object, once an animal has pleasure it has desire. Just having pleasurable sensations constitutes having a desire for what is pleasant. Later he adds to these implications:

> To sum up, then, and repeat what I have said, inasmuch as an animal is capable of desire it is capable of self-movement; it is not capable of desire without possessing *phantasia*; and all *phantasia* is either calculative or sensitive. In the latter all animals partake. (433b 27-30)

Here he adds that desire implies self-motion, and desire implies *phantasia*. If all of these conditionals hold, then anything that has sensation would have pleasure, pain, desire, self-motion, and *phantasia*. Since desire usually aims at what is not immediately the case, it makes sense for things that have desire to have phantasia to provide that object of

desire. That sensation implies all these other capacities strengthens the idea that they are all ultimately the same as sensation, and the pleasure model of self-motion helps us understand why they imply each other.

On this view, self-motion is guided by sensation, and the other elements involved, namely, *phantasia,* pleasure, and appetite, are dependent upon sensation. *Phantasia* reproduces likenesses of past sensations, pleasure arises from certain sensations, and appetite is merely the animal being motivated to pursue pleasure. This dependence allows Aristotle to claim that sensation implies the rest of these, and once an animal has all these elements, they have a psychology capable of directing and initiating self-motion.[126] By perceiving something pleasant, through a pleasant *phantasia* associated with what is sensed or by direct sensation, the animal treats that thing as something good, and the pleasant perception stimulates desire. Desire in turn moves the animal towards it as a goal. *Phantasia*, sense perception, and appetite thus enable animals to take something subjectively as a good, by taking it to be pleasant, act towards it as a good, and thus obtain what is actually good for them, since they tend to find pleasant what is actually good for them. By pursuing what they need in this way they exercise sensitive powers in a valuable way that fulfills their function.

4. Conclusion

While locomotion is mostly used to fulfill the needs of the nutritive soul, it is not merely of instrumental value to these ends. Locomotion also qualifies as a sensitive

[126] Appetite may not be the only form of desire that animals have, but it is the one that is discussed in the vast majority of his examples. If some animals also have *thumos*, then I expect it would still be closely tied to pleasure and pain. However, how this would work is less straightforward than in the case of appetite.

activity, since the capacities it depends on (desire, imagination, and sensation) are all sensitive and form a unified sensitive part of soul. As such, self-motion can constitute a part of animals' highest end defined by sensation. Accordingly, locomotion can add complexity and variety to the overall function of an animal in a way similar to how senses in addition to touch and taste can. By filling their basic needs through the use of locomotion guided by sensation, animals use some knowledge and assign value to objects to achieve their ends, since sensation is a type of knowledge and pleasure provides a way to evaluate objects by serving as an apparent good, which makes their actions more valuable. However, what the animal is aware of pursuing and the objective good at which the pursuit ultimately aims are not necessarily the same. The ends animals are aware of pursuing are determinate pleasurable things, but the pursuit of these aims fills broader goals like health, and ultimately the highest goal of exercising sensation to perform their function. These more general goals are aims of the actions, but not ones that the animals are aware of. Humans, by contrast, can become aware of these general ends, and next we will have to see how reason and conceptions of general ends in humans change the way humans pursue their highest goal.

Chapter Four: Relative and Unqualified Human Goods

Aristotle is famous for defining the human good in terms of the human function, which he claims is a kind of rational activity, in *Eudemian Ethics* II.1 and *Nicomachean Ethics* I.7. This determines what is good for humans in a way that is relative to the human species, but Aristotle also frequently ranks the lives of different species in comparison to each other and to the divine. This ranking cannot be justified by a conception of goodness that is always relative to a species. Instead, Aristotle appeals to a different, unqualified notion of what is good, where the best life is that of the gods, to support it. This second approach to understanding what is good is often underappreciated in discussions of Aristotle's ethics, but it is more prominent in his works on natural science and discussions of them. In this chapter, I argue that Aristotle uses both the relative and unqualified conceptions of goodness in his ethics, and that we can better understand his arguments about the content of the highest human good by identifying the roles these two conceptions play.

Appreciating these two distinct approaches provides a way to explain why there is a tension between two incompatible accounts of happiness in the *Nicomachean Ethics*. Throughout much of the text, Aristotle appears to endorse an inclusivist view of happiness, where being happy is constituted by doing courageous, temperate, and just actions, while helping one's friends and city. However, in Book X Aristotle appears to endorse the intellectualist view that theoretical contemplation of the cosmos and god is

the only constituent of happiness. This tension has left scholars divided as to whether Aristotle consistently held an inclusive view, an intellectualist view, changed his view, or was genuinely conflicted.[127] I offer an explanation of the source of this tension in Aristotle's work that has generated scholarly disagreement by showing how these two approaches work in his ethics. The species-specific notion of goodness favors an inclusivist interpretation of happiness, but the unqualified approach which uses the divine as a standard favors the intellectualist view.[128] Since Aristotle uses both approaches in the ethics, he draws conflicting inferences about what the best life for humans is, but identifying the approaches also helps us understand and resolve the tension.

While Aristotle does use both approaches, I argue that Aristotle's species-relative approach to the human good in the function argument is ultimately less fundamental than the non-relative approach within Aristotle's thought. The species-relative is dependent on the other approach, because the non-relative approach is needed to explain why doing what is characteristic of humans is beneficial for them, which answers a common objection to the function argument.[129] In his discussions of contemplation and wisdom Aristotle also diminishes the weight of species-specific notions of goodness in

---

[127] For scholars who defend an inclusivist interpretation of happiness, see: Ackrill (1975), Whiting (1986). For the intellectualist reading see: Nagel (1972), Kraut (1989), Richardson Lear (2004), Especially the chapter "The Finality Criterion," Reeve (1992) Chapter Three. Cooper (1975), Chapter Three, argues that Aristotle articulates the inclusivist view in the *Eudemian Ethics* and parts of the *Nicomachean Ethics*, but replaced that view with the *intellectualist* view in NE X.

[128] Thorsrud (2015) argues that Aristotle recognizes a genuine tension in human nature that leads to these two different conceptions of human happiness. Instead, I identify the main source of the tension in Aristotle's conception of happiness in his two ways of conceiving what is good. However, Thorsrud's account may explain why these two conceptions of goodness pull apart in the human case, but do not in the case of other animals and plants.

[129] For good articulations of this objection to the function argument, see Glassen (1957), Wilkes (1978), esp. 555-557, and Whiting (1988) 34-37.

comparison with non-relative conceptions, and he never argues for the reverse priority. Thus, while I take Aristotle's ethics to be conflicted between the two accounts of happiness, Aristotle had good reason to favor the intellectualist view of happiness, because the approach that favored it is more fundamental within the larger system of his thought.[130] Accordingly, we should take Aristotle's considered view to be that happiness simply is contemplation.

1. Species-Specific Goods and Functions

In *Nicomachean Ethics* I.7 and in the *Eudemian Ethics* II.1 Aristotle provides two similar versions of the function argument. In both cases, the function argument is supposed to identify what human happiness is by determining the function or work that is distinctive of human beings. Both arguments depend on the idea that there must be a strong connection between what something is and what its good is. This connection provides a way to give an account of the human good that does not simply replace "eudaimonia" or "highest good" with synonyms like "doing well" or "the best life." Accordingly, living a good life for humans and being happy is doing the activities of the human function well. This is a valuable first step in providing an account of human happiness that has real content to it.

In the function argument, Aristotle applies a broader theory of functions that is also at work in his biology to the human case. In doing so, Aristotle introduces a species specific notion of goodness that he also uses for other organisms in his ethics, since the

[130] This may not give us good reason to believe human happiness is intellectual contemplation, because most people today do not share Aristotle's views about the divine and living organisms attempting to approximate it. However, given his other views, he has greater reason to favor the intellectual view of happiness than the inclusive one.

purpose of the function argument is to define the human good by its connection to what humans are. This species-specific approach favors an inclusive account of happiness in which happiness is constituted by exercising character virtues, such as justice and courage, as well as the intellectual activity of contemplation.

In both versions of the argument, Aristotle introduces the human case by presenting analogous cases where the good of a thing is determined by its function. For example, Aristotle explains, "for the function of a lyre-player is to play the lyre, and that of a good lyre-player is to do so well" (NE, 1098a 12).[131] In this example, Aristotle identifies a certain type and the function that is characteristic of that type, and the good for that type is to do the activity of that function well. Aristotle also uses organs as examples, such as the eye, hand, and foot in the *Nicomachean Ethics* (1097b 30-31). In the *Eudemian Ethics*, Aristotle also cites tools, artifacts, and arts as examples of things that have functions: a garment, a vessel, a house, and the art of cobbling (EE, 1219a 1-5 and 18-23). In all of these analogous cases, we find that anything of a type will be a good instance of its type, if it successfully fulfills the functions that are distinctive of that type.

These examples highlight a significant feature of this approach, namely that it does not make sense to compare the goods of different kinds of things. Aristotle identifies the good of an eye as seeing well, and the good of a lyre player as playing well. Based on that identification it makes sense to compare two eyes and determine which is better, because they both have the same activity as their good, and they can have achieved it to different degrees. However, since one activity is the good of an eye and another is the good of the lyre player, it does not make sense to ask whether eye or the lyre player is

[131] All the translations are based on the Revised Oxford Translations with some modifications.

better. The kind of goods identified by this approach are only goods relative to the kind of thing that it is a good for, and it does not provide a way to rank the goods that different things are capable of.[132]

Many scholars have observed that these examples do not present a strong argument for the conclusion that humans have a function.[133] Aristotle's examples cite the functions of craftsmen, organs, and tools, but these are not good examples to use for an analogical or inductive argument that humans have functions, since none of them provide a clear case of another organism or substance having a function. Instead of providing an argument that humans have a function, these examples seem to assume that his audience will likely agree that humans have a function, but what this means needs clarification.[134] This assumption gives us reason to think that Aristotle has his biological theory of functions in mind, and presumes his audience is not hostile to that theory. By contrast, Barney argues that it would be inappropriate to expect readers of the ethics to import the details of Aristotle's natural teleology. [135] However, even if this is true, it looks like

---

[132] This inability to compare between species only applies to goodness and quality of life. It is certainly possible to say one species is faster than another, or one can see better than another. However, the species-specific approach to what is good does not give us any grounds to claim that one species can live a better life than another because it is faster or can see better.

[133] For examples see Barney (2008), 295-6, who explains why it would be a poor inductive argument, and she also discusses other authors who came to the same conclusion.

[134] Other authors have also concluded that Aristotle is not using the introductory examples as an argument, so much as an illustration or clarification of what having a function entails. See for examples, Lawrence (2001) 454 note 17 and Irwin (1988) 607 note 37. Reeve (1992) 124 points out that Aristotle provides an indirect argument by suggesting that it would be absurd for humans to be naturally idle, similar to his argument that the virtuous person who slept his whole life would not be happy.

[135] Barney (2008) 302-303. Nussbaum (1978) 100-106 also denies that the human function argument appeals to Aristotle's biology or theory of substances to determine the nature of or existence of the human function.

Aristotle is using functions in the ethics in a way that presupposes some acceptance of their legitimacy as an analytical tool. If he makes this presumption, the best way to understand his use of functions is to expect him to analyze functions in the same way as he does elsewhere. Thus, we can clarify the use in the ethics by looking to his discussion of functions in other texts.

The way Aristotle assigns functions in his scientific works supports the role Aristotle assigns the human function in the ethics. He maintains that a thing's function is essential to it and determines what it is: "What a thing is is always defined by its function (ἅπαντα δ' ἐστὶν ὡρισμένα τῷ ἔργῳ): a thing really is itself when it can perform its function; an eye, for instance, when it can see" (*Meteorology* 390a 10-12). In turn, what has a function exists for the sake of doing that function: "everything which has a function exists for that function (Ἕκαστόν ἐστιν, ὧν ἐστιν ἔργον, ἕνεκα τοῦ ἔργου)" (*On the Heavens* 285a 8-9). In sum, an individual exists for the sake of doing what is essential to it and gives it its identity, and doing what it exists for will be its good.

Aristotle takes the same approach to specify what the good is in the human case:

> Life seems to be common even to plants, but we are seeking what is peculiar (ἴδιον) to humans. Let us exclude, therefore, the life of nutrition and growth. Next there would be a life of perception, but *it* also seems to be common even to the horse, the ox, and every animal. There remains, then, an active life of the element that has a rational principle (πρακτική τις τοῦ λόγον ἔχοντος). (NE 1097b 33 – 1098a 3)

By identifying reason as what defines the human function, Aristotle can conclude that the human good, happiness, will be an excellent activity of the soul in accordance with reason.

Aristotle's identification of the human function as being rational depends on reason being ἴδιον of humans, and the only meaning of ἴδιον that makes sense in this

passage depends on Aristotle's view of essences, which he connects to things' functions. We could take "ἴδιον" to refer to uniqueness, but that would not work as a meaning of "ἴδιον" for this passage. In that case, the life of nutrition and growth would not be ἴδιον of plants either, since it is shared with animals. Nor would sensation be ἴδιον of animals. Additionally, humans share reason with gods on Aristotle's view, so it is not unique to them. Another option would be to claim that Aristotle is looking for what is not shared with any "lower" creatures, which would allow plants, animals, and humans to have the appropriate life be ἴδιον for them. However, Aristotle does not use the concepts of higher and lower in this passage except implicitly in the ordering of the capacities, and it would be strange to think ἴδιον on its own could have this meaning without any further explanation. In *Topics* I.4, Aristotle provides a technical definition of ἴδιον, as referring to non-accidental properties that are not part of the essence, but this definition also does not work, because sensation and nutrition would be ἴδιον of humans according to it.[136] However, in this definition he sets aside an alternative use of ἴδιον, which does refer to the essence: "what is proper [ἴδιον] of a thing – part signifies its essence [τὸ τί ἦν εἶναι], while part does not" (*Topics* 101b 19). This meaning would make reason ἴδιον of humans, but not plants or animals. Aristotle's use of ἴδιον only makes sense if it is referring to what is essential or characteristic of something, which is the meaning we would expect based on his discussions of functions outside the ethics.[137]

---

[136] Elsewhere in the *Organon* Aristotle may use *idion* to refer to properties that belong to all and only members of a certain type, but his definition here only requires that it belong to all members.

[137] Whiting (1988) 37-38 provides a convincing argument for reading ἴδιον with this meaning.

The function argument as a whole presupposes a general acceptance that a thing with a function has its identity (τὸ τί ἦν εἶναι) and its good defined by (ὡρισμένα) that function. The resulting specification of the human good in terms of the excellent use of reason provides a first outline of the human good to be filled in by the rest of the ethics, which examines what those excellences are. It leaves room for disagreement about what excellent rational activity is, but it also rules out many conceptions of the highest good, such as pleasure or wealth, since neither qualifies as a rational activity.[138]

Since the function argument defines rational activity in a broad way, the species-specific approach fits well with an inclusive view of happiness that includes practical activities. Aristotle indicates that rational activity is not only a matter of scientific knowledge or contemplation by mentioning multiple meanings of "rational": "there remains, then, an active life of the element that has reason [τις τοῦ λόγον ἔχοντος] (of this, one part has it in the sense of being obedient to reason (ὡς ἐπιπειθὲς λόγῳ), the other in the sense of possessing it and exercising thought) [ὡς ἔχον καὶ διανοούμενον]" (*NE* 1098a 3-5).[139] The part that has reason by obeying reason refers to the part of the soul that has desires and can be formed by habituation to desire the right things, which is an important element in developing the character virtues. By explaining how this part is also rational in a sense, Aristotle makes room for acting in accordance with character virtues,

---

[138] Lawrence (2001) defends the view that Aristotle's function argument has relatively formal results that are still informative and not empty.

[139] A defender of the intellectualist view might object that the function argument does not actually endorse that these other kinds of rational activities are actually components of happiness. Aristotle's claim at 1098a 17-18 that the human good will be in accord with the best and most complete [τὴν ἀρίστην καὶ τελειοτάτην] virtue can be interpreted in an intellectualist way, as in Richardson Lear (2004) Chapter Two. However, establishing which is best in favor of contemplation alone will likely requiring bringing in the scale of goodness that is not species specific.

like temperance and courage, to be rational activities in the sense required to be a component of the human good. Thus, since the character virtues are ἴδιον of our species, as rational and political animals, and since acting in accordance with them counts as a rational activity, it would make sense to view Aristotle's discussions of the virtues as filling in his account of what happiness is after providing an initial outline with the function argument itself. Additionally, the relevant use of reason in the full sense of having reason that commands the obeying part must be practical reason, as opposed to theoretical reason, since theoretical reason does not tell the emotions and appetites what to do. This results in an account of happiness that includes the kinds of practical rational activities that are actually unique to humans, unlike a view that makes contemplation the sole constituent of happiness; humans share contemplation with the gods, but the gods do not exercise courage, justice, or the other character virtues.

To sum up, Aristotle uses a species-specific approach to the human good in his ethics that is also at work in his natural science. The approach depends on identifying a thing's good based on its identity, and it leads to two conclusions about the human good that disagree with Aristotle's non-relative approach to the human good. First, it provides no way to compare the goods of things with different identities. Thus, it would not make sense to compare a human life with the life of an animal, if we limit ourselves to the logic of the function argument, because we have no common scale of comparison between the goods of individuals of different types. Second, the approach's focus on what is distinctively human lends itself to the conclusion that human happiness will involve the uniquely human virtues, such as justice and courage. Thus, determining the content of the human good by focusing on what is human supports the inclusive account of happiness.

2. The Divine Scale and Unqualified Goodness

While Aristotle frequently describes a thing's highest good by connection with its function and what is essential to it, he also ranks what individuals can do on a scale running up to the best possible good overall, the active life of contemplation enjoyed by god. While Aristotle sometime combines these two approaches, they are significantly different ways of thinking about the highest good for an individual. The first way, already examined, relies on a connection between what is beneficial for something and what makes that thing the kind of thing that it is. The second way posits a highest good that is not relative to the kind of thing that something is, and evaluates what is best for an individual in terms of how close they can come to that one standard of goodness. It is only with this second approach that it makes sense to compare the highest goods available to different species. In this section I establish that Aristotle does compare the lives available to different species, and I show that this interspecies scale of goodness plays an important role in Aristotle's arguments that contemplation is the highest good for humans.

It could be objected right off the bat that Aristotle rules out an unqualified standard of goodness in his criticism of Plato's Form or Idea of the Good in *NE* I.6 and *EE* I.8, where he seems to reject the idea of there being a universal sense of goodness that applies across all categories. However, Aristotle's criticisms of Plato's theory of the good do not actually rule out belief in a good itself. As Stephen Menn has shown, Aristotle dismisses two specific ways of understanding the good itself (Plato's Idea of the Good and the good as a common character), rather than the notion that there is a good itself. [140]

[140] Menn (1992) 548-549.

Rightly or wrongly, Aristotle criticizes both of these accounts of the good itself for being too divorced from human activities to provide an account of the human good, and he claims that they are unsuitable to be a guide for human actions, as would be required for an ethically relevant notion of the good.

In place of these two conceptions Aristotle posits a different theory of the good, as a final cause: "the that for the sake of which as an end is the good and the cause of all that is under it and the first of all goods" (*EE,* 1218b 10-13). In the case of the human good, this will be whatever other actions are done for the sake of, such that it is their final cause. While Aristotle's ethical works may not be interested in a final cause beyond what humans are capable of putting into action, he certainly considers it to be possible that there is one such end for the whole universe. Aristotle identifies such a good and final cause of the universe as the prime mover in *Metaphysics* XII, which allows him to have a highest good for the whole universe, while still dismissing Plato's theory.[141]

Aristotle compares the lives of different organisms based on their ability to participate in the eternal and divine, which sets one standard for all the organisms. In *De Anima* he explains why organisms reproduce as a way of pursuing this divine goal:

> The acts (ἔργα) in which it manifests itself are reproduction and the use of food, because for any living thing that has reached its normal development and which is unmutilated, and whose mode of generation is not spontaneous, the most natural act is the production of another like itself, an animal producing an animal, a plant producing a plant, in order that, as far as nature allows, it may partake in (μετέχωσιν) the eternal and the divine. That is the goal to which all things strive, that for the sake of which they do what so ever their nature renders possible. (415a 25 – 415b2)

[141] Menn (1992) provides a detailed account of how Aristotle's god as *nous* provides a revision of Plato's theory of the good. I do not go into a detailed account of god or the prime mover, but instead focus on the role this standard plays in giving accounts of organisms, since my goal is to show how this model influences his treatment of the human good in his ethics.

In a way that is similar to Diotima's speech from Plato's *Symposium,* the acts or functions of self-nourishment and reproduction are presented as ways of participating in the eternal and divine, and everything tries to partake in the eternal and divine as much as they can.

In *On the Generation of Animals* Aristotle gives the same explanation of reproduction, adding "for since it is impossible that such a class of things as animals should be of an eternal nature, therefore that which comes into being is eternal in the only way possible" (731b 31-33). Achieving immortality of their species by leaving offspring like themselves is the closest each individual animal can come to achieving eternal existence. Since gods can actually achieve an individual eternal existence and animals cannot, and since both aim at this as much as possible, there is a straightforward sense in which gods have a better life than animals. They both have the same goal by which we can measure their success at achieving it, and thus compare the quality of their lives.

This one standard of what is good for everything in the cosmos affects not only Aristotle's discussions of reproduction and nourishment, but also his discussion of the movements of animals, humans, and heavenly bodies. In Aristotle's explanation of the movement of the stars and planets, he reiterates that all organisms, including plants, animals, and humans, try to get as close as possible to one ultimate good. After comparing the motion of these heavenly bodies to those of plants and animals in order to explain why some move a great deal, while others do not, Aristotle concludes,

> For while it is clearly best for any being to achieve the real end, yet, if that cannot be, the nearer it is to the best the better will be its state (ἀεὶ ἄμεινόν ἐστιν ὅσῳ ἂν ἐγγύτερον ᾖ τοῦ ἀρίστου). It is for this reason that the earth moves not at all and the bodies near to it with few movements. For they do not attain the final end, but only come as near to it as their share in the divine principle permits. (*De Caelo*, 292b 17-22)

Aristotle claims that the heavenly bodies, like the organisms on earth, are all trying to come as near to one divine standard of perfection as they possibly can. In some cases that means a planet will have to move a great deal to get closer, others will only move a little, because they are unable to do more, and still others need not move at all, like the earth, because it does not need to move to get any closer.[142] This suggests that individuals may have different highest goods, but these differences are only due to varying abilities to come closer to the one standard of what is good.

The superiority of humans to other animals is frequently justified by appeals to humans being closer to the divine or partaking of it to a greater degree. For instance, in *Parts of Animals* Aristotle states, "for of all living beings with which we are acquainted humans alone partake of (μετέχει) the divine, or at any rate partake of it in a fuller measure than the rest" (656a 3-8). Unlike the passages on reproduction, this passage suggests that humans are the only organisms to actually partake of the divine. However, it also leaves open the possibility that human just have a much greater share of or proximity to the divine, which would be compatible with the passages on reproduction.[143] In any case, Aristotle explains why humans are closer to the divine, or have a greater share of it, by reference to their ability to reason. For instance, Aristotle uses this to explain why humans stand up straight:

---

[142] In this passage and the surrounding context, Aristotle has two main variables that determine how much something moves: the amount it needs to move to achieve the end, and the amount that it can move. Thus, something that has no abilities will not move, but be far from its goal, while something that achieved its goal already has no need to move, but not because of a limitation. Things that move a lot start far from their goal, but have a greater capacity to achieve it. For a detailed analysis of this passage see Leunissen (2010) 165-168.

[143] Lennox (1999) 6-7 makes the observation that this passage does not actually deny that other animals partake of the divine.

> For of all the animals man alone stands erect, in accordance with his god-like (θείαν) nature and substance. For it is the function of the god-like to think and be wise (ἔργον δὲ τοῦ θειοτάτου τὸ νοεῖν καὶ φρονεῖν); and no easy task were this under the burden of a heavy body, pressing down from above and obstructing by its weight the motions of the intellect and of the general sense. (*PA*, 686a 27-32)

The god-like, or divine, part of humans is their capacity to think and be wise, which other animals lack, and he takes the human body to be designed for the sake of enabling humans to do this. The fact that only humans can engage in the divine activity of thinking may explain why Aristotle vacillates between saying that humans are the only ones with a share of the divine and a greater share. Animals and plants may try to approach the divine as much as possible, but only humans can actually engage in the same kind of activities as those he takes the gods to perform. Thus, Aristotle is committed to the idea that plants, animals, and humans can all be ranked on a scale based on how close they get to the best possible life, enjoyed by the gods, but there is a large gap between humans and other animals, because the other animals lack reason.

The gap between humans and animals and the comparison of the human life to the divine life both appear within Aristotle's ethical works as well. This gap appears in Aristotle's denials of the possibility of achieving a form of *eudaimonia* for animals:

> Now this is admitted to be the greatest and best of human goods – we say human, for there may be a happiness peculiar to some superior being, e.g. a god; for of the other animals, which are inferior in their nature to humans, none have the right to the epithet 'happy'; for no horse, bird, or fish is happy, nor anything that of which does not imply some share of a divine element in its nature (ἐν τῇ φύσει μετέχει θείου τινός); but in virtue of some other sort of participation in good things some have a better existence, some worse. (EE I.7, 1217a 23-29)

Aristotle reserves *eudaimonia* for those beings that have something divine in them, while acknowledging that other animals still have better or worse lives. The creatures that have something divine in them are those with reason – humans and gods. Thus, even though

each animal has something that constitutes living well for it, Aristotle restricts calling a thing's good life "*eudaimonia*" if it lacks reason. To make sense of these denials of divinity to animals along with his claims that animals strive to partake of the eternal and divine, we have to conclude something along the following lines. All organisms, including humans, try to come as close to the divine as possible, but the "as close as possible" for non-rational animals falls short of their being considered divine, unlike the human case which does come close enough to have an actually divine element in them, which is reason.

In Book X of the *Nichomachean Ethics* Aristotle defines happiness in terms of this divine element in humans:

> If happiness is activity in accordance with excellence, it is reasonable that it should be in accordance with the strongest excellence (κατὰ τὴν κρατίστην); and this will be that of the best thing in us (τοῦ ἀρίστου). Whether it be intellect (νοῦς) or something else that is this element which is thought to be our natural ruler and guide and to take thought of things noble and divine, whether it be itself also divine or only the most divine element in us, the activity of this in accordance with its proper excellence will be complete happiness (ἡ τελεία εὐδαιμονία). That this activity is contemplative (θεωρητική) we have already said. (NE1177a 12-18)

At first glance it looks like Aristotle is merely reiterating the function argument's definition of happiness from the opening book in order to sum up the overall argument of the ethics, but there are significant differences between this description of happiness and the earlier one from I.7. In Book X happiness is defined in terms of whatever is best, highest, and most divine within us, since happiness is the activity in accord with the excellence of this part. This description makes no use of the human function, nor does it appeal to what is distinctive or characteristic of human beings. Instead, the argument proceeds by searching for what is best in us, and posits that our highest good will be using what is best for us. Unlike the species specific approach of the function argument,

this unqualified approach requires an already established standard of what is best, and the standard Aristotle uses looks like the same one he uses to rank the lives of different species, since it is again linked with divinity and places thinking at the top of the scale.

The arguments then used to identify what is best only make sense as appealing to a standard of what is best that is not species specific. For example, he defends the activities of the intellect (νοῦς) as the best thing we can do by arguing, "not only is intellect the best thing in us, but the objects of intellect are the best of knowable objects" (1077a 19-21). These best knowable objects are presumably the gods and other divine things, such as the heavenly bodies. The scale used to evaluate the best knowable things does not make sense as something relative to what humans are, since the goodness of the gods does not depend on what humans are like. The way Aristotle shifts from the best thing in us to the best objects, without noting any difference in the usage of the term best, suggests that he uses the term with the same evaluative scale for both. In fact, the Greek term for best, κρατίστη, only appears once and then the two things that are best are listed afterwards on equal footing: "κρατίστη τε γὰρ αὕτη ἐστὶν ἡ ἐνέργεια (καὶ γὰρ ὁ νοῦς τῶν ἐν ἡμῖν, καὶ τῶν γνωστῶν, περὶ ἃ ὁ νοῦς)" (1077a 19-21). That means what is best in us is best according to the same scale that makes the prime mover best overall.

Aristotle explicitly appeals to the divine and the hierarchy of lives to establish which human life is best later in X.8.

> Therefore the activity of God, which surpasses all others in blessedness, must be contemplative; and of human activities, therefore, that which is most akin to this must be most of the nature of happiness. This is indicated, too, by the fact that the other animals have no share in happiness, being completely deprived of such activity. For while the whole life of the gods is blessed, and that of men too in so far as some likeness of such activity belongs to them, none of the other animals is happy, since they in no way share in contemplation. Happiness extends, then, just so far as contemplation does, and those to whom contemplation more fully

> belongs are more truly happy, not accidentally, but in virtue of the contemplation; for this is in itself precious. Happiness, therefore, must be some form of contemplation. (1178b21-32)

As Kraut has observed, this passage ranks the well-being of the different kinds of living beings, and then uses the same interspecies standard to rank the lives of members of the same species.[144] When comparing different species, the gods are happiest, because they can contemplate all the time. Humans are next because they can contemplate some of the time, but not always. Animals cannot contemplate at all, so they are not happy at all. Aristotle then uses the same standard of happiness used across species within the human species to argue that humans who contemplate more will be happier than those who contemplate less. Whether comparing two humans or a god and an animal the same standards apply to decide who is happy or happier.

When using this divine scale approach rather than the function approach, Aristotle takes it to be obvious that happiness just is contemplation, and that species differences do not change what happiness is for that species. This approach stands in sharp contrast to the function approach that suggests that happiness involves practical reason and character virtues, and which leaves room for different species to have different standards of well-being. The unqualified good approach instead favors the view that happiness is contemplation, because that is the best activity for everyone regardless of species membership.

---

[144] Kraut (1989) 39-41.

3. Ambiguity of "Good of"

Aristotle's function approach to the human good is open to a problem that the divine scale approach is not. With the divine scale arguments, what is best for humans is determined by using what is best in them, and what is best is what can act most like the gods do. On this approach, Aristotle relies on the plausibility of the assumption that doing the best thing we can with the best part of us is what is best for us, since it is closest to the best life anyone, regardless of species, could have. In contrast, with the function approach, what is best for humans is determined by using what makes them human. This relies on a different and potentially problematic assumption: that being a good example of the human species is good for the individual. Or to put it another way, why should being a good human be good *for* a human? Some scholars have raised the objection that Aristotle's function argument may rely on an equivocal usage of the phrase the "good of X," which is ambiguous between meaning what makes something a good X and what is good for X.[145] It is certainly not clear that being a good example of one's type will always be beneficial to that individual. Though Aristotle is not explicit about the relation between these two approaches, I maintain that the divine approach supplements and reinforces the function approach in a way that provides an answer to this objection.

The analogous cases Aristotle mentions in the function arguments in *NE* I.7 and *EE* II.1 give reason to doubt that the individual with a certain function benefits from performing that function. Many of Aristotle's examples something performing its function benefits someone or something else, and the function is assigned by its creator's

[145] For a good articulation of this objection see Glassen (1957), Wilkes (1978), esp. 555-557, and Whiting (1988) 34-37. Rachel Barney (2008) 310-312 also highlights this ambiguity in the phrase "good of X" in terms of a weak version that determines what makes it a good X, and a strong version that also involves the thing's flourishing.

interests. The comparison of the human function to tools is especially troublesome. For example, we make houses specifically to provide shelter, which is good for the people using the house, but it is not clear why fulfilling this instrumental goal of providing shelter would be good for the house. Similar problems can be pointed out with the examples of organs and artisans. It looks like the eye seeing well is really beneficial for the animal who has the eye, more than it is beneficial for the eye itself. In these examples, the function of the thing in question has instrumental value to someone or something else, which means this way of defining its good is based on what is most beneficial to another, rather than what is most beneficial for it. Similarly, in the examples of the lyre player and the cobbler it is easy to imagine that cobbling well or playing the lyre well may not benefit the person doing so, but rather the person who wears the shoes or listens to the music.

These examples of artifacts, organs, and artisans open Aristotle's function argument to objections at two points. First, someone could object that we as humans do not have functions like instruments or artisans. Second, even if we have a function, filling that function may not benefit us, especially if the function is instrumental. The only way I see to answer these objections is by explaining what is different about the case of the human function from the above cases, such that humans have a function that is not merely instrumental and is good for the one performing the function.

Contemporary scholars who defend the function argument often point to the fact that humans, as a species of organism, are a natural kind or that they are substances in order to mark the significant difference between humans and the examples that have merely instrumental functions. For instance, Jennifer Whiting argues that the function

argument hangs on the premise that natural kinds cannot be defined without specifying what is beneficial to them, because of a connection between a thing's essence and what is good for them.[146] Rachel Barney describes this approach as the "biological approach," because it appeals to the idea that humans and other animal species are examples of natural substances to explain why their functions are not instrumental and do benefit the individual.[147] Aristotle needs to restrict his argument to functions of natural substances or something similar to make his argument plausible, in order to avoid the problems that instrumental functions raise.

I agree that Aristotle does treat the human case differently from those of the crafts and organic parts with instrumental functions, because humans are organisms, which are the paradigm example of substances, and thus have essences and functions in the fullest sense. With the additional premise that natural substances in general are the beneficiaries of performing their function, the human function argument would be much stronger.[148] However, this new premise needs support. To explain why substances benefit from

---

[146] Whiting (1988) esp. 38-39.

[147] Barney (2008) 300-302. Barney ends up rejecting this view of the function argument, however, in favor of thinking that Aristotle is appealing to a more everyday sense of "function." She does still endorse that Aristotle has this view of functions in his metaphysical and scientific works, however. Additionally, her considered view still seems to rely on connecting functions to the human essence or nature to explain why the activities are beneficial, even if they are embedded in social roles 317-320. Irwin (1980) and Achtenberg (1991) are other good examples of this 'biological' view.

[148] On this point I am in agreement with Johnson (2005), 75-80 and 176-187. He provides compelling evidence that that for the sake of which should be analyzed in terms of the aim and the beneficiary, and that substances are the beneficiaries of natural, teleological processes that occur within them. Whiting (1988) 35 understands the distinction in a slightly different way, because she takes the first meaning to refer to a relation of merely instrumental value, while the second refers to instrumental use and actual benefit. Johnson and I take Aristotle to be highlighting two aspects of the "that for the sake of which" relation in one action, while Whiting takes it to be highlighting two different kinds of actions. Since there is no disagreement about whether human functioning has both the aim and beneficiary, my argument does not depend on one or the other reading.

performing their functions, I hold that we need to add Aristotle's view that each natural substance tries to approach the divine in its own way. In other words the unqualified approach to goodness helps answer the main objection to the function argument, which is central to the species-specific approach.

Aristotle's discussion of the two different meanings of "for the sake of" suggests he is aware that performing a function could benefit either the performer or someone else.[149] The context in which Aristotle makes the distinction between aim and beneficiary as meanings of "that for the sake of which" suggests that the substances are benefited by the performance of their functions. Aristotle makes this distinction twice in *De Anima*:

> The acts (ἔργα) in which it manifests itself are reproduction and the use of food, because for any living thing that has reached its normal development and which is unmutilated, and whose mode of generation is not spontaneous, the most natural act is the production of another like itself, and animal producing an animal, a plant producing a plant, in order that, as far as nature allows, it may partake in (μετέχωσιν) the eternal and the divine. That is the goal to which all things strive, that for the sake of which they do what so ever their nature renders possible. The phrase 'for the sake of which' is double (διττόν); it may mean either the end to which, or the being in whose interest, the act is done (τὸ μὲν οὗ, τὸ δὲ ᾧ). (415a 25 – 415b3, cf. 415b 15-21)

After explaining that organisms reproduce for the sake of participating in the eternal and divine, Aristotle notes that the phrase "that for the sake of which" has two meanings: the aim and the beneficiary. Unfortunately, he does not explain why he introduces this distinction at this time, but it should have some relevance to the lines leading up to the distinction. Partaking in the eternal and the divine only makes sense as the end aimed at by reproducing, since it does not makes sense for the *action* of partaking to be a beneficiary in whose interest the action is done. His remark that the phrase has two

[149] Aristotle's discussion of the hierarchy of the arts in *NE* I.1-2 also indicates he is aware of this distinction, since the products of the lower arts benefit the ones who use them in the performance of a higher art.

meanings would make more sense if both meanings were relevant to the case at hand, and the only likely candidate in the discussion for being the beneficiary is the organism. The species itself does not seem like a proper object to receive a benefit, and the gods alluded to by the reference to the divine would receive no advantage. While reproducing itself may not provide a clear advantage to the individual organism, partaking in the eternal and divine does sound beneficial, which suggests the organism benefits by performing ἔργα that are natural to it.

Menn and Johnson have both taken this passage (415a 25 – 415b3) as evidence that substances benefit from their own functions. Menn explains the two meanings of "that for the sake of which" by saying that the body has the aim of partaking of the divine (through reproduction), while the soul is the one benefited by the body's performance of that function.[150] Similarly, Johnson concludes based that the various bodily organs have their functions as their aims, and these functions are performed for the benefit of the organism.[151] While these two scholars disagree about whether the organism as a whole, or the soul by itself is the beneficiary, both agree that Aristotle endorses the idea that it is the plant or animal itself that is the beneficiary of its functions. Which version is more accurate does not make a large difference for my purposes, since on either account the individual (conceived of as a soul or an organism) with the function is benefitting from the function.

If the functions of natural substances are different from instrumental cases, what is it about being a natural substance that makes performing its function beneficial to itself? The previous passage from *De Anima* suggests that the difference is that functions

[150] Menn (2002) 113-114.
[151] Johnson (2005) 75-76.

of natural substances aim at partaking of the eternal and divine as much as possible (*DA* 415b 15-21).[152] This marks a significant difference between the natural substances, such as plants and animals on one hand, and artifacts and organs on the other. Aristotle gives no indication that artifacts' goals somehow contribute to their partaking of the eternal and the divine. Similarly, while organic parts may help the organism as a whole participate in the eternal and the divine, their own goals, such as heating or cooling, are never described as contributing to the organ's effort to participate in the divine. If performing their functions is also participating in the eternal and divine as much as their nature allows, it would make sense that the organisms are benefited by these actions, because by performing their actions they are moving as high on Aristotle's universal scale of goodness as they can. In other words, they are benefitted by approximating the best possible thing. Thus, the function argument's success in the case of organisms depends on Aristotle's commitment to another standard of goodness in addition to the species specific one. The species-specific standard needs the more universal, unqualified one to explain why functions are beneficial to the organisms.[153]

Since Aristotle's function argument does not explicitly appeal to the divine or an interspecies scale of goodness, we might wonder if there is another way to explain why organisms benefit from performing their functions. The biological approach that I already

---

[152] This view requires endorsing a broad view of the teleological role of the divine as an end that does not limit the divine's role to moving the heavenly bodies, along the lines of the view defended by Kahn (1985). G. R. Lear (2004) esp. 89 also offers a similar account in her good discussion of how animals approximate the divine and are benefited by doing so.

[153] I grant that the assumption that approximating what is best as much as possible is the most beneficial for an organism could also have shortcomings. However, if this is the assumption about the natural world that explains why natural functions are beneficial to organisms, then it is still the more fundamental assumption within Aristotle's framework.

described is tends to stipulate that a natural kind's identity determines what is beneficial to it, unlike unnatural kinds. I do think this is something Aristotle would agree to, but I don't think it is a satisfactory explanation, unless we can identify what it is about natural kinds that gives them this property. My suggestion is that Aristotle takes all of natural things to be aiming at participating in the eternal and the divine, and this supplemental claim explains why natural kinds benefit from their functions. Without this additional claim, it seems plausible that there would be certain species where doing something characteristic of them (their function) would not benefit them.

I can see two main alternative explanations of what it is about natural substances that could make the function argument work. First, one could appeal to Aristotle's close connection of an organism's end and form, as two of the four causes.[154] Aristotle claims that the formal cause, what an organism is, and its final cause are the same in a way (see, *Physics* 198a 21-26, 198b 1-4). Since ends are generally goods, perhaps this connection between what an organism is and its end could explain why doing what is characteristic of an organism benefits it. However, this is not unique to natural substances, since forms and ends are almost always closely connected for Aristotle. Sight is both the form and the end of an eye, and a saw is defined by its ability to cut, which is also what it is for. Just because the definition of something already gives normative standards for how it should behave does not guarantee that thing will benefit from doing so, because its end could be to benefit someone else. The connection between an organism's form and function on its own does not solve the good X and good for X problem.

---

[154] This connection is often highlighted in discussions of the function argument: Whiting (1988) 39 uses this to explain why Aristotle is not moving from an is to an ought in a problematic way; Irwin (1980), 39-45 analyses the function argument in terms of Aristotle's hylomorphism, which links form and end. Also see Reeve (1992) 123-4.

Second, we could appeal to the idea that only natural substances have functions in the full sense, and that artifacts, artisans, and organs have them only in some secondary way. Aristotle thinks art imitates nature (e.g. *Physics* 194a 21-26, 199a 15-20), and artifacts lack an intrinsic principle of change unlike natural objects (e.g. *Physics* 192b 13-23), so the functions in the arts may only be imitations of functions, rather than true functions. However, I think this answer is unsatisfactory on two fronts.[155] First, organs are also natural, but their functions are still not the right kind for the argument, and Aristotle actually discusses the functions of organs more often than of organisms. Thus, naturalness alone is not enough. Second, to avoid being circular, this answer would need a separate standard to identify which things have real functions, other than identifying them as those that have functions which are beneficial to those with the function. Aristotle could appeal to his various criteria about what things qualify as substances generally, such as the criterion of having an innate principle of change and separability, and then identify those as the only things that can have real functions. This would avoid circularity, but then we would expect there to be something about what makes them a substance that explains why it benefits from performing its function.

I find substances' orientation toward the divine to be that feature within Aristotle's framework that best explains the benefit they receive. The function argument, thus, serves to specify the content of the human good in Aristotle's ethics by appealing to

---

[155] Another worry is specific to the context within the ethics. In both function arguments Aristotle only uses examples of functions (tools, craftsmen, and organs) that do not belong to substances and never notes that substances are different in a significant way. What he says about functions has to apply to these cases to some extent, in order for his discussion to make any sense. Barney (2008) 203 takes this a step farther than I will, because she uses this to argue that we should not take the function argument to reply on an understanding of Aristotle's biology or metaphysics.

a sense of goodness that is species relative, but the argument ultimately depends on Aristotle's cosmic scale of goodness with the gods at the top. Aristotle does not explicitly label these two ways of thinking about goods or describe their relation, but we can still analyze how they fit together conceptually. Distinguishing the two ways sheds light on Aristotle's background assumptions that make the function argument plausible, and the best way to explain why Aristotle would think doing what is characteristically human is beneficial to humans is to appeal to his conception of nature. According to that conception, all substances participate in the divine as much as possible by fulfilling their function. This situates what is good for the species on the interspecies scale of goodness and explains why something is good for a member of the species in terms of coming as close to the best thing overall as is possible for it.

4. Conclusion: Contemplation and The Highest Good

By disentangling these two ways of thinking about the human good and clarifying their relation to one another, we acquire a good tool to help clarify what *eudaimonia* consists of. The tension within Aristotle's ethics between an inclusive account of happiness and a purely intellectual one has fueled an ongoing interpretive debate.[156] I have already suggested that this tension exists within Aristotle's work because the two different approaches to thinking about the highest good that I have discussed lead to these two different answers about happiness. If we focus on doing what is distinctively human,

---

[156] For scholars who defend an inclusivist interpretation of happiness, see: Ackrill (1975), Whiting (1986). For the intellectualist reading see: Nagel (1972), Kraut (1989), Richardson Lear (2004), Especially the chapter "The Finality Criterion," Reeve (1992) Chapter Three. Cooper (1975), Chapter Three, argues that Aristotle articulates the inclusivist view in the *Eudemian Ethics* and parts of the *Nicomachean Ethics*, but replaced that view with the *intellectualist* view in NE X.

we will end up with an inclusivist picture of happiness, but if we focus on trying to do the best possible activity in the world that is available to us, then we will end up with the intellectualist view.

However, as I have shown, the characteristically human approach depends on Aristotle's view of nature being directed towards the divine, which means the view that favors the inclusivist picture depends on the truth of the view that favors the intellectualist one. This dependence favors taking the intellectualist picture as the one that more accurately reflects Aristotle's considered view, even if he makes remarks that suggest the inclusivist interpretation.[157] In addition to this dependence, whenever Aristotle directly compares practical and intellectual activities he consistently favors the intellectual, for reasons that are not species-specific, even though he also considers species specific reasons for favoring the practical in these discussions. Thus, when he compares species-specific reasons and unqualified reasons, the unqualified ones carry more weight. His prioritization of the unqualified approach is most clear in his defense of contemplation as happiness and in his discussion of theoretical wisdom's superiority over practical wisdom.

When Aristotle replies to a possible objection that this intellectual life is not human enough, he discounts the importance of focusing on what is distinctively human when identifying the human good. The hypothetical opponent objects, "but such a life would be too high for man; for it is not in so far as he is man [ᾗ ἄνθρωπός] that he will live so, but in so far as something divine [ᾗ θεῖόν] is present in him," while Aristotle

[157] For instance, I am not convinced Aristotle's insistence that the happiness requires friendship is consistent with the intellectualist interpretation of happiness (see NE VIII.1 and XI.9).

replies "we must not follow those who advise us, being men, to think of human things, and being mortal, of mortal things, but in so far as we can, make ourselves immortal [ἀθανατίζειν], and strain every nerve to live in accordance with the best thing in us" (1177b 26-34). Aristotle's imagined opponent appeals to a limiting conception of human nature that stresses the importance of knowing the limits of what humans can do and staying within them. While rejecting any notion of limiting ourselves, Aristotle sets us the same goal he uses to explain animal reproduction: striving for immortality. This reinforces that Aristotle does take the goal of all organisms to be to come as close to the eternal and divine as possible, setting one overall goal for all of them. Even though this conception of human nature in the obejction is much different from the conception used in the function argument, since this one focuses on knowing one's limitations, Aristotle's reply calls into question whether what is characteristic or distinctive of humans actually plays a significant role in determining their highest good.

However, Aristotle does still appeal to the same line of thought as in the function argument in Book X, as well. Aristotle's reply also rejects the opponent's conception of what is really human, which allows him to show how trying to make ourselves immortal can still be the human thing to do:

> This would seem, too, to be each human himself, since it is the authoritative and better part of him [δόξειε δ' ἂν καὶ εἶναι ἕκαστος τοῦτο, εἴπερ τὸ κύριον καὶ ἄμεινον]. It would be strange, then, if he were to choose not the life of himself but that of something else. And what we said before will apply now: that which is proper to each thing is by nature best and most pleasant for each thing [τὸ γὰρ οἰκεῖον ἑκάστῳ τῇ φύσει κράτιστον καὶ ἥδιστόν ἐστιν ἑκάστῳ]; for a human, therefore, the life according to the intellect [νοῦν] is best and pleasantest, since intellect more than anything else is human [εἴπερ τοῦτο μάλιστα ἄνθρωπος]. This life therefore is also the happiest. (*NE* 1178a 2-8)

Aristotle makes the argument that each person is most of all his intellect, and uses this as added support that the life of the intellect is the best for us. This passage returns to an argumentative approach that is much closer to the function argument, and could even be making a direct reference back to the function argument in I.7 when he alludes to what he said before. What is best and most pleasant is described in a way that is relative to each thing by using a dative, ἑκάστῳ, and what is best with respect to those things is defined by what is proper (οἰκεῖον) to that thing, where οἰκεῖον serves the same role that ἴδιον serves in the function argument. Thus, it looks like Aristotle is trying to show how the life of the intellect, even if it is divine, still fits the outline of the human good he provides in I.7, and now he is prepared to say more precisely that the rational activity that is happiness is contemplation.[158]

On closer inspection, however, it is clear that this is not providing another argument that is independent of Aristotle's argument that we should live according to the best part in us. Aristotle's argument that humans are most of all their intellect depends on his arguments that the intellect is our best part, which uses a scale of goodness that is not relative to humans. Rather than examining what is characteristic or proper of humans to determine what is best, Aristotle uses what is best to determine what is most proper of

[158] Cooper (1975) Chapter Three argues that Book X presents a picture of human nature that is incompatible with his view expressed in the *Eudemian Ethics* and earlier parts of the *Nicomachean Ethics*. On Cooper's view this shift comes about because of Aristotle's identification of humans with their theoretical intellect in Book X, while the human identity is broader in the other parts. This takes the nature of the human good to be set by what constitutes human identity. Whiting (1986) agrees that the identification is the key to determining the human good, but argues that above passage only shows what would follow if humans' identity, hypothetically, were just *nous*. She then defends a non-intellectualist view of eudaimonia. In either case, both approaches understand the debate to be over what part of us we most identify with as fundamental to determining what the good is, rather than Aristotle's view of what is good in the cosmos.

humans. Only after already using this notion of it being best does Aristotle then employ the argument that the life of the intellect is best because it is most proper. Thus, Aristotle's argument could really be condensed to the claim that the life according to the intellect is best, because the intellect is best, which is how he began X.7 and now concludes it.

In X.8 Aristotle continues with a similar line of reasoning which takes contemplation to be the content of happiness for all species, which I examined in Section 2 (1178b21-32). In that passage Aristotle also uses an interspecies standard of goodness to establish what the best life for humans is, rather than a species specific one. The claim that humans are most of all their intellect may add further support to Aristotle's claim, but Aristotle's main argument that a human is most of all his intellect depends on locating it on his scale of goodness with the gods at the top.

Aristotle's prioritization of what is good without qualification over what is good relative to the human species is not limited to Book X, either. Aristotle's argument that wisdom (*sophia*) is superior to practical wisdom (*phronesis*) appeals to the distinction between these two senses of goodness:

> For it would be strange to think that the art of politics, or practical wisdom [φρόνησιν], is the best [σπουδαιοτάτην] knowledge, since man is not the best thing [τὸ ἄριστον] in the world. Now if what is healthy or good is different for men and for fishes [ὑγιεινὸν μὲν καὶ ἀγαθὸν ἕτερον ἀνθρώποις καὶ ἰχθύσι], but what is white or straight is always the same, anyone would say that what is wise [σοφὸν]is the same but what is practically wise is different. … It is evident that also that wisdom and the art of politics cannot be the same; for if the state of mind concerned with man's interests is to be called wisdom, there will be many wisdoms; there will not be one concerned with the good of all animals (any more than there is one art of medicine for all existing things), but a different wisdom about the good of each species. (NE 1141a 20-33)

Aristotle uses the fact that practical wisdom is concerned with what is good for humans as a distinct species with distinctive needs to argue that it is an inferior form of knowledge. Wisdom by contrast is knowledge of the best things in the cosmos, where best is not relative to any individual or type. This means that wisdom is the same for everything, regardless of their species, unlike practical wisdom, which would be different for each species that has it. By this line of reasoning, it is wisdom's lack of connection to anything distinctively human that makes it superior. Accordingly, the best knowledge humans can have, the exercise of which is happiness, is the kind of knowledge that is not actually particular to humans at all, and its superiority is justified by it not being specific to humans.

Aristotle's evaluations of theoretical wisdom and contemplation reveal that he places less importance on the species-specific approach than he does on the unqualified approach to understanding the human good. The unqualified approach also provides Aristotle with the best way answering the main objections to the function arguments, because the approach explains why doing what is characteristic of a species benefits it. If the species-specific approach is subordinate to the unqualified approach, and if the two approaches lead to conflicting intuitions about the human good, then Aristotle has good reason to give greater weight to the intuitions of the more fundamental approach to understanding the human good. It appears Aristotle does in fact give greater weight to those intuitions in his discussions of contemplation and wisdom. As a result, we should take Aristotle's considered view about the content of happiness to be that happiness is contemplation.

Chapter Five: Happiness as Everyone's Goal – Explanation and Evaluation

Aristotle's opening remarks in both the *Nicomachean Ethics* and the *Eudemian Ethics* serve to show that the highest good for humans and the highest goal for humans is happiness. In *Eudemian Ethics* I Aristotle describes the highest good as "the goal of all human action" and closes the book by suggesting "we must now consider, making a fresh start, in how many senses the good as the end of humans, the best in the field of action, is the best of all, since this is best" (1218b 11-12, 1218b 25-27).[159] *Nicomachean Ethics* I opens with the suggestion that it has been well said that the good is "that at which all things aim," and later Aristotle describes happiness as a "first principle [ἀρχή]; for it is for the sake of this [χάριν] that we all do everything else" (1094a 2-3,1102a 2-3).

However, there are still multiple ways to interpret the claims that happiness and the human good are the goal for humans, that happiness is everyone's goal, and that all our actions are for happiness' sake. The simplest interpretation of happiness being the human goal is to posit that all humans in fact do everything they do for the sake of happiness intentionally. However, many scholars have rejected this descriptive interpretation as too absurd to attribute to Aristotle, and they often cite his remark that foolish people do not organize their lives with a view to an end, along with his account of

[159] All translations are from the Revised Oxford Translations with some modifications, unless otherwise noted.

akrasia, as evidence that he did not hold it (EE 1214b 6-11).[160] Alternatively, we might interpret Aristotle's claim that happiness is the human goal in a normative rather than descriptive sense, which does not make any psychological claims about what humans actually do, but instead states what humans should be aiming at. While it looks like Aristotle does think we should act for the sake of happiness, this also seems to be too limited a claim to make sense of Aristotle's claims that it is the end of everything we do.

I propose to clarify the sense in which happiness is the human goal by comparing the explanatory role of goals in nature and the crafts with that of happiness, and by examining how wish [βούλησις] has the true good as its object absolutely, but the apparent good for each person (NE III.4). I argue that these two aspects of wish allow Aristotle to maintain that there is a sense in which everyone does in fact wish for and pursue true happiness, because the very capacity of wishing has the purpose of aiming at the correct object, even if individuals consciously aim at different things. This understanding of wish allows Aristotle to analyze all human behavior as attempts to achieve real happiness, both successes and failures. This account of wish parallels Aristotle's discussions of the crafts and nature, where a thing has a goal that serves as a

[160] Kenny (1978) 25-32 highlights difficulties with attributing an indicative, descriptive claim about eudaimonia being the end for which all action is undertaken. McDowell (1980) 359-361 rejects the descriptive claim that everyone pursues happiness in each action, but does advocate a more limited descriptive claim about all actions of a particular kind. Roche (1992) 46-50 rejects the idea that Aristotle makes a descriptive eudaimonist claim, and further rejects that Aristotle claims that we should do every action for the sake of happiness. In the process he provides a good breakdown of various forms of eudaimonism. Irwin (1980) 47 accuses Aristotle of equivocating between psychological description and giving ethical advice on this question. Lebar (2008) 192 summarizes Aristotlianism as being characterized by endorsing both psychological and normative eudiamonism.

normative standard when what it does is best described as an attempt the achieve that goal, and that description helps explain what actually occurs.

First, I examine the evidence for and against the view that Aristotle endorses a descriptive, psychological eudaimonism, where every human does everything for the sake of happiness. While Aristotle makes some claims that I think must be read descriptively, the simplest version of this view, that everyone consciously aims at happiness in every action, does not hold up well, because it cannot account for some cases, especially weakness of will. Second, I consider the plausibility of the normative reading that only claims we should aim at happiness. I find that it cannot account for several of Aristotle's claims that must be read as descriptive claims about the actual aims of all people. Third, I show that the purely normative reading would be out of character with Aristotle's other discussions of goals. He consistently applies goals as normative standards only to cases where that goal has explanatory power with regard to what actually happens, but the normative reading requires claiming that the proper normative standards for human actions play no explanatory role. Fourth, I show that Aristotle confronts these difficulties that arise from describing the good as a goal in his discussion of the object of wish in *NE* III.4 and *EE* II.10. Aristotle's account of wish allows us to say both that a bad person can in one sense wish for and obtain goals that are not in fact good, while also failing to get what he really wishes for (what is really good) in another sense. This second sense of the object of wish, the unqualified one, provides Aristotle with a way to claim that people do in fact aim at happiness, and should do so, while allowing for *akraisia* and avoiding the problems faced by the simplest psychological eudaimonist account that I consider in the first section.

1. Psychological Eudaimonism

The simplest interpretation of happiness being everyone's goal would be to claim that everyone does in fact do every action for the sake of happiness in the sense that happiness provides the motivation to do the action, which we can call psychological eudaimonism. Assuming this provides a good reason to endorse ethical eudaimonism, the project of ethics would mostly be a matter of working out how to become more successful at attaining what we are already trying to get.

It is theoretically possible to endorse psychological eudaimonism without endorsing ethical eudaimonism, but it would look highly unusual for Aristotle to claim that we should be doing something radically different from what we are made to do, since his teleological approach generally identifies what should happen with the normal case. It also is common in other ancient ethical discussions to take psychological eudaimonism as evidence as evidence for ethical eudaimonism, as in the case of Epicurus with a hedonistic version of this argument. Epicurus bases his ethical hedonism on the truth of psychological hedonism, such that the reason we should pursue pleasure is that we already do so, but we can do it more successfully.[161]

There are several passages that suggest Aristotle did endorse psychological eudaimonism, which would be taken as evidence for ethical eudaimonism, as I will show. However, because endorsing psychological eudaimonism is a strong claim to make, all it

[161] Cooper (1998) argues against this "standard reading" of Epicurus. However, I think Woolf (2004) provides a convincing rebuttal of Cooper, and Sedley (1998) 135- 139 provides a more convincing argument that Epicurus thought the truth of psychological hedonism made ethical hedonism obviously correct. Cicero's reconstruction of Epicureanism fits Woolf's and Sedley's interpretations better than Cooper's (*De Finibus* I, 29-30). Notably, Epicurus' opponents in *De Finibus* challenge the conclusions of ethical hedonism by showing counter examples to descriptive hedonism.

takes is one case of a person doing an action that is not for the sake of happiness to show that this view is false, and Aristotle also discusses some examples that appear to fit this description.

Book I of the *Nicomachean Ethics* contains two passages that provide the best support for a psychological eudaimonist interpretation.

1. [A] If then there is some end [τέλος] of things we do [τῶν πρακτῶν], which we desire for its own sake [δι' αὐτὸ](everything being desired for the sake of this [διὰ τοῦτο]), [B] and we do not choose everything for the sake of something else [δι' ἕτερον] (for at that rate the process would go on to infinity, so that our desire would empty and vain), [C] clearly this must be the good and the chief good. [D] Will not the knowledge of it, then, have a great influence on life? Shall we not, like archers who have a mark to aim at, be more likely to hit upon what we should? (NE I.2, 1094a 18-24)

Some scholars interpret Passage 1 as presenting a fallacious argument that there is one ultimate goal that every action is for the sake of based on the evidence that every action is chosen for some ultimate goal.[162] On this interpretation Aristotle infers the antecedent of the conditional, A, based on the evidence in B, and then concludes that the end described in A must be the good described in C. This argument would be invalid, because it uses the fact that everything is done for some end that is not for the sake of something else to conclude that there must be some one thing everything is done for; but there could be multiple ends that are not chosen for the sake of something else. The argument would be just as invalid as claiming that there is one person who is the father of everyone, because everyone has a father. If Aristotle is making this fallacious argument, then he is endorsing the view that there is one end that we do everything else for the sake of, even if his reasoning is not valid.

---

[162] Roche (1992) 55-62 provides a good analysis of the fallacy reading and offers some good reasons for rejecting it. I borrow his division of the sentence into parts A, B, and C.

Still, it is also possible that Aristotle is not making a fallacious argument, and merely makes a conditional statement about the possible existence of a type of end, where A and B are both part of the antecedent to C. In this case, Aristotle is describing an end that could exist without presenting an argument that such an end exists. If such an end did exist, we would want to know about it so that we could aim at it more successfully. Accordingly, Aristotle would not be providing evidence that such an end exists, but rather it would look like he continues his discussion with the assumption that such an end does exist.

On both readings, the difficult part is to figure out what to do with B. On one reading B provides evidence that A is correct, as an aside between the antecedent and consequent, but it does not actually do so validly. On the other, B is a continuation of the antecedent conditions, but in this regard it appears unnecessary, because A already rules out the possibility that everything is chosen for the sake of something else. I think reading B as another part of the antecedent in a large conditional sentence is more appealing, based on the principle of charity, because it does not saddle Aristotle with an obvious fallacy.

However, whichever way we parse the sentence, it looks like Aristotle is describing the kind of end that will be the subject matter of the *Nicomachean Ethics* in part A, which he goes on to describe in more detail in the rest of the work. If this is true, then Aristotle looks to endorse that there is some end desired for its own sake, and for which everything else is desired. As long as this is a description of what people do desire, then it is an endorsement of psychological eudaimonism. Moreover, Aristotle's following remark in D suggests that if psychological eudaimonism is true, then we would want to

have a clearer picture of what we are aiming at, so as to better achieve the goals we already have, just as archers need a clear view of their target. This suggests that Aristotle takes psychological eudaimonism (the claim that we *do* all desire happiness) to be good evidence for ethical eudaimonism (the claim that we *should* all pursue it).

If there are still doubts as to whether Aristotle believes that there is an end for which we do everything else, as described in the antecedent of passage 1, Aristotle appears to endorse it explicitly later in Book I.

> 2. But to us it is clear from what has been said that happiness is among the things that are prized and complete. It seems to be also from the fact that it is a first principle [ἀρχή]; for it is for the sake of [χάριν] this that we all do [πάντες πράττομεν] everything else [τὰ λοιπὰ πάντα], and the first principle and cause of goods is, we claim, something prized and divine. (NE I.12, 1101b 35 - 1102a 4)

Passage 2 is presented as a conclusion and summation of what has come before, and it is hard to read Aristotle's claim as anything other than an endorsement of psychological eudaimonism. Aristotle uses the indicative to make the claim about doing everything for the sake of happiness, rather than any words or conjugation indicating that this is only something that we *should* do, and he emphasizes *all* for both the agents and actions. It is true that the adjectives Aristotle uses to describe happiness, such as calling it divine, prized, and complete, suggest that happiness is worth pursuing, but we expect this to be true if he endorses psychological eudaimonism and ethical eudaimonism. Alternatively, these descriptions of happiness could be used as evidence of confusion on Aristotle's part, due to not sufficiently distinguishing between advice and description, as Irwin takes it.[163] However, stating that Aristotle endorses both normative and descriptive

[163] Irwin (1980) 47 uses Aristotle's descriptions of happiness as evidence that Aristotle does not clearly distinguish psychological facts from ethical advice. However, it is not necessary to attribute this confusion to Aristotle, because suggesting that we do in fact try

eudaimonism enables us to explain these remarks without unnecessarily attributing confusion to him.

If we accept that Aristotle is making a descriptive claim, McDowell does offer a less extreme way of reading this sentence by appealing to Aristotle's technical sense of "action."[164] On his reading, Aristotle is making a descriptive claim about rational actions that are indicative of an agent's character, and reflect deliberation that starts from an agent's conception of eudaimonia, such that all of these sorts of actions are for the sake of happiness.[165] This reading has plausibility, but it hinges on Aristotle using πράττομεν in a very technical sense, when he has given no indication that it is a technical usage, and he does not distinguish this technical use until much later in Book III. As a result, I doubt that we should conclude that Aristotle is using a technical meaning of a common word in this passage from an introductory section.

Although well supported by these two passages, the psychological eudaimonist position runs into problems of plausibility and internal consistency, because it only requires one example of someone doing an action that is not for the sake of happiness to falsify it. Trivial actions, weakness of will, and vicious actions all present possible counterexamples to a strong psychological eudaimonist view. First, there seem to be many mundane actions that we do without thinking about how they contribute to happiness. Aristotle describes a category of actions that would encompass these when he discusses actions that are voluntary, but not chosen, because they were done at the spur of

---

to get what is good for us and that we ought to do so better is a coherent position that makes sense of the passages. The principle of charity would suggest that we should prefer the interpretation that does not posit unnecessary confusion.

[164] McDowell (1980) 363-364

[165] Irwin (1997) 191 provides a gloss of this passage along these lines in the notes to his translation of the *Nicomchean Ethics.*

the moment (*NE,* 1111b 6-10). To account for these examples on a psychological eudaimonist reading, we would have to claim that Aristotle did not notice these as problematic, or he thought these actions could be for the sake of happiness, even if the agent did not consciously refer them to it before acting. Perhaps upon questioning, agents would eventually give an explanation of their own action in terms of happiness.

Second, Aristotle frequently describes vicious people acting for the sake of misguided conceptions of happiness. For instance, bad people wish for "any chance thing" (*NE,* 1113a 25-26), and unlike weak-willed people they deliberately choose to pursue these goals (*NE,* 1151a 5-7). In one sense, these people are clearly acting for the sake of happiness, because they are consciously referring their actions to a conception of happiness, even if it is the wrong one. Thus, this case is compatible with the claim that everyone refers every action to his or her own conceptions of happiness. However, if we take Aristotle to mean that everyone does everything for the sake of the same goal, *real* happiness, then the vicious people could be a counter example, as long as we expect actions aiming at real happiness to do so consciously. Still, it is unlikely Aristotle would expect everyone to act with the correct conception of happiness and always have true beliefs about the circumstances of their actions. It is fairly easy for psychological eudaimonism to allow for these cases by saying that people who pursue the wrong objects of desire based on false beliefs are still trying to get what is really good and still want what is really good.

Third, Aristotle's belief in weakness of will, *akrasia*, presents a stronger objection, because *akrasia* appears to be an example of explicitly acting against what one thinks contributes to one's own happiness by pursuing pleasure against one's better

judgment (e.g. *NE,* 1145b 12-14 and 1151a 5-7). Because weakness of will is characterized by internal conflict, the agent has to believe that the temperate action contributes to happiness, and at the same time act intemperately, in order to be considered a case of weakness of will. In this case, the weak-willed person does an action that is explicitly not contributing to what he or she believes happiness to be.

These three cases that Aristotle discusses provide examples of actions that look like they are not consciously referred to further goals, actions that are consciously referred to the wrong goals, and intentional actions that deviate from one's conception of happiness, respectively. Even if we take the vicious person to be acting for the sake of happiness, I think these examples rule out the possibility that Aristotle thought that we do in fact consciously refer every action to the pursuit of happiness. However, since passages 1and 2 do seem to make some kind of descriptive claim about what people do, it is worth looking for another way to make sense of these actions being for the sake of happiness. I will consider the best way to do this after evaluating and ruling out the possibility that Aristotle endorses ethical eudaimonism without psychological eudaimonism.

2. Ethical Eudaimonism

In light of these problem cases, we could try to interpret Aristotle's eudaimonistic claim to mean merely that everyone *should* pursue happiness, but not everyone does. In other words, we could read Aristotle as endorsing ethical eudaimonism, but not psychological eudaimonism. On this reading none of the previous three cases are problematic, because we expect people to fail to do what they should do sometimes. We only expect virtuous people with practical wisdom to always succeed in referring their

actions to happiness. As a result, the claim that everyone should refer their actions to happiness ends up being very similar to the descriptive claim that the virtuous agent or practically wise agent, refers all of his or her actions to happiness. McDowell's more limited descriptive reading fits this picture, since he limits the descriptive claims to apply only to actions chosen in the way that a virtuous agent would choose them.[166] Similarly, Irwin defends a view on which everyone should try to make choices as the virtuous person does, and the virtuous person chooses actions based on what contributes to happiness.[167] Gabriel Richardson Lear offers a study of happiness' status as a goal by comparing it to goals in crafts and nature, and she concludes that happiness, the human good, is the end upon which all the choices converge in a life that is worth living.[168] It is a more popular reading of Aristotle to ascribe some form of this normative eudaimonistic claim about the best way of organizing our lives than to endorse the descriptive reading concerning everyone's actual aims.[169] I suspect this normative eudaimonist reading is

---

[166] McDowell (1980) 363-364

[167] Irwin (1975), 570. Gaut (1997) defends a similar Aristotelian conception of how choices are made as a viable theory for understanding practical reasoning. Cooper (1975) 92-96 also takes this highest, convergent end to provide a decision making procedure that allows us to make rational decisions.

[168] Richardson Lear (2004) 21-23. She also claims that Aristotle believes all people have their lives organized to some one end at any given moment, but what this end is varies from person to person and over time for the same person. Thus, she maintains that some form of descriptive eudaimonism applies to all people, but not all humans thereby descriptively have the *same* goal.

[169] There are some authors who have denied that Aristotle is even committed to normative eudaimonism, but this is a minority view that I do not think can make sense of passages 1 and 2. Roche (1992) 46-51 claims that Aristotle does not advise everyone to choose their actions for the sake of happiness, nor does he make a descriptive claim about people's actual motivations. However, he takes himself to be opposing the more popular views. Richardson (1992) 346-349 also denies that Aristotle takes the highest good to be a convergent end for which all else is chosen. His reading maintains that the virtuous person makes choices that are not for the sake of happiness.

more popular because it seems more plausible psychologically and easily accounts for the earlier problem cases; but it also faces difficulties of its own.

On this normative reading, the correct account of happiness provides the standards by which we evaluate the success of every human's life, but it only serves to explain the actions of the virtuous people. For instance, a full explanation of why the virtuous person acts courageously would involve that person taking that action to contribute to happiness, whether the action was deliberately chosen for this reason, or stemmed from a disposition that was cultivated with that view in mind. However, explanations of why some did something that was not virtuous would not involve the correct account of happiness as a goal. Explaining why a person ran from battle may stop at an appeal to their fear of death being greater than their fear of disgrace (1116b 20-23); or a non-virtuous person standing his ground may have done so out of animal-like passion, rather than any reflection about what happiness is (1116b 34 – 1117a 1). In these cases of failing to act fully virtuously, we would appeal to happiness as the *correct* goal that they should have had, and look for reasons that the person did not have the correct goal. However, in that case, the correct account of happiness only plays an evaluative role, and it has no role in explaining why the person did the actual action in these cases. Instead, reasons like fearing death or passion explain the actual course of events.

While intuitively appealing, the normative view has some real problems as a reading of Aristotle. Passages 1 and 2 appear to endorse claims that apply to everyone, or at least everyone that the *Ethics* is addressed to. Passage 2 uses the fact that everyone pursues happiness to explain why it is so valuable, which certainly has more argumentative force if he really means everyone. While passage 1 may not be making an

argument for the fact that everyone pursues happiness in some sense, Aristotle appears to assume that this is true. He proceeds to provide a clearer picture of the mark that we are all aiming for, and he assumes that it would be absurd for us to lack such a target, because it would make our desires empty and vain. In this case, Aristotle assumes everyone is already aiming at happiness, as psychological eudaimonism claims, but which a purely normative reading denies.

The normative reading also requires divorcing the normative component of having a goal, which sets the standards of success, from the descriptive and explanatory components of having a goal, and it does this in a way that is highly unusual for Aristotle's discussions of goals. In the cases of natural goals, the goals of crafts, and intentional goals of voluntary actions, something only has that goal if the goal is involved in explaining the relevant actual behavior. However, the normative reading has to deny that happiness is cited as a goal in explaining the behavior of non-virtuous people, but it is cited as a goal when evaluating their actions normatively.[170] However, since Aristotle normally described something as having a goal only when that goal serves both the normative and explanatory roles, if there is a way to ascribe happiness to all people in

[170] For instance, Irwin claims that human actions, unlike the actions of other animals or plants, are not explained by reference to objective goods, but are instead explained by conscious goals and their concepts of what is good (1980) 44-48. This view, marks a sharp divide between humans and animals, because other animals act for the sake of an objective good of which they are not conscious, based on their systematic organization. However, humans have a conception of what is good and this replaces the objective good in the role of action explanation. Other scholars, who emphasize the human ability to use reason and deliberation to set goals for themselves, also deny that true happiness has an explanatory role to play in non-virtuous actions. Moss (2014) offers a critical discussion of other scholars who argued for the role of reason setting our ends. Cf. Wiggins (1975). Moss's own more Humean view claims that our ends are set by desires set by character traits, which also does not suggest humans all have the same goal, since they have different desires. However, if all humans had one desire in common it could explain why all humans have the same goal, cf. Grönroos (2015).

both ways, it should be the preferred reading.[171] Such a combined reading would provide a naturalistic account of human ends, based on a unified theory of goals.

3. Goals Combine Description and Evaluation

This unified and naturalistic view of happiness is available, because, as I will show, Aristotle's treatment of happiness as a goal parallels his treatment of goals in nature and crafts. In his discussions of natural goals and their similarities to those in the crafts, we find that goals normally have one aspect that is descriptive and explanatory along with another aspect that is normative and evaluative. These two aspects do not work independently, because the explanations appeal to the normative standards to explain actual events, and the normative standards apply in evaluations precisely because of their role in explaining what actually happens. We can see both of these aspects and their intimate relation in Aristotle's discussions of natural goals and the goals of crafts.

In Aristotle's account of natural goals, the standards of success are closely linked with what happens in the normal case. He uses something happening "for the most part" (ὡς ἐπὶ τὸ πολύ) as evidence that the process is goal-directed towards that result, which we can see in his reply to Empedocles' view that animals grow and develop by chance:

---

[171] Richardson Lear (2004) Ch. 2 and Broadie (1987) both offer insightful studies that show how Aristotle's discussion of ethical ends shares many of the same features as ends in his natural works and crafts. However, both highlight how the normative standards of success are established independent of conscious psychology, but they do not discuss how those ends might play a role in action explanation without being conscious. Thus, they show that the normative aspect of goals is structured the same within and outside of Aristotle's ethics, but they neglect the explanatory role of non-conscious, objective goals in the comparison. Grönroos (2015) recognizes that Aristotle's account of happiness needs a teleological explanation of why humans pursue it, and he points to wish as a rational, non-deliberated desire to provide that explanation. My approach tries to solve a similar problem as Grönroos, but I disagree about how Aristotle's account of wish does this, as I will discuss later.

> Yet it is impossible that this should be the true view. For teeth and all other natural things either invariably or for the most part (ὡς ἐπὶ τὸ πολύ) come about in a given way; but of not one of the results of chance (τύχης) or spontaneity (αὐτομάτου) is this true. We do not ascribe to chance or mere coincidence (συμπτώματος) the frequency of rain in winter, but to frequent rain in summer we do; nor heat in summer but only if we have it in winter. If then, it is agreed that things are either the result of coincidence or for the sake of something, and these cannot be the result of coincidence or spontaneity, it follows that they must be for the sake of something; and that such things are all due to nature even the champions of the theory which is before us would agree. Therefore action for an end is present in things which come to be and are by nature. (*Physics* II.8, 198b 34-199a 8)

Aristotle's argument for the presence of action for an end in nature relies on the assumption that it would be absurd for regular occurrences to happen by chance. He observes that teeth always or almost always develop the same way in the same kinds of animals, and it would be a remarkable coincidence for this to occur by chance. Controversially, Aristotle then argues by disjunctive syllogism that if these natural occurrences do not happen by chance, because they are regular, then they must occur for some end. This argument appears to leave no room for regular occurrences that do not have a purpose, because this third option would prevent him from being able to conclude that they must be for the sake of something merely because they are not by chance. This result seems odd, and there is reason to think that Aristotle does allow for regular occurrences that lack purpose. [172] However, to make the above argument, Aristotle must believe regularity provides evidence that something is happening for a purpose, even if

[172] If we take the disjunction of being for the sake of something or being by chance to be exhaustive, then summer heat alluded to in this passage would have to be for the sake of something. Most controversially, Sedley (1991) uses this disjunction to argue that the regular occurrences in nature are all for the sake of humans. This passage is the subject of great debate over whether these kinds of events, such as summer heat and rain, have purposes or depend on events that have purposes, and whether the purposes are anthropocentric. See, Nussbaum (1978) Ch. 1, Gotthelf (1976), Balme (1987), Furley (1985), Scharle (2008a) 147-150, and Leunissen (2010) 22-32. I offer discussion and criticism of these views in Chapter One.

that evidence is defeasible. When Aristotle posits a goal in nature, he does so to explain why some process happens with regularity. Thus, natural goals serve to explain why the normal cases occur, whether that be why a dog's teeth came in, why the summer is hot, or why a human gave birth to a human baby.[173]

Moreover, when Aristotle explains what actually happens by reference to a goal, he also introduces the normative standards of success that apply to the thing that has that goal. The normative element enters because the goals are not merely results where it is no better or worse whether it happens or not. Instead, these goals or ends are "causes in the sense of the end or the good of the rest; for that for the sake of which tends to be what is best and the end of things that lead up to it" (*Physics,* 195a 23-25). Aristotle thinks the achievement of natural goals is a good thing. As the good thing at which the other processes leading up to it aim, it sets the standards by which some processes are successful and good, and by which other processes are failures and bad, because they deviated from their natural goals.[174] For instance, Aristotle discusses the monstrosities that can result from gestation going contrary to nature in Book V of *Generation of Animals* (e.g. 770b1-26). These resulting animals are monsters and imperfect because they fail to achieve their goods. This judgment requires taking the normal case as the goal and the standard of success for both the normal cases and the failures.

---

[173] While there is significant debate over the scope of Aristotle's teleology in light of this passage, that natural goals explain normal cases is agreed upon. Thus Sedley (1991), who defends an anthropocentric interpretation of Aristotle's teleology that assigns purposes to non-living parts of nature, can agree with Nussbaum (1978) Ch. 1, who argues that Aristotle's teleology is non-anthropocentric and limited to living organisms, on this point.

[174] This is true whether we conclude that the organism has that goal because the goal is good, or that it is good because the organism has the goal. Cooper (1987a) defends the former, while Gotthelf (1988) defends the latter.

Not only do the normative standards set by a goal apply both to the cases that meet that goal and the ones that fail to, but also the goal plays an explanatory and descriptive role in both cases as well. To explain how some monstrosity or mutilated creature developed during gestation one needs to identify the goal it was attempting to achieve, "because even that which is contrary to nature [παρὰ φύσιν] is in a certain sense according to nature [κατὰ φύσιν], whenever, that is, the formal nature has not mastered the material nature [μὴ κρατήσῃ τὴν κατὰ τὴν ὕλην ἡ κατὰ τὸ εἶδος φύσις]" (*GA,* 770b 15-17, cf. 778a 5-9). Aristotle takes monstrosities and mutilated creatures (what is contrary to nature) to be the result of the formal nature failing to fully control the material that it uses to make an organism. In one way, the material is given more explanatory power than the form and end of the organism in these cases, since the result is the product of the tendencies of the matter that deviate from the form and end. For instance, Aristotle takes offspring to be male by default because the semen carries the male form, but if the womb is cold, then the action of the semen is interfered with, and it produces a female (*GA,* 766b 15-25). Similarly, Aristotle explains the birth of twins in humans and the duplication of organs by suggesting that there was more material than required, which then formed the extra parts (*GA,* 772a 30 – 772b 25). However, it does not look like the form and end are abandoned in explanations of what has happened, because these cases are understood as deviations from the goal that sets what normally happens. We cannot understand or explain what happens in these deviant cases without knowing what goal the creature had in addition to knowing what causes the creature to go off course from that goal.

Aristotle's account of goals in the crafts or arts works similarly to his account of goals in nature, as is suggested by his frequent comparisons between art and nature. Crafts have goals that are set independent of the craftsman's psychology, since what makes a good shoe or what makes a person healthy is not determined by the craftsman's motivations for practicing the craft.[175] In *NE* I.1 Aristotle explains that the goals of a craft are often set by a higher craft. For example, bridle making has its goal set by the art of horsemanship, because what makes a good bridle is determined by what a rider needs the bridle to do while riding a horse. This goal is set by what makes a good bridle whether the craftsman is making the bridle because he wants to make money or has any other motivation. Thus, like natural goals, the goals of crafts set normative standards of success that hold independent of any one person's desires.

Also like natural goals, the goals of crafts serve in explanations of what actually occurs in addition to setting the standards of success. For instance, in *Physics* II.3 Aristotle demonstrates how to explain why an actual person is building an actual house: "a person builds because he is a builder, and a builder builds in virtue of his art of building. This last cause then is prior" (195b 23-25). Aristotle explains actual instances of building by citing the art as the cause of that action. What the craftsman does because of having that art is determined by the goal of the art. For instance, in the case of the walls of a house, "it comes to be for the sake of sheltering and guarding certain things" (200a 6-7). This goal determines what shapes make sense for the walls, what size they have to

[175] Lear (2004) 35-36 shows this point clearly, and that the normative goals are not set by the craftsman's desires. Broadie (1987) also argues that Aristotle's discussion of goal directedness in the crafts is independent of the craftsmen's desires, to show that Aristotle's comparisons of crafts to nature do not require the presence of desires for natural goals to exist.

be, and what materials can be used for them. Thus, when an actual builder makes a rectangular wall out of wood, Aristotle can say it is due to the art of building, because the art sets the goal, which determines how the action of building the wall is in fact carried out.

In parallel to the natural cases, failures in the crafts also still cite the art and its goal as part of the explanation, even if the goal is primarily cited to explain the normal case where things go correctly. Aristotle compares mistakes in the arts with mistakes in nature:

> Now a mistake [ἁμαρτία] can occur even in the operations of art: the literate man makes a mistake in writing and the doctor pours out the wrong dose. Hence clearly mistakes are also possible in the operations of nature also. If then in art there are cases in which what is rightly produced serves a purpose [ἕνεκά του], and if where mistakes occur there was a purpose in what was attempted [ἕνεκα μέν τινος ἐπιχειρεῖται], only it was not attained, so must it be also in natural products, and monstrosities will be failures in the purposive effort [ἁμαρτήματα ἐκείνου τοῦ ἕνεκά του]. (*Physics,* 199a 33- 199b 4)

In the cases of nature and in the cases of the arts, a good description of what happens will include what the action is for the sake of, whether the action succeeds or fails. For instance, if a person who normally spells words correctly writes, “freind,” we would understand this as an attempt to write, “friend,” in which a mistake occurred. However, if an illiterate person scribbled the same shapes on a piece of paper by chance, we would likely not see it as an attempt to write that word. Thus, treating a case as a failed attempt at a goal, leads us to analyze what happened differently than we would if we did not describe the case as an attempt.

Aristotle does seem to think that it may not be fully understandable why a specific case failed in exactly the way it did. Because mistakes and failures to achieve an end are by definition irregular occurrences that are exceptions to a rule, there is no account in the

full sense of these events: "for an account [λόγος] is of what holds always or for the most part" (197a 19-20). These cases where mistakes happen in an attempt to achieve a goal may not have full scientific explanations of what happened, because there will not be rules that predict their occurrence always or for the most part. For similar reasons, Aristotle denies that we can have scientific knowledge (ἐπιστήμη) of what happens by accident or coincidence in *Metaphysics* (1026b 2-5).

However, based on Aristotle's discussions of failures in nature and crafts, we can infer that he thinks it is more accurate to describe what happened as a mistake, than as something completely random or disconnected from any goal. Thus, the same goal that is used to give an account of the successful cases is used to describe what happens in the cases that go wrong, even though that goal was not achieved, and a full scientific account may not be possible. The level of explanation that is possible will depend on that correct description of the event in terms of the goal. Accordingly, for Aristotle, when a goal serves as a standard of evaluation, it also serves in descriptions and explanations of what in fact happens in both successful and unsuccessful cases.

4. Happiness as a Goal

Aristotle's analysis of goals in the crafts and nature can shed light on the debate from Sections 1 and 2 about what kind of eudaimonism Aristotle endorses. To recap, both the normative and descriptive versions of eudaimonism agree that that everyone should pursue happiness. However, the normative reading denies that everyone in each action does in fact pursue happiness, while the descriptive account endorses this claim. This burdens the descriptive reading with many cases that are hard to explain, because it does not look like people are aiming at happiness in every action. Yet, based on my analysis

from Section 3, if happiness is the goal for all humans, it would be odd for it to have no descriptive role in the actions of every human. In the other cases where Aristotle assigns goals a normative role, the goal also serves an explanatory and descriptive role in the cases where it serves as a norm. Thus, even if the descriptive reading has some counterintuitive implications, my analysis of Aristotle's treatment of goals in Section 3 adds further evidence to that found in sections 1 and 2 in support of some version of the descriptive reading.

I suggest that happiness does have an explanatory role to play in the voluntary actions of all people, virtuous and non-virtuous alike, in the same way that goals of crafts and nature appear in explanations of both successes and mistakes. Accordingly, all intelligible, voluntary human actions should be understood as attempts to achieve real happiness, and we would fail to understand what is happening in those actions, if we did not view them as attempts to reach that goal.[176] This view makes Aristotle's analysis of happiness as a goal continuous with his analysis of goals in crafts and nature, where the descriptive and normative roles of goals are always paired together.

My position endorses a kind of psychological eudaimonism, but by modeling the way that humans have happiness as a goal on nature and the arts, it can avoid some of the implausible implications of other versions. From a first-person point of view, it seems absurd to think that all the cases of human's doing actions that do not lead to real

---

[176] My view ends up at a position that has much in common with Freeland (1994). She argues that "objective goal directedness" is more fundamental in Aristotle's analysis of animal self-motion than subjective or intentional goal directedness. Accordingly, all self-motion has to be directed at an objective good, on her account, rather than just a perceived good. Applying a similar approach more specifically, I conclude that real happiness is that at which all human actions aim, even if this is not evident at a subjective level.

happiness are intentionally aiming at a happiness and failing to follow through, as the simplest descriptive account posits. However, conscious aiming is not the only way for humans to have happiness as a goal in a descriptive sense. The arts and natural objects both have goals that are not dependent on a first-person point of view or intention. An objective way of having happiness as a goal that is similar to the way that the crafts and natural objects have goals could explain why Aristotle makes descriptive claims about all humans having happiness as a goal, even if all humans do not consciously aim at it in all actions.

I make the case that Aristotle treats human happiness as a goal in the same way that crafts and natural things have goals in three parts. First, I examine Aristotle's account of wish, and show that it provides him with a way for all humans to have real happiness as their goal, even if they are not consciously aiming at it. Aristotle's account of wish distinguishes one true goal of wish proper from the random objects that people may happen to wish for. The way he distinguishes these two senses of having a goal allows him to maintain that wish in the strictest sense is always for the same thing in every person. This parallels the arts, since they always have the same goal, even if people perform the arts for different psychological motivations. Second, I consider two different ways that real happiness can be the object of wish: as the object of a particular desire, and as the aim of the capacity of wish itself. I argue for the latter, but acknowledge that either account preserves the most important features for my larger argument. Third, I apply my interpretation of wish to the cases of weakness of will and vicious actions. I show that Aristotle thinks these two cases are best understood as failures to achieve an objective goal, even if the agents were not aware of that goal, just as in analysis of goals in crafts

and nature. Accordingly, Aristotle treats human actions as aiming at happiness in an objective sense, whether those actions are virtuous and successful or neither of those.

a. The Objective and Subjective Objects of Wish

Aristotle's distinction between objective and subjective meanings of wishing helps to explain how everyone could have the same overall goal, while pursing different concrete things. Aristotle marks out wish [βούλησις] as a rational desire, which has the end or goal as its object, and which is often connected with deliberation. He frequently associates the object of wish with the good, but this raises a puzzle:

> That wish [βούλησις] is for the end [τοῦ τέλους] has already been stated; some think it is for the good [τἀγαθοῦ], others for the apparent good [φαινομένου ἀγαθοῦ]. Now those who say that the good is the object of wish must admit in consequence that that which the person who does not choose aright wishes for is not an object of wish (for if it is to be so, it must also be good; but it was, if it so happened, bad); while those who say the apparent good is the object of wish must admit that there is no natural object of wish [μὴ εἶναι φύσει βουλητόν], but only what seems so to each person. Now different things appear so to different people, and if it so happens, even contrary things. (*NE* III.4*,* 1113a 15-22)

Aristotle presents a dilemma with two possible outcomes, neither of which he finds acceptable. On one hand Aristotle could say the object of wish is the real good, much as Socrates does in some of Plato's dialogues when he argues that no one does what is bad voluntarily, based on the idea that everyone wants what is really good, not merely apparently good. As a result, if a vicious person deliberately chooses to steal, then stealing will not actually be what the person wishes for, even though he would describe that as his object of wish when asked. This conception of the object of wish works well to explain why the same normative standards apply to all humans, since they all wish for the same thing, but on its own it lacks the ability to explain why people choose different

things. On the other hand, if the object of wish is the apparent good (i.e. everyone wishes for what seems good to them), then there will not be a natural object of wish, which means there would be nothing that everyone really wishes for. Aristotle could just admit that there is no natural object of wish and concede that wish is just for whatever happens to appear good, which works well to explain why individuals pursue different paths. However, Aristotle does not take this route, which only makes sense if he thought there was something important about preserving the idea that there is a natural object of wish.

Rather than taking one horn of the dilemma or the other, Aristotle uses one of his typical strategies and specifies two different respects in which something is the object of wish:

> If these consequences are unpleasing, are we to say that absolutely [ἁπλῶς] and in truth [ἀλήθειαν] the good is the object of wish, but for each person the apparent good [τὸ φαινόμενον]; that that which is in truth an object of wish is an object of wish to the good person, while any chance thing [τὸ τυχόν] may be so to the bad person, as is in the case of bodies also the things that are in truth wholesome are wholesome for bodies which are in good condition, while for those that are diseased other things are wholesome – or bitter or sweet or hot or heavy, and so on; since the good man judges each class of things rightly, and in each the truth appears to him? For each state of character has its own ideas of the noble and the pleasant, and perhaps the good person differs from others most by seeing the truth in each class of things, being as it were the norm and measure [κανὼν καὶ μέτρον] of them. (*NE* III.4*,* 1113a 22-33)

Aristotle phrases his answer to the dilemma as rhetorical questions, but since he does not provide a different answer, he seems to assume that we will agree with the position proposed in the questions. His solution maintains that there is a natural object of wish, because only what is really good can be wished for when a person's wish is informed by the truth. However, he does not want to accept the Socratic paradox that no one wishes for bad things, so he specifies that there is another sense of wish that is relative to a person, rather than being simple or absolute [ἁπλῶς]. This qualified sense of wish has

whatever appears good to that person as its object, which, unlike the unqualified sense of wishing, can be for any chance thing [τὸ τυχόν]. By distinguishing these two senses of wishing Aristotle tries to avoid the counter intuitive consequences of either horn of the dilemma, which reveals that Aristotle is committed to the idea that there is a proper object of wish.

Aristotle's solution to the dilemma has much in common with his discussion of goals in the crafts and nature. This is most apparent in his comparison of the virtuous person's character to a healthy person's body, which is a natural case. Aristotle thinks that what is healthy in the primary sense is what is healthy for the healthy person, but when someone becomes sick, other chance things can be healthy. When a person becomes sick, their body is failing to fulfill its natural goals and deviates from its natural equilibrium. With such a chance deviation, chance things can become healthy for a sick person, because they would restore the balance. Similarly, when a person's character becomes corrupted, things that would normally be bad for the person may be good, such as receiving a punishment or feeling shame. Also, a disease may make unhealthy things appear healthy, and a vicious person may have bad things appear good because of the chance changes that distort the person's viewpoint. The healthy person provides the norm and measure by which the sick person is evaluated as sick, and the virtuous person provides the norm and measure by which the non-virtuous person is evaluated. This evaluation is not taking place from within the standards that the non-virtuous person is psychologically aware of, and instead it treats the person from a third-person point of view, where the standards of success are set by the kind of creature he is, much as what is healthy is.

The similarities between Aristotle's treatment of wish having a natural end, and his natural teleology are even more evident in his discussion of wish and deliberation in the *Eudemian Ethics*:

> But the end of deliberation is always something good by nature [φύσει], and men deliberate about its partial constituents [περὶ οὗ κατὰ μέρος], e.g. the doctor whether he is to give a drug, or the general where he is to pitch his camp. To them the absolutely [ἁπλῶς] best end is good. But contrary to nature and by perversion [παρὰ φύσιν δὲ καὶ διαστροφὴν] not the good but the apparent good is the end. [. . .] And similarly wish is of the good, but contrary to nature and through perversion the bad as well. (1227a 18-30)

Aristotle uses the language of natural teleology to explain how the end that is wished for and deliberated about is what is good by nature. Accordingly, wish without any qualifications aims at what is really good, but it is possible for the natural course of events to go wrong and be perverted during character formation. This account of wish makes wishing for the good the default that will happen, unless something goes wrong, even though there are statistically more people who go wrong than right. However, Aristotle's position commits him to the idea that most cases of wish need to be analyzed as the mistaken ones that break from the normal course for them to be understood fully and evaluated properly.

In these accounts of wish, the way that non-virtuous people have what is really good as their goal has both normative and descriptive components. On the normative side, Aristotle identifies the object of the virtuous person's wish as the standard by which to measure and evaluate all other instances of wish, because it finds the correct object that is really good. On the descriptive side, we might be tempted to say that only the apparent good has any explanatory power, because that is what we need to cite to explain why a

person chose to pursue the exact course of action that they did.[177] In this case we would see the normative goals and descriptive goals come apart as they do in the purely normative reading. However, I take the above passages to indicate that this appeal to the subjective goal given by the apparent good is not the only or even primary level of analysis that Aristotle offers to explain what happens in these non-virtuous actions. If we take one further step back from the particular action, we are faced with questions about why wish is failing to reach its proper object or why a person failed to act according to his or her correct wish.

Once we start looking at action as a failure to achieve the real goal, or as a perversion, we are no longer looking just at the subjective states of the agent. Instead, the objective goal takes a more fundamental place, and it looks like people have subjective states, such as desires and apparent goods, as a means to pursue what is really good. In some cases, those means fail to fill their purpose even if the person gets what appears good to him or her. If we are to understand wishing for bad things as a perversion that runs contrary to nature, then we have to give an explanation in terms of an objective good and cite what caused the deviation. As a result, the absolute end of wish, which is happiness, has an important role to play in explaining all actual cases of human wishing, even the ones that go wrong.

This account of wish fits well with Aristotle's discussion of pleasure, which adds further support for my interpretation. Aristotle provides a similar analysis of what is

---

[177] Irwin (1980) 41-48 takes this view. He argues that psychological states and what they take to be good replace objective goods in teleological explanations in animals, unlike with plants.

pleasant, where he posits some things as being unqualifiedly pleasant by nature, while others only happen to be pleasant to a particular person.

> If this is correct, as it seems to be, and excellence and the good man as such are the measure [μέτρον] of each thing, those also will be pleasures which appear so to him, and those things pleasant which he enjoys. If the things he finds tiresome seem pleasant to someone, that is nothing surprising; for men may be ruined and spoilt [φθοραὶ καὶ λῦμαι] in many ways; but the things are not pleasant, but only pleasant to these people and to people in this condition. (*NE,* 1176a 17-22)

Just as with wish, Aristotle uses the good person pursuing the right things as the normative measure for the other people. In this case, the things that are really pleasant correspond to the things that the good person finds to be pleasant, which means the good person has a true perception of what is actually pleasant. The things that are really pleasant do not directly motivate everybody, but they do play a role in understanding what everyone does. Treating the pleasures of non-virtuous people as instances of being ruined or corrupted requires seeing those people as having the same goal as the good person, while also identifying something that took them off the track of achieving it. Citing the goal in these cases of things not pleasant by nature will not be a satisfactory explanation on its own. However, just as in the case of wish, without citing the goal from which they deviate, one will miss giving the correct description of the event, and no explanation of the occurrence will be complete without an accurate description of the natural goal.

b. The Natural Object of Wish: Object of a Desire or the Capacity?

If we grant that everyone has real happiness as the natural object of wish, there are still a few ways of spelling out what that means. Grönroos offers an explanation of how everyone wishes for the true good by suggesting that everyone is born with an innate

desire for the real good, which belongs to the rational part of the soul, but which is not arrived at by a process of reasoning. [178] According to his interpretation, wish is a basic desire that helps provide a teleological explanation of why humans pursue their distinctive end by providing a rational desire shared by humans for what is really good. People pursue different courses of action because they need an action-guiding conception of what is good to put this underlying desire into action, and people can get this conception wrong in different ways. Grönroos' opposes views of wish that would have the real object of wish determined by rational deliberation or pleasure.[179] It also allows Aristotle to take a rather Socratic view that people may pursue what they think they desire without actually pursuing what they really desire, which is supported by Aristotle's defense of there being a natural object of wish.

I think Grönroos gets a lot right, but I do not think that the basic desire for what is good that he describes has enough content to be thought of as a truly distinct desire. His interpretation of wish as a basic desire has to have the real good as its object to explain why wish has a natural object, but at the same time wish only leads to action through an action-guiding conception of what is good. This creates a puzzle because each recognizable, individual desire will be a desire for something based on a conception of that thing (or it will be desired under some description), but wish seems to require a desire that has the right content independent of our conceptions.

I suggest that we should not posit another distinct desire with the correct content to explain why humans have a natural object of wish, but instead we should look at the

---

[178] Grönroos (2015), esp. 61-2.
[179] For the deliberation view see: Irwin (1975), Cooper (1988) and (1996). For The pleasure view see Moss (2012) 139-141.

purpose of the capacity of wishing. Humans would, then, have the natural goal of wish, happiness, merely by having the capacity of wishing, because the purpose of having that capacity is to aim at what is really good. Thus, each actual desire would have its content determined by an agent's conceptions, but the good person's wishes fulfill the purpose of wish by "seeing the truth," while others wish for "chance" things (previous passage 1113a 22-33). On my suggestion, some desires fail to be fully rational because they fail to be based on truth, which are the ones that miss the natural object of wish. Thus, the capacity of wishing comes with standards of what makes wish correct that are independent of and agents' conceptions of that is good.

My suggestion that the goal of wish is set by the capacity is in line with Aristotle's treatment of goals in nature and crafts. For animals and plants to be oriented towards their own good and to have that good as an end, Aristotle does not think we need an individual desire for that good. Instead, it is the systematic organization of the organism that leads it to pursue its end.[180] Similarly in crafts, there is not a distinct desire for the end that causes the craft to move towards that end, but instead it is the organization of the art that does so. Just because humans have a natural goal, then, does not imply that they have a discrete desire for that goal. Instead the capacities they have and the desires they have can be organized such that humans will achieve that goal if things go right. Thus, wishing for bad things is the capacity failing to do its purpose, much as a plant not growing leaves would be a failure of its capacity for nutrition and growth.

[180] I defend this view at the level of individual processes in Chapter One and at the level of organisms in Chapter Two.

For the purposes of my larger argument, however, both my interpretation and Grönroos' share the most important features. On both accounts, everyone has a natural object of wish that is not transparent to them. Both agree that people pursuing the objects they consciously desire can fail to pursue their real end, which is the natural object of wish. Accordingly, for either account, a full understanding of an agent's actions cannot be grasped solely by studying what the agent is aware of; that understanding requires attention to goals that may not be available from the agent's own first-person perspective.

c. Vice and Incontinence as Failures to Reach the Goal

The cases of vice and incontinence both provide examples of how Aristotle offers explanations of actual actions in terms of failing to reach an objective goal. The accounts of these cases involve using normative standards, but those standards are not merely evaluative, because the accounts are supposed to explain actual behavior in addition to providing moral evaluations of that behavior. The case of incontinence is most clearly analyzed as a deviation from things going correctly, but Aristotle's account of vice fits this approach as well.

Incontinence is puzzling precisely because we expect someone with knowledge of what the good thing to do is to do that action, but the incontinent person has that knowledge, and fails to follow through with the action it prescribes. Thus, Aristotle's analysis of incontinence is an effort to figure out what goes wrong in a mechanism that normally leads the agent to do the good action that contributes to happiness. Much as in cases of natural teleology there is a mechanism for achieving the proper goal, and explaining failures requires that we identify the normal mechanism, then say what has

gone wrong in its operation, or what has prevented its operation. He identifies what goes wrong by citing the limited way in which a person has knowledge: it is perceptual rather than universal, and it may not be fully active (1147a 10-23, 1147b 9-19). After clarifying that the incontinent person does not have full knowledge that could not be overpowered, he specifies what overpowers this partial knowledge as an appetite for pleasure (1147a 31- 1147b 3). Without highlighting the way the incontinent person is actively trying to do what leads to real happiness, we would no longer be describing the same phenomenon, since we would just be describing a case of someone pursuing pleasure without reservation. Even though the resulting action is not one that actually contributes to happiness, accounts of incontinence need to include a description of how the agent had happiness as a goal and failed to achieve it in order to have an accurate description and explanation of the phenomenon.

Accordingly, weakness of will is not actually a counter example that shows an instance of someone not acting for the sake of happiness, but rather it must be seen as aiming at happiness in order to raise the puzzle that is characteristic of it. Weakness of will is puzzling precisely because we expect knowing the good thing to lead to doing the good action, but it does not. The weak-willed agent has psychological components, such as knowledge of the good thing to do, which normally lead to doing the right action. If we do not recognize this agent as deviating from the right action, then we do not acknowledge the normal tendencies of those components to bring about the right action, which makes the action a case of weakness of will.

In the case of vice, it is harder to see what role actual happiness would play in the explanation of what the person does, because the bad person does not have correct belief

or knowledge about what actions really lead to happiness. However, this case is still correctly analyzed as an attempt at happiness that goes wrong. Rather than failing to act on one's belief, vice is a case of having the wrong belief and acting on it by choice (e.g. *NE,* 1150b 35 – 1151a 10). Thus, the mistaken belief has the most direct relevance for explaining why the person did that particular action. On one hand, this makes the conceptualized end that the vicious person is conscious of have the most immediate explanatory power, rather than the correct goal. This is because the vicious person wishes for and deliberates about how to achieve ends that are not actually good. However, on the other hand, Aristotle considers this to be only the qualified sense of wishing, rather than the primary one, which is for what is truly good. Because of the primacy of the natural objects of wish, what the vicious person wishes for is an instance of wish failing to find its proper object. His actions are failures because the bad person has developed incorrect beliefs about the good life and formed bad habits. These incorrect beliefs and habits cause the vicious person to think he will achieve happiness through his actions, but they also cause him to fail to do so, even if that person cannot recognize it. Thus, even a description of vicious people and their wishes will include references to the actual good, because the real good is needed to give an account of their psychological development and to correctly describe the performance of their capacities as failures. For the vicious person, the agent's belief forming capacity has fallen short of tis function of hitting the truth. By contrast, the weak willed person's beliefs are functioning properly, but other factors go wrong, and the virtuous person succeeds at his own aim with his capacities functioning properly. This supports the primacy of the proper object of wish, because only people who wish for it actually succeed at their goals from an outside perspective.

That cases of vice should be understood as attempts at achieving what is really good can be seen by the way Aristotle contrasts these cases with instances of brutishness.

> For, as has been said at the beginning, some are human [ἀνθρώπιναί] and natural [φυσικαὶ] both in kind and in magnitude, others are brutish [θηριώδεις], and others are due to deformities and diseases. Only with the first of these are temperance and self- indulgence concerned; this is why we call the lower animals [θηρία] neither temperate nor self-indulgent except by a metaphor, and only if some one kind of animals exceeds another as a whole in wantonness, destructiveness, and omnivorous greed; these have no power of choice [προαίρεσιν] or calculation [λογισμόν], but they *are* departures from what is natural [φύσεως] as, among humans, madmen [οἱ μαινόμενοι] are. Now brutishness is less evil than vice, though more alarming; for it is not that the better part has been perverted [διέφθαρται τὸ βέλτιον], as in the human [τῷ ἀνθρώπῳ],—they *have* no better part. (*NE,* 1149b 27-1150a3)

Aristotle thinks some people behave so strangely and have such odd desires that it is hard to even recognize their behavior as human, and these people are more like animals than people. Some of the examples of brutish people include people who irrationally fear mice, those who live by sensation alone, and a person who wants to eat a human child (1149a 1-10). It becomes unintelligible to try to see how fleeing from mice or eating children could reflect thinking that these actions contribute to a good human life. These behaviors do not appear to make sense as the results of reasoned decisions. This leads Aristotle to suggest that the cause of brutishness is the lack of choice and calculation, which means that the best part of a human, reason, is missing in these people. Whereas, vicious people, even though their actions do not reflect correct reasoning are intelligible as the product of calculating the best means to what they perceive to be their goal. Vicious people can even be good at this kind of reasoning by being clever (1144a 24-27). Thus, while vicious people's behavior is best understood as an attempt to do what is actually good for them by rationally pursuing an apparent good, brutish people cannot be understood to be making such an attempt.

Since there are limits to what human behavior can be seen as being for the sake of the human good, the concept of aiming at the natural object of wish is not an empty one that makes no analytic difference. However, what falls outside of the scope of being for the sake of the human good also ceases to look like *human* behavior for that very reason. Thus, Aristotle's analysis of vice and weakness of will indicates that he thinks all human actions aim at the real human good, happiness.

5. Conclusion

In the opening book of the *Nicomachean Ethics*, Aristotle assumes that everyone does every voluntary action for the sake of happiness, and he explicitly states so at least once (1102a1-3). There may be limit cases, as in brutishness where this may not be true, but in those cases we also approach the limits of behavior that is recognizably human. While the view that everyone always consciously refers each action to happiness looks to be too absurd to attribute to Aristotle, reducing Aristotle's claims to being purely prescriptive or normative does not work well with Aristotle's indicative phrasing, nor with his normal analysis of goals. I have argued that Aristotle thinks that in order to fully understand human actions we should analyze them as attempts at achieving real happiness. My reading does not require a conscious motivational link between every action and its contribution to happiness, but it does provide a way to make sense of the claim that everyone does in fact act for the sake of happiness. Happiness is an objective goal for the human species, where the achievement of it requires rational mental activity and moral development. There are many ways that the process can go wrong, but just as in cases of natural teleology, Aristotle treats these cases as deviations from their natural

goal, which are best understood by recognizing that goal and the source of deviation from it.

It is true that for Aristotle humans do not achieve happiness for the most part in any statistical sense, whereas he identifies natural goals with what happens for the most part. However, even in the case of natural goals there are instances where the natural goal is not what happens the majority of the time, but is still taken to be the normal case, even if Aristotle often makes it sound like the natural ends will be the majority. In *Generation of Animals*, Aristotle explains that most fish lay many eggs so that their species will not die out, since most eggs die before developing into fish: "for nature makes up for the destruction by numbers" (755a 20-35). The natural goal of each egg is to become a fish, and the purpose of laying eggs is to preserve the species, even if most eggs, numerically, die. Aristotle's discussion of natural teleology in *Physics* II suggests that the natural end is determined by a tendency towards it: "the tendency in each is towards the same end, if there is no impediment" (199b 17-18). Thus, the eggs have developing into a fish as their end, because without impediment that is what they will do, but in most cases there is some impediment to achieving this end.

Similarly, those who achieve happiness do not make up a statistical majority, but that does not prevent being happy from being the normal case for the purposes of understanding and evaluating human actions. It may be the case that most people encounter some impediment towards that goal, but it is still their goal. Some may object that there is no similar "tendency" towards the goal in humans. But, Aristotle does correlate the proper functioning of one's capacities with what is most pleasant, and having true beliefs also leads people to pursue the right end. These two features of the

natural goal could provide some tendency, and it is still true that when things go right, a person ends up happy. Aristotle has to provide other arguments to establish what that goal is, aside from the majority cases, which he does by analyzing what is best, most self-sufficient, complete, and distinctively human.

As a last piece of evidence that Aristotle thinks human actions should be analyzed as attempts at achieving real happiness, it looks like Aristotle extends this approach beyond his strictly ethical works to the *Politics* as well:

> Now, whereas happiness [εὐδαιμονία] is the highest good, being a realization and perfect practice of excellence, which some can attain, while others have little or none of it, the various qualities of humans are clearly the reason why there are various kinds of states and many forms of government; for different people seek after happiness in different ways and by various means, and so make for themselves different modes of life [βίους] and forms of government [πολιτείας]. (1328a 37 – 1328b2)

Here, Aristotle aims to explain the variety of human lives and governments by citing the true nature of happiness, the fact that people pursue it, and the fact that people fail to achieve happiness in different ways. By understanding the different ways in which people strive for happiness and fail or succeed, we will understand why people develop different ways of life and different governments. They have different characters that give them different ideas about what is good, leading them to do different actions. This could lead us to think that they are only aiming at their own conception of happiness rather than the real thing. However, the passage fits with the idea that they do have real happiness as their goal, because Aristotle cites the real good, and then cites causes of deviation from achieving that good, just as my reading suggests he should. Aristotle also uses "happiness" to refer to the real thing in the first use and then uses the same term again in the second instance to describe what people seek without indicating that the word has a

different meaning the second time. Thus, the proper explanation of why a certain person has a certain kind of life and why a certain people has a certain government will both cite objective happiness and the impediments or lack of impediments to achieving it.

Shortly after this passage, Aristotle reiterates that everyone pursues happiness, and he details the ways that people can go wrong. Conceptually, people can go wrong in understanding what the end is and in identifying what contributes to that end (1331b 25-30). There are also external factors that affect the possibility of achieving happiness.

> The happiness [εὐδαιμονίας] and well-being [εὖ ζῆν] which all manifestly desire [ἐφίενται], some have the power of attaining, but to others, from some accident or defect of nature, the attainment of them is not granted; for a good life requires a supply of external goods, in a less degree when people are in a good state, in a greater degree when they are in a lower state. Others again, who possess the conditions of happiness, go utterly wrong from the first in pursuit of it. (1331b 39-1332a 3)

People can fail to achieve real happiness from lack of understanding, defects, and lack of external supplies. By categorizing human behavior in terms of attempts at happiness, Aristotle describes the way in which a politician should understand the causes of human behaviors. While at the same time, understanding the ways that humans can go wrong also helps the politician understand how to organize the state correctly, so as to enable the achievement of happiness for the citizens. Thus, while some human actions can be explained by citing a conscious motivation that is not happiness itself, Aristotle thinks we will not have a full understanding of that action without recognizing it as an attempt at real happiness, and its status as an attempt at happiness brings in the standards by which we can evaluate its success.

Conclusion

Aristotle's natural teleology is based on the assumption that if something regularly does something that benefits itself, then the benefit will likely play a role in explaining why it keeps occurring. His defense of the existence of goal directedness in nature rests on the belief that it would be absurd for these regular cases of beneficial occurrences to happen by chance, or to be beneficial only by chance. Accordingly, he structures many of his biological explanations by identifying the benefit an organism receives as the goal of the process, and then investigating the details of how that goal is brought about. For instance, Aristotle does this for processes like respiration; he identifies the goal by stating that the process is for the sake of cooling the organism, which in turn keeps the organism's heat at an appropriate level, and thus keeping it alive. After identifying the goal, he explains the details of how the air is moved in and out in terms of material and efficient causes (e.g. *PA*, 642a 31 – 642b 2). As I have argued in Chapter One, Aristotle's framing the explanation of what occurs in terms of a goal and the good achieved by reaching that goal does not replace material and efficient causal accounts, but instead frames the inquiry into what those kinds of causes are bringing about.

When examining low-level processes and the functions of organs, Aristotle's biological discussion of ends can look far removed from anything that would have relevance to an ethical discussion of the goals that humans do or should pursue, but, as I have argued, these two discussions are actually closely related. Aristotle's analysis of goals is continuous from the low-level processes to intentional action, because he takes

the lower-level goals to contribute to the goals of the whole organism, and the way the organisms pursue their overall goals involves voluntary behavior. In Aristotle's natural works and studies of the soul, these higher-level goals play a role in explaining why organisms have the parts they do, why their organs work the way they do, and why the organism behaves the way it does. Animals have goals set by their natures, which explains why animals perform certain voluntary actions, and the success of those actions determines how good of a life that animal has achieved. This applies, I think, even to the way Aristotle discusses human happiness, which he identifies as the overall goal for humans. I have made the case that Aristotle has a general approach to organisms that identifies their goods in terms of their goals, and Aristotle's ethics is a detailed application of his more general approach that shares many principles with his biology.

To make this argument I showed that Aristotle analyses other animals in a way that it would make sense to draw upon in his ethical discussions. Concretely, in Chapters Two and Three, I argued that animals have their overall goals set in terms of achieving a certain type and quality of life, which is defined by the use of their sensitive capacities. Rather than having goals determined by survival and reproduction, as standard evolutionary biology posits, each animal species has a certain way of living and using sensation for which its parts exist and at which its behavior aims. Aristotle defends sensation as the defining capacity for animals' highest goal by appealing to what is definitive and characteristic of them, and by situating sensation on a hierarchy of capacities to show that it is the best available to them. One of the main ways animals achieve these goals is by using sensation to move around voluntarily, which helps them survive and reproduce, but also reflects a knowledge of the world and constitutes a better

way of living. Since Aristotle's biological discussions of goals analyze voluntary action in terms of natural goals that determine quality of life, it would be surprising if this way of thinking did not carry over to the ethics, especially if we consider that Aristotle's ethics is concerned with the highest human goal and best life possible, which is achieved through voluntary actions.

However, merely showing that Aristotle's biology is of a particular kind, such that it would makes sense for him to appeal to it in his ethics, does not on its own show that Aristotle does in fact draw on his biological work in his ethics. In Chapters Four and Five I identified two main ways that Aristotle's biological approach to the goods of organisms influences his ethical treatment of the human good. First, Aristotle specifies the content of the human good using the same principles as he does in animals: identifying what is essential and what is best. We see him focus on what is essential to humans in the function argument especially, and he defines the human good in terms of their best capacity, as situated by proximity to the divine, in his discussion of contemplation. Second, the way humans have their good as their goal also shares a formal similarity with the goods of other organisms. In Aristotle's treatment of the goods of other organisms, he uses the good as a goal both to explain their behavior and to evaluate the success of individual lives, even if the organisms are not aware of their highest goal. I showed that happiness also plays both of these roles for humans, since Aristotle uses real happiness in his accounts of virtuous and non-virtuous human behavior, while also using it to evaluate the lives of virtuous and non-virtuous people. These normative and descriptive roles of happiness reflect Aristotle's commitment to both descriptive eudaimonism and normative eudaimonism.

By highlighting a common approach to organisms and their goods that underlies Aristotle's science and ethics, I am suggesting a closer connection between Aristotle's ethical works and scientific works than is often advocated. For instance, Julia Annas and Martha Nussbaum have developed accounts of Aristotle that sharply divide ethical discussions of the human good from discussions of the well-being of other animals, and instead focus on shared human experience and rational discourse.[181] These reading may in part be motivated as a way of preserving the relevance of Aristotle's ethics for today in response to philosophers who have argued that appealing to human nature, understood as something objective that each human is born with, to define a human good that is shared across the species is no longer plausible.[182]

Nonetheless, I think there is strong intuitive appeal supporting the idea that each organism has certain things and activities it needs in order to fare well, and if that is so, there is something misguided about the effort to understand the human good in a way that is unrelated to how we would think about the well-being of other animals. I take this intuition to be behind a fairly traditional reading of Aristotle that takes him to view humans as having a fixed nature that determines what human happiness is, although this reading became less popular as philosophers became more skeptical of this approach to ethics generally. This intuition appears in many ethical theories that are not closely related to Aristotle as well. For instance, utilitarianism relies on the idea that faring well

---

[181] Annas (1993) 139, Nussbaum (1978) 81-85, and Nussbaum (1992) defends a version of Aristotelian essentialism that she calls an internal realist position that limits claims about human nature to shared human experiences. This view denies that there is an objective human essence, and remains anthropocentric, since it inherently tied to the human view of the world, as Johnson (2005) 290 points out. This inherent anthropocentrism undermines any attempt to draw parallels between the human good and the good of other animals.

[182] Williams 1985, 43-44 and MacIntyre 2007, xi, 173, 229.

or poorly amounts to feeling pleasure or suffering, which humans and animals are both capable of. Peter Singer uses this insight into the shared nature of well-being of animals and humans to defend the ethical treatment of animals.[183] Paul Taylor and Holmes Rolston III within environmental ethics have both defended the need for a non-anthropocentric conception of value, and have both appealed to the goals and goods of each organism as the basis for such value.[184] What these authors have in common is they share a naturalistic intuition that the way humans can be benefited and harmed is importantly similar to the way that other organisms can. I think there is something importantly correct about this intuition, and the reading of Aristotle I have defended shares it.

Studying Aristotle's ethics and biology in conjunction, as I have done, has advantages both for scholarly understanding and for thinking about contemporary ethics. By developing a detailed account of what it means for the human good and the goods of other organisms to be parallel cases, I highlighted the importance of quality of life in Aristotle's biological explanations, especially with regard to the well-being of animals. In his ethics, drawing attention to this parallel allowed a better understanding of his method for identifying the content of happiness, and of the formal status of happiness as every human's goal. For developing our own contemporary ethical views, it is valuable to see how Aristotle developed an account of the human good that recognizes that species have different needs, while also maintaining that all species will have goods in analogous ways. Aristotle's own approach to understanding the good of other organisms offers an account that neither takes all value to be anthropocentric, nor treats every life as equal.

---

[183] Singer 1976.
[184] Rolston, III 1998 and Taylor 1981.

Aristotle's is an interesting view that can support the intuition that each organism has a way of faring well or poorly, and the intuition that there is something more valuable in the life of a human than that of an ant or a piece of moss. Even if Aristotle's science can no longer be taken to be an accurate biological account, it is valuable to study the basic principles regarding the goals of organisms that his ethics and biology share.

Bibliography

Achtenberg, D. (1991). “The Role of the 'Ergon' Argument in Aristotle's Nicomachean Ethics” in Essays in Ancient Greek Philosophy, IV, Anton, John P (ed). Albany: SUNY Pr.

Ackrill, J. L. (1974). “Aristotle on Eudaimonia”

Allan, D. J. (1952). The Philosophy of Aristotle. London, New York: Oxford University Press.

Annas, J. (1982). “Inefficient Causes,” Philosophical Quarterly, 32: 311–322.

Annas, J. (1988). "Self-Love In Aristotle." Southern Journal of Philosophy SUPP 27: 1-18.

Annas, J. (1993). The Morality Of Happiness. New York, Oxford University Press.

Annas, J. (1996). "Aristotle on Human Nature and Political Virtue." Review of Metaphysics 49(4): 731-753.

Balme, D. M. (1939). “Greek Science and Mechanism: I. Aristotle on Nature and Chance” The Classical Quarterly, Vol. 33, No. 3/4 (Jul. - Oct., 1939), pp. 129-138

Balme, D. M. (1965). "Aristotle’s use of teleological explanation." Inaugural Lecture. Queen Mary College, University of London.

Balme, D. M. (1972). Aristotle’s De Partibus Animalum I and De Generatione Animalium I (with passages from II. 1-3), Oxford: Clarendon Aristotle Series.

Balme, D. M. (1987). "Teleology and necessity". Philosophical Issues in Aristotle’s Biology, ed. A. Gotthelf and J. Lennox. Cambridge, 275–86.

Barney, R. (2008). “Aristotle's Argument for a Human Function,” Oxford Studies in Ancient Philosophy, Volume XXXIV, Summer 2008.

Barnes, J. ed. The Complete Works of Aristotle: The Revised Oxford Translation. Princeton, N.J., Princeton University Press, 1984.

Bolton, R. (1995). “The Material Cause: Matter and Explanation in Aristotle’s Natural Science,” in Kullman (1997).

Bostock, D. (1988). “Pleasure and Activity in Aristotle’s Ethics.” *Phronesis,* vol. 33, no. 3, 251-272.

Boylan, M. (1981). “Mechanism And Teleology In Aristotle's Biology,” Apeiron: A Journal for Ancient Philosophy and Science, Vol. 15, No. 2 (December 1981), pp. 96-102.

Bradie, M. and Miller, F. D. (1984). “Teleology and Natural Necessity in Aristotle,” History of Philosophy Quarterly, Vol.1 No. 2, Apr., pp. 133-146.

Brentano, F. (1978/1911). Aristotle and His Worldview, trans. and ed. R. George and R. M. Chisholm, Berkley: University of California Press.

Brickhouse, T. C. (2003). “Does Aristotle Have a Consistent Account of Vice?” The Review of Metaphysics. Vol. 57, No. 1, 3-23.

Broadie, S. W. (1987). "Nature, craft, and phronesis in Aristotle." Philosophical Topics, 15(2): 35–50.

Broadie, S. W. (1990). “Nature and craft in Aristotelian teleology.” In Biologie, Logique et Metaphysique chez Aristote, ed. D. Deveraux and P. Pellegrin, Paris, pp. 389–403.
Broadie, S. W. (1991). Ethics with Aristotle. Oxford, New York: Oxford University Press.
Broadie, S. W. (1996). "Nous, and Nature in Aristotle's De Anima, III," Proceedings of the Boston Area Colloquium in Ancient Philosophy, 12: 163–76.
Broadie, S. W. (2007). Aristotle and Beyond: essays on metaphysics and ethics. Cambridge, New York: Cambridge University Press.
Burnyeat, M. F. (1981). "Aristotle on Learning to Be Good." Essays on Aristotle's Ethics. Berkeley: University of California Press.
Byrne, C. (2002). “Aristotle on Physical Necessity and the Limits of Teleological Explanation” Apeiron: A Journal for Ancient Philosophy and Science, Vol. 35, No. 1 March, pp. 19-46.
Cameron, R. (2002). “The Ontology of Aristotle's Final Cause” Apeiron: A Journal for Ancient Philosophy and Science, Vol. 35, No. 2 June, pp. 153-179.
Cartwright, N. (1986). "Two kinds of teleological explanation". In A. Donagan, A. N. Perovich, Jr., and M. V. Wedin, eds. Human Nature and Natural Knowledge. pp. 201–10.
Charles, D. (1984). Aristotle's Philosophy of Action. London: Duckworth.
Charles, D. (1986). "Aristotle: Ontology and Moral Reasoning." Oxford Studies in Ancient Philosophy. 4: 119-144
Charles, D. (1991). "Teleological causation in the Physics." in Judson (1991a), pp. 101–128.
Charles, D. and Scott, D. (1999). “Aristotle on well-being and intellectual contemplation.” *Aristotelian Society Supplementary Volume* 73 (1): 205–223.
Charles, D. (2006). “Aristotle’s Desire.” In Mind and Modality, Edited by Vesa Hirvonen, Toivo J. Holopainen and Miira Tuominen, 19-40. Leiden: Brill.
Charles, D. (2011). “Desire in Action: Aristotle’s Move.” In Moral Psychology and Human Action in Arsitotle, edited by Michael Pakaluk and Giles Pearson, 75-93. Oxford: Oxford University Press.
Caston, V. (1996). “Why Aristotle Needs Imagination.” *Phronesis.* Vol. 41, No. 1, 20-55.
Code, A. (1987). "Soul as efficient cause in Aristotle’s embryology". Philosophical Topics, 15: 51–9. Reprinted in ACA, vol. 2, pp. 295–302.
Code, Alan and Julius Moravcsik. (1992) "Explaining Various Forms of Living." in Nussbaum and Rorty (1992). 129–45.
Code, A. (1995). “The Priority of Final Causes over Efficient Causes in Aristotle’s PA” in Kullman (1997).
Cohen, S. Marc. (1992). "Hylomorphism and Functionalism." in Nussbaum and Rorty (1992). 57–73.
Colaner, N. (2012). "Aristotle on Human Lives and Human Natures." History of Philosophy Quarterly 29(3): 211-226.
Cooper, J. M. (1975). Reason and Human Good in Aristotle. Cambridge, Mass.: Harvard University Press.
Cooper, J. M. (1982). "Aristotle on Natural Teleology" in Owen et al. (1982).

Cooper, J. M. (1987a). “Hypothetical Necessity and Natural Teleology,” in Gotthelf and Lennox (1987).
Cooper, J. M. (1987b) “Contemplation and Happiness: A Reconsideration.” *Synthese, 72*(2), 187-216.
Cooper, J. M. (1995). “Eudaimonism and the Appeal to Nature in the Morality of Happiness: Comments on Julia Annas, The Morality of Happiness.” Philosophy and Phenomenological Research. Vol. 55, No. 3, 587-598.
Cooper, J. M. (1999). Reason and Emotion : essays on ancient moral psychology and ethical theory. Princeton, N.J.: Princeton University Press.
Cooper, J. M. (2004). Knowledge, Nature, and the Good, Princeton: Princeton University Press.
Depew, D. J. (1995). “Humans and Other Political Animals in Aristotle’s ‘History of Animals.’” Phronesis. Vol. 40, No. 2, 156-181.
Fodor, J. A. (1974). “Special sciences (or: the disunity of sciences as a working hypothesis)” Synthese, Vol. 28, No. 2 Oct., pp. 97-115.
Foot, P. (2001). Natrual Goodness, Oxford: Clarendon Press.
Frede, M. (1987). Essays in Ancient Philosophy, Minneapolis: University of Minnesota Press.
Frede, M. (1992). “On Aristotle’s Conception of Soul,” in Nussbaum and Rorty (1992). 93-108.
Frede, M. and G. Striker (1996). Rationality in Greek Thought. Oxford ; New York, Clarendon Press ; Oxford University Press.
Freeland, C. (1991). “Accidental Causes and Real Explanations” in Judson (1991a).
Freeland, C. (1994). "Aristotle on Perception, Appetition, and Self-Motion." in Gill and Lennox (1994).35-63.
Furley, D. (1978). "Self-Movers." in Gill and Lennox (1994). 3-14 .
Furley, D. (1985). “The Rainfall Example in Physics II.8” in Gotthelf (1985).
Furley, D. (1994). "Aristotle and the Atomists on Forms and Final Causes" in Sharples (2003).
Furley, D. J. (1996). “What Kind of Cause is Aristotle's Final Cause?,” in Frede and Striker (1996).
Gallop, D. (1988). ‘Aristotle on Sleep, Dreams, and Final Causes,’ Proceedings of the Boston Area Colloquium in Ancient Philosophy, 4: 257–90.
Gill, M. L. (1991). "Aristotle on Self-Motion." in Gill and Lennox (1994). 15-34.
Gill, M. L. and J. G. Lennox (1994). Self-Motion : from Aristotle to Newton. Princeton, N.J., Princeton University Press.
Gill, M. (1995) “Material Necessity and Meteorology IV 12,” in Kullman (1997).
Glassen, P. (1957). “A Fallacy in Aristotle’s Argument about the Good.” Philosophical Quarterly. 7 (29):319-322.
Gomez-Lobo, A. (1989). "The Ergon Inference." Phronesis. Vol. 34, 170-184.
Gomperz, T., L. Magnus and G. G. Berry (1901). Greek Thinkers : a history of ancient philosophy. New York, Scribners.
Gotthelf, A. (1976). "Aristotle's Conception Of Final Causality." Review of Metaphysics. Vol. 30, 226-254.
Gotthelf, A. (1985). Aristotle on Nature and Living Things, Pittsburg: Mathesis Publications.

Gotthelf, A. and Lennox, J. (1987). Philosophical Issues in Aristotle's Biology, Cambridge: Cambridge University Press.
Gotthelf, A. (1988). "The Place Of The Good In Aristotle's Natural Teleology." Proceedings of the Boston Area Colloquium in Ancient Philosophy. 4, 113-139.
Gotthelf, A. (1989). "Teleology and Spontaneous Generation in Aristotle: A Discussion," Apeiron, Vol. 22, No. 4, 181-193.
Gotthelf, A. (1997). "Understanding Aristotle's Teleology: Final Causality in Nature and Human Affairs," Studies in Philosophy and the History of Philosophy, Vol. 30.
Gotthelf, A. (2012). Teleology, First Principles, and Scientific Method in Aristotle's Biology, Oxford: Oxford University Press.
Grönroos, G. (2015). "Wish, Motivation and the Human Good in Aristotle." Phronesis. Vol. 60, 60-87.
Gurtler, G. M. (2003). "The Activity of Happiness in Aristotle's Ethics." The Review of Metaphysics. Vol. 56, No. 4, 801-834.
Hankison, R. J. (1998). Cause and Explanation in Ancient Greek Thought, Oxford: Clarendon Press.
Harvey, M. (2001). "Deliberation and Natural Slavery." Social Theory and Practice. Vol. 27, No. 1, 41-64.
Heath, M. (2008). "Aristotle on Natural Slavery." Phronesis. Vol. 53, No. 3, 243-270.
Heinaman, R. (1995). Aristotle and Moral Realism. Boulder, Westview Press.
Henry, D. (2008). "Organismal Natures." Apeiron. Vol. 41, 47-74.
Henry, D. (forthcoming). "For-The-Most-Part in Aristotle's Science and Ethics."
Hocutt (1974) "Aristotle's four becauses." Philosophy. Vol. 49, 385–399.
Hudson, S. D. "Reason and Motivation in Aristotle." Canadian Journal of Philosophy. Vol. 11, No. 1, 111-135.
Hursthouse, R. (1999) On Virtue Ethics, Oxford: Claredon Press.
Irwin, T. H. (1975). "Aristotle, Reason, Desire, and Virtue." The Journal of Philosophy. Vol. 72, No. 17, 567-578.
Irwin, T. H. (1980). "The Metaphysical and Psychological Basis of Aristotle's Ethics" in Rorty (1980).
Irwin, T. H. (1988). Aristotle's First Principles. Oxford; Oxford University Press.
Irwin, T. H. (2000). "Ethics as an Inexact Science: Aristotle's Ambitions for Moral Theory," in Hooker and Little, Moral Particularism, Oxford (2000). 100-129.
Irwin, T. H. (2007). The Development of Ethics : a historical and critical study. Oxford ; New York, Oxford University Press.
Jackson, F. (1998). From Metaphysics to Ethics: A Defense of Conceptual Analysis, Oxford: Clarendon Press.
Johnson, M. R. (2005). Aristotle on Teleology. Oxford: Oxford University Press.
Judson, L. (2001a). Aristotle's Physics: A Collection of Essays, Clarendon Press,.
Judson, L. (2001b). "Chance and 'always or for the most part' in Aristotle," in Judson (2001a).
Kahn, Charles (1985). "The Place of the Prime Mover in Aristotle's Teleology" in Gotthelf (1985).
Karbowski, J. (2012). "Slaves, Women, and Aristotle's Natural Teleology." Ancient Philosophy 32(2): 323-350.

Kelsey, S. (2003). "Aristotle's Definition of Nature." Oxford Studies in Ancient Philosophy Volume XXV, Winter 2003. Oxford: Oxford University Press.
Keny, A. (1966). “Happiness.” Proceedings of the Aristotelian Society. Vol. 66, 93-102.
Korsgaard, C. M. (1986). "Aristotle On Function And Virtue." History of Philosophy Quarterly 3: 259-279.
Korsgaard, C. M. (2008). The Constitution of Agency: Essays on Practical Reason and Moral Psychology. Oxford: Oxford University Press.
Kraut, R (1989). Aristotle on the Human Good. Princeton: Princeton University Press.
Kraut, R. (2007). "Nature in Aristotle's Ethics and Politics." Social Philosophy and Policy 24(2): 199-219.
Kullman, W. ed. (1997). Aristotelische Biologie. Steiner.
Lawrence, G. (2001). "The Function of the Function Argument." Ancient Philosophy 21(2): 445-475.
Lawrence, G. (2006). "Human Good and Human Function." The Blackwell Guide to Aristotle's Nicomachean Ethics. Malden MA, Blackwell Publishing.
Lawrence, G. (2009). "Is Aristotle's Function Argument Fallacious? Part 1, Groundwork: Initial Clarification of Objections." Philosophical Inquiry: International Quarterly 31(1-2): 191-224.
Lear, Gabriel Richardson (2004) Happy Lives and the Highest Good: An Essay on Aristotle’s Nicomachean Ethics, Princeton: Princeton University Press.
Lebar, M. (2008). “Aristotelian Constructivism.” Social Philosophy and Policy. 25(01), 182-213.
Lennox, J. G. (1999a). "Aristotle on the Biological Roots of Virtue: The Natural History of Virtue" in Maeinschein and Ruse (1999).
Lennox, J. G. (1999b). "The Place of Mankind in Aristotle's Zoology." Philosophical Topics 27(1): 1-16.
Lennox, J. G. (2001). Aristotle’s Philosophy of Biology: Studies in the Origins of Life Science, Cambridge: Cambridge University Press.
Leunissen, M. (2010). Explanation and Teleology in Aristotle's Science of Nature. Cambridge, UK ; New York, Cambridge University Press.
Leunissen, M. (2012). "Aristotle on Natural Character and Its Implications for Moral Development." Journal of the History of Philosophy 50(4): 507-530.
Leunissen, M. and A. Gotthelf (2010). "'What's Teleology Got To Do With It?': A Reinterpretation of Aristotle's 'Generation of Animals' V." Phronesis: A Journal of Ancient Philosophy 55(4): 325-356.
Lorenz, H. (2006). The Brute Within: Appetitive Desire in Plato and Aristotle. Oxford, Oxford University Press.
MacIntyre, A. (2007). After Virtue. New York; London, Bloomsbury Academic.
Majithia, R. N. (2006). “Function, Intuition and Ends in Aristotle’s *Ethics*.” Ethical Theory and Moral Practice. Vol. 9, 187-200.
Matthen, M. “The Four Causes in Aristotle's Embryology” Apeiron: A Journal for Ancient Philosophy and Science, Vol. 22, No. 4, Nature Knowledge and Virtue: Essays in memory of Joan Kung (December 1989), pp. 159-179.
McDowell, J. H. (1994). Mind and World. Cambridge, Mass., Harvard University Press.

McDowell, J. H. (1996). “Deliberation and Moral Development in Aristotle”, in Stephen Engstrom and Jennifer Whiting, eds., (1996) Aristotle, Kant and the Stoics. Cambridge University Press. Cambridge. pp. 19–35

McDowell, J. H. (1998). Mind, Value, and Reality. Cambridge, Mass., Harvard University Press.

Mele, A. R. (1984). “Aristotle’s Wish.” Journal of the History of Philosophy. Vol. 22, No. 139-156.

Menn, S. (1992). “Aristotle and Plato on God as Nous and as the Good.” The Review of Metaphysics. Vol. 45, No. 3, 543-573.

Menn, S. (2002). “Aristotle’s definition of soul and the program of the *De Anima*.” Oxford Studies in Ancient Philosophy, 22: 83–139.

Meyer, Susan Suave (1992), “Aristotle, Teleology, and Reduction,” The Philosophical Review, vol. 101, no. 4, oct., pp. 791-825.

Meyer, S. S. (1993). Aristotle on Moral Responsibility, Cambridge, MA: Blackwell.

Meyer, S. S. (1994). "Self-Movement and External Causation." in Gill and Lennox (1994). 65-80.

Miller, F. D. (1995). Nature, Justice, and Rights in Aristotle's Politics. Oxford, Oxford University Press.

Miller, F. D. and D. Keyt (1991). A Companion to Aristotle's Politics. Oxford, UK ; Cambridge, Mass., USA, B. Blackwell.

Modrak, D. K.W. (1990). “The First Cognitivist?” Apeiron. Vol. 23, No. 1, 56-75.

Moss, J. (2010). "Aristotle's Non-Trivial, Non-Insane View That Everyone Always Desires Things under the Guise of the Good." Desire, Practical Reason, and the Good. Oxford, Oxford Univ Pr.

Moss, J. (2012). Aristotle on the Apparent Good. Perception, Phantasia, Thought, and Desire. Oxford Aristotle Studies, Oxford.

Moss, J. (2014). “Was Aristotle a Humean?: A Partisan Guide to the Debate.” In The Cambridge Companion to Aristotle's Nicomachean Ethics, Edited by Ronald Polansky, Cambridge University Press. 221-24.

Nagel, T. (1972). "Aristotle on Eudaimonia." in Nagel (1994) Other Minds, Oxford, Oxford University Press, 113-120.

Nielsen, K. M. (2011). “Deliberation as Inquiry: Aristotle’s Alternative to the Presumption of Open Alternatives.” Philosophical Review, Vol. 120, No. 3, 383-421.

Nussbaum, M. C. (1978). Aristotle's De motu animalium : text with translation, commentary, and interpretive essays. Princeton, N.J., Princeton University Press.

Nussbaum, M. C. (1992). “Human Functioning and Social Justice: In Defense of Aristotelian Essentialism” Political Theory, Vol. 20, No. 2, pp. 202-246.

Nussbaum, M. C. and A. l. Rorty (1992). Essays on Aristotle's De anima. Oxford, Oxford University Press.

O’Keefe, T. (1997). Epicurus on Reduction, Determinism, and Freedom. UT-Austin.

Owen, G. E. L., M. Schofield and M. C. Nussbaum (1982). Language and Logos : studies in ancient Greek philosophy presented to G.E.L. Owen. Cambridge ; New York, Cambridge University Press.

Polanski, Ronald (2007). Aristotle’s De Anima: A Critical Commentary. Cambridge, Cambridge University Press.

Reeve, C. D. C. (1992). Practices of Reason, Oxford: Clarendon Press.
Reeve, C. D. C. (2012). Action, Contemplation, and Happiness : an essay on Aristotle. Cambridge, Mass., Harvard University Press.
Richardson, H. S. (1992). "Degrees of Finality and the Highest Good in Aristotle." Journal of the History of Philosophy. Vol. 30, No. 3, 327-352.
Richardson Lear, G. (2004). Happy Lives and the Highest Good : an essay on Aristotle's Nicomachean Ethics. Princeton, N.J., Princeton University Press.
Roche, T. D. (1992). "In Defense of an Alternative View of the Foundation of Aristotle's Moral Theory." Phronesis. Vol. 37, No. 1, 46-84.
Rolston, III, H. (1998). "Naturalizing Values" in Environmental Ethics, Pojman and Pojman, pages 105-122.
Rosler, A. (2005). Political Authority and Obligation in Aristotle. Oxford, Oxford Aristotle Studies.
Ruse, M. and J. Maienschein (1999). Biology and the Foundation of Ethics. Cambridge, UK ; New York, Cambridge University Press.
Sedley, D. (1991). "Is Aristotle's teleology anthropocentric?". Phronesis, 36(2), 179-196.
Segvic, H. (2004). "Aristotle on the Varieties of Goodness." Apeiron. Vol. 37, No. 2, 151-176.
Segvic, H. (2009). "Aristotle's Metaphysics of Action." In From Protagoras to Aristotle, Princeton: Princeton University Press. 111-143.
Scharle, M. (2008a). "Elemental Teleology in *Aristotle's* Physics 2.8" Oxford Studies in Ancient Philosophy, Vol. 34, 147-183.
Scharle, M. (2008b). "The Material and Efficient Causes in Aristotle's Natural Teleology," Apeiron Vol. 41, 3, pp. 27-45.
Sharples, R. W. and S. V. Keeling (2003). Perspectives on Greek Philosophy : S.V. Keeling memorial lectures in ancient philosophy, 1992-2002. Aldershot, Hants, England ; Burlington, VT, Ashgate.
Shields, C. (2007). Aristotle, New York, Routledge.
Singer, P. (1976). Animal Rights and Human Obligations. Englewood Cliffs, NJ: Prentice Hall.
Skinner, B. F. (1971). Beyond Freedom and Dignity. New York, Knopf.
Sorabji, R. (1980). Necessity, Cause, and Blame : perspectives on Aristotle's theory. Ithaca, N.Y., Cornell University Press.
Stein, N. (2011). "Aristotle's Causal Pluralism" Archive for Gesch. d. Philosophie 93. Bd., pp. 121–147.
Suits, B. " Aristotle on the Function of Man: Fallacies, Heresies and Other Entertainments." Canadian Journal of Philosophy, Vol. 4, No. 1, 23-40.
Taylor, P. (1981). "Biocentric Egalitarianism," Environmental Ethics. Vol. 3, 237-243.
Thorsrud, H. (2015). "Aristotle's Dichotomous Anthropology: What is Most Human in the Nicomachean Ethics" Apeiron. Volume 48, Issue 3, 346-367.

Trott, A. (2012). "The Human Animal: The Natural and the Rational in Aristotle's Anthropology." Epoche: A Journal for the History of Philosophy 16(2): 269-285.
Tuozzo, T. M. (1994). "Conceptualized and Unconceptualized Desire in Aristotle." Journal of the History of Philosophy. Vol. 32, No. 4, 525-549.

Urmson, J. O. (1995). “A Fallacy of Aristotle’s about Ends.” Argumentation. Vol. 9, 523-530.

Waterlow [Broadie], S. (1982). Nature, Change, and Agency in Arsitotle’s *Physics*, Oxford: Clarendon Press.

Whiting, J (1986). "Human Nature and Intellectualism in Aristotle." Archiv für Geschichte der Philosophie 68 (1).

Whiting, J. (1988). "Aristotle's Function Argument: A Defense." Ancient Philosophy 8: 33-48.

Whiting, J. (2002 a). "Eudaimonia, External Results, and Choosing Virtuous Actions for Themselves." Philosophy and Phenomenological Research 65(2): 270-290.

Whiting, J. (2002 b).“Locomotive Soul”, Oxford Studies in Ancient Philosophy.

Williams, B. (1985). Ethics and the Limits of Philosophy. Cambridge, MA, Harvard University Press.

Woodfield, A. (1976). Teleology. Cambridge ; New York, Cambridge University Press.

Wilkes, K. (1978) “The Good Man and the Good for Man in Aristotle’s Ethics” Mind. 87 (348):553-571.

Winter, Michael, (1997). “Aristotle, *hōs epi to polu* relations, and a demonstative science of ethics,” Phronesis, vol. 42, no 2, pp. 163-189.

Yurdin, J. (2009). “Aristotelian Imaginiation and the Explanation of Behavior.” In Ancient Perspectives on Aristotle’s *De Anima*, ed. Gerd Vn Riel and Peirre Destrée, Leuven: Leuvin University Press. 71-87.